

Forest Fire Lookout Tower on Mt. Kearsarge.

State of New Hampshire

BIENNIAL REPORT

of the

Forestry and Recreation
Commission

*For the Two Fiscal Years
Ending June 30, 1942*

CONCORD
1943

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Report

*To His Excellency, the Governor
and the Honorable Council:*

The Forestry and Recreation Commission submits herewith its report for the years 1941 and 1942. In this period of changing conditions and re-adjustments, the cutting of trees to meet the manifold needs of war industries has been the outstanding contribution and sacrifice of natural resources within the state. More standing timber has been cut than was salvaged from the hurricane during the preceding biennium. Volume production has taken precedence over consideration of future requirements or the effect upon the forests. Forest fire prevention and control have taken on more difficult and serious aspects than have before existed, involving protection of farm buildings, summer cottages and even whole villages from fires originating in slash and sweeping across dry open lands. The entire season of 1941 was exceptionally dry but the spring season of almost any year now constitutes a grave fire peril. In 1941 while men trained to fight fires were still available, 699 fires, not including railroad fires, burned over 36,533 acres. Nearly two-thirds of this acreage was attributable to one fire in Marlow, Stoddard and Washington beginning on April 28th which burned 23,350 acres, threatened two villages, destroyed seventeen farms and summer camps, two portable saw mills and the Pitcher Mountain fire tower and cabin before it was under control.

During 1942 diversion of man power into the armed forces and war industries and the closing of all CCC Camps has affected all activities and to a very considerable extent our program of protection. It may affect them even more seriously in the period ahead. Fortunately the record for 1942 of 538 fires and 4,928 acres burned over compares more favorably with the thirty year average. There were, however, two large fires and several of incendiary origin in Hillsborough County in April and May.

Our efforts during the past three years to meet the critical fire situation have been supported by new legislation relating to saw mills, exempting towns from sharing fire costs above one-half of one percent of valuation, and increasing state fire appropriations. No less than \$40,000 worth of well assorted fire tool supplies was purchased in advance of all restrictions and distributed to towns throughout the state at one-half the cost. Federal assistance has been received in fire training work and in the loan or gift of fire equipment to be kept by the state for emergency use, including six fully equipped trucks and other apparatus

and supplies of small tools for several hundred men. A new forest law bulletin has been compiled from the Revised Laws. A manual of instruction for wardens and training groups was prepared mainly by Gerald H. Hight who has been employed for two years in fire training work and the maintenance and upkeep of the state's fire equipment.

Administration of the forest fire protective work requires half the entire year round efforts of the department's office and field personnel. Much credit is due to Elphege J. Couture, serving as administrative assistant to the State Forester, and to other long time members of the Concord office staff and district chiefs for faithful services devoted to the forest fire organization. Maintaining an active, efficient organization of some 1,200 forest fire wardens and deputies, who receive little compensation except for actual fire suppression, involves many time consuming details. Procurement and care of equipment, control of permits for burning waste, attending meetings and conferences and posting notices are extra duties our wardens are expected to perform, busy as they are with their regular duties under existing conditions.

While registrations of saw mills and permits to operate at each new location are issued from the Concord office, the inspection of mills and of roadside slash, supervision of the fire lookout stations and watchmen, investigations of fire law violations and enforcement generally are handled by the district chiefs with some assistance from the local wardens. Conservation officers of the Fish and Game Department, members of the State Police, and personnel of the White Mountain National Forest in their respective districts have cooperated fully wherever their services were needed by our forest fire organization. During critical fire periods practically continuous services and communication have to be maintained from the Concord and district headquarters with those concerned. When a serious fire occurs, these duties include the dispatching of help, equipment and supplies. Telephone communication with fire headquarters and by messenger, radio or telephone from fire headquarters to persons on the fire line and a nearby lookout station are essential requirements at all serious fires. The State Police radio communication or use of amateur operators and equipment have been most helpful. The department has been assigned a frequency and is authorized by the Federal Communications Commission to operate fixed and portable radios with city and town fire agencies in forest fire installations as equipment can in time be assembled. Some progress has already been made. Meetings of warden associations and other fire groups, sometimes held jointly with neighboring states and with federal agencies are attended during the year. Training of town fire crews is carried out as fully as such meetings can be arranged. Seven of our nine district fire chiefs are primarily employed by other agencies on other work and are not required to although they do give more than 25 percent of their time to fire protection work.

The department regrets the loss of an old and faithful employee, Walter H. Tripp, for many years employed by the department in forest fire work, chiefly in the construction and maintenance of the fire towers, cabins and telephone lines and care of the fire equipment and supplies, who passed away very suddenly while engaged in his duties at Mount Prospect, Lancaster, June 28, 1941.

The department is cooperating with the Federal Government in three special emergency fire protection measures for which costs are paid by the government. Airplane warning service is operated at three remote posts on a 24 hour basis. In addition most of the fire lookouts perform air raid warning service during the fire season. Five critical area projects of military, industrial and other importance, each including some twenty towns are given special fire consideration in organization, preparedness and suppression effort. Supervision is furnished by the staff and district chiefs and the work is carried out by a project director assigned to each area. The third project involves enlisting and training extra man power crews and leaders in as many communities as possible for fighting fires in emergency. This is a branch of the Office of Civilian Defense, working closely with the State Defense Council, and designated as the Forest Fire Fighters Service. The state forester and district fire chiefs serve as state and district coordinators with the fire wardens as local coordinators.

Blister rust control to maintain the growing stock of white pine has been in progress within the state since 1918. It has a vital objective to protect the future of white pine. Its parallel is in forest fire protection which likewise has been a cooperative project of long duration. To date 90.8 percent of the areas of white pine producing lands (3,173,392 acres) have been covered once for ribes eradication. A check on all the initial work is expected to be done in five to eight years after the initial eradication but this accomplishment has been possible on only 25.1 percent of the areas first covered. Working with 215 individual towns and cities to secure needed funds and employ where possible local labor during all these years has been a slow but persistent task. Its purpose has been accomplished with system and reasonable dispatch where towns made frequent if not annual appropriations of a few hundred dollars. Some towns long ago completed initial and secondary control. A few have done little or nothing and the other towns are in all stages of progress toward completion. All towns containing substantial areas of young immature white pine should regard blister rust control as an essential and continuing local undertaking until the necessary work has been completed.

Through the years a fixed, steadfast policy of cooperation on the dollar for dollar basis on the part of the Plant Disease Bureau of the Federal Department of Agriculture has been adhered to without inter-

ruption. The Federal Government pays for a state agent and five district leaders and supplies in addition funds to match state, town and private funds for actual ribes eradication. The five district leaders in New Hampshire by special agreement and division of costs are also allowed to serve the state a proportionate part of their time as district fire chiefs in our forest fire organization, thus exercising economy in field agent work and saving the state thousands of dollars it would otherwise have had to spend annually in district chief services.

The Federal Government is prepared to match funds from the state, towns or private individuals. Under our statutes (Chapter 238—Revised Laws) the state policy is to secure the matching funds from appropriations by each town concerned, by contributions from land owners for work on their own lands and from state appropriations. Each town is a separate operating and accounting unit with its control work carried forward from year to year. Town maps are made available to show the progress of control in each town. In practice the state's share of expenditures has generally been to pay a trained crew foreman and the overhead incidental to crew work.

During depression years town as well as state funds fell off but labor was abundant and the various federal and state work agencies, particularly WPA and CCC, made possible our steady advance in eradication work which was of great value to towns burdened with unemployment. Work in the woods was made more difficult but even more important following the hurricane. War conditions of 1941 and 1942 have introduced problems of labor shortage, high wages, restrictions in travel, economy programs and the fact that blister rust control is a long time program not immediately related to the war effort. The 1941 legislature reduced the appropriation for blister rust to \$4,090 and \$4,095 while the towns raised \$9,225 and \$5,385 for the two seasons of 1941 and 1942. The Federal Government set up \$16,508 of matching funds in addition to WPA work. Not all of the federal matching funds could be offset on the dollar for dollar basis because of insufficient state and town appropriations. The state has paid \$6,425 less than the towns during this past biennium and should come to the rescue of the towns and at the same time maintain our cooperative standing with the Federal Government by sufficiently increased appropriations for the next two years.

The total area of state forests and reservations is now 41,950 acres, including 895 acres acquired during the biennium, of which all but 21 acres were donations. One of the notable gifts, accepted by act of the 1941 legislature, was Mount Prospect in Lancaster from the heirs of Senator John W. Weeks who was a native of Lancaster and the author of the original Weeks Law of 1911 (now the Clarke-McNary Act of Congress) providing for the purchase of national forests in the eastern states and for cooperation with the states in forest fire protection, forest

planting and farm forestry extension. This property consists of 430 acres of forest land and buildings. A stone observation tower, which has now superceded Mounts Cabot and Agassiz as fire lookout stations, and other buildings and improved grounds are being made useful for public recreation. A scenic road two miles in length extends from the Daniel Webster Highway to the summit. It is fitting that this memorial is being dedicated to public use and the promotion of forestry interest in northern New Hampshire. Another gift of interest is a tract of 76 acres on both sides of the mountain road to the summit of Pack Monadnock in Peterborough from the sons of former Governor Robert P. Bass, for many years a member of this Commission and still interested in forest conservation. This property joins and becomes a part of the first reservation of three acres received by the state and known as Miller Park. The so-called Day Use Area in Allenstown, which is a part of the Bear Brook Reservation long in process of development by the National Park Service, was leased to the department and operated for two-thirds of 1941 and during 1942.

Public use of the supervised recreational areas decreased during 1942 on account of travel restrictions. However, we were called upon to accommodate groups of service men from the armed forces at several of the areas nearest the Coast and at other places where travel distance was not prohibitive. Operating conditions became acute and problems had to be met such as paying higher wages for inexperienced help at key positions and the necessity of operating areas poorly patronized in order to protect state property. Qualified lifeguards were difficult to find. In spite of this the record has been maintained of no drownings and no forest fires at any of the established areas.

A statistical comparison of the two seasons for all the supervised areas shows the attendance was reduced 50 percent, the number of personnel employed 24 percent, the operating costs 30 percent and the income 40 percent during the season of 1942. The Day Use Area for picnicking and bathing at Bear Brook however enjoyed an increase in patronage of 5 percent and income of 56 percent in 1942. The total attendance was over 383,000 people in 1941 and about half that number in 1942. A change in service charges from the previous 25 cents per car to 10 cents per person for many of the areas in 1942 helped to offset greater losses in revenue which would otherwise have occurred.

New recreational developments on our state forests and reservations terminated with the closing of the last CCC Camp and the WPA program early in 1942. In place thereof the department through the National Forest Service now supervises the work program of one Conscientious Objectors Camp. Necessary work in surveying the boundaries of certain state lands, especially the Connecticut Lakes Parkway its entire length of thirteen miles, as well as continuing the work of type

mapping and completing work on other state properties, has been done out of income from state lands. The remaining salvage of down timber and the cutting of fuel wood and other growth where this needed to be done has been carried along with other work. Recreational projects not entirely completed by CCC have been carried forward or completed as funds were available. Reference is made to financial and other statements elsewhere in the report relating to state land activities.

Towns and cities are the owners of 63,393 acres of land of which a little over one-half is held by 16 communities for the protection of their water supplies and by 62 others specifically as town forests. The balance of acreage is in 87 different communities where the titles have been taken over on account of delinquent taxes or for other reasons. All such lands may be regarded as in undetermined status since there is no fixed program as to the uses to which they may be put or their ultimate ownership. There is need for a more definite land planning policy to guide the towns with particular reference to lands of undetermined status. Some years ago many towns in this state had forest committees with responsibility for the supervision and management of town forests. Such committees with increased duties are more likely to be needed in the future than ever before since tax delinquency and problems of land use are on the increase. The towns having obtained title should determine whether it is in the public interest to sell the lands or hold and improve them as town forests. In too many cases towns have sold such lands only to see them stripped of any remaining growth and abandoned for the town to take over again in worthless condition.

Continued draining of our already dwindling timber supplies and its effect upon our post war forest conditions and the economy of our rural communities constitute a series of problems in taxation, land values and ownership, rural income and stability of forest industries which are just beginning to be understood by the general public. The preceding report touched upon these matters and pointed out that much concern existed throughout the country over pending legislation before Congress dealing with private forest regulation either directly or by the states themselves through the passage of laws to bring about coordination with the federal program.

Authentic information as to the seriousness of the situation and the character and amount of existing forest resources is difficult to obtain here and in other states. Yet we have been of the opinion even before the hurricane in 1938 that in this state the annual forest depletion, which is the total of cut and losses minus new growth, was equivalent to 150 million board feet. With the lumber cut for the year 1941 known to be 277 million and at least as much more for pulpwood, fuel, farm use, etc.,

and with the war requirements progressively increasing, it is probable that the annual depletion now exceeds that estimated for 1938.

The last legislature by a declaration of policy and providing for district forest advisory boards has recognized that the public welfare of the state requires the maintenance, protection and rehabilitation of forest lands. Six district boards of five members each have been selected and have held meetings in their districts and jointly with our Commission on three occasions. They have already rendered helpful service in furthering the understanding over the state of the problems of forest conservation.

Neighboring and more distant states are also trying to study conditions and determine policies to meet their own needs for better forest practices to keep forest lands productive. The state foresters of fourteen northeastern states have enlisted the services of the Council of State Governments and worked out with its technical staff and some of its legislative members a general forest regulatory program, intended to serve as a guide toward eventual, uniform legislation for the states of the region. Acceptance by the voters of this state of the timber tax amendment to the Constitution is tangible evidence of awakened public interest in the future of our forests.

What the next steps shall be in matters relating to forest taxation and to regulation must probably await more complete public understanding of the needs and how the desired results can be arrived at without detriment to the state in other ways and with reasonable consideration of private rights and initiative. It seems probable that states of a region having common forest practices and markets for similar products must proceed together and with the Federal Government on a formula of general understanding and agreement based on the public welfare which is assured of support by the courts and which will be financed by joint federal and state appropriations, on the principle of the present Clarke-McNary cooperation. In New Hampshire at least, the policy to be determined for taxing forest growth may be closely related to measures which can be taken to keep forest lands continuously productive. We are now at war and forest production takes precedence over forest conservation. It is quite evident in Washington that pressure to regulate the timber cut of the country will not be exerted for the duration. In the meantime the problems of taxation and forest regulation as they relate to every part of the state need to be thoughtfully canvassed and studied in order to arrive at a program as soon as possible which will serve the needs of this state and be assured of public support.

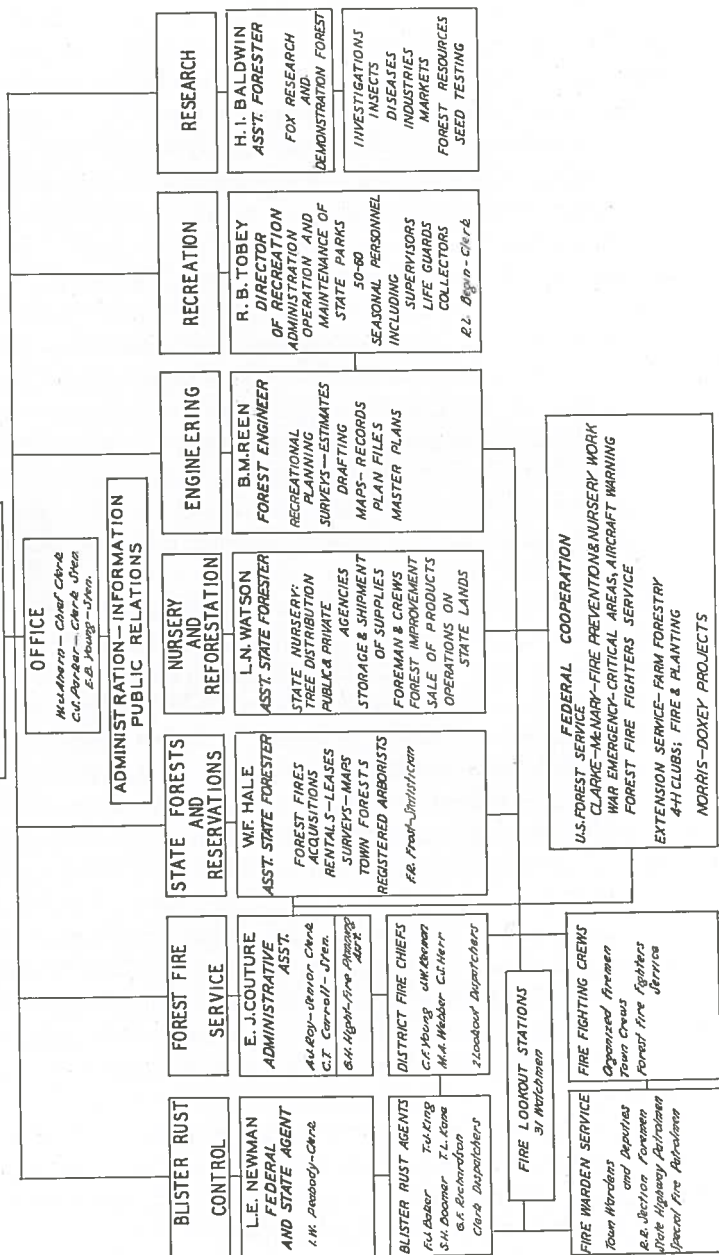
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FOREST FIRE CONTROL

Review of Conditions



THE 1941 fire season was unprecedented in severity. From March until December there were no outstanding periods of low fire danger. Weather records for seventy years indicated an all time low in precipitation and an all time high in temperature for the year. In every month but two the rainfall was below normal. In April, which is our worst fire month, less than one-half inch of rain fell and the mean temperature was 51.2 degrees. The mean relative humidity for the month was 33% as compared to a normal of 61% and for fifteen days it was below 30%.

