Bathhouse at Catamount Lake, Bear Brook State Park.

State of New Hampshire

BIENNIAL REPORT

of the

Forestry and Recreation Commission

For the Two Fiscal Years
Ending June 30, 1944

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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 1943 and 1944.

Three things have happened since 1932 that have profoundly influenced and altered the course of the work of this department: the aftermath of the depression gave us the State and Federal Work Programs, the hurricane devastated a large part of our forests and the war depleted our timber resources and our working personnel. With lumber production and all business at their low ebb in 1932, State and Federal measures for relief of unemployment furnished work programs which could not have been considered in ordinary times, particularly in developing facilities for recreational use in our public reservations. The period of CCC construction projects, beginning in 1933, continued until the hurricane of 1938 presented the new and pressing task of salvage and hazard reduction which lasted until 1941. By that time the country was on the verge of war. Demands upon the forests for war materials and the call for men to serve the armed forces and war industries brought new problems of aiding the National Defense and getting regular work done without sufficient help or facilities. During this biennium of 1943 and 1944, the conditions and limitations which had to be met became even more acute than during the two preceding years. More and more men left to work in war plants, yet every activity of our department, although handicapped and curtailed, was still directed to the all-out war effort.

Fortunately the 1943 fire season was generally very favorable. The small total of 307 fires, the lowest since 1929, was due in part to the weather but also to decreased travel and the additional preventive efforts made because of the war emergency. In 1944 May was below average in rainfall and some sizable fires occurred. Boys and men exempted from military service were trained and enrolled in the Forest Fire Fighters Service under the emergency wartime training program. High and preparatory schools participated throughout the state and efficient work resulted under supervision suited to the circumstances.

The Sixth Supplemental National Defense Act had alloted federal funds for critical area projects. These areas of military and industrial importance, containing about twenty towns apiece, were delineated and project directors were appointed to carry out the work program. Men trained and organized into units included over 1,500 individuals in more than 100 communities.

In order to be prepared for problems which might arise from enemy action such as sabotage or air raids, elaborate plans were made in collaboration with the First Service Command of the U. S. Army, the

U. S. Forest Service, the State and Federal Offices of Civilian Defense and the New Hampshire State Guard. Several "manoeuvres" have been held, using State Guard units and forest fire fighting organizations.

Our lookout stations have been pressed into use as observatories of the U. S. Army Air Raid Warning Service. Three of these stations in regions less well provided with volunteer workers than elsewhere in New Hampshire have been manned at government expense on a 24-hour year-round basis.

Total lands acquired in the biennium, 8,342 acres, approximate one fifth of all state land acreage, 41,950 acres, already owned.

The largest of our public reservations, Bear Brook State Park, was accepted as a gift from the Federal Government through the National Park Service. It was approved by legislative act on March 3rd, 1943. This tract had been developed as a demonstration, recreational area utilizing sub-marginal land near large centers of population. It was a part of the Federal Works Program. This park area of 6,436 acres is located in the townships of Allenstown, Deerfield, Candia and Hooksett. When the state acquired the property the recreational developments included some ten miles of improved gravel roads; nearly twenty miles of hiking trails; two sets of organized camps with buildings; water supplies; sewerage system; playfield; lake shore beaches; parking area, etc. Forest improvement work had been carried on over the whole area and the forest is in excellent growing condition.

Another acquisition of particular importance was Echo Lake, adjacent to Cathedral and White Horse Ledges across the valley from North Conway. The area covers 87 acres and the lake is bordered by a sandy beach and groves of tall white and red pine. The state by legislative act in 1943 appropriated $5,500 for its share in the purchase and the North Conway Chamber of Commerce raised a similar amount through public subscription.

Although diminished elsewhere, the recreation services offered to the public at Bear Brook Park were increased and extended during these two years. In addition to civilians, large groups of military personnel came from Grenier Field, Manchester under sponsorship of Army or Red Cross. Special arrangements were made for their benefit: rates and schedules; a wide variety of recreation, including fishing, hiking, boating, bathing, picnicking, skiing and skating. At the camps social recreation, movies and games were available. These services seemed much appreciated and there was an added pleasure in providing outings for wounded men. Further military use took place at the old CCC camp which was operated by the Navy as a rest camp for naval personnel on leave from the Boston area. Groups of 100 or more came for weekends or longer stays. The organized camps were also used in the off-seasons as rest camps for American and British sailors.

Other recreation areas were kept open through these years although reduced and often inexperienced personnel called for double duty and ingenuity in the performance of the necessary work. The auto pleasure

travel ban during 1943 reduced civilian patronage to one-half that of 1942 and one-quarter that of 1941. There was enough use, however, of those areas which were open to justify operation. People came by bus, bicycle, horse-drawn vehicles and on foot. All seemed to accept the limited services cheerfully and many expressed appreciation for the recreational opportunities that were available.

In these two years fewer towns than usual voted funds for Blister Rust Control work. From the general sentiment voiced around the state this was not due so much to lack of interest as to the acute local labor shortage. Through a careful study of local conditions, however, and with the assistance given by selectmen and other town officers, a limited number of crews was obtained for work in the towns which had voted appropriations. As in the previous years of the war, every effort was made to avoid the employment of farm labor. Men under and over military age were obtained and through intensive training and careful supervision, were developed into satisfactory field units.

State Forest Nursery activities have been maintained on a reduced scale. It was difficult, in view of the impossibility of knowing how many trees would be ordered during this period, to plan the nursery production for the years immediately ahead. Much less planting was done on private lands during the biennium since landowners did not have time nor could they hire labor. Trees to the number of 109,992, however, were sent to 4-H clubs and members of other young people's educational groups; four towns planted a total of 29,500 trees.

New Hampshire was the leading state in production of white pine lumber in 1943—more than 392 million board feet; the production of pulpwood and other products approached the amount cut for lumber. During the entire biennium, measures for timber production took precedence over any measures for conservation.

W. Robinson Brown,
Harry K. Rogers,
Owen Johnson,
Randall E. Spalding,
Charles E. Greenman,

Forestry and Recreation Commission

John H. Foster, *State Forester*

PUBLIC FORESTS

STATE FORESTS AND RESERVATIONS

New Acquisitions

TWELVE TRACTS of forest land were acquired by the state during the years 1943 and 1944. The Bear Brook State Park of 6,436 acres, deeded to the state by the Federal Government, constitutes the largest reservation under the supervision of the Forestry and Recreation Department. Another valuable acquisition was the Echo Lake property of 87 acres in North Conway. A total of 8,342 acres were conveyed to the state during the biennium. The total acreage as listed in the 1941-42 report was 41,950; this, with recent additions, now totals 50,292 acres.

The following table lists each tract acquired:

Name	*Location*	*In Town*	*Total*	*Year*	*How Acquired*
Annett Addition	Rindge	214			
" "	Jaffrey	1	215	1943	Gift
Bear Brook	Allenstown	4088			
" "	Candia	290			
" "	Deerfield	1693			
" "	Hooksett	365	6,436	"	"
Belle Island	Bristol		2	"	"
Cliff Island	Bristol		6	"	"
Echo Lake	Conway		87	"	$5,500
Fox Additions	Hillsboro	18		"	310
" "	Hillsboro	32	50		
Humphrey's Ledge	Bartlett		36	"	Gift
N. H. Forest Nursery Addition	Boscawen		272	"	$3,000
Wantastiquet Mt.	Chesterfield	519		"	Gift
" "	Hinsdale	388	907		
Hatch Grove	Eaton		1	1944	"
Honey Brook Addition	Lempster		94	"	"
Shakers	Canterbury		236	"	"
	Total Acquired		8,342		
	Last Reported		41,950		
	Present Acreage		50,292		

Annett Addition

Arthur S. Annett of Jaffrey, N. H., and his cousin, Cecil B. Annett, Jr., of Moorestown, New Jersey, have given a valuable addition of 215 acres of forest land in Rindge to the reservation named in honor of the Annett family. This recent gift of promising young stands of timber is located across the road and west of the old CCC camp. The addition now brings the northern boundaries of the reservation close to Squantum village in Jaffrey and provides several access roads.

Bear Brook State Park

This area of 6,436 acres was accepted as a gift from the Federal Government by legislative act approved on March 3, 1943 which provided that the property shall be used exclusively for public park, recreational and conservation purposes. A large portion of the area is located to the east of the Bear Brook State Forest in Allenstown with additional acreage located in the towns of Deerfield, Hooksett and Candia. It is typical southern New Hampshire country covered with mixed hard and softwood forest. Within its boundaries are Bear Hill, an elevation of 800 feet, and four ponds—Bear Hill Pond, Spruce Pond, Beaver Pond and Catamount Pond—which total approximately 130 acres of water. Though the area included several farms a hundred years ago, they have been largely abandoned, and in 1935 only two families were living on the property. In May of that year the Federal Government applied to the State Land Use Board for permission to purchase up to 7,000 acres. Permission was granted after hearings were held in the towns where the purchases were to be located. Subsequently the purchases were made and a development plan carried out under the National Park Service with the aid of WPA and CCC to establish a recreation-demonstration area. When the state acquired the property by gift, the recreational developments included some 10 miles of improved gravel roads, nearly 20 miles of hiking trails, two sets of organized camps with buildings, water and sewerage systems, playfield, parking area, etc. The administration area included garages, tool shop, repair shop and supervisor's residence. In addition there was a day-use area with pond, beach, bathhouse, picnic areas, shelter, parking places, etc. Considerable work has been accomplished on the tract to improve the forest, which includes many acres of white and Norway pine planting. Insect control measures, fire hazard reduction, including a fire lookout tower on Bear Hill, forest weeding, cleanup and salvage of hurricane blowdown have been inaugurated. Included also in the transfer were many items of equipment to facilitate operations and maintenance work, such as a sawmill, a fire truck, fire tools, maintenance trucks, road grader, tractor and miscellaneous hand tools. This department has administered the area since June, 1943. Under "Recreation Administration" in this report are further details of its operation.

Belle Island

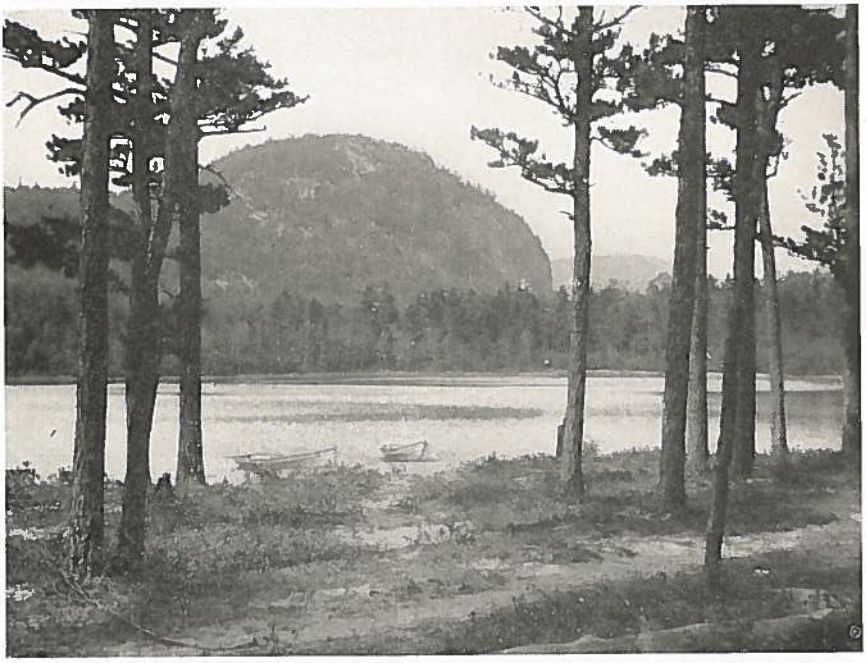
Col. Alcott F. Elwell of East Hebron and owner of the Mowglis Camp for boys deeded as a gift Belle Island, the smaller of two islands in Newfound Lake adjacent to Wellington State Beach. This island, located within the town of Bristol, has always been a favorite spot for camping, especially for the boys and girls from camps in the vicinity of the lake, and is under the supervision of the caretaker at Wellington Beach. He arranges a schedule to include all who desire to enjoy outdoor camping. No buildings are to be erected and the island is to be preserved in its natural state.

Cliff Island

Also in Bristol, Cliff Island, which is larger and adjacent to Belle Island in Newfound Lake, was conveyed by the Pasquaney Camp Association operating a boys' camp in the town of Bridgewater on the east side of the lake. These gifts place in public ownership these two islands which now become a valuable addition to Wellington State Beach. Cliff Island of six acres is covered with a heavy forest and includes a desirable camping place at the south end. The state is fortunate to have these islands conveyed at about the same time.

Echo Lake

Cathedral and White Horse Ledges on the west side of the valley from North Conway were given to the state in 1903 by local and summer residents interested in protecting the natural beauty of the vicinity and in saving the Ledges from being quarried by a granite company. Since that time adjacent forest tracts have been added with the ultimate purpose of including the Echo Lake property lying between the ledges and the west side highway. Echo Lake, bordered by a sandy beach and surrounded by tall white and Norway pines, is the only lake in that vicinity available for bathing. For many years the public has been attracted to this spot by the beauty of its setting. The owner had steadfastly refused to sell, but following his death in 1941, it was expected that the state would be able to acquire the property. It was found, however, that



Echo Lake and Cathedral Ledge, North Conway. (Photo by Slade).

commercial interests were seeking this property. Fortunately another party had secured an option on 87 acres of forest land surrounding the lake. After negotiations a price was finally agreed upon with the holder of the option, and the public was given the opportunity to contribute to a fund for the acquisition of this beautiful and useful site.

The Legislature of 1943, then in session, appropriated $5,500 as the state's share in the purchase and the North Conway Chamber of Commerce raised a similar amount. A deed to the state was signed May 26, 1943. Mr. Chris Allen of Manchester whole-heartedly cooperated in bringing this tract into public ownership, and grateful acknowledgment is made to the many hundreds of persons who contributed to save this scenic place from commercial exploitation.

Only minor changes have been made at Echo Lake since the property was acquired. The parking area was defined and marked, sanitation conditions were improved and picnic tables and baskets placed in the pine grove. A line of floats was anchored in the lake at the bathing beach to indicate the danger zone to bathers. One of the most important projects begun was the covering of exposed tree roots in the picnic grove. It is believed that this work can be completed during the coming season. A caretaker has been employed weekends during the season. No charges of any kind have been made.

Fox Forest Additions

Two separate forest tracts were added to the Fox Research Forest in Hillsboro during the fall of 1943. Mrs. Grace A. Horsfall of Lowell, Massachusetts sold 18 acres (7 acres known as the "Oak Lot" and 11 acres located at the corner of the Bog Road) for $150. These areas include excellent stands of young growth and bring the former boundaries to a main road.

The other tract of 32 acres also in Hillsboro was purchased from Walter E. Gay of the same town for $160. This is a back lot lying on the north mountain and contains excellent stands of young hardwoods and hemlock.

Humphrey's Ledge

The most northern ledge on the west side road from North Conway to Bartlett is called Humphrey's Ledge. On the east side of this is located a cave known as "Pitman's Arch". One trail from the main road leads to the cave and another to the top of Humphrey's Ledge in Bartlett. From the summit there are fine views to the east and south. Miss Marion P. Howard and Miss Gladys E. Stuart of North Conway deeded this area of 36 acres containing the ledge as a gift to the state in memory of Miss Howard's father and mother.

New Hampshire Forest Nursery Addition

A valuable tract of 272 acres of forest land was added to the State Forest Nursery in Boscawen by purchase for $3,000 from Benjamin

K. Ayers, Agent for the Ayers Estate. This tract is located north of the Merrimack County Farm and includes 60 acres of old pasture planted to pine by Mr. Ayers 30 years ago. About 80 acres more are stocked with an excellent quality of hardwoods 20 to 40 years old. Mr. Ayers, a former member of the Commission, has managed and improved the forest on these lands since the death of his father in 1918.

Wantastiquet Mountain

A high and rocky mountain located in Hinsdale and Chesterfield, rising abruptly from the Connecticut River opposite the City of Brattleboro, Vermont, is called Wantastiquet Mountain. For almost 90 years this vast mountain area was owned by the Vermont Asylum for the Insane, now known as the "Brattleboro Retreat", and yearly the tract supplied wood for use at this institution. Later most of the valuable timber was cut and then forest fires burned whatever forest cover remained. One of the largest forest fires burned over 2,000 acres in 1941, undoubtedly started by careless campers. When the Retreat offered to deed the entire ownership of 907 acres to the state, it was believed that more adequate supervision could be given if the land became state property. A nearby resident, who is a deputy fire warden, will patrol the reservation during dry periods in the spring. There are some very large white pines in scattered groves along the river banks and an attractive waterfall near the winding road under the cliffs.

Hatch Grove

Mr. Ernest H. Hatch of Medford, Massachusetts, willed to the state one acre of a point of land on the northern shores of Crystal Lake in the town of Eaton. The entire area is covered with large white pines, hemlocks and scattered hardwoods. This timbered plot is to be forever held as a public park to be known as the Eugene W. Hatch Reservation. The state received title by probate records dated March 23, 1944.

Honey Brook Addition

The town of Lempster deeded to the state as a gift 94 acres of forest land located on the Dartmouth College Highway adjoining the Marlow town line. This tract is one of many which the town has acquired because of defaulted taxes. It borders the Honey Brook State Forest on three sides and contains some excellent stands of young timber.

Shakers

The Canterbury Colony of Shakers was organized about the year 1790 when the Order began to acquire lands. For a century and a half these thrifty people have carried on farming, horticulture, lumbering, stock raising and other useful arts with great success. For the past few years the Colony has been declining to a point where only 25 sisters remain to carry on all the various duties. Their land holdings have diminished likewise and the hurricane of 1938 did vast damage to their woodland.