Our fire records for thirty years were rather badly upset. In spite of 699 fires reported for the year, New Hampshire might have come through favorably but for six fires of more than forty which occurred during the two consecutive and long to be remembered days of April 28 and 29. These six fires burned 29,000 acres—nearly 80% of the year's total, caused a damage of \$155,000 and cost \$38,000 to extinguish. The three most serious of these were the Marlow-Stoddard-Washington, the Hinsdale-Chesterfield and the Nelson-Harrisville-Hancock fires. The first burned 23,350 acres of the total of 36,533 acres burned during the year. Three times and for a total period of 36 days woodland closures by proclamation of the Governor were in effect. Closures following legislation enacted during the spring fire period included for the first time the shutting down of registered portable mills. The larger and more costly of all fires during the year started or later burned in hurricane and lumber slash areas which were inaccessible and difficult to approach. These fires as well as many of the smaller ones burned deeply in the ground and required many days of mop-up work after they were under control, increasing the costs accordingly. Smoking as usual was the cause of nearly 43% of all fires with brush burning second and responsible for nearly 20%. While lumbering was the cause of less than 3% of the fires, these fires were responsible for over 60% of the area burned and damages. Conditions favorable to fires continued through November and seven fires were reported in December and two in January of 1942.

The forest fire season of 1942, however, was nearly the reverse of 1941. There were fewer fires than in any previous year, except two, since 1911. The average area burned per fire was somewhat disproportionately high because of three large fires on May 2. Weather conditions were generally favorable and the public seemed more fire-minded and careful. Rainfall was slightly in excess of normal. The dangerous spring period was of short duration, April 22 to May 3, during which only a trace of rain occurred and the relative humidity ranged from 22%

to 30%. In the spring period of twelve days, three fires on May 2 in Amherst, Merrimack and New Boston burned 2,500 acres, the first two of which started from the railroad and the third from within the Grenier Field bombing range. There were also a series of incendiary fires in the neighborhood of Hooksett and Bedford as a result of which the responsible party was duly apprehended.

In 1941 CCC and to some extent WPA help was still available and rendered excellent service at the major fires without cost to the state. Local fire fighters, many of whom were experienced or had received special training in fire work, were the first line of defense at all fires and alone were responsible for the control of most of the smaller ones. Town crews under deputy wardens and bringing their equipment were called from towns as far away as fifty miles. It was fortunate that the serious fire season of 1941 came before our local forces were more seriously depleted on account of the war and before the work camps of the CCC were closed. Mutual aid from nearby and more distant towns was better organized in 1942 and must be depended on even more as available man power continues to decrease.

The six following tables contain the standardized fiscal year records of the number of fires by months; total burned, damages and averages for 33 years; summary of averages; complete fire record by counties; railroad fire record; number of fires, areas burned and damage by causes; and a combined summary for all agencies reporting:

Number of Fires by Months
(Exclusive of Railroad Fires)

<i>FISCAL YEAR</i>		<i>FISCAL YEAR</i>	
<i>Ending June 30, 1941</i>		<i>Ending June 30, 1942</i>	
July, 1940	22	July, 1941	64
August, 1940	84	August, 1941	70
September, 1940	9	September, 1941	105
October, 1940	97	October, 1941	24
November, 1940	13	November, 1941	23
December, 1940	0	December, 1941	7
January, 1941	0	January, 1942	2
February, 1941	0	February, 1942	0
March, 1941	10	March, 1942	31
April, 1941	323	April, 1942	146
May, 1941	69	May, 1942	54
June, 1941	72	June, 1942	12
Totals	699	Totals	538

Forest Fire Record for Thirty-Three Years
(Exclusive of Railroad Fires)

<i>Year</i>	<i>No. Fires</i>	<i>Area Burned</i>	<i>Average Area Burned Per Fire</i>	<i>Damage</i>	<i>Average Damage Per Fire</i>
1910	272	9,038A	33.2A	\$40,000.00	\$147.06
1911	462	30,958	67.0	175,000.00	378.79
1912	344	8,474	24.6	62,000.00	180.23
1913	609	14,507	23.8	100,000.00	164.20
1914	315	8,119	25.8	53,000.00	168.25
1915	792	29,480	37.2	174,567.00	220.41
1916	128	6,630	51.8	40,075.00	313.09
1917	197	1,680	8.5	18,205.00	92.41
1918	357	8,693	24.3	94,468.00	264.61
1919	308	3,502	11.4	41,287.00	134.05
1920	138	1,996	14.4	17,681.00	128.12
1921	276	7,172	26.0	59,503.00	215.59
1922	295	9,484	32.1	94,917.00	321.75
1923	199	2,333	11.7	27,786.00	139.63
1924	330	5,351	16.2	83,347.00	252.57
1925	486	8,368	17.2	97,508.00	200.62
1926	295	8,181	27.7	115,614.00	391.91
1927	367	9,420	25.7	75,762.00	206.44
1928	271	4,714	17.4	27,090.00	99.96
1929	192	1,661	8.7	9,188.00	47.85
1930	765	18,750	24.5	93,191.00	121.82
1931	363	4,882	13.4	38,994.00	107.42
1932	485	5,080	10.5	39,760.00	81.98
1933	542	7,485	13.8	55,524.00	102.44
1934	370	2,920	7.9	10,043.00	27.14
1935	488	2,667	5.5	15,122.00	30.98
1936	387	2,011	5.2	12,548.00	32.42
1937	433	2,906	6.7	13,451.00	31.06
1938	488	4,400	9.0	20,524.00	42.06
1939	410	5,080	12.4	32,307.00	78.80
1940	691	2,069	3.0	23,827.00	34.48
31 years	12,055	238,011		\$1,762,289.00	
1941	699	36,533	52.3	211,255.00	302.22
1942	538	4,928	9.2	24,851.00	46.19
33 years	13,292	279,472		\$1,998,395.00	

Summary of Averages

<i>Average</i>	<i>31 Years</i>	<i>1941</i>	<i>1942</i>	<i>33 Years</i>
Fires Per Year	389	699	538	403
Area Per Year	7,678	36,533	4,928	8,469
Damage Per Year	\$56,848.03	\$211,255.00	\$24,851.00	\$60,557.42
Area Per Fire	19.7	52.3	9.2	21.0
Damage Per Fire	\$146.19	\$302.22	\$46.19	\$150.35

Fire Record for Fiscal Years 1941 and 1942
(Exclusive of Railroad Fires)

County	Year	Number of Fires	Total Acres Burned	Average Area Per Fire in Acres	Total Damage	Average Damage Per Fire	Total Cost of Fighting	Average Cost Fighting Per Fire
Belknap	1941	46	184	4.0	\$1,301.00	\$28.28	\$620.22	\$13.48
	1942	27	247	9.1	1,719.00	63.67	410.88	15.21
	1941	34	764	22.5	12,514.00	368.06	4,367.53	128.46
Carroll	1941	25	144	5.8	250.00	10.00	1,827.13	73.09
	1942	76	26,284	345.8	143,166.00	188.38	32,642.25	429.50
Cheshire	1941	48	262	5.5	2,145.00	44.69	1,625.66	33.87
	1942	26	255	9.8	3,337.00	128.35	2,201.88	84.69
Coos	1941	21	201	9.6	4,283.00	203.95	1,140.73	54.32
	1942	44	455	10.3	4,678.00	106.32	2,070.43	47.06
Grafton	1941	33	72	2.2	849.00	25.73	493.15	14.94
	1942	143	1,889	13.2	5,407.00	37.81	9,859.89	68.95
Hillsborough	1941	146	2,004	13.7	6,814.00	46.67	10,433.43	71.46
	1942	94	1,410	15.0	14,053.00	149.52	6,149.42	65.42
Merrimack	1941	71	1,715	10.1	2,613.00	36.80	3,064.59	43.16
	1942	156	1,209	7.8	7,247.00	46.46	4,889.49	31.34
Rockingham	1941	110	1,756	6.9	4,411.00	40.10	4,144.32	37.68
	1942	43	585	13.6	2,556.00	59.44	2,237.14	52.03
Strafford	1941	34	428	12.6	1,421.00	41.79	1,267.90	37.29
	1942	37	3,498	94.5	16,996.00	459.35	5,703.49	154.15
Sullivan	1941	23	99	4.3	346.00	15.04	643.06	27.96
	1942	699	36,533	52.3	\$211,255.00	\$302.22	\$70,741.74	\$101.20
State Totals	1941	538	4,928	9.2	\$24,851.00	\$46.19	\$25,050.85	\$46.56
State Totals	1942	699	36,533	52.3	\$211,255.00	\$302.22	\$70,741.74	\$101.20

Railroad Fire Record for Fiscal Years 1941 and 1942

<i>Year</i>	<i>No. of Fires</i>	<i>Total Area Burned</i>	<i>Average Area Per Fire</i>	<i>Total Damage</i>	<i>Average Damage Per Fire</i>
1941	87	292	3.4	\$1,003.00	\$11.53
1942	52	1,771	34.1	\$7,292.00	\$14.02

Total Number of Forest Fires, Area and Damage by Causes For Fiscal Years 1941 and 1942

<i>Causes</i>	<i>Percent Total Number of Fires</i>	<i>Percent Total Area Burned</i>	<i>Percent Total Damage Causes</i>
Railroads	10.1	4.7	3.4
Smokers	42.9	18.3	16.8
Burning Brush	19.5	4.1	8.3
Miscellaneous	11.7	3.7	5.0
Lumbering	2.9	62.8	61.1
Incendiary	4.4	2.7	1.8
Lightning	2.7	.1	.1
Camp Fires	2.5	2.6	1.6
Unknown	3.3	1.	1.9
Totals	100.0	100.0	100.0

Combined Forest Fire Record For Fiscal Years 1941 and 1942 All Agencies Reporting

<i>Year</i>	<i>Town</i>	<i>Railroad</i>	<i>White Mountain National Forest</i>	<i>Bear Brook Recreational Demonstration Area</i>	<i>Total</i>
<i>NUMBER OF FIRES</i>					
1941	699	87	5	0	791
1942	538	52	6	1	597
Total	1,237	139	11	1	1,388
<i>AREA BURNED</i>					
1941	36,533	292	14.35	0	36,839.35
1942	4,928	1,771	11.46	10.5	6,720.96
Total	41,461	2,063	25.81	10.5	43,560.31
<i>DAMAGE</i>					
1941	\$211,255.00	\$1,003.00	\$101.00	0.00	\$212,359.00
1942	24,851.00	7,292.00	51.84	\$150.00	32,344.84
Total	\$236,106.00	\$8,295.00	\$152.84	\$150.00	\$244,703.84

Special Emergency Fire Control

The legislature in 1939 passed in addition to the regular fire appropriations, a special appropriation of \$100,000 for two years to June 30, 1941 in order to strengthen the forest fire protection needs resulting from the hurricane of the preceding October. Of this amount, \$30,000 was available only for the payment of fire bills to towns. The balance was for administrative expenses and fire tool equipment. The last biennial report (Page 40) itemized the expenditures made during the year before, including payment of fire bills to towns over and above regular appropriations—\$8,342.81; state fire equipment—\$6,876.17; and fire tools for towns on a 50-50 basis—\$13,437.64. Total expenditures to June 30, 1940 were \$43,855.66 and the unexpended balance of \$56,144.34 was budgeted to carry the extra emergency requirements during the next fiscal year with a balance to be carried beyond June 30, 1941 if legislative approval

was obtained. In fact the 1941 legislature provided for the balance to be carried forward. The fires of April 28 and 29, however, not only used up the balance but required transfer from the Executive Fund of \$10,793.32 before the fire season of 1941 was over. Town fire tool expenditures of \$16,930.38 supplied the means of adding to previously acquired town equipment which together were invaluable to the towns during the 1941 and 1942 fire seasons. The following supplementary statement shows the expenditure of the balance of the special emergency fire appropriation of 1939.

Special Emergency Fire Control—Chapter 254, Laws of 1939
July 1, 1940—June 30, 1942

Appropriation, Chapter 254, Laws of 1939		\$100,000.00
Expenditures July 1, 1939-June 30, 1940		43,855.66
		\$56,144.34
Balance available July 1, 1940		
Expenditures July 1, 1940-June 30, 1942:		
<i>Item</i>	<i>Amount</i>	
State Truck and Tool Equipment	\$244.74	
Town Fire Tools	16,930.38	
Administrative Assistance—Concord	800.00	
District Dispatchers	4,868.00	
District Chief—Cheshire	663.12	
District Chief—Rockingham	2,158.05	
Temporary Lookouts	3,767.53	
Special State Land Patrol	601.82	
Extra Administrative Expense	1,025.87	
Forest Fire Bills	22,407.19	
Special Training Expense	2,677.64	
	\$56,144.34	0.00
Total		

Emergency Forest Fire Expenditures
July 1, 1940—June 30, 1941

Executive Department Transfer		\$10,793.32
Forest Fire Bills	\$10,793.32	0.00

The 1941 legislature appropriated no special fire funds and actually decreased regular fire appropriations but near its close, made allowance for urgent needs by adding \$11,000 of extra funds (over a 1938 normal) for district supervision, lookout watchmen wages, warden training, saw mill inspection, town fire tools and repair of state owned fire equipment.

The total cost of our forest fire protection work, state, town and private expenditures for prevention and suppression, for the calendar year 1941 (not fiscal year) was \$182,254.58. This abnormal cost was due to the extraordinary fire season and does not include protection of the White Mountain National Forest. The cost for prevention alone was \$82,648.46 and includes purchase of fire equipment for the towns and state. The total cost for 1942 was \$103,755.75 and for prevention alone \$69,708.96. In terms of cost per acre for 4,276,000 acres under protection by the state, the total cost for 1941 was 4.2 cents and for 1942 it was 2.4 cents per acre. The prevention costs for these two years were 1.9 cents and 1.6 cents per acre respectively.

State and Town Fire Equipment

Following the termination of the New England Forest Emergency Project (NEFE) on June 30, 1941, a companion project to the NETSA undertaking for the salvage of blown-down timber, this department received a proportionate share of the non-expendable equipment purchased and used by the U. S. Forest Service to reduce the fire hazard caused by the hurricane. This equipment consisted of six 11½ ton stake body trucks, three station wagons, seven portable power pumps, approximately 20,000 feet of 1½ inch hose and hand tools for 1,000 men. The equipment was in fair condition but needed overhauling and repairs, marking to identify it as state forest fire equipment and a plan for orderly, state-wide use for emergency purposes. At a cost of \$2,000 we now have six fully equipped trucks each with a portable pump unit, 2,500 feet of hose and separately and securely boxed tools for 150 men. These trucks are entirely under the jurisdiction of the department and are located and kept in condition for prompt dispatch on call of a district chief for emergency use only. The three station wagons are in use for training and fire fighting purposes, carrying equipment for special uses such as field telephone sets, lights for night work, extra hose or a power pump when needed.

The department has also received in 1942 as a loan from the Army through the U. S. Forest Service six pick-up trucks and one 250 man and fifteen 20 man fire tool caches. The trucks are for the transportation of the critical area project directors and for the fire training programs. The big cache is on "stand by" for this and other New England States and the other tools are being made available for fire fighting crews recruited in college and preparatory schools for service in districts other than individual towns.

The purchase and distribution of back pumps and other kinds of hand tools to towns on a 50-50 cost basis led to the policy approved in 1941 for the state to serve as a central purchasing agency for towns in the procurement of heavier and more costly fire equipment such as power pumps and hose for resale to towns at actual cost. Town orders for sixteen power pumps and nearly 30,000 feet of hose were received but obstacles in preference rating in the case of pumps and changed specifications indicating inferior quality in the case of hose have resulted in little progress being made. Under normal conditions there would have been no difficulty in filling these orders.

In the field of communication the department owns and has used during the past two seasons two complete portable telephone sets with four miles of ground wire each. They have given excellent service in extending telephone service from the nearest line to points closer to if not actually at a fire several miles away.

Since March, 1941 the department has cooperated with the NYA in a modest radio construction program intended eventually to provide one

automobile and two or more pack sets which would make easy communication between a fire headquarters on a telephone line and the front of a fire and also with a nearby fire lookout station. In the absence of any equipment of our own, the radio has been used at some of the serious 1941 fires with the help of borrowed equipment and amateur operators. On one occasion two state troopers in equipped cars assisted in speeding up communication where they could use the highway to reach a telephone line. Inability to obtain high enough preference ratings for crystals and other needed parts and of NYA to continue radio cooperation resulted in little progress during this biennial period. In the meantime, however, several of our municipal fire departments have become interested and emergency forest fire radio communication is slowly being established in the state.

As we go to press, there are 23 transmitter-receivers in various stages of completion in six different communities—Manchester, Wolfeboro, Concord, Northwood, Franklin fire departments and this department. They are, or will be as completed, approved, licensed and assigned call letters by FCC on the New Hampshire Forestry Emergency frequency of 39,420 kilocycles. They comprise fixed stations, mobile units for cars, and portable units for receiving and sending emergency messages between stations and between an automobile at a telephone and portable sets at a fire or lookout station nearby.

The use of airplanes in fire protection, extensively developed in some of the western states and to a lesser extent in the East, has not as yet been given serious consideration for New Hampshire because of the cost and our relatively small, wild land regions, good lookout station coverage and telephone communication. Commercial planes have at times reported progress of fires by radio to certain airports and thence by telephone. Opportunity exists for cooperation with the Civil Air Patrol in case of emergency and at established rates. This service may well be needed and used under certain conditions.

Special Wartime Forest Fire Projects

Inaugurated in 1942 several projects closely associated with the war effort are being conducted by the department for the U. S. Forest Service, Army and other agencies of the Government. Aircraft warning service is furnished from three remote posts in New Hampshire on a 24 hour basis. Most of the fire lookouts perform similar services during the fire season.

Five critical areas or regions of the state are receiving special consideration in fire prevention and control on account of their importance to military, industrial, transportation, communication, power, water, and mining installations and to commercial forest areas essential to the conduct of the war. Defense plants within these areas because of their location

might be destroyed or have their normal activities disrupted by forest, brush or grass fires. Smoke nuisance and fire glow along the sea coast are special factors given consideration. These projects cover about twenty towns each around Grenier Field, Manchester; the Coastal Area extending inland about 30 miles from the Massachusetts line to include several towns in the northern part of Strafford County; Southern Grafton and Sullivan Counties; the Coos-Connecticut section including all the upper watershed; and the Coos-Androscoggin covering the extensive pulp resources in the northeastern part of the state. A project director has been assigned to each project working with the district fire chief to coordinate the activities, cooperate with industrial and forest owners, train crews and in other ways carry out the objectives which are to prevent fires and have fully equipped and trained groups in each locality readily available to take suppression action on forest fires that occur. This work is financed as a part of the Clarke-McNary program.

The "Wartime Forest Fire Prevention" campaign is a national effort, especially during the spring and fall of each fire season, to inform the public about forest fires and enlist support in their prevention. This is not so much a newspaper campaign, although the press has wholeheartedly given support, as the use of posters, stuffers, book marks and other forms of attractive literature which have been distributed to millions of people directly. Our share of the distribution in New Hampshire has amounted to over 200,000 pieces. Radio announcements, motion picture scripts and window displays have been widely used. Contributions have been made by forest owners and others to pay for full page newspaper advertisements in the interests of forest protection and the war effort.

The Forest Fire Fighters Service is a state wide emergency fire training program which involves enlisting and training leaders and groups in as many towns as possible and from new sources such as high schools and academies, boy scouts, etc. It is a branch of the Office of Civilian Defense working closely with the State Defense Council, with the State Forester and district fire chiefs serving as state and district coordinators and the fire wardens as local coordinators. Arm bands and identification cards are awarded to those who have completed the prescribed training courses.

Lookout Station Construction and Repairs

Mr. Walter H. Tripp supervised the lookout station repair and upkeep work during the spring of 1941 until his death the last of June. Since that time the work has been handled in the Concord office with the continued assistance of A. M. Worth and men as needed.

The wooden observation cab on the Pitcher Mountain tower and the nearby cabin were destroyed in the big Marlow fire of April, 1941. The former was immediately rebuilt; the latter at a later date by the Warner

Conscientious Objectors Camp. The stone observation tower on Mount Prospect, Lancaster, a gift to the state, was increased in height and entirely remodeled for lookout purposes, replacing both Cabot and Agassiz stations. Crotched Mountain in Francestown and Sam's Hill in Charlestown were closed during 1941. The former, in Francestown, is fairly adequately replaced by Craney Hill in Henniker and Miller Park in Peterborough, two new stations set up in 1939. Sam's Hill in Charlestown was a 1939 station and not deemed of primary importance.

During the 1942 season Smart's Mountain was closed and Bear Hill was operated only part time. In the summer of 1942 a new observation structure was built on Sugarloaf; also a new cabin about one-half mile from the summit. There were 29 stations in operation by the state during each of the two seasons. The following table gives the number of smokes discovered and fires reported and the number of visitors who registered at the fire towers at each station during 1941 and 1942. The reduction in the number of visitors during 1942 is notable.

Osborne fire finders were installed on 16 stations in the southern and central part of the state. These instruments greatly improved the efficiency in reporting fires and it is hoped that most of the remaining stations will in time have the use of these fire finders.

Repairs to fire towers, cabins and telephone lines were made during both seasons.

Fire Lookout Station Statistics

Name of Station	Number of Smokes Discovered		Number of Fires Reported		Number of Visitors Registered	
	1941	1942	1941	1942	1941	1942
Bear Hill	24	...	2	...	1,129	...
Belknap	194	93	37	38	1,992	1,976
Blue Job	82	32	33	19	1,102	665
Cardigan	211	97	114	65	2,811	1,808
Craney Hill	277	83	28	15	528	231
Crotched	...	203	...	21	...	992
Croydon	62	89	41	61	246	74
Deer	8	8	7	2	82	49
Federal Hill	83	43	64	38	761	662
Great Hill	237	27	58	10	789	334
Green	66	33	20	10	1,248	610
Hyland	196	90	35	53	255	212
Jeremy Hill	234	147	89	46	1,000	571
Kearsarge	39	69	37	53	7,320	3,065
Magalloway	19	9	4	1	20	26
Milan Hill	27	21	8	1	4,137	1,600†
Miller Park	97	152	56	38	14,182	2,871
Monadnock	559	294	129	78	36,869	6,876
Oak Hill	39	60	22	56	332	224
Pawtuckaway	179	84	83	27	6,263	2,354
Pitcher	66	26	43	17	959	531
Prospect	6	51	6	20	4,130	2,061
Red Hill	506	83	140	17	1,848	1,130
Rock Rimmon	297	270	127	52	682	874
Sam's Hill	...	8	...	5	...	54
Signal	3	4	1	2	17	4
Smart's Mt.	85	...	75	...	207	...
Stratham Hill	359	138	157	57	3,078	1,372
Sugarloaf	6	25	5	10	...	51
Uncanoonuc	115	92	82	50	2,317	762
Warner Hill	293	183	116	72	462	185
Totals	4,369	2,514	1,619	935	94,766	32,224

† Estimated.

Saw Mill Operations

The 1941 Legislature amended the statutes relating to the registration and operation of portable saw mills and other mills sawing lumber in or near woodlands. This was a direct result of the serious fires of that year attributed to lumbering operations. Requirements have accordingly become more severe and repeated inspections of some of the mill settings have been necessary when they were found at first unsatisfactory. Many operators on the other hand conform so well to the requirements that a second inspection at the same site is seldom made. Inspection of mills has been more difficult because of the necessity to use incinerators at some of the mills, high wages and labor shortage, and the pressure to accomplish production regardless of operating conditions and legal requirements for protection from fires.

More mills were registered in 1941 and in 1942 than in any year except 1939 following the hurricane. This was due in part to the registration of some mills not previously required to be registered. Contract mills sawing government logs from pond storage are nearly completed, although a few will continue into 1943. Following is a tabulation of the mills registered and permits to operate at the changing locations each year from 1925 to 1942.

Tabulation Showing Registration of Saw Mills

Year	Total No. Mills Registered	Power Used		Total Number of Permits	Number of Permits	
		Steam	Gas & Others		Steam	Gas & Others
1925*	163	116	47	244	163	81
1926	240	171	69	432	267	165
1927	254	177	77	459	265	194
1928	249	164	85	443	255	188
1929	248	145	103	440	207	233
1930	202	111	91	310	118	192
1931	149	77	72	273	82	191
1932	125	51	74	175	47	128
1933	141	69	72	298	106	192
1934	174	75	99	343	95	248
1935	143	60	83	276	68	208
1936	167	66	101	323	80	243
1937	196	69	127	387	83	304
1938	207	74	133	361	88	273
1939	306	88	218	563	103	460
1940	263	72	191	446	74	372
1941	279	54	225	555	63	492
1942	293	70	223	757	101	656
18 year average	211	95	116	394	126	268

* Law in effect from July 1, 1925.

Patrol by Large Forest Land Owners

Owners of one thousand acres or more of forest land in any one town or in a contiguous area are by Section 48, Chapter 233, Revised Laws required to furnish patrol against the spread of fire therefrom, to the extent of one cent per acre annually. The New Hampshire Timberland Owners' Association, (J. W. Keenan, Secretary, Berlin) provides such patrol for most of the large privately owned forest properties in Coos County and adjoining. Several large operating concerns maintain their

own fire patrol. The Association should bring into its membership all properties which benefit directly or indirectly from the established patrol or can benefit without disproportionately added cost to the Association and the owners do not wish to patrol their own. Some of these owners also contribute to protection of their lands by aiding this department in telephone line and lookout station maintenance.

Certain thousand acre properties, not near large contiguous ownerships but where supervision is maintained or the owners reside nearby, at least receive some personal attention in fire protection. There are still other remote and scattered properties whose owners are non-resident and do not operate the land, where fire patrol or other supervision at one cent per acre is entirely impracticable.

Periodically, this department makes a check on all ownerships of one thousand acres or more of forest land in contiguous areas. This information was obtained in March, 1942 from the selectmen of all towns and for unincorporated places, together with replies from the owners. The results of this survey indicate that there are 116 owners having title to more than one thousand acres, the gross area of such ownerships being 868,229 acres. Twenty-eight owners or 24 percent live outside the state. Over 80 percent have title to less than 20 percent of the gross acreage. Five owners control over 50,000 acres each and two of these control over 100,000 acres each. It is reasonable to say that all the large timberland owners are greatly concerned in matters of fire protection and desire to do all they reasonably can to assist.

WHITE PINE BLISTER RUST CONTROL



CONTROL of the white pine blister rust has been conducted in New Hampshire by the State Forestry and Recreation Department, in cooperation with the Federal Government, towns, cities and individuals since 1918. Until about 1933 the towns, for the most part, had cooperated with reasonable frequency. During the depression period the Federal Government through such agencies as NRA, WPA and CCC made available an aggregate of funds for ribes eradication in New Hampshire far in excess of any previous combination of state and town appropriations. By so doing the Federal Government has aided in the advancement of the control program to a degree far beyond what would have been possible had there been only state and town funds available.

Even with CCC already terminated and WPA on the way out, the Federal Government in 1941, and again in 1942, made special funds available for cooperative ribes eradication, thus expressing interest in the furtherance of the control program. These funds were made available with the expectation that the state and its cooperators would provide an equal amount.

The past two years has seen a great increase in the cutting of white pine in New Hampshire, due largely to the demand for lumber used in defense work and war needs. Not since 1925, when registering of portable mills was first required by law, has there been a biennial period when so many mills have operated under permit. Since a large percentage of these mills have cut white pine, it is evident to any casual observer that great inroads have been made in the merchantable growth of this species. There has been left the medium and immature pine stands upon which the industry will have to rely for future operations. It is this young growth which is most seriously affected by the blister rust disease, and which should be given continued protection.

Town Cooperation—1941

At their annual March meetings 35 towns appropriated \$9,225.00. This was a slight decrease as compared with town funds made available in 1940. The appropriations made by several towns were wholly inadequate to permit any considerable area being put under control, or furnishing local employment for any great length of time. As has been pointed out in previous reports, appropriations under \$400.00 do not permit as efficient work, due in part to the time required to train inexperienced labor and also since these small expenditures can give protection to only a very limited amount of white pine growth. In all of the cooperating towns local labor was obtained through consultation with Boards of Selectmen, or other town officials. In many instances control work was

deferred for the time being in order that seasonal agricultural crops might be harvested. Such a policy became more and more necessary as local enlistments into the armed forces and employment in defense plants increased. Rates paid labor were higher in some towns than had formerly been the practice, but in all instances were the same as other local rates. A total of 247 men were employed for periods aggregating 3,207 man-days.

Federal Emergency Relief Funds—1941

The granting of WPA funds, through the U. S. Bureau of Entomology since 1935, has been responsible for considerable progress in blister rust control. Up to 1941, without state or local expenditures, 246,987 acres had been worked for the first time, and 294,800 acres rechecked. These federal allotments were also instrumental in giving employment in certain towns where no other public works programs were in operation.

Although by 1940 many programs of the Works Projects Administration had been terminated, forest protection projects were still authorized, and during 1941 New Hampshire received a new allocation of WPA funds. These were used in the eradication of currant and gooseberry bushes during the late spring and summer months. In the fall, winter and early spring months these funds permitted mapping of prospective control areas. Since 1935 and up to this biennial period, 1,118,193 acres had been mapped and 221,624 additional acres eliminated from control work due to insufficient white pine to justify control measures.

During the mapping period 50 men were given employment for a total of 2,920 man-days, while for the eradication season 137 men worked for periods aggregating 5,375 man-days. Accomplishments under these two programs will be found in the biennial summary of mapping and eradication.

Other Control Programs—1941

A rechecking of white pine areas was conducted by the City of Manchester Water Board in the towns of Auburn, Candia and Hooksett since a large proportion of the watershed of Lake Massabesic has either been planted to white pine or contains a great deal of such pine in natural growth. A cooperative control project was also conducted upon the Webster Estates in the towns of Campton, Holderness and Sandwich.

Town Cooperation—1942

Twenty towns voted a total of \$5,385.00 at their annual meeting in March. With the exception of the year 1934, this was the smallest appropriation by towns since the inception of blister rust control. On account of a scarcity of labor brought about by the war, control work in

some towns had to be deferred until agricultural work was completed. In most cases the only labor that was available consisted of elderly men, or groups of high school age. Acknowledgment should be made of the assistance given by town officers who made special effort to assist in the solution of the labor problem. A total of 125 men were employed for varying periods which aggregated 1,963 man-days.

Federal Emergency Relief Funds—1942

Effective January 1, 1942 an allotment of WPA funds was received covering a twelve month period. Labor employed on this program was obtained through WPA and control work was conducted in nine towns. In addition, during January through April and again from October to December 31, mapping units were employed in 30 towns.

The WPA program was interrupted for the period of July 1 to about August 11 due to an executive order from Washington reducing the state labor quota. For the spring and late summer period 51 men were employed a total of 1,344 man-days. On the mapping program 47 men, working for varying periods, put in 2,852 man-days.

Other Control Programs—1942

For the fiscal year of 1942 the Bureau of Entomology and Plant Quarantine received from Congress additional funds for conducting control work in cooperation with the several states engaged in blister rust work. Allocated on a dollar for dollar basis, the appropriations of the state, towns and individuals were allowed as offsets. These federal funds were expended in the employment of carefully trained and experienced scouts and a few unskilled laborers. Areas were scouted and ribes found to exist in small numbers were destroyed by an individual scout, while the larger concentrations were eradicated by a unit of two to three men. Thirty-six men were employed at different periods aggregating 1,500 man-days. The cooperative program on the Webster Estates in Campton and Holderness was continued this season.