Mr. George Monell of Concord, N. H., the Shakers' fiscal agent, offered the state several lots as a gift. These lots total 236 acres in the town of Canterbury adjacent to the Concord-Laconia highway. Part of the old sugar orchard and the stone foundation of the sap house are located on one of these lots.

Leases and Special Use Permits

The Governor and Council have authorized the Commission by its agent, the State Forester, to issue leases and special use permits for concessions and privileges on certain state forests and reservations. Most of these permits are for one year with considerations of less than $100; a few are for more than one year but not more than five.

In 1942 Mr. Ernest E. Gile, the lessee of the Willey House Site in Crawford Notch, requested the abatement of his rentals for the duration of the war on account of lack of business. This request was granted by the Governor and Council subject to submitting a financial statement of his gross receipts at the end of each season. Tourist travel greatly improved in 1944 so that the seasonal rental amounted to $1,200. The total income from leases and permits was $2,859.29 in 1943 and $4,233.29 for the season of 1944.

INCOME FROM LEASES OF STATE LANDS — 1943 - 1944

Tract	*Lessee*	*Amount 1943*	*Amount 1944*
Annett	Cambridge Council, Boy Scouts	$ 10.00	$ 10.00
Bear Brook	Medford Council, Boy Scouts	666.00	
Bear Brook	N. H. Camps Association	666.00	800.00
Bear Brook	Medford Council, Girl Scouts		800.00
Bear Brook	Fred Zenovitch		5.00
Beech Hill 1926-1943	Public Service Company		126.00
Bellamy	Dover Athletic Association	202.39	159.39
Blair & Livermore Falls	Public Service Company	10.00	10.00
Boardman	Carroll Stoddard	50.00	50.00
Cardigan	Appalachian Mountain Club	10.00	10.00
Casalis	William Glazier	25.00	
Connecticut Lakes	Walter S. Aiken	10.00	10.00
Crawford Notch	Ernest E. Gile	150.00	1,200.00
Crawford Notch	Clifford E. McGlauflin	10.00	10.00
Crawford Notch	Charles E. Young	10.00	10.00
Franconia Notch	Appalachian Mountain Club	10.00	10.00
Franconia Notch	Univ. of N. H. Outing Club	10.00	10.00
Haven	Charles M. Mills	5.00	5.00
Hemenway	Boston Council, Boy Scouts	25.00	25.00
Hemenway	James K. Selden	526.40	526.40
Hemenway	Tamworth Outing Club	1.00	1.00
Islands in Conway Lake	Comstock Heirs	10.00	10.00
Ingalls Island	Ledger Christian	10.00	10.00
Ingalls Island	A. C. Leavitt	10.00	10.00
Kingston Lake	Arthur P. Tucker	10.00	10.00
Kingston Lake	Mildred Tucker	12.00	25.00
Mt. Prospect	A. G. & Fred Sherman	75.00	75.00
Pillsbury	Blanche Annan	25.00	25.00
Pillsbury	Leo Clark	25.00	25.00
Scribner-Fellows	Public Service Company	7.50	7.50
Sky Pond	N. H. Electric Cooperative	2.00	2.00
Stockdale	Kenneth P. Clark	240.00	60.00
Stockdale	Charles H. Nelson		160.00
Sugar Hill	Earl P. Freese	1.00	1.00
Taylor	Edward Offhaus	25.00	25.00
White Lake	Edwin C. Remick	10.00	10.00
		$2,859.29	$4,233.29

FOREST OPERATIONS

Connecticut Lakes Parkway

The Connecticut Lakes road was patrolled from the old CCC Camp to the Canadian border through the usual summer periods from May to November. The patrolman covered the road twice each day except for periods following wet weather, when the road was patrolled only once and the balance of the day was spent on planting, roadside cleanup and forest improvement work. This work accomplished a cleanup of one-fourth mile of roadside and shore at Third Lake and released 30 acres of small spruce and fir near Second Lake; also spot planting and filling in by the side of the highway where logging operations had eliminated young crop trees. Assistance was given in rebuilding and maintaining the Deer and Magalloway Mountain telephone lines.

Franconia Notch

All maintenance, roadside cleanup and patrol work was kept at a minimum throughout the Notch due to war conditions. The patrolman was transferred from the Ranger Cabin to Lafayette Lodge where he did double duty taking care of the camp ground as well as the roadside. Two additional men were employed part time on necessary maintenance of bridges, buildings, equipment and roads. Eighty-two cords of spruce pulp and thirty-five cords of wood were salvaged along the new highway at the north end of the Notch. The pulp and one-half the wood sold for $1,407.00 and there was $61.50 of miscellaneous income.

Belknap Mountain Road

The Belknap Mountain auto road was built ten years ago and is much used and appreciated by the public when it is open for travel. Construction was begun in 1934 with labor from Laconia, using state unemployment funds. The CCC side camp at Laconia continued the work until 1938 when the hurricane work required their services elsewhere. Special attention to culverts and widening of the road were given by the men from the Bear Brook CCC Camp in 1940. Since that time the state has spent several hundred dollars each year in strengthening bridges, filling in a serious washout that occurred in 1944, and general maintenance under the able supervision of the State Highway Agent, Roy Page, of Gilford. One mile has been oiled and is in excellent condition; the remaining half mile of dirt road will require widening, roadside clearing and reconstruction of one bridge. It is believed that at least $250 per year should be spent for the general upkeep in order to keep the road safe for tourist traffic.

White Birch Sales

The sale of all white birch stumpage on the Conway Common Lands and Hemenway Reservations was made as a contribution to critical war needs. The quality of the birch on both areas was good and the trees were generally ripe for cutting as shown by the slowing down of diameter growth. All trees under eight inches were reserved and no trees were cut within 100 feet of any road. Entrance roads were kept at a minimum in both width and number and no roadside yards were allowed to be cut in order not to destroy the natural appearance of the roadside. The stumpage price was $6.00 per cord for both areas and 490 cords were cut from the Hemenway Reservation during this period.

Timber Sales at Forest Nursery

Limited cutting operations of pine and hemlock were possible at the State Forest Nursery during the winters of both 1943 and 1944 by men ordinarily employed on nursery work. During the winter of 1943, 100,200 feet of logs were cut and yarded to rollways accessible to trucks. Trees were two and three log trees, widely scattered and about 10 percent hemlock and 90 percent pine. One-half were good quality and the bal-

ance coarse and rough. The net stumpage return was $4.50 per M. In the winter of 1944, 100,350 feet of pine and hemlock were cut from small groups of open pasture trees 25 years old in 1920 when the balance of the pasture area was planted to white and red pine. These rough one and two log trees, about 20 percent hemlock, netted $3.00 per M.

Fuelwood Cutting

Individuals have been allowed to cut fuelwood for their own use on state land as a contribution to wartime fuel needs. Each person was assigned a cutting area where he could cut and remove down and damaged trees and inferior species without charge. Instructions were given on the ground as to how the work was to be done and nearly all areas were handled in a satisfactory way. Returns indicated that 300 cords of wood were cut by 48 persons on 16 state forests.

FOREST IMPROVEMENT FUND—FISCAL OPERATIONS

July 1, 1942—June 30, 1944

Name of Reservation	*Income*	*Expenditures*	*Balance*
Annett State Forest	$ 100.00	$ 7.08	$ 92.92
Ayers State Forest		117.87	117.87*
Bear Brook State Forest Park		4,089.66	4,089.66*
Beech Hill State Forest	126.00		126.00
Black Mountain State Forest	505.00	69.57	435.43
Cardigan Mountain CCC Camp		109.37	109.37*
Cardigan State Reservation	488.62	1,771.49	1,282.87*
Casalis State Forest	40.00	581.32	541.32*
Connecticut Lakes State Park	20.00	1,768.61	1,748.61*
Crawford Notch State Reservation	366.29	3,861.80	3,495.51*
Fay State Forest	409.56	162.11	247.45
Fox Research Forest	923.25	485.01	438.24
Franconia Notch State Reservation	3,276.47	3,362.72	86.25*
Hampton State Beach		1,304.05	1,304.05*
Harriman-Chandler State Forest	1,784.91	120.40	1,664.51
Hemenway State Reservation	4,086.82	355.90	3,730.92
Honey Brook State Forest	75.00	295.30	220.30*
Monadnock State Reservation	4,113.33	3.72	4,109.61
Mount Prospect State Reservation	150.00	256.61	106.61*
Pillsbury State Reservation	823.55	192.46	631.09
Shadow Hill State Forest	1,261.75	296.78	964.97
State Forest Nursery	2,410.24	5,971.11	3,560.87*
Stockdale State Forest	425.00	115.76	309.24
Wellington State Beach	1,125.00	1.38	1,123.62
Other Reservations (45)	400.12	844.55	444.43*
Administration	5,989.00	2,143.50	3,845.50
Total	$28,899.91	$28,288.13	$611.78

* Overdraft.