During the control season of 1942 four of the district blister rust control leaders conducted scouting in ten towns. Such work was carried on partly in conjunction with other duties and therefore the scouting was performed rather intermittently. The work included the location and destruction of wild ribes where their numbers made it practicable for one man to uproot them. Where the abundance of these bushes called for crew work, such areas were plotted on field maps for future working. The results of this special scouting are included in the following table:

**Biennial Summary—Blister Rust Control
Town, State, Federal and Private
1941 and 1942**

<i>Project</i>	<i>Initial</i>		<i>Re-eradication</i>	
	<i>Acreage Covered</i>	<i>Ribes Destroyed</i>	<i>Acreage Covered</i>	<i>Ribes Destroyed</i>
Town				
1941	3,262	102,478	14,598	144,477
1942	527	9,180	9,120	116,706
WPA				
1941	6,138	77,606	21,126	252,760
1942	2,233	74,273	4,013	60,501
Regular				
Federal				
1941	3,176	1,910	4,729	2,083
1942	4,739	25,880	21,351	45,160
Private				
1941	210	20,222	643	17,218
1942	23	4,357	596	8,528
District				
Leaders				
1942	2,239	2,712	1,298	902
Totals	<u>22,547</u>	<u>318,618</u>	<u>77,474</u>	<u>648,335</u>

Pine and Control Area Mapping—1941 and 1942

WPA funds allocated to this state in 1941 and 1942 permitted the continuance of pine and control area mapping during the fall, winter and early spring months, a period of the year when eradication of wild ribes was impossible. The following tabulation indicates the accomplishments in this phase of the blister rust control program:

**Biennial Summary
Pine and Control Area Mapping
1941 and 1942**

<i>Year</i>	<i>Mapped</i>	<i>Acreage Eliminated</i>	<i>Per Acre Cost</i>
1941	101,875	26,285	\$0.10
1942	59,189	9,053	.174
Totals	<u>161,064</u>	<u>35,338</u>	<u>\$0.126</u>

STATE FORESTS AND RESERVATIONS

IN 1891 the state acquired its first tract of forest land located on the summit of Pack Monadnock Mountain in Peterborough. This area of only three acres was donated by a worthy citizen of Temple and named after General James Miller of Civil War fame who lived near the mountain. A trustee was then appointed by the Governor and Council who cared for the tract until it was accepted by legislative act in 1915. Now, about fifty years later, an adjoining gift of 76 acres has been made to the state by the three sons of former Governor Robert P. Bass of Peterborough.



One of a series of new cabins in the Crawford Notch State Forest.

During this half century the state has acquired 117 different tracts of land for forestry and recreational purposes with an acreage of 41,950 acres and having a value of more than \$1,000,000. The Crawford and Franconia Notch Reservations were acquired by legislative acts. All of the areas purchased represent about 62% of the total acreage. Other valuable areas, of which many are recreational, were gifts to the state and constitute 37%. A few were acquired by tax delinquency and by escheat where property without heirs has reverted to the state.

All of these forest properties may be classified under the following headings:

1. Timber production and demonstration
2. Recreational development and use
3. Fire lookout stations
4. Scenic, historic and geological

5. CCC camp sites
6. Miscellaneous

Many of the tracts have produced revenue from the sale of forest products; some have produced revenue from rentals and others under recreational administration from fees and concessions. A great many state areas furnished fuelwood for town relief as well as work projects for unemployed during years of depression. From these work projects our recreational development was largely made possible. The public attitude towards state acquisition, development and management of forest land has been favorable.

During the past biennium four areas have been acquired with a total of 895 acres. Completed surveys of the Connecticut Lakes Parkway acquired in 1935 show an increase of 50 acres more than the 1,130 acres reported at that time. The total acreage last recorded in the 1939-40 report was 41,005 acres. Recent acquisitions and survey changes indicate an increase of 945 acres. The total acreage of all state forests and reservations is now listed as 41,950 acres.

Tracts Acquired During 1941 and 1942

John W. Weeks Memorial

The state by legislative act in 1941 has accepted a gift of 430 acres of land and buildings on Mount Prospect in the town of Lancaster. The donors are Sinclair Weeks and Katharine W. Davidge, children of the late United States Senator John W. Weeks, as a memorial to his outstanding interest in the promotion of forestry not only in this state but throughout the nation. The entrance roadway extends almost two miles to the summit of Mount Prospect and is now maintained by the State Highway Department for public travel during the months of June to October each year. The main building which was the private residence of Senator Weeks may in time be used as a museum of educational and historical exhibits relating to forestry. Other buildings include the stone tower, a caretaker's cottage and a garage where a state forest fire truck completely equipped is kept during the fire season for use in the northern part of the state. Mr. Sinclair Weeks has shared the cost of a new roof and added enclosure to make the tower more serviceable for both fire and public use and has paid for new entrance gates, flag pole and repairs and furnishings of the main building.

Connecticut Lakes Addition

In 1942 the St. Regis Paper Company of New York City conveyed by gift an additional strip of forest land along both sides of the main highway southerly from the original tract. This gift was made possible through arrangements by former Councilor George D. Roberts of Lancaster in cooperation with the State Highway Department and contains 368 acres. The combined area of the Connecticut Lakes Parkway is now 1,548 acres.

Miller Park Addition

Mr. Perkins Bass and his two brothers, Jeremiah and Robert P. Bass, Jr., all of Peterborough, in 1941 conveyed by gift to the state 76 acres of forest land on Pack Monadnock Mountain. This tract is located on the westerly and northerly portions of the summit and joins the original Miller Park area of three acres on the north and another small state area, called the Farrar lot, on the south. The old road which was restored by the CCC and is now maintained by the State Highway Department bounds the tract on the east. Since the hurricane in 1938 Miller Park has been used as a fire lookout station and a steel tower was built at the summit. With increased activities in recreation this mountain top has come into public use throughout the year, the skiers using the long range in winter and auto parties driving cars to the summit for the view during the summer months.

N. H. Forest Nursery Addition

A tract of 21 acres in Boscawen was purchased in 1941 from Mrs. Francese J. Lowell of Franklin for \$175.00 in order to establish a permanent water supply previously leased for the State Nursery adjoining. The property lies on both sides of Stirrup Iron Brook and extends for 1,500 feet on the northerly side of the Salisbury road.



The most northerly of all State Reservations lies in the Connecticut Lakes region.
(Courtesy Planning & Development Commission)

INCOME FROM RENTALS AND SALES OF PRODUCTS; EXPENDITURES

THE following statement shows the income received and expenditures made as a result of all transactions and operations on the state forests and reservations during the biennial period ending June 30, 1942. Incomes were derived from rentals and use permits and from sales of products, some of which were the result of operations of the preceding biennial period. One small sale of land is included. The expenditures represent costs of salvaging remaining hurricane timber and other forest products, forest improvement work and other necessary upkeep of these properties. Space does not permit of a complete breakdown by forests to show for each the kind and amount of income and expenditures. The figures for 61 tracts are given as one item. The administrative item covers overhead expenditures relating to all the state forests and impossible to charge to any one of them. Work accomplishments on state lands are described elsewhere in this report.

Forest Improvement Fund—Fiscal Operations

July 1, 1940—June 30, 1942

<i>Name of Reservation</i>	<i>Income</i>	<i>Expenditures</i>	<i>Balance</i>
Black Mountain State Forest	\$232.30	\$114.38	\$117.92
Cardigan State Reservation	38.00	248.63	210.63
Casalis State Forest	30.00	805.11	775.11
Chesterfield Gorge	115.00	6.25	108.75
Connecticut Lakes State Park	20.00	1,657.64	1,637.64
Crawford Notch State Reservation	8,820.09	4,325.23	4,494.86
Dodge Brook State Forest .....	.....	117.28	117.28
Fox Research Forest	8,782.85	6,704.94	2,077.91
Franconia Notch State Reservation	16,044.32	7,198.07	8,846.25
Harriman-Chandler State Forest	61.91	782.19	720.28
Hemenway State Reservation	966.80	530.26	436.54
Honey Brook State Forest .....	.....	282.00	282.00
Hubbard Hill State Forest .....	.....	204.75	204.75
Kearsarge State Reservation .....	.....	531.87	531.87
Kingston Dam Lots .....	.....	944.66	944.66
Litchfield State Forest .....	.....	192.32	192.32
Merrimack River State Forest .....	.....	193.18	193.18
Monadnock State Reservation	1,285.04	21.40	1,263.64
Mount Prospect State Reservation	75.00	1,365.89	1,290.89
Pawtuckaway State Reservation .....	.....	307.29	307.29
Pulpit Rock State Forest	175.00	.....	175.00
Randolph Springs .....	.....	101.48	101.48
State Forest Nursery .....	.....	431.47	431.47
Stockdale State Forest	430.00	26.32	403.68
Sugar Hill State Forest	1,683.67	271.50	1,412.17
Wellington State Beach .....	.....	382.50	382.50
White Lake State Park .....	.....	1,527.69	1,527.69
Other Reservations (61)	597.62	1,322.27	724.65
Administration .....	.....	2,369.50	2,369.50
Total	\$39,357.60	\$32,966.07	\$6,391.53

TIMBER SALVAGE ON STATE LAND



HE cleanup and salvage of hurricane damaged timber on state land continued into the years 1941 and 1942 on nineteen state forests. These operations have consisted principally of yarding and delivering pulp and cordwood from operations which started previous to 1941 (Page 77, Report 1939-40). The following statement includes all expenditures and returns on account of these sales during the two calendar years ending December 31, 1942. The amounts credited to the Black Mountain, Litchfield, Monadnock, Pot Holes-Bear Den and Wellington include bills collectable amounting to \$993.50; and amounts credited to the Cardigan Mountain, Harriman-Chandler, Meadow Pond, Nursery, Pawtuckaway and Wellington tracts include salable inventory amounting to \$815.00.

State Forests—Timber Salvage—January 1, 1941 to December 31, 1942

<i>Forest</i>	<i>Costs</i>	<i>Income</i>	<i>Inv. and Accts. Rec.</i>	<i>Profit Dec. 31, 1942</i>
Beech Hill	\$19.50	\$88.00	.....	\$68.50
Black	57.00	182.30	\$177.50	302.80
Cardigan	238.50	18.00	265.00	44.50
Chesterfield Gorge .....	.....	115.00	.....	115.00
Crawford Notch .....	.....	138.74	.....	138.74
Fay	247.43	409.56	.....	162.13
Fox	5,111.45	7,606.88	.....	2,495.43
Franconia Notch	3,554.74	5,607.24	.....	2,052.50
Harriman-Chandler	721.69	1,017.41	125.00	420.72
Honey Brook .....	.....	75.00	.....	75.00
Litchfield .....	.....	10.00	65.00	75.00
Meadow Pond .....	.....	.....	50.00	50.00
Monadnock .....	.....	.....	100.00	100.00
Nursery .....	.....	20.00	200.00	220.00
Pawtuckaway .....	.....	.....	100.00	100.00
Pierce's Island .....	.....	75.00	.....	75.00
Pot Holes—Bear's Den .....	.....	50.00	25.00	75.00
Sky Pond .....	.....	10.00	.....	10.00
Wellington	381.00	100.00	701.00	420.00
Total	\$10,331.31	\$15,523.13	\$1,808.50	\$7,000.32

MAPPING AND INVENTORY OF STATE FORESTS



CHANGES in type, age classes and volume, brought about by relief fuel cutting operations, planting and the hurricane, had become so pronounced on many of the state forests and reservations that new maps and tables were needed to provide correct and up to date information. A system or procedure was set up in collaboration with the CCC Administration Office, which made use of existing maps and data as far as possible and the man power then available at five state forest CCC camps. The field work was started by the technical foremen of the several camps in the spring of 1941 and satisfactory progress was made as long as the CCC was available. Progress has since been made by two technical foresters working individually for a short time and later by a crew from the Stoddard CPS Camp working on the crew basis as previously conducted with CCC crews.

The mapping and inventory work in the field was completed on 66 tracts totaling 18,000 acres by all agencies. Fifty-one tracts with a total of 23,000 acres remain to be covered. Some of these and certain parts of others are areas barren or else not subject to timber cutting. The outside boundaries of several were obscure from hurricane blowdown and needed to be resurveyed, blazed and painted in order to know the bounds and protect them from lumbering on adjacent lands. After checking the accomplishments of the different groups on this project it is believed that one or two trained men can work to better advantage than the larger crews. Additional men are helpful in running base lines and clearing boundaries.

Franconia Notch

During 1941 the usual pickup and care of the roadside and public use areas and general maintenance of all property was continued. During July and August the public was so careless of where waste was thrown or left that one man alone could not keep these areas reasonably clean. New signs for waste disposal have been made and posted. In addition to the usual maintenance of trails, bridges, buildings, water system, campground and picnic areas, the construction of log and plank dams in the land slides opposite the Profile Shop have helped to protect Profile Lake from the drainage of muddy and silt laden water. The CCC continued timber salvage and hazard reduction and did an outstanding piece of work at the Basin to preserve the natural appearance of the area by relocating trails, building new foot bridges, installing rock and log abutments and grading to protect tree roots and natural growth from injury by concentrated use.

In 1942, because of the reduction in public travel, the care and clean-

up of public use areas were reduced to about three-fourths of one man's time. The usual evening patrol and necessary maintenance of all property and operating facilities were maintained. Relocation of the state highway to the old railroad grade east of Echo Lake resulted in considerable salvage of pulpwood, cordwood and logs. This with the salvage and cleanup of similar material from wind damaged trees elsewhere in the reservation made up a large percentage of the work of this department during the season. Rocks, stumps and earth deposited by the land slide on the west side of the highway near the "Old Man" view point have been cleaned up. Massive log and plank boundary signs were erected at the north and south entrances.

Connecticut Lakes Parkway

The Connecticut Lakes road was patrolled twice daily throughout the season of 1941. The CCC camp site lease was terminated in the summer and the buildings turned over to the owner of the land. This made it necessary to provide new quarters for the state patrolman and the construction of a two room cabin was started at Moose Falls. Cement posts were set to mark the corners of the reservation and a few of the boundary lines were run at the south end of the area.

In the spring of 1942 a three man crew was organized to patrol the road, complete the Ranger Headquarters cabin and build a garage with space for storage, and to survey, type map and inventory the reservation. As there was very little public use of the area the patrol was limited to one daily trip at night except during very dry periods when the required all day patrol was maintained.

The crew was increased to four men and then divided for convenience and safety into two crews of two men each for three weeks while the garage and storage building were being built and the Deer Mountain telephone line put in good working order. One-fourth mile of new telephone line was built to connect the headquarters with the Deer Mountain line.

From the Second Lake Dam, where the corners had been established to the Canadian line, it was necessary to run trial lines before the boundaries could be run, blazed and painted. From Second Lake Dam to the lower end of the Parkway extension near the CCC camp site, boundary lines were run, corners set and the lines partially blazed. Both sections were type mapped and inventoried. The boundary lines of the lower area will need additional blazing and painting. A water system for the Ranger Headquarters should be developed another year. During the spring and summer of 1942 the St. Regis Company, donors of the property, were authorized to cut certain hardwoods adjacent to their own property, in order to complete war contracts. Several log loading sites on the Parkway road were allowed according to the terms of the deed.

TOWN FORESTS

‡ The U. S. Forest Service has attempted during the past year to set up certain standards for the states defining community forests. If there is a reasonable expectancy that land will remain in municipal ownership, if it is not held solely for recreational use and if it is being planted or allowed to grow up to timber, it would be considered a community forest. This classification is based on the theory that such lands even if they are not under forest management will in the course of time produce a crop of timber. As the stands of growth develop into classes of recognized value and their values become more apparent the communities will be influenced to start some sort of forest management. It is believed that the lack of interest by town selectmen in many cases is due to pre-occupation with more important duties in town affairs. Interest may revive after the war if the problem of community forests becomes more serious, due to increase in tax delinquent forest lands.

This department prior to town meeting in 1941 wrote to fifty or more town selectmen having the problem of defaulted taxes to solve, suggesting an article in the town warrant, creating a town forest committee of three or more members. There is a need to revive such town committees, to examine the titles to forest properties acquired by the town, to decide which should be sold and returned to the tax list and which should be retained. A program of improvements and use of the lands to be held for forestry or other purposes should be made by these communities. After carefully studying the records of all towns having title to forest lands, the following classification is suggested as a basis for determining permanent community forests in this state:

1. Communities receiving gifts of 20 acres or more forest land.
2. Communities purchasing 20 acres or more forest land.
3. Communities holding title to 50 acres or more of tax delinquent forest lands for six years or longer.

A regrouping has been arranged of town owned forest properties in the state at this time, as between those held for water supply and forestry purposes and those whose status is undetermined.

	<i>Number of Cities and Towns</i>	<i>Acres</i>	<i>Trees Planted To Date</i>
City water supply areas	8	8,972	1,533,175
Town water supply areas	8	9,084	680,400
Town forests—other	62	14,114	570,400
	78	32,170	2,783,975
Other cities and towns having forest areas: gifts, purchase, tax delinquent lands, etc.	87	31,223	115,000
TOTAL	165	63,393	2,898,975

It is hoped that towns having considerable acreage of tax delinquent lands will endeavor to retain the ownership of these lands by a favorable vote at any town meeting.

RECREATION ADMINISTRATION



THIS is a report of the operation and maintenance of the following twenty supervised state parks and reservations operated directly by the department during the calendar years 1941 and 1942. It does not include Franconia Notch and Crawford Notch Reservations whose recreational facilities are under lease.

Bear Brook Recreation Area—Allenstown
 Bellamy State Park—Dover
 Cardigan State Reservation—Orange
 Clough State Reservation—Weare
 Endicott Rock State Park—Laconia
 Forest Lake State Park—Dalton
 Hampton Beach State Reservation—Hampton
 Kearsarge State Reservation
 Toll Gate—Warner
 Winslow Site—Wilmot
 Kingston Lake State Park—Kingston
 Milan Hill State Park—Milan
Miller State Park—Peterborough
 Monadnock State Reservation—Jaffrey
 Moose Brook State Park—Gorham
Mount Prospect State Reservation—Lancaster
 Peterborough State Pool—Peterborough
 Wadleigh State Park—Sutton
 Wellington State Reservation—Bristol
 Wentworth State Park—Wolfeboro
 White Lake State Park—Tamworth

New Areas Operated in 1941

Bear Brook Recreation Area—This is a part of the Bear Brook Reservation extending over some 6,000 acres in Allenstown, Deerfield, Candia and Hooksett and owned by the Federal Government. Extensive developments for recreation and conservation purposes have been carried out by the National Park Service through CCC and WPA work programs. A portion of the Reservation in Allenstown has been developed for day use recreation which includes a bathhouse, bathing pool and beach, picnic areas with tables, fireplaces and shelters, parking areas and foot trails. Under lease arrangement the state commenced operating this day use area on July 19, 1941. The planning and development of these facilities have been guided by advice of the National Park Service and experience of our department. The results are a development economical to operate and popular with the public. Although unfinished,

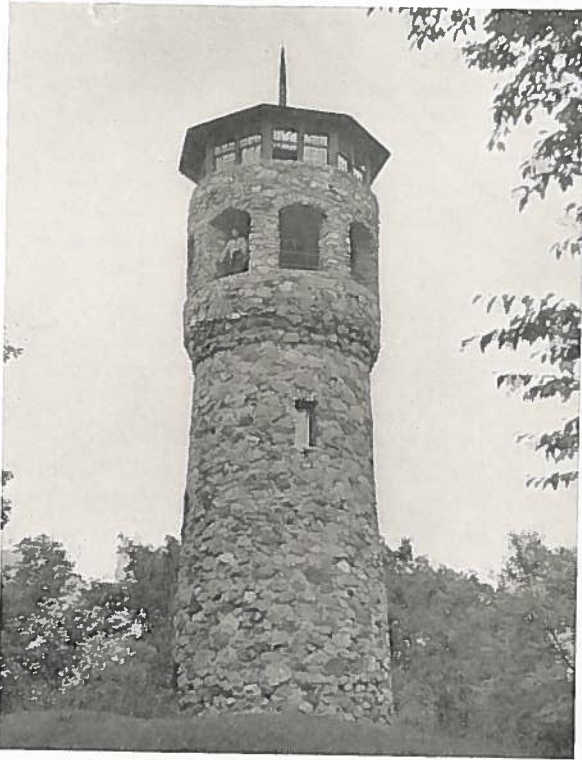
the facilities were sufficiently complete to operate in 1941 while work went on toward completion during the summer season. The experience gained during the portion of the season operated was valuable for future plans and arrangements.

In 1942, operations were carried on during the period June 1 to October 15. The tables shown herewith indicate the additional patronage and revenue received during this period as compared with the first season. Evidence of the popularity of this area is gained by a direct comparison of income from service charges for the same period of weeks each season. On this basis income increased 56% during 1942 and estimated attendance increased 5%. According to a survey we have conducted, it appears that patrons came from 47 New Hampshire towns traveling an average round trip of 27 miles on their visit to the area. Patronage by organized groups of from 25 to 200 persons increased considerably the second season and in addition special arrangements were made to accommodate a number of service men groups from Grenier Field, Manchester. We are of the opinion that this day use area will develop into one of the most popular and heavily used areas under our administration. Within a radius of 15 miles nearly one-fourth of the state's population is located.

Miller State Park, Peterborough, is situated at the end of an auto road at the top of Pack Monadnock Mountain. Sight-seeing and picnicking near the site of the state fire lookout tower have been popular here for many years. Since the hurricane, the use of picnic fires has been restricted because of the fire hazard condition which prevailed. In order to encourage and serve the popular use of this area for recreation purposes and to enforce safety requirements, the services of a man were provided beginning in June, 1941. To enable picnickers to prepare meals, charcoal grills complete with fuel were provided. Other equipment included picnic tables and rubbish barrels. The usual service charges were nearly sufficient to cover these expenses. During 1942 part time services only were required since patronage dropped considerably. It was felt that these services were necessary, however, in the interest of safety, sanitation and fire prevention.

Mount Prospect State Reservation, Lancaster, which covers a large acreage including the improved summer property of the late John W. Weeks, was given to the state as a memorial by his heirs. A gravel road leads to the summit from U. S. Route No. 3 and was improved considerably in 1941 by the State Highway Department. The large living room of the house, occupying the entire second floor with views in every direction, has been open to the public. In addition to the residence is a tower used by the public for extensive views of the Connecticut River Valley and the Kilkenny, Franconia and Presidential Ranges, and also serves for fire lookout purposes. Around the grounds are opportunities

for games and picnicking. Picnic tables were provided, also a few fire-places and such games as croquet, horse-shoes and ring-tennis. Since the services needed by those using the area could not be carried out by the lookout watchman, it was necessary in 1941 to provide an assistant. By this arrangement, equipment and services were provided to all who visited and used the area. During 1942 when patronage declined, extra personal services were not provided.



The Mount Prospect Tower is used for forest fire detection as well as for recreational purposes.

Patronage

Unusually warm weather in the early summer of 1941 caused an increase in patronage at the outset of the season. This more than doubled the amount of attendance during the corresponding period of the previous season. However, as the season progressed and uneasiness developed regarding the gasoline supply, attendance tapered off more sharply than in previous seasons. During 1941, and increasing in 1942, were requests to accommodate service men at several areas. Special arrangements were made to take care of these groups under a policy that groups of service men on officially sponsored recreation tours would be admitted without charge. Arrangements were made on requests by the Army to carry out field training on three areas after the summer season.

All areas received less patronage in varying degree during 1942 with the exception of the Bear Brook Recreation Area. Here attendance increased slightly because of its favorable location within a short distance of large centers of population. The basis of estimating all patronage, which in the past has been conservative, will in the future be more accurate since it is now closely related to income through the revised service charges.

Patrons at the state parks apparently appreciate the areas and facilities provided for their use, respect property and observe the rules. As evidence of this, it has not been necessary during the past two seasons to make any arrests. There have been no drownings and no forest fires caused by park patrons.

The following table shows the combined data at the three major camp grounds: Monadnock State Reservation, White Lake State Park and Milan Hill State Park.

	1941	1942
Number of Parties	1,238	475
Number of Persons	4,878	2,048
Average Stay in Days	3	4
Number of States Represented	24	9
Camper-Days	13,503	7,675

Income

Corresponding to the increase in patronage during the early part of 1941, income for the first month doubled over the year before, and for the season was \$2,416.61 greater than anticipated in our budget. During this season our service charges were based on a parking charge of 25 cents per car. It became apparent as our "survey of use" had indicated that more persons were coming in the average carload and thereby requiring more services which increased expenses of services, supplies and maintenance. Accordingly in 1942 the service charge was established at 10 cents per person over 12 years old, thus attempting to bring income into correct relation to the amount of services required. It is estimated that this will increase our income in normal times 20% to 30% over the old arrangement. Income during the season of 1942 dropped \$8,000 or 40% from 1941. This reduction, it is felt, would have been greater if the service charges had not been changed to the new basis for that season.

Expenses

The increase in income over 1941 did not offset the increase in expense due to the need for added services and the following unexpected items of maintenance:

Camping at White Lake State Park increased to such a degree during 1941 that unusual demands were made upon the water system. When laid out several years ago by the CCC, such demands were not anticipated and thus it was necessary to relay the main pipe lines and install a larger storage tank and water pump.

The main floor of the bathhouse at Bellamy State Park became unsafe and useless due to improper construction and lack of adequate aeration of the supporting members. This was overcome by providing air vents in the brick veneer, installing impregnated stringers and new floor boards.

At Wellington State Reservation where the picnic area had become crowded and over taxed with the increasing use, a dozen new fireplaces and tables were provided and grounds improvement work was carried out during 1941.

It was thus necessary, before the end of the year, to obtain Governor and Council approval in applying the amount of income which exceeded budgetary estimates (\$2,416.61) to the added expenses of that season.

Personnel

Over a period of several years a large percentage of our personnel holding positions of responsibility such as supervisors and lifeguards were willing to return year after year. Familiarity with and interest in their work have resulted in more efficient services to park patrons as well as to the department. This was apparent particularly during the 1941 season when the amount of patronage doubled previous attendance peaks at several areas.

Some left in the midst of the 1941 season to join the armed forces or take positions in war industry. Still more left during the 1942 season. This necessitated the use of many persons new to this work. The problems of administration were complicated by the necessity of locating and training new personnel on several areas at the outset of the season. In 1942 some mistakes were made by those unfamiliar with their new duties in carrying out the rules and regulations or collection of service charges. In 1942 for the first time it became necessary to employ three young women as lifeguards. Their services proved satisfactory in maintaining the standard of water safety as heretofore. Women were also used as part-time collectors. It was possible, despite loss of personnel, to attend to necessary maintenance items and thus keep buildings and improvements in good condition.

The following table shows the number and classification of the full-time seasonal personnel required to supervise, operate and maintain the state parks and reservations during the past two seasons:

	1941		1942	
	Number Employed	Average Monthly Wage	Number Employed	Average Monthly Wage
Supervisors	18	90.00	15	96.00
Collectors	13	74.00	10	73.00
Lifeguards	14	78.00	10	84.00
Attendants	12	72.00	9	73.00
General	3	82.00	3	81.00
Totals and Average Monthly Wages	60	80.00	46	85.00

OPERATION, MAINTENANCE, IMPROVEMENT AND ADMINISTRATION EXPENSES
OF STATE RECREATION AREAS
FOR THE PERIOD JANUARY 1, - DECEMBER 31, 1941

Area	No. of Personnel	Average Monthly Wage	Total Wages	Other Expenses	Total Maintenance Cost	Total Income	Net Cost	Estimated Attendance	Net Cost per Visitor
Bear Brook Recreation Area	6	\$85.00	\$1,896.24	\$976.33	\$2,872.57	\$705.76	\$2,166.81	11,763	\$.184
Bellamy Park	6	72.00	1,819.80	561.08	2,380.88	124.32	2,256.56	42,474	.053
Cardigan Reservation	1	70.00	265.50	91.96	357.46	152.00	205.46	3,111	.066
Clough Reservation	1	70.00	259.00	37.13	296.13	..	296.13	8,000	.027
Endicott Rock Park	3	75.00	653.45	281.12	934.57	827.43	107.14	9,930	.01
Forest Lake Park	3	76.00	685.65	106.22	791.87	359.44	432.43	8,314	.052
Hampton Beach	12	87.00	3,711.97	3,807.25	7,519.22	8,984.60	1,465.38	111,254	.013
Toll Gate Reservation	1	85.00	398.83	59.22	458.05	138.25	299.80	3,772	.094
Winslow Site	1	85.00	486.72	286.06	772.78	498.00	274.72	3,715	.028
Kingston Lake	4	72.00	1,343.48	1,286.12	2,629.60	772.78	1,856.82	43,391	.022
Millan Hill	1	50.00	245.63	192.20	437.82	230.03	207.79	4,243	.025
Miller Park	1	75.00	106.70	108.63	215.33	199.25	16.08	9,014	.001
Monadnock Reservation	3	83.00	1,798.17	450.90	2,249.07	1,398.07	851.00	22,017	.038
Moose Brook Park	6	72.00	1,605.94	823.38	2,434.32	297.10	2,137.22	10,060	.212
Peterborough Pool	3	83.00	660.11	273.05	933.16	93.95	839.21	15,434	.054
Prospect Mountain	..	..	..	186.79	186.79	29.75	157.04	1,551	.101
Wadleigh Park	3	83.00	777.64	383.75	1,161.39	285.25	876.14	5,588	.156
Wellington Reservation	3	83.00	1,319.38	542.84	1,862.22	1,932.95	70.27	35,282	.002
Wentworth Park	3	80.00	1,244.19	609.89	1,854.08	416.94	1,437.14	8,765	.163
White Lake Park	4	78.00	1,491.64	1,723.31	3,214.95	1,539.75	1,675.20	20,878	.080
20 Area Totals	65	\$79.00	\$20,770.03	\$12,792.23	\$33,562.26	\$20,747.87	\$12,814.39	383,956	.033
Administration	2	..	2,803.69	1,998.72	4,802.41	..	..	..	..
Inventory	..	..	..	..	652.73	..	..	..	..

FOR THE PERIOD JANUARY 1 - NOVEMBER 30, 1942

Area	No. of Personnel	Avg. Monthly Wage	Total Wages	Other Expenses	Total Maintenance Cost	Total Income	Net Cost	Estimated Attendance	Net Cost per Visitor
Bear Brook Recreation Area	5	\$85.00	\$1,761.07	\$833.51	\$2,594.58	\$1,871.81	\$722.77	15,794	\$.045
Bellamy State Park	5	73.00	1,736.00	234.10	1,970.10	133.44	1,836.66	38,942	.047
Carleigan Reservation	..	.....	128.00	18.15	146.15	75.45	70.70	1,069	.066
Clough Reservation	..	.....	160.53	1.85	162.38	.....	162.38	5,500	.029
Endicott Rock Park	2	85.00	672.21	426.85	1,099.06	727.67	371.39	6,347	.058
Forest Lake Park	1	90.00	340.70	25.03	365.73	243.70	122.03	2,943	.041
Hampton Beach	12	89.00	2,354.08	2,386.92	4,741.00	4,288.31	452.69	56,441	.008
Toil Gate Reservation	1	90.00	484.65	247.42	732.07	47.45	684.62	1,218	.562
Winglow Site	1	85.00	513.00	48.38	561.38	205.37	356.01	2,379	.149
Kingston Lake	4	75.00	1,819.87	396.94	2,216.81	1,555.80	661.01	16,098	.041
Miller Hill	1	50.00	202.06	73.54	275.60	137.70	137.90	1,701	.081
.....	..	.....	31.65	23.68	55.33	24.50	30.83	831	.037
Monadnock Reservation	2	90.00	1,561.34	287.25	1,848.59	534.05	1,314.54	5,462	.240
Moose Brook Park	2	87.00	854.08	334.11	1,188.19	304.38	883.81	2,601	.339
Peterborough Pool	3	93.00	928.92	189.52	1,118.44	93.75	1,024.69	7,431	.137
Prospect Mountain	..	.....	44.80	33.02	77.82	15.05	62.77	1,950	.032
Wadleigh Park	2	83.00	578.65	156.32	734.97	105.57	629.30	1,389	.453
Wallington Reservation	3	83.00	1,020.07	283.03	1,303.10	962.22	340.88	11,085	.030
Wentworth Park	2	85.00	1,281.97	370.23	1,652.20	246.14	1,406.06	3,145	.447
White Lake Park	4	77.00	1,598.42	358.61	1,957.03	733.80	1,023.23	8,406	.121
20 Area Totals	50	\$83.50	\$17,872.07	\$6,728.46	\$24,600.53	\$12,306.26	\$12,294.27	190,732	.064
Administration	2	.....	2,928.82	1,265.47	4,194.29	.....	.....	.....	.....
Inventory	..	.....	.....	.....	706.64	.....	.....	.....	.....

STATE FOREST NURSERY



OPERATIONS during this biennium have consisted as formerly in raising seedlings and transplants of the more important species of timber trees for reforestation throughout the state. This stock was sold at less than cost to private individuals and given free, F. O. B. Gerrish, to state, county and municipal agencies in unlimited quantities and to junior educational groups in limited amounts. The department reserves the right to assign the amount, kind and type of the free stock distributed. All parties ordering stock under any of the above conditions agree to give the State Forester as requested from time to time a brief statement concerning the condition of their plantations.

A total of 259,200 trees were given to eleven cities and towns as follows: Manchester 190,000, Keene 25,000, Dunbarton 20,000, Franklin 5,000, Dummer 5,000, Jaffrey 4,000, Winchester 3,500, Walpole 3,000, Sandwich 3,000, Durham 500 and Greenland 200.

Members of junior educational groups between the ages of nine and fifteen were allowed a maximum of 500 trees, while those between the ages of sixteen and twenty-one were allowed up to 1,000. The 4-H clubs planted a total of 112,650 trees in nine counties as follows: Hillsborough 37,050, Rockingham 26,750, Cheshire 11,500, Belknap 11,350, Coos 10,700, Carroll 5,100, Grafton 5,100, Merrimack 4,100 and Strafford 1,000.

Smith-Hughes or agricultural high schools and academies planted a total of 38,475 trees divided as follows: Thayer High, Winchester 6,550; Hollis High, 5,650; Colebrook Academy, 5,500; Walpole High 4,000; Quimby School, Sandwich 4,000; Weare High 3,225; Orford High 3,000; Vilas High, Alstead 2,450; Raymond High 2,400; Hopkinton High 1,500; and Coe-Brown Academy, Northwood 200.