TOWN FORESTS

VERY LITTLE information has become available concerning the minor activities of town forests during this biennium. Several towns have taken advantage of high stumpage prices and the great demand for lumber to sell some of their softwood timber. In 1944 the town of Warren realized $1,200 from one of the town tracts. The town of Milton sold $1,900 worth of pine and Dunbarton through its town forest committee expects to increase its fund through the sale of timber on the Stark forest. Other towns have undoubtedly done likewise.

The town of Lempster during the past few years has received several hundred acres of forest land by defaulted taxes. Although the location of the areas was known, the exact boundaries and the amount of standing growth were not available. The town was given assistance by agents of the department who were able to determine the boundaries and made a rough type map of several of the lots. The town was later able to sell one lot of forty acres for $750, and may make another sale.

The department regards this cooperation with the towns as highly important. A forester employed full time by the department for this particular service would be invaluable for the furtherance of greater local interest, better management and larger money returns to the towns.

THE WHITE MOUNTAIN NATIONAL FOREST

CLIFFORD L. GRAHAM, *Supervisor*

THE LAST two years have seen constant change and readjustment on the White Mountain National Forest. As the younger men left, one by one, to enter the armed services, many others accepted positions in wartime agencies. The slack on the Forest was taken up by old guards while at the same time new names appeared on personnel rosters. Many of the new employees served only briefly before they too went into the armed services.

The Forest swung into the tide of affairs and concentrated its efforts upon marketing timber and pulpwood for the war effort. Assistance was given to the private timberland operator and sawmill man in untangling wartime red tape. This service was furnished through a cooperative program known as the Timber Production War Project, financed by the War Production Board. Development of the many Forest resources, other than timber, necessarily remained on a maintenance level. Protection activities were reorganized currently to meet changing manpower requirements and sources. No serious fire losses were suffered.

RECREATION ADMINISTRATION

THE OPERATION and maintenance of state recreational areas under this department is reported herewith for the calendar years 1943 and 1944. Franconia Notch and Crawford Notch State Reservations are not included as they are covered elsewhere in the general report. The following list indicates the areas reported:

Bear Brook State Park, Allenstown
Bellamy State Park, *Dover*
Endicott Rock State Park, *Laconia*
Forest Lake State Park, *Dalton*
Hampton Beach State Reservation, *Hampton*
Kearsarge State Reservation, Winslow Site, *Wilmot*
Kingston Lake State Park, *Kingston*
Milan Hill State Park, *Milan*
Monadnock State Reservation, *Jaffrey*
Moose Brook State Park, *Gorham*
Peterborough State Pool, *Peterborough*
Wadleigh State Park, *Sutton*
Wellington State Reservation, *Bristol*
Wentworth State Park, *Wolfeboro*
White Lake State Park, *Tamworth*

Note: The area in italics was newly supervised in the past two years.

OPERATION AND USE OF RECREATION AREAS UNDER WARTIME CONDITIONS

Bear Brook State Park

The operation of a leased portion of this federal area was reported previously. In May, 1943, the whole area of nearly 7,000 acres was transferred to the state under authority of a legislative act. This gift was brought about by the National Park Service which had developed a variety of recreational facilities under the federal work program. Their plan of development was comprehensive and included a public day-use

area with bathhouse, bathing beach and picnic area; two organized camp developments each with some 25 buildings to accommodate approximately 96 campers and staff; twenty miles of foot trails and ten miles of roads. With the transfer of the area was included a considerable amount of equipment such as hand tools, trucks, tractor and building supplies to aid the state in its future operations and maintenance. Since, under wartime conditions, this material would have been difficult or impossible to obtain, it was gratefully received and immediately put to use.

We were faced at once with several unusual items of maintenance in connection with the organized camps. Pollution of an artesian well was discovered by the State Department of Health and their recommendations for chlorination were carried out. Since the federal work program closed down rapidly, such items as road grading, bridge repairs, repairs to water pumps and other mechanical equipment had not been carried on. It was necessary, therefore, during the two years covered by this report to attend to these and other matters as rapidly as possible, utilizing the supplies and equipment received with the area. The number of area personnel and the expenses of operation were necessarily increased for these two years due to maintenance work and the extension of services offered to the public.

The park is situated within twenty miles of large centers of population in the southern part of the state. Under wartime travel restrictions

Navy personnel enjoying Bear Brook Park.

many persons who could not reach more distant areas were able to get to Bear Brook State Park and increased the total patronage each year. In addition to civilians, large groups of military personnel came from Grenier Field, Manchester, under sponsorship of Army or Red Cross. Arrangements made for their benefit included special rates and schedules planned to avoid congestion when public use was high. These services seemed appreciated and there was particular satisfaction in providing outings for wounded men. Additional military use took place at the old CCC camp which was operated by the Navy as a recreation camp for naval personnel on leave from the Boston area. Groups up to 100 or more came for weekend or longer stays for rest and recreation on the area. Arrangements were made for their use of the area without charges and a wide variety of recreation was enjoyed, including fishing, hiking, boating, bathing, picnicking, skiing and skating. At the camp, social recreation, movies and games were available. Regular Army units held maneuvers and bivouacs there during 1943. In addition to this military use, civilian patronage increased rapidly and in 1944 income from service charges was double that of 1943.

Recreation at Other State Parks

Plans for the operation of other areas would normally have been made in the spring of 1943. It was not possible to do this because of the unknown conditions of travel under wartime restrictions. Plans were delayed as long as possible pending announcement of policy by the federal agencies. It was necessary to obtain seasonal personnel without regard to these conditions for the manpower shortage was becoming acute. Nearly half the personnel for the 1943 season were new persons replacing former employees who had left for the armed services or wartime employment. The total number of personnel was not as large as in 1942, as it appeared unnecessary to open five small isolated areas and it was not possible to get a full complement for some of the larger areas. Wages paid in wartime employment made it necessary to pay higher wages to summertime park employees. A shortage of manpower brought about the employment of several women as lifeguards or supervisors. It is a compliment to all concerned that regular services and standards of safety were maintained; that there were no drownings or serious accidents or forest fires during this period.

Under the automobile pleasure travel ban, the season's patronage decreased in 1943 to about one-half that of the 1942 season and about one-quarter of the high peak of 1941. However, there was enough use of those areas which were open to justify operations. Some areas were near regular bus lines and patrons walked one to three miles from the bus stop to use the areas. Picnic fires became less frequent as food rationing took effect. There were fewer campers, since most campers in the past were from outside the state. Some came by train and bus, however, to stay for longer periods than previously.

Camping Statistics for All Areas

	1943	1944
Number of Parties	188	356
Number of Persons	800	1,601
Average Stay in Days	4	6
Number of States Represented	7	8
*Camper-Days	3,013	7,124

* One person camping for one night is a camper-day.
Example: 4 persons camping 4 nights equals 16 camper-days.

Hotels were not able to provide automobile or bus transportation to guests for their park visits. Some horse-drawn vehicles were used, however, and proved popular. All seemed to accept the limited services of the areas cheerfully and many expressed their appreciation for the recreational opportunities that were available.

Included in the operation expenses were the added costs of Bear Brook State Park with its increased maintenance work and larger number of personnel; also a temporary new toilet building at Kingston Lake State Park where recommendations of the State Department of Health were carried out. Aside from these absolute essentials, many items of routine work were not accomplished because of lack of funds and personnel.

In the late spring of 1944, indications were that the automobile travel ban would be lifted and that patronage at the recreational areas would probably increase. Instead of increasing the number of regular area personnel greatly, more general use was made of women and young people in part time work.

Personnel Chart

	1943		1944	
	Number Employed	*Average Monthly Wage*	*Number Employed*	*Average Monthly Wage*
Area Supervisors	11	$119	12	$137
Maintenance Assistants	7	94	7	111
Life Guards	5	90	4	99
Collectors	4	82	4	93
Bathhouse Attendants	8	63	10	95
Totals and Average Monthly Wages	35	$93	37	$113

By the beginning of the season a state employees' classification system had been established and wage scales set up for such positions as park supervisors, bathhouse attendants, life guards, collectors, and maintenance assistants. In nearly all instances the wage range (based on duties and responsibilities involved in these positions) was higher than had previously been paid and brought about the increase in the total amount paid for wages. Interesting results were observed of the greater interest assumed by these seasonal employees, who willingly responded when called upon to extend their services with the rise in the number of park visitors. This contrast may be seen by comparing in the tables the increase of both visitors and personnel employed in 1944

with the corresponding figures for the 1943 season. Again it is possible to report that during this season no serious accidents or forest fires occurred.