Facilities and storage space at the State Nursery have long been furnished to other branches of the department for the handling, storing, conditioning and distributing in wholesale amounts forest fire fighting tools, recreational supplies and other equipment, as well as other miscellaneous services rendered where Nursery men or equipment can be used to advantage. Forest fire fighting tools and equipment amounting to \$23,914.42 were received at the Nursery for marking or painting, storage and redistribution as purchased by cities and towns throughout the state.

In the summer of 1941 twenty-one acres of woodland were added to the Nursery area. This purchase made possible the relocation from private to state land of the pump house with pump, motor and three hundred feet of pipe which supplied the Nursery area with its important sprinkling system.

In the spring of 1942 a small two wheel Bolens tractor developing three and one-half horse power was added to the Nursery equipment. This tractor used as a cultivator will make it possible to machine work

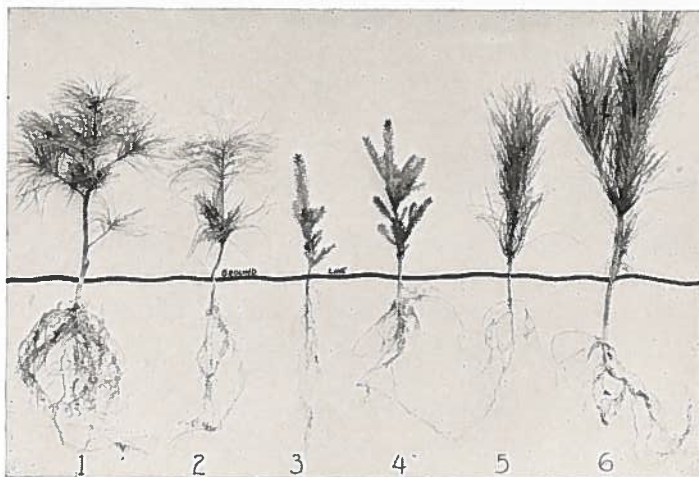
paths and small nursery areas where the larger equipment cannot operate.

The State Highway Department is given assistance in developing stock for roadside planting. Approximately two acres of the Nursery area were used for growing and developing trees and shrubs for this purpose.

The following tables show the value of nursery stock distributed by years and the agencies receiving it and the output of the Nursery by species and age for each of the two fiscal years:

Value of Nursery Stock Produced
Years ending June 30, 1941—June 30, 1942

	1941	1942
Trees sold to private planters	\$1,862.25	\$2,080.08
Trees given to 4-H and other juvenile clubs	519.16	282.00
Trees given to towns	829.35	462.50
Trees used on State lands	543.40	300.56
	\$3,754.16	\$3,125.14



Forest planting stock: (1) white pine transplants, 4 yrs. 9"; (2) white pine root-pruned seedlings, 3 yrs. 6"; (3) Spruce root-pruned seedlings, 3 yrs. 6"; (4) Spruce transplant, 4 yrs. 7"; (5) Red pine root-pruned seedlings, 3 yrs. 6"; (6) Red pine transplants, 4 yrs. 10".

(Departmental photo by Ellis)

Nursery Output: Fall 1940—Spring 1941

<i>Age of Stock</i>	<i>White Pine</i>	<i>Red Pine</i>	<i>Scotch Pine</i>	<i>Norway Spruce</i>	<i>White Spruce</i>	<i>Balsam Fir</i>	<i>White Ash</i>	<i>Total</i>
6 yr. transplants .....	..... 6	300	.....	.....	.....	.....	.....	300
5 yr. transplants	14,750	7,000	3,000	.....	.....	.....	.....	10,006
4 yr. transplants	148,930	34,400	2,900	2,625	33,300	25,850	.....	113,825
3 yr. root pruned seedlings	163,686	260,725	10,500	3,200	117,973	11,150	400	552,880
		302,425	16,400	5,825	151,275	37,000	400	677,011

Nursery Output: Fall 1941—Spring 1942

<i>Age of Stock</i>	<i>White Pine</i>	<i>Red Pine</i>	<i>Scotch Pine</i>	<i>Black Spruce</i>	<i>White Spruce</i>	<i>Balsam Fir</i>	<i>White Ash</i>	<i>Total</i>
5 yr. transplants	27,450	58,025	2,775	.....	1,500	.....	.....	1,500
4 yr. transplants	147,000	196,425	1,075	79	16,875	27,075	.....	132,200
3 yr. root pruned seedlings .....	.....	.....	.....	.....	42,200	6,668	.....	393,447
2 yr. seedlings	174,450	254,450	3,850	79	.....	.....	8,200	8,200
					60,575	33,743	8,200	535,347

FOREST PLANTING



FOREST planting has not played a prominent part in New Hampshire's forest program during the past two years. It has been much less than the yearly average for the past several years, and probably in contrast with the place it will assume when the curtailment of war work makes labor again available for home industry. The reasons for these changes and anticipated increase can best be understood by comparing the yearly planting since trees were first distributed by the state with the changing conditions which have taken place. To make this comparison and the fluctuations in the amounts planted as clear as possible, the number of trees supplied by the department each year for planting in the state are shown in the graph on page 51.

Planting stock was first made available at cost in 1911. While all requirements could not be supplied from the state nursery immediately, orders were filled from several nurseries in the state, so that the amounts shown are indicative of the interest in forest planting. Orders for trees gradually increased from 1911 to the time of the first world war when sales practically ceased until after the war. In 1916, just previous to our entrance in the first war, interest in forest planting was so active that all nurseries combined could not supply the demand. Also during the build-up period of industrial activity following the war, stumpage prices were high and more orders for planting stock were received than could be filled until 1926 when the supply about equalled the demand. In 1927 the lumber market suffered with other business and stumpage values were greatly depreciated. This condition was immediately reflected in decreased forest planting since land owners lost confidence in future timber values as depression conditions continued. Tree orders fell off from year to year until 1934. Increased planting from 1934 to 1938 was due to activity in made and relief work on public areas, and also to private planting as confidence returned with the scarcity of better grades of lumber and as higher prices prevailed. The sharp drop of 1939 was obviously the result of land owner concentration of all possible effort on the salvage of their hurricane timber. Following 1939 a slight recovery took place, followed by the drop on account of the present emergency war program, from which no improvement can be expected until we return to normal activities.

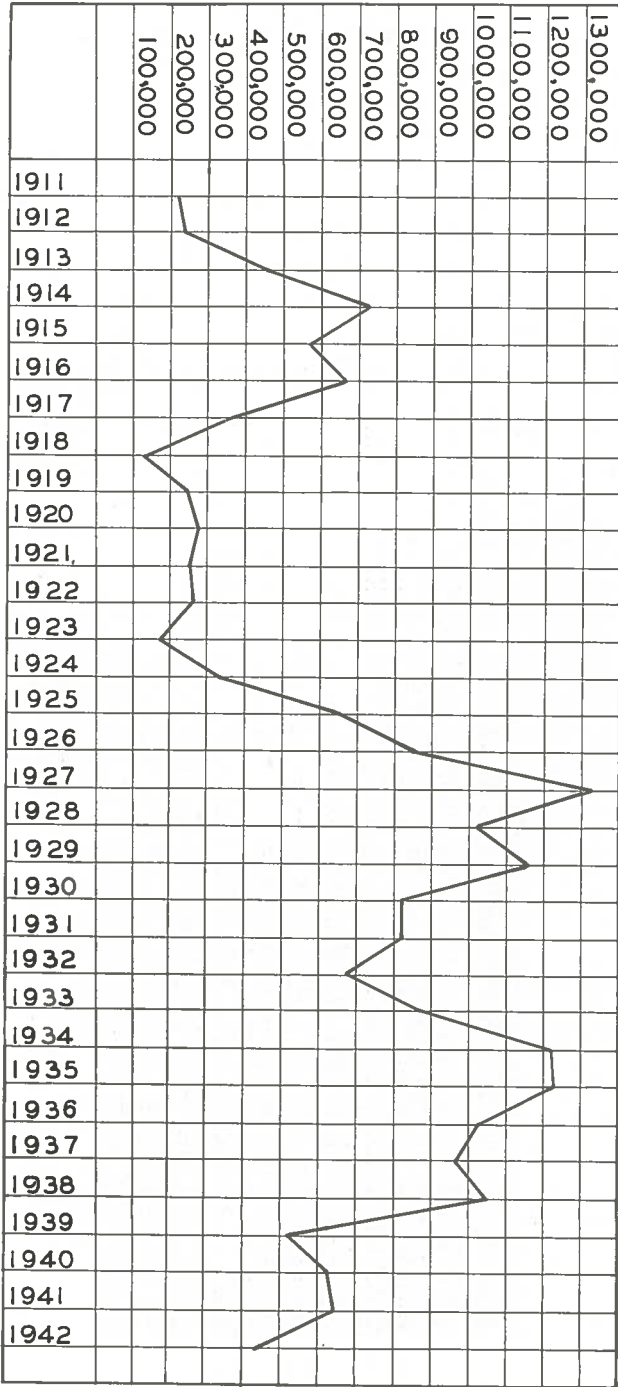
Land owners have had an opportunity during the past several years to observe and experience unusual changes in forest conditions and values of products which should impress them with the importance of assisting nature through forest management. They have seen high quality timber sell for fair prices when a market could not be found for

the cheaper and more plentiful stumpage. The federal government's purchase and grading of hurricane timber again emphasized the value of quality grown timber, which will always find a ready market and command higher prices. Confidence in future stumpage values through the proper growing of timber should be restored in the minds of forest owners who have seen the market absorb unprecedented amounts of lumber and still seek more than is available in our forests today.

There is a greater need for forest planting than ever before because of the wide spread depletion of future supplies of both growing and mature timber. The restocking of these areas so that they can again supply at least a part of our needs can best be accomplished by intelligent forest management in which forest planting must play a part in order to restore valuable growth as quickly as possible.

The table on page 52 gives the detail of planting operations on state lands during the past two years:





Nursery tree distribution by years for forest planting in New Hampshire.

Planting on State Land by Tracts, Number and Species

Tract	Acres Covered	White Pine	Red Pine	Scotch Pine	White Spruce	Black Spruce	Balsam Fir	White Ash	Total
Annett	8	.....	1,200	.....	3,600	.....	.....	.....	4,800
Black Mountain	35	.....	7,000	.....	3,000	.....	.....	.....	10,000
Davisville	5	.....	2,500	.....	.....	.....	.....	.....	2,500
Dodge Brook	20	8,350	675	425	.....	.....	.....	.....	9,450
Franconia Notch	10	.....	.....	.....	3,100	80	45	400	3,625
Harriman-Chandler	20	.....	8,500	.....	6,000	.....	.....	.....	14,500
Haven	25	.....	12,800	.....	2,100	.....	.....	.....	14,900
Honey Brook	51	6,800	11,150	75	8,000	.....	.....	.....	26,025
Meadow Pond	8	.....	4,000	.....	.....	.....	.....	.....	4,000
Monadnock	30	.....	11,000	.....	14,300	.....	.....	.....	25,300
Ponemah	9	.....	9,000	.....	.....	.....	.....	.....	9,000
Powow River	2	.....	2,050	.....	.....	.....	.....	.....	2,050
Rock Rimmon	10	.....	3,500	.....	.....	.....	.....	.....	3,500
Total	233	15,150	72,375	500	40,100	80	45	400	129,650

CIVILIAN CONSERVATION CORPS

At the beginning of the biennial period five Forest Service CCC camps were operating in New Hampshire under the supervision of this department and one Park camp at Bear Brook, operated by the National Park Service. The work accomplished during the winter and spring of 1941 with all six camps was principally hurricane hazard reduction with some salvage on state land. Two of the Forest Service camps and the National Park camp remained through the year and were able to accomplish important construction projects on state land. All the camps rendered conspicuous service in forest fire suppression as long as they remained during the critical season of 1941.

Camp P-60, West Swanzey

Hazard reduction on private lands was the principal work accomplished with some timber salvage on the Beech Hill, Chesterfield Gorge and Pot Holes state areas. This camp was closed on March 29, 1941.

Camp S-54, Danbury

Fire hazard reduction was completed in all nearby towns, on the Mascoma and Wellington Beach state lands and around public use areas on the west side of the Cardigan Mountain Reservation. There was some salvage work done on the Wellington Beach Reservation. A side camp at Laconia operated from this camp and did hazard reduction in that area and some salvage on the Meadow Pond State Forest. Type maps and forest inventory surveys were made on eight state forests totaling 858 acres. This camp closed on April 11, 1941.

Camp S-55, East Jaffrey

Hazard reduction work in nearby towns, and on the Annett, Casalis and Monadnock state lands took most of the man power of this camp. Blowdown areas which had been cleared up were reforested on the Annett, Haven and Monadnock State Forests. At Miller Park improvement work was done on the lookout tower, shelter, and other buildings and a parking area was developed.

At the Casalis Reservation a power line was built in from the highway to make current available to the house and other buildings. A pipe line was also laid below frost line between the house and the new well and a parkway cable laid in the same ditch to furnish power for the pump. A new concrete pump house was built in the side of the hill, near the well, to protect the pump from freezing.

Forest type maps and inventory surveys were made on ten nearby state forests. This camp closed May 28, 1941.

Camp P-61, North Haverhill

This camp worked through the winter on general hazard reduction and timber salvage on the Black Mountain State Reservation. Areas cleared of blowdown were later reforested. Repair and improvement of the Boardman buildings were continued. The grounds were graded, septic tank installed, new pipe laid and spring house built to provide the property with a gravity supply of spring water.

At Camp Chipewas the entrance road was relocated, the quarry dam and sluiceway completed, the pool enlarged and landscaped, the lime kiln restored, and a sewage disposal system for the camp partially completed.

A side camp was maintained at Camp S-59, North Woodstock, in order that hazard reduction and timber salvage might be taken care of in Franconia Notch. The Basin area was also improved by relocating the paths, installing guard rails, foot bridges, and grading and landscaping to protect the tree roots and natural features of the area from erosion and intensive public use.

A parking area was provided at Plummer's Ledge, the area cleaned up and trails cut to the pot holes and ledges. The largest pot hole was entirely excavated and guard rails installed.

Forest type maps and inventory surveys were made on eight state forests. This camp was closed November 7, 1941.

Camp S-56, Warner

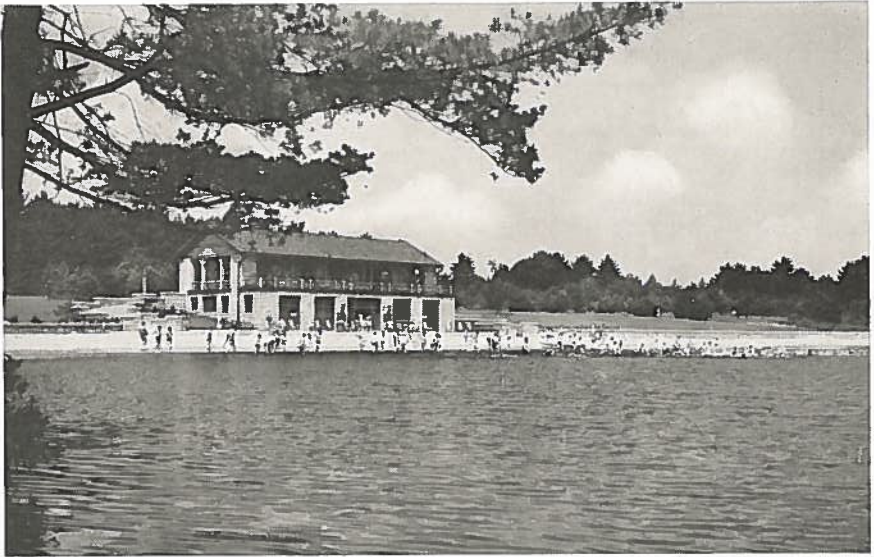
Hazard reduction and salvage were carried on at the Carroll, Davisville, Harriman-Chandler, Kearsarge Mountain and Wadleigh Park tracts. The area cleared on the Harriman-Chandler Reservation was reforested. Construction on the Kearsarge Mountain Toll Road was continued and completed except for graveling the surface. Stone guard rails were built at the eastern and southern parking overlooks and the parking area at the upper end of the road was completed. A diversion ditch was dug to protect the parking area from washing and the foot trail to the top of the mountain was improved. A sewage disposal line was installed at the Toll Gate.

Logs salvaged on the Harriman-Chandler Reservation were sawn and hauled to the State Nursery for later use in the construction of a storage building. Type mapping and forest inventory surveys were carried out on nine state forests. This camp was closed January 11, 1942, ending all Forest Service CCC work on state and private lands.

Bear Brook Camp, Allentown

This camp, comprised of World War veterans under the direction of the National Park Service, has brought to a successful conclusion a number of projects in the field of recreation, conservation and national defense.

The Bear Brook bathhouse, the construction of which was undertaken in 1939 and a major feature in the development of the Day Use Area located within the Bear Brook Recreational Demonstration Area was substantially completed during the 1941 season. Other important projects completed at this time were landscaping including finished grading, planting and seeding; construction of a footbridge connecting the



Bear Brook Bathhouse in Allenstown.

bathhouse area with the picnic area; completion of a public latrine building located in the picnic area proper; building of a 250 car parking area to serve the bathhouse area; erecting an all steel diving pier and the construction of a by-pass town road located to the west of the bathhouse.

To the south of the so-called Picnic Area, construction was begun in 1941 on a Group Picnic Area and in 1942 two structures, the Shelter-Latrine Building and the Nature Lore Building, were substantially completed. The former, a semi-open structure 30 by 92 feet, built of native stone and timbers, has a huge heating fireplace, a cooking fireplace, storage rooms and toilets. The latter, a frame structure 18 by 40 feet, houses exhibition cases, work benches and display tables for museum purposes. Both sewerage and water systems were installed to adequately serve these two buildings.

Included among the other activities of the camp was the erection of 15 miles of steel wire and 500 "No Hunting" signs on the boundaries of the Bear Brook area setting it aside as a game sanctuary; fire prevention work at five NEFE lumber sticking yards; fire hazard reduction work on

the entire Reservation and lookout service at the Bear Brook fire tower. Tree insect pest control on 437 acres was also carried out.

Meeting the urgent necessity of contributing to the national defense program, a 50-man camp was established in 1941 at Pierce's Island in Portsmouth Harbor for the purpose of constructing a 500-man United States Army recreation camp. This work was completed in August, 1941 and from that date on to the closing of the camp on January 10, 1942, a large part of the camp's work was centered within the Grenier Field area in Manchester on projects of an undisclosed nature.



Wherever possible attractive forest growth along highways should be preserved.
(Courtesy Planning & Development Commission)

CAPITAL BUDGET NEEDS



THIS department has given consideration to long term budget planning for major improvements of its properties and other land needs. In the past the CCC and WPA programs have provided most of the structures and improvements on state land at no expense to the state except in some instances for materials. Such improvements as have not been made by emergency work agencies have generally been paid for out of state land revenues. Experiences gained during the past few years have indicated the need for planning ahead to meet future requirements and to be ready to take advantage of aid from whatever sources it may come after the war. Detailed plans for future use are already prepared or being prepared as time permits.

The following list of projects with estimated costs are intended to be carried out when and as capital budget funds, other funds or future work agencies make labor or materials available. These projects are shown in the approximate order of their importance:

State Forest Nursery, Gerrish; warehouse and storage building, a proposed concrete and wood structure 40 feet x 84 feet adjacent to the existing buildings. This will provide storage space for trucks, pumps, hose, and other state equipment, fire tools awaiting transfer to towns and supplies for fire and recreational needs. Some of this equipment is now stored elsewhere for lack of present accommodations. The design of the building will take advantage of the terrain for a truck ramp and provide a needed truck loading platform. Total estimated cost—\$15,000.

Crawford Notch State Reservation, Hart's Location; a public building of concrete and wood to include space for recreation and rest rooms, dining room, lunch counter and souvenir stand, kitchen and storage facilities, help quarters and necessary sanitary requirements for general public use. This structure would replace three existing public buildings of log construction now deteriorated beyond hope of further repair through twenty years of service. By re-location and concentration of all facilities within one well planned building, the public would obtain far better accommodations, at decreased cost of maintenance and with expectation of increased revenue. Total estimated cost—\$25,000.

Hampton Beach State Reservation, Hampton.

Project I. A proposed swimming pool is one of the four projects leading to the complete development of this reservation where bathing is now the chief attraction. This pool would be built of reinforced concrete construction and consist of the necessary pumps, filters and chlorinators for the accommodation of approximately 300 bathers at one time. Experience in the operation of this reservation has indicated that bathing is adversely affected when water temperatures are low and by

certain weather conditions. Since the temperature of the pool water would be more constant and the water itself calmer, bathing would very greatly increase. Further increase in patronage would be gained by swimming meets, diving and water sport activities and other services that such a standard Olympic pool would offer. Administration and operation could be handled economically together with the present bathhouse operation and income from the reservation would be correspondingly greater. Total estimated cost—\$43,500.

Project II. This part of the ultimate development plan for the area includes a children's play area, shuffleboard, ring tennis courts, etc. Without such facilities the only inducement to patronage is the beach. The economy of this and two other related projects for this reservation would be accomplished by providing for the optimum recreation use on this well located but only partially developed area. Total estimated cost—\$7,700.

Project III. Grading, drainage and landscaping are seriously needed for protection against erosion and unconfined use. At present the bathhouse setting is the original rough grading of the filled marsh land. The more attractive appearance and setting for the recreational facilities of this area thus accomplished would attract patronage and increase revenue. Total estimated cost—\$32,000.

Project IV. Provides for a service building with storage space for vehicles, tools and other equipment; headquarters and living accommodations for the area manager; information and collection booth. The building would be suitable for year-round use and effect a net savings. Some \$400 annually would be saved in the cost of twice yearly transportation of equipment and supplies to and from storage space now being rented. Total estimated cost—\$6,000.

Wellington State Reservation, Bristol; construction of a modern type bathhouse with concession room, checking space, open courts, inclosed cubicles, ample lavatories, toilets and showers. This structure in a better location would replace an existing bathhouse which is inadequate and causes delay and inconvenience to those patronizing this popular recreation area. The needed services would not only satisfy patrons but would effect very considerable additional revenue. Total estimated cost—\$15,000.

Land Acquisition—Funds budgeted for this purpose would enable the department to proceed in long range planning and also to be in a position to take advantage of opportunities by option and otherwise when desirable land in the right locations may be available. Proposed that \$5,000 for each biennial period be made available for land acquisition only. This sum has been appropriated by the legislature in certain past periods. The advantage of such a budget will be seen in the four major considerations of a land acquisition plan.

1. For purposes of protection or extension of existing state forests or recreation areas.

2. For orderly long range acquisition of new lands for forestry or recreation purposes.

3. For lands which are desirable in order to take advantage of a federal work program.

4. For lands which fit into departmental needs and may because of individual circumstances be available for purchase.



Long-term forest programs should provide for protection of the watersheds of rivers and streams.

(Courtesy Planning & Development Commission)

FOREST RESEARCH

THE biennium included in this report completes the tenth year of forest investigations and other forestry work under the Fox Trust Fund. Much of the research work was curtailed due to lack of personnel and the demands of defense and later war activities. Many projects were nevertheless completed or continued. Roads and trails were maintained and improvements made on the camp ground area. Plantings of trees from different seed sources were made on the Fox, Nursery, Merrimack River and Vincent State Forests. These will be completed in the spring of 1943. Measurements of older plantations have been carried out. Observations on snow interception, different methods of handling fuelwood, and production of charcoal have been continued. Much attention has been devoted to forest statistics and methods of town and state surveys of forest resources. Control of white pine weevil by spraying has confirmed results obtained elsewhere, that effective protection can be attained by this method.

Cooperative Research Projects

From March to October, 1942 Henry I. Baldwin, Assistant Forester in charge, served as consultant to the National Resources Planning Board, preparing a report on the forest resources of New England. Plots to study population fluctuations of the gypsy moth have been established on the Fox Forest by the Bureau of Entomology and Plant Quarantine.

Demonstrations and Exhibits

Many exhibits were provided by the Forestry Museum at Hillsboro for county fairs and other functions. In 1940 cooperation with the U. S. Forest Service, Society for the Protection of New Hampshire Forests and Extension Service resulted in a joint traveling exhibit of more ambitious character than attempted heretofore. A large cabin with adjoining tents was taken to all fairs by a staff of Forest Service employees assisted by representatives of cooperating agencies, and reached thousands of people. Most of the material exhibited is now on display at the permanent Forestry Museum in Hillsboro.

Signboards summarizing stand and growth data for each plot were erected beside sample plots on main highways during 1941. Signs were constructed by the NYA.

Several notable forestry meetings were held in connection with the summer meeting of the American Association for the Advancement of Science in 1941. An extensive tour of state, town and private forests was arranged with the Manchester Water Works Forest as the chief objective. Several sample plots were laid out and growth and yield data computed for the occasion. A well attended excursion was held at the Newington

Town Forest, famous as the oldest community forest in America. The Ecological Society of America arranged an excursion on Mt. Washington during which a field symposium on arctic alpine ecology was held in which many foresters participated.

Management of the Fox Research Forest

Salvage from the hurricane was continued through the end of 1941 and early months of 1942, when shortage of labor prevented any further cutting. No fuelwood has been cut for sale since April, 1941, so that all sales cease with the exhaustion of old supplies. During the biennium 15,700 board feet of sawlogs mostly hardwoods, 618 cords of fuelwood and other cordwood and 587 fence posts were taken from the Fox Forest in salvage or improvement cuttings. Since the sale of a variety of forest products has a particular value in the management of the Fox Forest, the following table is included to show the kinds and volumes of wood sold and amounts received from sales, also accounts receivable and amounts of inventory unsold for each of the biennial years:

Annual Sales—Fox Research Forest

Description	1940-1941		1941-1942	
	Volume	Amount†	Volume	Amount
Four-Foot Cordwood (cords)	327.42	\$2,031.79	325.03	\$2,302.29
Fireplace Wood (cords)	55.65	804.50	105.45	1,584.55
Excelsior Wood (cords) .....	.....	.....	57.07	400.69
Powder Wood (cords)	4.50	31.50	.....	.....
Pulpwood (cords)	5.37	31.00	18.27	139.26
Logs (bd. ft.)	20,191.	175.71	4,124.	50.89
Lumber (bd. ft.)	11,131.	168.69	.....	.....
Posts (no.)	210.	70.24	860.	235.01
Kindlings (bags)	14.	3.50	.....	.....
Shingles (bundles)	11.5	11.50	24.	24.00
Charcoal (bags)	305.	57.00	1,952.	397.63
Other .....	.....	35.82	.....	85.00
Total .....	.....	\$3,421.25	.....	\$5,219.32
Accounts Receivable .....	.....	\$795.74	.....	\$260.48
Inventory .....	.....	\$2,261.52	.....	\$890.34

Charcoal operations had to be abandoned in December, 1941 because of lack of wood cutters. Subsequently the kilns were loaned to the U. S. Forest Service and Camp Marienfeld respectively. The kilns were operated continuously from June 15 to December 15, 1941. The following is a summary of the yields and costs of operation during that period:

Charcoal Operation

<i>Production</i>	<i>Hardwood</i>	<i>Softwood</i>	<i>Total</i>	<i>Average</i>
No. cooks	32	30	62	
No. lbs.	10,449	5,984	16,433	.....
Average yield/cook				276.7 lbs.
<i>Costs (to October 31, 1942)</i>				
Labor: (charcoaler 26 weeks)			\$326.20	
Supplies (bags, twine, kerosene, etc.)			52.61	
Equipment (tools, replacement parts)			11.24	
Wood (31.5 cds. at \$3 a cord)			94.50	
Delivery and selling expenses			56.11	
Depreciation on kilns (10% of \$125)			12.50	
Total			\$553.16	
Average cost per cook				\$8.92
<i>Receipts (to October 31, 1942)</i>				
Half-bushel bags				
1,765 at \$.249+			\$440.92	
Small bags				
857 at \$.062+			53.56	
			\$494.48	
<i>Bills receivable (November 1, 1942)</i>				
7 bags at \$.25 (C-50)			\$1.75	
<i>Inventory (November 1, 1942)</i>				
Hardwood				
35 large at \$.25			\$8.75	
125 small at \$.07			8.75	
Softwood				
481 large at \$.20			96.20	
Total			\$113.70	
<i>Summary</i>				
Receipts			\$494.48	
Inventory value			113.70	
Bills receivable			1.75	
Total credits				\$609.93
Total costs				\$553.16
Net gain on operation		\$56.77		

The Fox Forest now consists chiefly of young stands, and cultural operations have been undertaken in considerable areas, including pruning of selected crop trees, weeding, removal of wolf trees by cutting or girdling, and thinning to a more limited extent. The extensive plantations are now fast reaching a stage where further weeding and other release work must be done. Thinnings in young hardwoods have been undertaken on an experimental scale, salable products being removed in each case.

FARM FORESTRY



THE farm forestry programs of the Extension Service of the University and their forestry projects with the U. S. Department of Agriculture are conducted in close cooperation with this department. Special federal funds have been allocated to New Hampshire to support three Norris-Doxey projects, matched by extension and county funds and other contributions. The Extension Forester administers the work and employs a project director for each project according to plans and an agreement entered into by the U. S. Forest Service, Director of Extension and the State Forester. This work is designed to assist individual farmers and other small woodland owners to carry out forestry practices on their land, find the proper markets for their products, keep their land in suitable productive condition and at the same time encourage them to meet the timber and fuel needs of the present emergency. Personal contacts with farm owners and preparation of woodland management plans for cutting and marketing are important objectives. The three land owner assistance projects, Coos, Carroll and Cheshire-Sullivan counties, were conducted during 1942 with added emphasis to help meet the war requirements. They have been helpful in their respective regions to existing organized land owner marketing associations which are rendering practical service to their members and to the cause of forestry in this state.

Extension foresters, county agents and club agents have rendered valuable assistance in the work of this department in fire protection, reforestation and general educational work. Accomplishments of the 4-H Club organizations have not received the recognition they deserve in tree planting, fire prevention and other forestry activities. The forest rangers, organized since 1939, had no less than 80 groups or nearly 1,000 boys enrolled in fire prevention work and to some extent assisting in fire suppression during 1941. The numbers decreased in 1942 on account of other demands upon their efforts.

DISTRICT FOREST ADVISORY BOARDS



CHAPTER 235, Revised Laws, an act to establish district forest advisory boards was passed by the 1941 legislature. The declaration of policy (Section 1) recognizes that the public welfare of the state requires the maintenance, protection and rehabilitation of forest lands, soils and cover, the maintenance of forest industries in rural communities, recreational opportunities and many other benefits which accrue to the public as a result of perpetuating a proper forest cover on forest land; also the importance of information and knowledge concerning resources and planning for wise use of these resources.

The act provides for establishing forest districts and an advisory board for each composed of persons residing in the district who are interested in forest conservation. Their duties are to study forest conditions, formulate proposals for legislative action when such action is advisable, organize and meet from time to time and advise and assist the state forester in the duties of his office.

The Commission under the law has divided the state into six districts along county lines and five members have been appointed to each board for terms of one, two and three years. Each board has selected its chairman and has held meetings as the difficulties of travel have permitted. District fire chiefs serve as secretaries to keep records of proceedings. Joint meetings of all the boards with the Commission have been held in Concord on three occasions during 1942. Meeting discussions have centered on the state's forest conditions and resources and measures needed to build up and improve the forests, the activities of the federal government and other states relating to forestry, forest protection, taxation and the need for a state wide survey of its forest resources. Much valuable information from various sources relating to the forests has been considered by the members and by them with many others, which has already helped to direct public attention to important forest policies and the best means of solving problems which relate to improved forest practices on private land. Distinct service was rendered in sponsoring passage of the constitutional amendment on taxation of forests.

Following are the names of the members of the six advisory boards effective January 1, 1942, number of years first appointed and addresses:

District Advisory Boards

COOS COUNTY:	Charles W. Jackson	1	Colebrook
	Frank S. Dodge	2	Whitefield
	S. S. Lockyer	2	Berlin
	George D. Keysar	3	North Stratford
	*I. D. Ellingwood	3	Groveton
GRAFTON COUNTY:	Arthur L. Hamilton	1	Lisbon
	Harry D. Rollins	2	Alexandria
	Harry D. Sawyer	2	North Woodstock
	*Sherman Adams	3	Lincoln
	Earl V. Howard	3	Piermont
BELKNAP AND CARROLL COUNTIES:	Howard W. Sanborn	1	R. 1, Laconia
	Richard W. Read	2	Tamworth
	Roger Williams	2	Tuftonboro Center
	Frank Kennett	3	Conway
	*Curtis H. Page	3	Gilmanton
HILLSBOROUGH AND MERRIMACK COUNTIES:	Merritt R. Langdell	1	Milford
	Herbert E. Webster	2	Salisbury
	*Charles A. Bartlett	2	Concord
	Alfred S. Cloues	3	Warner
	Philip C. Heald	3	Wilton
CHESHIRE AND SULLI- VAN COUNTIES:	Merrill Symonds	1	East Jaffrey
	George L. Porter	2	Langdon
	Maurice A. Mansell	2	Marlow
	*George H. Duncan	3	Jaffrey
	Wayne Lewison	3	George's Mills
ROCKINGHAM AND STRAFFORD COUNTIES:	Thomas E. Fernald	1	Nottingham
	*Karl W. Woodward	2	Durham
	Joseph F. Culick	2	Fremont
	Charles H. Felker	3	Rochester
	Dean E. S. Wells Kerr	3	Exeter

* Chairman.