Visitors came to the areas in larger numbers on weekends and there were many more persons in each automobile than heretofore. Public interest in outdoor recreation was reflected by the large number of bicycles used to get to the parks and the fact that a considerable number came by foot, walking from one to four miles. Visitors stayed longer during the day and made a wider use of all the facilities, though picnicking was not greatly increased because of food rationing. Larger numbers of men and women in the military services used several of the areas. At Bear Brook State Park military group picnics up to 500 persons were organized. At this area there was also an increase in the number of social and industrial group picnics. Special provisions were made for them at a group picnic area where up to 600 were accommodated at one time. The popularity of these outings is indicated by one group which, lacking automobile transportation, chartered a train made up of coal cars with temporary seats. These people enjoyed a full day of recreation at Bear Brook State Park.

Total expenses for the 1944 season were only slightly greater than in 1943 but income increased nearly three times. Only two areas showed a decrease in income compared to 1943 while all other areas showed an increase of from 100 to 600 per cent. During the summer period, services to patrons took most of the time of the seasonal employees and since funds were limited, it was necessary to close down operations as rapidly as possible in the fall. For the third year many items of maintenance work were neglected because funds and manpower were lacking.

These two years of wartime operations were characterized by shortages of funds, manpower and patronage. They demanded a doubling-up in duties and responsibilities for all employees and called for ingenuity in the performance of their work. However, the effort which numbers of people made to reach and use these areas for rest and relaxation was a reward for our efforts and a justification for the expenditure of funds by directly contributing to public health and morale under wartime conditions.

OPERATING EXPENSES OF STATE RECREATION AREAS FOR THE PERIOD JANUARY 1 - DECEMBER 31, 1943, INC.

Area	*No. of Personnel*	*Av. Monthly Wage*	*Total Wages*	*Other Expenses*	*Total Maintenance Cost*	*Total Income*	*Net Cost*	*Estimated Attendance*	*Net Cost per Visitor*
Bear Brook State Park	7	$94.00	$4,464.69	$2,959.21	$7,423.90	$2,052.42	$5,371.48	21,270	$.252
Bellamy State Park	5	87.00	1,144.62	358.21	1,502.83	235.06	1,267.77	30,000	.042
Endicott Rock Park	3	100.00	796.17	220.48	1,016.65	573.61	443.04	4,663	.095
Forest Lake Park			99.30	18.31	117.61		117.61	800	.148
Hampton Beach	4	107.00	802.84	1,394.89	2,197.73	547.90	1,649.83	10,186	.161
Winslow Site	1	95.00	335.67	220.95	556.62	113.98	442.64	1,428	.399
Kingston Lake	4	85.00	1,315.45	352.82	1,668.27	150.86	1,517.41	3,300	.466
Milan Hill				22.60	22.60		22.60		
Monadnock Reservation	1	110.00	1,017.16	120.74	1,137.90	118.98	1,018.92	2,549	.399
Moose Brook Park	3	50.00	641.97	269.35	911.32	227.23	684.09	2,208	.309
Peterborough Pool	3	113.00	909.06	438.84	1,347.90	181.90	1,166.00	4,272	.272
Wadleigh State Park			113.00	19.35	132.35		132.35	500	.264
Wellington Reservation	2	85.00	754.83	152.41	907.24	264.64	642.60	3,121	.205
Wentworth State Park	1	75.00	421.20	100.39	521.59	58.56	463.03	882	.524
White Lake State Park	1	110.00	519.05	219.14	738.19	284.01	454.18	2,500	.181
15 Area Totals	35	93.00	$13,335.01	$6,867.69	$20,202.70	$4,809.15	$15,393.55	87,679	.175

ADMINISTRATIVE AND OVERHEAD EXPENSES

Office	2	4,247.91	625.17	4,883.08
Maintenance Department		168.91	14.48	183.39
Supply Depot		626.39	1,337.35	1,963.74
Special Maintenance Work				3,070.70
Total	2	5,053.21	1,977.00	10,100.91

Total Expenses for 1943 ..... $30,303.61

OPERATING EXPENSES OF STATE RECREATION AREAS FOR THE PERIOD JANUARY 1 - DECEMBER 31, 1944, INC.

Area	No. of Personnel	Av. Monthly Wage	Total Wages	Other Expenses	Total Maintenance Cost	Total Income	Net Cost	Estimated Attendance	Net Cost per Visitor
Bear Brook State Park	6	$118.00	$5,563.46	$1,659.35	$7,222.81	$4,115.50	$3,107.31	34,076	$.091
Bellamy State Park	5	104.00	1,452.49	132.81	1,585.30	177.54	1,407.76	30,000	.046
Endicott Rock Park	2	105.00	663.56	143.44	807.00	1,305.30	498.30	11,157	.044
Forest Lake Park	1	127.50	295.75	19.12	314.87	185.68	129.19	1,321	.097
Hampton Beach	7	106.00	2,451.87	1,134.07	3,585.94	3,523.76	62.18	24,047	.002
Winslow Site	1	127.50	599.30	71.77	671.07	285.81	385.26	2,569	.150
Kingston Lake	3	112.00	1,700.65	332.52	2,033.17	1,146.00	887.17	11,264	.078
Milan Hill				10.67	10.67		10.67		
Monadnock Reservation	1	127.50	1,077.63	128.99	1,206.62	325.88	880.74	3,085	.285
Moose Brook Park	3	104.00	983.75	289.99	1,273.74	634.02	639.72	5,215	.122
Peterborough Pool	3	133.00	1,301.48	142.89	1,444.37	173.25	1,271.12	9,675	.131
Wadleigh State Park			117.25	81.80	199.05		199.05	800	.248
Wellington Reservation	2	139.00	934.18	188.74	1,122.92	988.57	134.35	9,154	.014
Wentworth State Park	1	92.50	390.80	143.98	534.78	284.05	250.73	2,360	.106
White Lake State Park	2	101.00	675.35	329.11	1,004.46	719.09	285.37	6,781	.042
15 Area Totals	37	$113.00	$18,207.52	$4,809.25	$23,016.77	$13,864.45	$9,152.32	151,504	.060

ADMINISTRATIVE AND OVERHEAD EXPENSES

Office	2	5,045.41	645.54	5,690.95
Maintenance Department	1	21.50	12.90	34.40
Supply Depot		1.63	215.74	217.37
Special Maintenance				1,438.09
Special Equipment				591.67
Total	3	$5,068.54	$874.18	$7,972.48

Total Expenses for 1944 ..... $30,989.25

FOREST FIRE CONTROL

THE RECORD of forest fire control during this wartime biennium is one of shortages—men, materials, time; of increased duties—more protection against greater actual and potential dangers; of cooperation between many agencies—all interested in safeguarding critically important woodland resources and in preventing possible disasters. This is a report, therefore, of efforts in which the regular town organizations and our department received and gave assistance to the end that the common objectives might best be achieved. Grateful acknowledgment is here made of the splendid work performed by handicapped organizations in the towns; of the cooperation received from the U. S. Forest Service through its Regional Office and the White Mountain National Forest; of the assistance given by the New Hampshire State Federation of Forest Fire Warden Associations and its constituent county and regional groups. To these and to numerous other public and private agencies, our thanks are given.

Review of Conditions

The 1943 fire season was generally very favorable and the number of fires, area burned and damage were correspondingly low. The small total of 307 fires—lowest since 1929—as against the ten-year average of 502, was due in part to the favorable weather and also to the additional preventive efforts made because of the wartime emergency. The summer and fall of 1942 were generally hot and dry in the southeast part of the state only and most of the fires occurred there. In the spring of 1943, the snow went off early in March in the same region, with many grass and brush fires occurring in open areas among the snow patches. The dry weather continued through April, some grass fires burning buildings and stacked lumber, thus accounting for the high damage figures reported for Rockingham County.

The costs of suppression per fire were less than usual amounts with the exception of a few fires in Coos County which were in inaccessible areas and burned deeply, resulting in high labor costs before complete control could be effected.

The dry period starting the last of June, 1943, did not end until July 21 and fires occurred generally throughout the state in mid-July. Because of the extreme drought the fires burned deeply into the duff and old stumps; water was scarce and control costly. The lack of local manpower necessitated the calling of crews from surrounding towns in a number of cases. The fall weather was dry with little snow cover until January in the southern part of the state and fires occurred up to that time.

The snow went off late in the spring of 1944. Fires in late March occurred in the southeast, however, and many grass fires as well as some woods fires occurred in April. May was below average in rainfall with a mean relative humidity of 38% and the bad fire days of May 17 to 21

ended with a low of 14%. This was accompanied by a brisk westerly wind and fires spread rapidly. Sizable fires occurred in Epsom, Hillsboro, Sanbornton, Hudson and Jaffrey during this period.

A large number of fires of suspected incendiary origin centering in the town of Hudson was kept from growing larger when the suspect was apprehended in the vicinity of fires in Nashua and Merrimack.

Smokers and brush burners accounted for 56% of all fires during the biennium, while railroads caused 13% of the number which burned 30% of the total area. Included in these were bad fires in Swanzey, Keene, Marlboro and Epsom.

Forest fire trailer constructed by Proctor Academy boys May 1945 carries tools and equipment for 70 men.