LUMBER CUT 1940 AND 1941 IN RELATION TO FOREST RESOURCES



THE department's report of the calendar year lumber cut under the provisions of Chapter 233, Section 66 of the Revised Laws has been obtained in the past mostly from timber operators who own and cut stumpage within the state but who may not necessarily operate a saw mill. This record attempts to show the cut of all the established year in and year out operators for all purposes except pulpwood and cordwood but it is evident that for 1941 there were important operations by those whose cut for the year was not reported. There is no assurance that names of parties to whom cards are sent for report of cut are complete although efforts are made to revise the mailing list each year. Of the 230 reporting for 1941, there were 67 recorded who cut over one million board feet each. On the basis as described the 1940 and 1941 reports of cut were as follows:

<i>Year</i>	<i>Number Reporting</i>	<i>Cut of Hardwoods</i>	<i>Cut of Spruce</i>	<i>Cut of Other Softwoods</i>	<i>Cut of Pine</i>	<i>Mixed</i>	<i>Total</i>
1940	239	30,964 M	25,285 M	13,624 M	96,435 M		166,308 M
1941	230	36,281 M	30,302 M	14,043 M	130,020 M	260 M	210,906 M

Prior to 1941 the Census figures for lumber production were from mail canvass with no checking in the field. During the spring of 1942 a valuable check was provided on the usual inquiry as to the amount of lumber sawed during the calendar year 1941. This was furnished by a field canvass of all saw mills by agents of the U. S. Forest Service co-operating with the Bureau of the Census and the War Production Board. Care was used to insure that no duplication occurred. The results of this census released in April indicated the lumber production for 1941 as 342,277 M board feet. Further investigation disclosed that 64,678 M of this was sawed under contract or directly by the NETSA from logs stored in ponds, which were salvaged in 1939 and 1940 and reported during those years by this department. The remaining discrepancy between the state and Census figures of about 65 million board feet represents lumber produced from mills whose cut was not reported to the department. The actual lumber cut within the state during 1941 may therefore be regarded as about 277 million board feet.

Direct personal contact with each mill is the only practical method of accurately determining the annual cut of lumber. Because of the amounts of logs shipped out of the state for manufacture or other use elsewhere and shipped in from other states for manufacture here, there are many possibilities for serious discrepancy in any lumber cut analysis. With forest products other than lumber the possibilities for discrepancy are even greater. In fact, an accurate determination of the annual cut of all forest products can be obtained only by receiving for each stumpage

owner a notification of intention to cut forest products for sale, a report of the amount actually cut by each and field inspection by district foresters or others personally familiar with each locality and in frequent touch with all cutting operations. Uniform reporting requirements in all neighboring states like New England are even necessary if interstate movements of logs and other products are accounted for in order to obtain complete and accurate market records.

Many think of lumber as the principal forest product of the state. Yet the lumber cut annually is only one of the drains upon our forest resources. Pulpwood and fuelwood are other products having a combined cut equal to if not in excess of the lumber cut. Records of the annual cut of pulpwood and cordwood are not required by law and these and other products severed from the stump for miscellaneous uses are very difficult to obtain. Pulpwood may be cut from one to three years before it reaches the mill so that the amount actually cut in any one calendar year is practically impossible to determine under present requirements for reporting. Recent war contracts have resulted in the trucking of large numbers of poles and piling to shipyards, docks and plants outside the state. There are many small, widely scattered pulpwood operations where the wood is transported by truck and rail to other New England and New York points. The same is true of hardwood bolts for squares, veneer, etc.

No agency of the state has made a canvass for pulpwood and fuelwood but federal agencies report a mill consumption of pulpwood for 1941 of 493,000 cords, of which 104,000 cords were hardwoods. Of the total consumption it is estimated that 332,000 cords represents the New Hampshire cut. The Federal Bureau of Agricultural Economics has estimated that of the total consumption 158,000 cords were cut from farm woodlands and the balance from other sources within the state.

Fuelwood is commonly supposed to be produced largely from farm woodlands but no thorough analysis is available to indicate how much other fuelwood is produced. Commercial wood dealers sell on the average from 200 to 300 cords each per year. From what is known of fuelwood cutting generally, it is believed that commercial operators provide one-fourth to one-half as much as the farm cut. The estimated fuelwood cut for 1937 was 287,000 cords. It is probable that the total fuelwood cut for 1941 exceeded 350,000 cords. A special effort has been made by the Extension Forester during the past year to double if possible a normal fuelwood production regarded as about 250,000 cords annually in order to provide against a shortage of coal and oil.

In terms of board feet it may be assumed that the overall cut of forest products during 1941 in New Hampshire was at least 600,000,000 board feet. Shortage of man power will probably result in a reduction of this amount for 1942.

Drain Upon Forest Capital

The need for accurate knowledge of the state's forest production from year to year, the accretion in new growth and the probable drain upon the resources has long been a real objective. A fairly comprehensive forest survey by towns was published in the biennial report for 1923-24 which was the basis of information for many years following, in fact long after the information had ceased to have authentic value. A complete report of the forest industries of the state by C. P. Cronk was published by this department in 1936. In March, 1938, Baldwin and Brown of the department made public a compilation of New Hampshire forest statistics based on information available from all sources. Following the hurricane a report by Hopkins of this department on Marketing of Forest Products was published by the Planning and Development Commission. This included a revised list of saw mills and other forest industries. Plans were made to carry out a new survey of forest resources as a WPA project in 1939 but this had to be abandoned through inability to secure the required WPA labor after the project was ready to start.

The 1938 report by Baldwin and Brown showed the total average annual drain upon the forests to be 452,000 M board feet including all commercial production and estimated losses due to fires, insects, diseases, breakage and other causes. The net annual growth was estimated at 311,830 M board feet, the difference of 140,170 M board feet representing the annual depletion. Expressed roughly in terms of an average acre representative of 4,445,691 acres of residual forest land in the state, the balance account was as follows:

Annual increment	70 board feet
Annual depletion	100 " "
Excess of depletion over growth	30 " "

The above figures are given not with any assumption of accuracy or present application. The hurricane and subsequent heavy cutting have changed the values, no matter how accurate, by decreasing merchantable timber resources, increasing the annual depletion and probably the excess of depletion over growth. The saving of young trees during logging, which is not often done, would of course increase the average rate of growth and tend to offset depletion.

It is not a pleasant prospect to know that we are cutting timber faster than it is growing but this has undoubtedly been taking place with varying rapidity over a period of many years. Present demands upon white pine for boxing and crating of supplies and equipment for our armed forces and allies and hardwoods and spruce for chemical and other products have stimulated cutting wherever standing timber is available. It is estimated that 42,000,000 feet of white pine have been stripped from Carroll County during the calendar year 1942. An exception worthy of

mention is a cooperative effort in this region where three million feet have been cut by careful selection methods looking ahead to a sustained yield program. In general the exact opposite of this has been the practice. Permanent forest industries which have depended upon local timber within reasonable hauling distances of their plants are no longer certain of nearby future supplies. In one town outside the hurricane area, 90 percent of the merchantable timber inventory has been lost to established permanent industries, which have been the principal support of the community, because of the entrance of portable mill activity.

Proposed Forest Survey

More accurate knowledge of our forest resources is needed in order to establish sound policies relating to private timber cutting practices as well as forest taxation. Such a survey should coordinate and compile all existing data on forest resources wherever such information is available. It should secure new information as to number and volume of each species and the types, age classes, accessibility and rates of growth of forest areas. These should be summarized by counties. The requirements of established forest industries should be considered.

Types of surveys in other states and methods of the U. S. Forest Service survey have been examined. A forest survey of the entire United States has been underway for some years but so far work has been confined largely to the Northwest and South. Funds for work in new areas are not available. In any event such a survey would be on an extensive basis with results applying to an entire region and not to states or subdivisions of states. Two conferences sponsored by the Planning and Development Commission resulted in agreement that a survey should be made for New Hampshire, possibly a combination of the so-called plot and strip methods of survey, assuming strips running east and west at three mile intervals and making 60 strips of varying length to cover the state. The total mileage of these strips less deductions for areas not necessary to work is approximately 3,000 miles and circular plots, one every forty rods, would supply the sampling information needed. Assuming that competent men were employed it was estimated that the total cost of such a survey including all field work, office computation and report would be upwards of \$30,000, and require two seasons to complete. An aerial map has been used in other states to supplement the ground work. Securing full information on annual cut and depletion would be necessary in order to make the survey of continuous use and applicability.

Measures to Safeguard the Forest Resources

In the last biennial report (Page 13) reference was made to federal legislation pending and Nation-wide conferences and discussions taking place in relation to conservation and control of private timber cutting.

Although three regulatory bills have been pending before the 77th Congress no action was taken on these bills before adjournment. There have been continuing efforts on the part of federal and many state agencies to prepare the way for future legislative action. Our entrance into the war and the mounting requirements of the War Production Board for lumber and other forest products may well serve to delay action by the Congress.

Large private timber owners and associations particularly in the West and South have taken seriously the federal challenge that now more than ever before public control of cutting is needed in order to keep private forest lands productive on a national scale. Progressive operators are beginning to apply conservation practices. Some are organizing to operate their holdings on a sustained yield basis. The National Lumber Manufacturers Association and other associations are widely advertising their sponsorship of management plans for future timber growth and at the same time calling public attention to the contribution that forest product industries are making to win the war.

Public action to keep forests productive when and as it comes should probably be based upon cooperative legislation passed by Congress consisting of a set of objectives and a broad formula for carrying them out by states, not by coercion or threats but on the principle of the present Clarke-McNary Act by which the federal government cooperates with the states in forest fire protection, farm forestry extension, etc., and shares the cost of administration whenever states enact legislation to provide the organization necessary to put the provisions into effect and appropriate the funds to pay their proportion of the cost. Any alternative types of federal legislation, such as have been proposed threatening direct control from Washington and depriving states of the cooperative benefits now received under the Clarke-McNary or similar acts if they do not subscribe to the federal formula by a given date, violate the sovereign rights of the states and would be contested by the states throughout the country.

Substantial progress is being made toward joint action among states on a regional basis. The Council of State Governments, an organization of the states themselves, has already sponsored many worth while projects for uniform legislation and has during the past year held several meetings with the fourteen northeastern state foresters and others in relation to forest conservation. A recent example of accomplishment through inter-state action is the emergency war powers acts of the states cooperating with the federal Office of Civilian Defense which in our own state is under the State Defense Council whose wide-spread activities have been carried out in general compliance with a federal defense program.

The northeastern state foresters working with the Council of State Governments have prepared the draft of a bill for public control of cutting on private forest land and recommend that their states should

work together in providing a uniform legislative program for enactment when the proper time arrives. The long title (Section 1) indicates the scope and character of the proposed measure, as follows:

“An act to declare the existence of a public interest in and to the forest resources and forest lands of the state; to declare the necessity of public regulation of the processes of harvesting such forest resources, and conserving and maintaining the productivity of such forest lands in the interests of the public safety, health and general welfare; to create a governmental agency of the state to be known as the State Forestry Board; to empower such board, subject to standards and conditions set forth in this act to adopt rules and regulations designed to promote forest practices which will avoid the creation of hazards and promote the maximum sustained productivity of the forests; to provide for the creation of forest districts within the state; to authorize the state board to create district boards where necessary; to define the powers of such district boards; to define the duties of forest owners and operators in furtherance of the protective measures herein declared to be necessary; to specify the operations to which this act shall not apply; to provide for appeals from decisions of district boards and the state board to the courts; to appropriate moneys for the administration of the act; to fix the time when this act shall take effect and for other purposes.”

An editorial in the *Journal of Forestry* (Vol. 41-No. 1) sums up the situation as follows: “Forest exploitation will sooner or later be replaced by forest management. The real choice is whether that management will be enforced by drastic governmental regulation or practiced voluntarily by the majority of private owners with only such public control of the minority as the more progressive owners themselves will approve. Which shall it be?”

LEGISLATION—1941



IN any one fiscal year when the total for suppression and prevention of forest and brush fires to be borne by the municipality shall equal one-half of one percent of the annual valuation of such municipality for the preceding tax year, expenses incurred in excess of such sum shall be borne entirely by the state.

Mills Sawing Lumber

The law providing for registration by the state forestry and recreation commission was amended to include any portable mill or other mill sawing lumber except mills chiefly propelled by water power. The fee shall be ten dollars a year unless application is made after October first, in which case the fee shall be three dollars. Applicant must furnish a receipt or certificate showing that the taxes assessed thereon for the preceding year have been paid.

All mills subject to registration hereunder which dispose of mill waste by burning, except when the ground is covered with snow, shall be equipped with incinerators approved by the state forester. Such mills must also be equipped with fire fighting tools as specified by the state forester, the cost not to exceed twenty-five dollars for each mill.

Inflammable material except sawdust and fuelwood piled in commercial order shall be removed for a distance of one hundred feet in all directions from the mill, sawdust pile and incinerator. Sawdust pile shall be kept not less than twenty-five feet from the incinerator. Suitable precautions against fire must be taken in the storage and handling of gasoline, fuel oil, and other combustibles.

Closed Season—Special Precautions

During periods when woodland is closed, the operation of saw mills and other machine units, except trucks and pleasure motor vehicles, in or near woodland may also be suspended and smoking prohibited. All persons engaged in lumbering operations may be required to furnish sufficient fire guards and fire fighting tools, and to forbid smoking within such areas. Violation of these provisions and unlawful smoking is punishable by a fine of ten dollars.

Prospecting and Mining

Licenses may be issued by the state forester on terms approved by the commission for prospecting and mining on unimproved state forest lands and reservations and in beds of great ponds and navigable waters.

Forest Advisory Boards

Provisions were made for permanent district forest advisory boards appointed by the commission to collect data, study forest conditions in

their respective districts and formulate proposals for legislative action to create public interest and conserve future values in forest land.

Upon the publication of the Revised Laws of New Hampshire in 1942, a revised forest law publication was issued including the amendments made by the 1941 Legislature.

STATE APPROPRIATION ITEMS



THE annual reports of the State Comptroller and State Treasurer give in detail a financial statement of revenue, appropriations and special funds of the department. The following is a statement of the budget appropriation items:

July 1, 1940 — June 30, 1941

	<i>Appropriation</i>	<i>Expenditures</i>	<i>Reserved for Bills Payable</i>	<i>Appropriation Balances Available June 30, 1941</i>
Administration	\$18,735.00	\$18,480.54	\$254.46	
Nursery	7,440.00	7,376.75	63.25	
Reforestation	1,900.00	1,899.89		
District Chiefs	7,115.00	7,115.00		
Lookout Stations	10,053.00	10,053.00		
Warden Training	2,000.00			\$2,000.00
Prevention of Forest Fires	4,800.00	4,800.00		
Forest Fire Bills to Towns	7,500.00	7,500.00		
White Pine Blister Rust Control ..	4,144.00	4,088.37	55.63	
Emergency Forest Fire:	56,144.34			
Transfer - Executive Department .	10,792.80	37,711.46	17,432.88	11,792.80
Recreational Development:				
Appropriation	16,081.00			
Income	16,717.41			
Balance, 1940 Income	310.59	32,878.32		
Federal Emergency Program	5,000.00	4,046.56	953.44	230.98
Old Year Reserve	2,070.23	2,061.98		
	<u>\$170,803.37</u>	<u>\$138,011.87</u>	<u>\$18,759.66</u>	<u>\$14,023.78</u>

July 1, 1941 — June 30, 1942

	<i>Appropriation</i>	<i>Expenditures</i>	<i>Reserved for Bills Payable</i>	<i>Appropriation Balances Available June 30, 1942</i>
Administration	\$18,735.00	\$18,470.74		
Nursery	7,440.00	7,440.00		
Reforestation	1,900.00	1,900.00		
District Chiefs	7,915.00	7,915.00		
Lookout Stations	12,280.00	12,280.00		
Warden Training:				
Balance, 1941 Appropriation	2,000.00	573.74		\$1,426.26
Prevention of Forest Fires	5,000.00	0.00	\$5,000.00	
Forest Fire Bills to Towns:				
Appropriation	7,500.00			
Transfer - Executive Department .	13,073.57	20,573.57		
White Pine Blister Rust Control ..	4,090.00	3,227.58	759.69	
Emergency Forest Fire:				
Balance, 1941 Appropriation	11,792.80	11,792.80		
Forest Fire Equipment	9,000.00	1,817.33		7,182.67
Recreational Development:				
Appropriation	19,452.00			
Income	20,964.61			
Balance, 1941 Income	230.98	40,044.95		
Federal Emergency Program	5,000.00	5,000.00		602.64
Old Year Reserve	18,759.66	18,759.27		
	<u>\$165,133.62</u>	<u>\$149,794.98</u>	<u>\$5,759.69</u>	<u>\$9,211.57</u>