The manpower situation became acute when most of the young men were called up for military service and many of the others left town to work in war plants. Many wardens used trained crews of boys 14 years and older, and efficient work resulted under supervision suited to these circumstances. These boys and men who are exempted from military service requirements are being trained and enrolled in the Forest Fire Fighters Service under the emergency wartime training program, high and preparatory schools participating throughout the state.

The following tables give the usual records of monthly fire occurrence; the 35-year record of fires, area burned, damage and averages; fire rec-

ord by county; 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)

Fiscal Year Ending June 30, 1943		*Fiscal Year* Ending June 30, 1944	
July, 1942	12	July, 1943	59
August, 1942	23	August, 1943	4
September, 1942	30	September, 1943	23
October, 1942	13	October, 1943	24
November, 1942	6	November, 1943	6
December, 1942	3	December, 1943	11
January, 1943	0	January, 1944	2
February, 1943	0	February, 1944	0
March, 1943	34	March, 1944	9
April, 1943	137	April, 1944	161
May, 1943	30	May, 1944	141
June, 1943	19	June, 1944	56
Totals	307	Totals	496

Forest Fire Record for Thirty-Five Years

(Exclusive of Railroad Fires)

Year	*No. Fires*	*Area Burned Acres*	*Average Area Burned Per Fire Acres*	*Damage*	*Average Damage Per Fire*
1910	272	9,038	33.2	$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
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	
1943	307	1,235	4.0	$23.972.00	$78.08
1944	496	3,422	6.9	$26,213.00	$52.85
35 years	14,095	284,129		$2,048,580.00	

Summary of Averages

Average	*33 Years*	*1943*	*1944*	*35 Years*
No. Fires Per Year	403	307	496	403
Area Per Year (acres)	8,469	1,235	3,422	8,118
Damage Per Year	$60,557.42	$23,972.00	$26,213.00	$58,530.86
Area Per Fire (acres)	21.0	4.	6.9	20.2
Damage Per Fire	$150.35	$78.08	$52.85	$145.34

FIRE RECORD FOR FISCAL YEARS 1943 and 1944

(Exclusive of Railroad Fires)

County	Year	Number of Fires	Total Acres Burned	Average Area Per Fire Acres	Total Damage	Average Damage Per Fire	Total Cost of Fighting	Average Cost Fighting Per Fire
Belknap	1943	17	35	2.1	$ 715.00	$ 42.06	$ 372.63	$ 21.92
	1944	27	203	7.5	3,722.00	13.79	1,202.89	44.55
Carroll	1943	24	192	8.0	2,600.00	108.33	906.06	37.75
	1944	25	35	1.4	61.00	2.44	847.11	33.88
Cheshire	1943	33	58	1.8	26.00	.79	381.13	11.55
	1944	53	482	9.1	2,060.00	38.87	3,120.50	58.88
Coos	1943	18	43	2.4	993.00	55.17	2,626.50	145.92
	1944	23	29	1.1	254.00	11.04	566.30	24.62
Grafton	1943	19	70	3.7	37.00	1.95	346.85	18.26
	1944	25	268	10.7	4,998.00	199.92	699.79	27.99
Hillsborough	1943	78	193	2.5	410.00	5.26	1,060.99	13.60
	1944	144	1,343	9.3	6,797.00	47.20	7,553.80	52.46
Merrimack	1943	35	339	9.7	1,036.00	29.60	770.72	22.02
	1944	57	370	6.5	958.00	16.81	1,954.94	34.30
Rockingham	1943	69	244	3.5	17,899.00	259.41	1,050.29	15.22
	1944	106	413	3.9	6,045.00	57.03	3,604.00	34.00
Strafford	1943	7	25	3.6	171.00	24.43	108.70	15.53
	1944	19	203	10.7	1,053.00	55.42	874.10	46.01
Sullivan	1943	7	36	5.1	85.00	12.14	66.75	9.54
	1944	17	76	4.5	265.00	15.59	436.49	25.68
State Totals	1943	307	1,235	4.0	$23,972.00	$78.08	$7,690.62	$25.05
	1944	496	3,422	6.9	26,213.00	52.85	20,859.92	42.06

Railroad Fire Record for Fiscal Years 1943 and 1944

Year	No. of Fires	Total Area Burned Acres	Average Area Per Fire Acres	Total Damage	Average Damage Per Fire
1943	52	206	4.0	$1,840.00	$35.38
1944	64	1,786	27.9	$9,991.00	$156.11

Total Number of Forest Fires, Area and Damage by Causes For Fiscal Years 1943 and 1944

Causes	Percent Total Number of Fires	Percent Total Area Burned	Percent Total Damage
Railroads	12.7	30.	19.1
Smokers	32.3	20.9	36.
Burning Brush	23.6	14.9	25.3
Miscellaneous	13.5	16.4	7.
Lumbering	2.9	6.5	5.
Incendiary	6.6	4.1	.8
Lightning	3.9	1.7	1.
Camp Fires	1.6	3.7	4.7
Unknown	2.9	1.8	1.1
Total	100.0	100.0	100.0

Combined Forest Fire Record For Fiscal Years 1943 and 1944 All Agencies Reporting

Year	Town	Railroad	White Mountain National Forest	Total
	Number of Fires			
1943	307	52	4	363
1944	496	64	2	562
Total	803	116	6	925
	Area Burned (acres)			
1943	1,235	206	.02	1,441.02
1944	3,422	1,786	.27	5,208.27
Total	4,657	1,992	.29	6,649.29
	Damage			
1943	$23,972.00	$ 1,840.00	0.00	$25,812.00
1944	$26,213.00	$ 9,991.00	0.00	$36,204.00
Total	$50,185.00	$11,831.00	0.00	$62,016.00

Wartime Emergency Fire Control Projects

To intensify and augment forest fire prevention and suppression measures in certain critical areas of the state, New Hampshire received an allotment of Federal funds in 1942 appropriated as the Sixth Supplemental National Defense Act. These critical area projects, so-called, were of military or industrial importance and included transportation,

communication, power, water and mining centers, or commercial forest areas which, because of their location, might be destroyed or functionally disrupted by forest, brush and grass fires.

In October, 1942, five critical areas of about 20 towns each were delineated and project directors were appointed to assist in carrying out the work program. Their duties have been to assist in organizing and training additional manpower; to inspect sawmills operating in or near woodland as well as related fire hazards and risks incident to logging operations; to investigate cases of unauthorized or injudicious brush and rubbish burning and to assist in actual fire suppression. The manpower has been organized into units of the Forest Fire Fighters Service and includes more than 1,500 individuals in more than 100 communities. This has involved cooperation with the New Hampshire State Council of Defense as well as with the U. S. Office of Civilian Defense. In the towns, fire problems peculiar to the locality have been studied and the efforts of the wardens and district chiefs have thus been supplemented in coping with them. A light truck equipped with fire tools was assigned to each project director. The critical areas, their project directors and the forest area of each unit are as follows:

Name of Area	*Project Director*	*Total Forest Area*
Coos-Androscoggin	Emmett R. Buckley	342,000 acres
Coos-Connecticut	Harold B. Chase	340,000 acres
Grafton-Sullivan	James Q. Ricard	445,000 acres
Coastal	Robert W. Smith	193,000 acres
Grenier Field Army Air Base	Richard B. Diehl	233,000 acres
Total Area Under Special Protection		1,553,000 acres

During the winter months, training sessions for wardens and deputies were held by the district chiefs and project directors, and motion pictures showing forest fire suppression methods were scheduled at many indoor sessions. Radio broadcasts were twice made over facilities of four New Hampshire radio stations as special efforts to prevent fire occurrence. During each of the fire seasons, the project directors were active with the district chiefs in assisting the wardens on the fire line. In addition to these details, the following is a brief summary of special activities carried out in each area:

Coos-Androscoggin Project—Emmett R. Buckley

In this area, as well as in the Coos-Connecticut unit next to be mentioned, the pulp and paper industry has its most important installations and our largest pulpwood cutting operations are carried out. Under the impulse of war demands for these critically needed materials, great cutting jobs are in progress and the resulting increase in fire danger calls for counter-measures which these project programs are calculated to provide.

Coos-Connecticut Project—Harold B. Chase

The problem here resembles the situation in the Coos-Androscoggin area and similar action is being taken. In both areas, a substantial proportion of the fire fighting help must come from logging crews and fire control planning under such circumstances has called for special forms of organization and training.

Grafton-Sullivan Project—James Q. Ricard

In this comparatively large but sparsely populated area, the principal objective is the control of fires which might well become of disastrous proportions because of the large wooded areas involved and the relatively low density of population in the region. Important pulpwood, lumber and mining operations are special risks calling for counter-action.

Coastal Project—Robert W. Smith

This project was started December 1, 1942 and terminated June 30, 1944. Within its boundaries, the Portsmouth Navy Yard and several army installations are located, but the principal problem was the danger of fires which might silhouette shipping, and smoke which might hamper coastal patrols.

Grenier Field Army Air Base—Richard B. Diehl

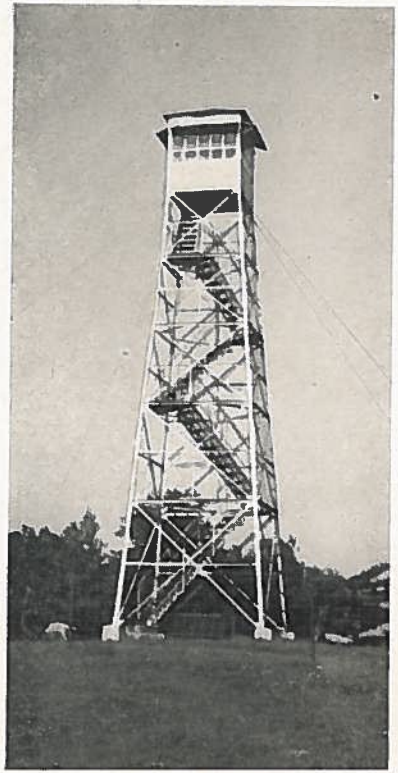
This project was the first to be established, starting in October, 1942. Serious problems were presented by numerous fires resulting from bombing practice at the bombing range in the towns of New Boston, Mont Vernon and Amherst. Although special Army crews were stationed on the area, fires repeatedly escaped from control and the help of town crews was required. Plans for controlling these fires and special agreements were made by Army, state and town authorities concerned. Special federal funds were made available for the construction of a fire line fifty feet wide along the boundaries of the range. It is understood that practice bombing will be continued during the spring of 1945.

Civilian Defense

In order to be prepared for problems which might arise from enemy action such as sabotage and air raids, elaborate plans have been made in collaboration with the U. S. Forest Service, the First Service Command of the U. S. Army, the State Council of Defense, the U. S. Office of Civilian Defense and the New Hampshire State Guard. Several maneuvers have been held.

The lookout stations have also been pressed into use as observatories of the U. S. Army Air Raid Warning Service. Three of these stations in areas less well provided with volunteer posts than elsewhere in New Hampshire have been manned at government expense on a 24-hour year-round basis.

At Warner Hill lookout station, the U. S. Army has obtained the use of a part of the facilities there for special purposes which cannot now



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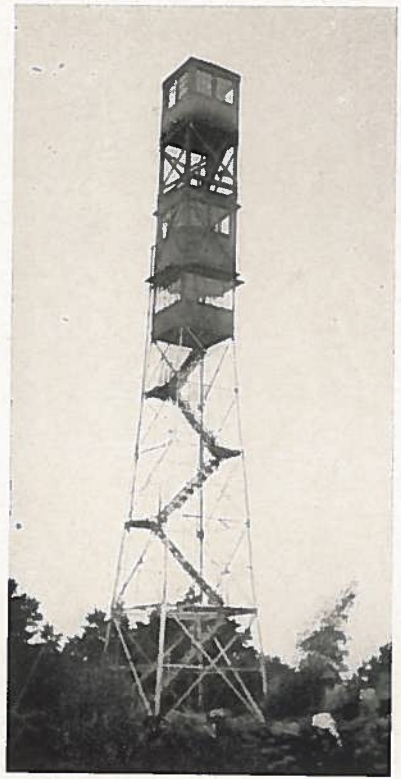


1943

1945

War-time alterations to Warner Hill lookout tower.

be disclosed. This use, however, does not interfere with the operation of the station for fire detection purposes.

Wartime Forest Fire Prevention

This nationwide program was started in 1942 and has been carried out each year since. Public relations specialists of national reputation have given their services to federal and state forest agencies, and many thousands of posters and other forms of publicity materials, as well as radio broadcasts and motion pictures, have been produced and distributed through the program.

Forest Fire Tools to Towns

In spite of wartime shortages, against which the department had been able to make some provisions, the supply of tools available to towns was adequate to fill all orders and some 4,900 items were distributed, including more than 900 backpack water pumps, 1,000 digging tools and 425 cutting tools. Good supplies are in stock to meet further demands.

Radio Communication

The development of this forest fire communication facility naturally has been retarded by the war demands upon industry for equipment. Started during the latest previous biennium, when several communities and our department initially acquired equipment, modest but steady progress has been made and interest in the matter is high.

We are indebted to the Superintendent of the New Hampshire State Police and to Lt. Basil F. Cutting of his staff for guidance in the establishment of this project which promises to be of ever-increasing importance in adequate fire control planning.

Lookout Stations

No significant changes or additions have been made in the installations and equipment of this service and all primary stations have been operated to the fullest possible degree. In a number of instances, however, vacancies in the personnel necessitated the closing of stations for periods ranging from as little as a week up to the whole season.

The following table giving the record of smokes discovered, fires reported and visitors registered quite accurately reflects the moderate degree of fire danger experienced during the biennium as a whole, and the wartime travel restrictions which reduced the number of visitors below normal:

Fire Lookout Station Statistics

Name of Station	*Number of Smokes Discovered*		*Number of Fires Reported*		*Number of Visitors Registered*	
	1943	1944	1943	1944	1943	1944
Bear Hill***	44		21		137	165*
Belknap	107	94	25	9	958	961
Blue Job	54	41	27	33	378	472
Cardigan	53	45	40	43	625	1072
Craney Hill	46	113	6	22	151	242
Crotched**						
Croydon	32	31	27	23	73	69
Deer	1	0	1	0	24	55
Federal Hill	42	83	41	78	506	603
Great Hill	33	29	7	11	77	189
Green	71	21	15	7	461	747
Hyland Hill	49	19	29	17	123	20
Jeremy Hill	154	144	54	78	329	374
Kearsarge	69	122	48	84	1351	2310
Magalloway	4	5		0	1	0
Milan Hill	7	7	3	2	1000	1200*
Miller Park	158	91	21	11	1266	2249
Monadnock***	71		71		3526	4231*
Oak Hill	228	100	57	69	302	458
Pawtuckaway	123	126	43	38	780	1039
Pitcher	11	11	10	6	321	336
Prospect	42	20	3	6	1531	2075
Red Hill	142	103	30	58	689	953
Rock Rimmon	395	373	65	53	489	776
Sam's Hill**						
Signal	7	3	6	3	10	4
Smarts Mt.**						
Stratham Hill	133	163	59	51	598	945
Sugar Loaf	0	0	0	0	0	0
Uncanoonuc	181	219	95	79	825	573
Warner Hill	137	158	72	68	177	35
	2,394	2,121	876	849	16,708	22,153

* Estimated
** Not operated in 1943 and 1944
*** Not operated in 1944

Sawmill Operations

The completion of the sawing of logs salvaged after the hurricane brought about a considerable reduction in the number of sawmill registrations but the wartime demand for lumber kept the total well above average. A total of 263 mills occupied 1,051 sites during the biennium.

The great majority of millmen cooperated with the department in meeting the mill-site clean-up requirements of the 1941 law. The restrictions on the sale of building materials and the great demand for box lumber resulted in the sawing of this type lumber at most mills. As a result, fewer incinerators were operated to burn edgings, and slabs became salable as other fuels became scarce. While few fires occurred about the mills, possibly because of the required precautions, some bad fires occurred in slash areas where men were working. The more frequent inspections of mills made possible by the availability of the Critical Area project directors was a factor of importance in preventing fires.

The following table shows the mills registered and permits issued each year from 1925 to 1944:

Tabulation Showing Registration of Sawmills

Year	Total No. Mills Registered	Steam	Gas & Others	Number of Permits Total Number of Permits	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
1943	260	56	204	516	44	472
1944	263	44	219	535	26	509
20-year average	213	91	126	407	117	290

* Law in effect from July 1, 1925.

STATE FOREST NURSERY

THE FOREST Nursery has continued to produce trees and render the same services as in previous biennial periods. Tree growing and all service activities have been on a reduced scale due to the scarcity of labor and concentration of manpower on emergency war work. Landowners have expressed interest in planting but were unable to hire help or give time to the work.

On state lands 4,400 red pine were planted on the nursery forests and 2,000 white spruce and 1500 balsam fir along the roadsides at the Connecticut Lakes.

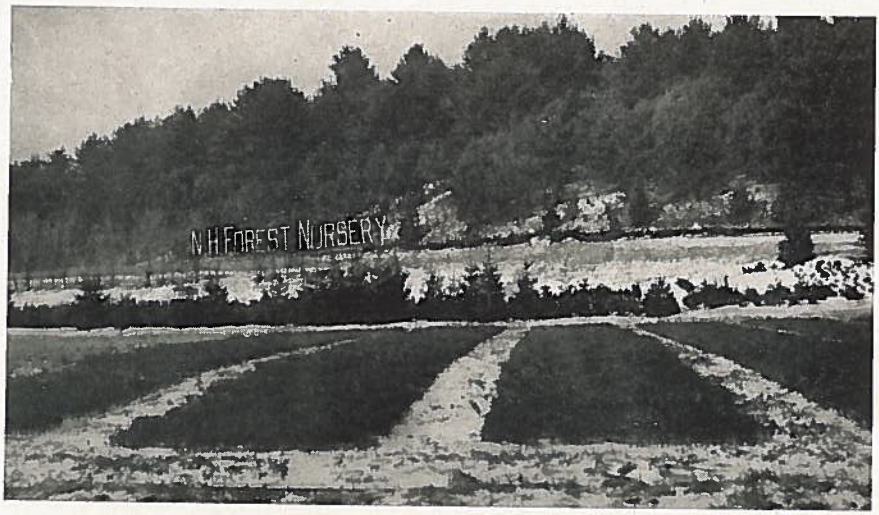
Four cities and towns received 29,500 free trees as follows: Keene, 13,000; Hanover, 12,000; Walpole, 3,000 and Goffstown, 1500.

Boys and girls educational groups between the ages of nine and twenty-one were given 109,922 trees. The 4-H Club members planted 89,772 trees in eight counties as follows: Hillsborough, 30,277; Rockingham, 23,750; Merrimack, 11,385; Cheshire, 6,750; Strafford, 6,150; Coos, 5,510; Belknap, 5,450 and Grafton, 500. Eight Smith-Hughes or Agricultural High Schools planted 20,150 trees as follows: Hopkinton High, 6,500; Vilas High, Alstead, 5,000; Tilton-Northfield High, Tilton, 3,250; Colebrook Academy, 1,900; Raymond High, 1,500; Simonds Free High, Warner, 1,000; Alton High, 500 and Quimby School, Sandwich, 500.

The State Highway Department has been given the usual assistance and use of two acres of the nursery area for the development of roadside trees and shrubs.

The buildings were painted and the roof of the house and walls of the ell were insulated with rock wool.

Storage, marking and reshipment of forest fire fighting tools to towns from the nursery store-house has continued in the usual volume.



Trees raised in this nursery have planted over 33,000 acres.

Two acres of the nursery area were planted to potatoes in the summer of 1943, as a contribution to the wartime food production program, and 380 bushels were produced with a net return of $50.00 over all costs.

VALUE OF NURSERY STOCK PRODUCED

Years Ending June 30, 1943 and June 30, 1944

	1943	1944
Trees sold to private planters	$748.23	$476.08
Trees given to 4-H and other juvenile clubs	278.70	305.32
Trees given to towns	97.50	71.25
Trees used on state lands	26.30	32.40
	$1,150.73	$885.05

NURSERY OUTPUT: Fall, 1942 — Spring, 1943

Age of Stock	*White Pine*	*Red Pine*	*Scotch Fine*	*White Spruce*	*Balsam Fir*	*White Ash*	*Total*
5-year transplants				10			10
4-year transplants	29,700	32,500	400	8,500	19,650		90,750
3-year root pruned seedlings	32,915	30,120		23,885	1,100	400	88,420
	62,615	62,620	400	32,395	20,750	400	179,180

NURSERY OUTPUT: Fall, 1943 — Spring, 1944

Age of Stock	*White Pine*	*Red Pine*		*White Spruce*	*Balsam Fir*	*White Ash*	*Total*
6-year transplants		100					100
4-year transplants	14,575	9,050		14,450	11,475		49,550
3-year root pruned seedlings	22,953	22,458		32,699	9,101	5,716	92,927
	37,528	31,608		47,149	20,576	5,716	142,577

FOREST PLANTING

THE DRAIN on New Hampshire forest areas has been so great in recent years, due to the hurricane and emergency wartime cutting, that much of the backlog of our timber supply has disappeared. This includes young growth as well as commercial timber and the effect will be prolonged over a longer period than the loss in volume of timber may indicate.

New Hampshire's forest lands are her greatest natural resource and they are obviously a very important element in our industrial and agricultural income. Failure to utilize this resource to its best advantage has resulted in thousands of acres of waste land on our farms, and of non-producing brush land throughout the state. These lands not only fail to contribute their share of raw material for industry and revenue, but are a tax burden on other lands and income. They are a liability to the owner and to the state.

Forest growth, like all living things, is susceptible to renewal and management, and with all grades of stumpage commanding high prices, owners can well afford to undertake recognized practices that will eventually increase their forest income. Forest renewal is a determining factor in the economic well-being of all and deserves the support of every progressive minded citizen. Planting vacant spots and filling in among naturally seeded trees already on the land will prove a good investment, as it will enhance the quality of the next crop of timber.

The landowner who is interested in continuing a forest crop on his lands and who is in a position to plant the trees himself, or at moderate labor cost, will realize increased value on his property without a too heavy continued investment. If he can carry on needed cultural work in succeeding years, the value of the planting will increase in proportion. The prospective planter should make a careful analysis of his area and see that the foundation is laid for the best crop and largest possible income the soil is capable of producing. Experienced foresters are available to consult with him on the ground in making this analysis. This service is free of charge and application should be made to the State Forester at Concord or to the County Foresters at the Farm Bureau Offices.

Source of Trees

The New Hampshire Forestry and Recreation Commission maintains the State Forest Nursery at Gerrish, N. H., where it grows and distributes stock, without charge, for planting state and town forest lands, and to boys' and girls' clubs for educational purposes. Stock is for sale to private parties, at cost, for planting within the state. The private planter agrees to furnish a brief report, as requested, concerning the plantation; not to use the trees for ornamental purposes, or to resell them with their roots attached.

The long period required to produce trees of size for planting is a serious difficulty in planning output for several years ahead. Of the total orders received, white and red pine and white spruce make up 90 per

cent. Therefore the nursery has devoted itself to the production of these important coniferous species. Handling only a few species makes it possible to keep the costs low. There is an increasing demand for balsam fir because of the interest in Christmas tree plantations, while Scotch pine and white ash are grown in small quantities for special uses.

Kinds of Trees

White Pine has always been popular for planting. It is the most important timber tree in southern New Hampshire, but has been too generally planted without regard to conditions under which it should grow. It is a good tree for mixed, group plantings with other pine, or to fill in naturally seeded areas among other species. It is the best pine to underplant grey birch and other undesirable species. as it is moderately tolerant of shade when young. Pure stands should not be planted on warm open sites, as they will not thrive under such conditions and are subject to serious damage by the white pine weevil. The weevil destroys the terminal shoot, which retards and distorts the growth of the tree. White pine should never be planted within 1,000 feet of any wild or cultivated currant or gooseberry bushes because of danger of infection from the white pine blister rust disease. Further information in regard to forest pests and diseases will be furnished on request.

Red or Norway Pine is an excellent substitute for white pine for planting open areas where it receives a fair amount of light. It grows well on dry, sandy soils, poor quality sites, and is also well adapted for mixed plantings and for filling in naturally seeded areas. Practical immunity to the insects and diseases that affect the white pine make it the better tree for general planting. It should not be planted on heavy soil, however, or used for under-planting unless a large percent of the cover is to be removed within two or three years.

White Spruce is the most desirable of the spruces for all types of planting. It is not menaced by the white pine weevil which does attack both the red and Norway spruce. It is tolerant of shade and grows well on practically all types of soil except light sand. Its excellent dark blue-green color makes it a good tree to plant for the Christmas tree market.

Balsam Fir, however, is the tree most desired by the Christmas tree trade. Like the white spruce, it should not be planted on dry or light sandy soils. It will grow in swamps and at high elevations but is not a good substitute for spruce in the pulp or lumber market. Sensitive to environment, it should be planted with caution, unless naturally seeded balsam is already growing in the vicinity. The spruce budworm shows a decided preference for balsam fir.

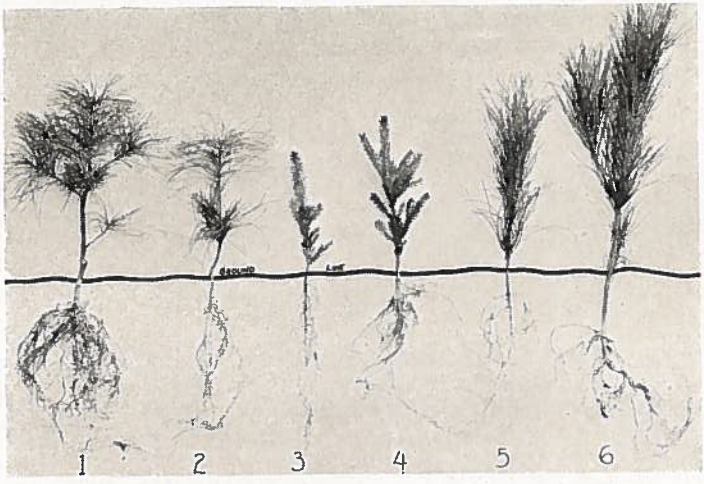
Sugar Maple

The need of adding sugar maple to the list of planting stock available to planters is indicated by requests received from individuals and recommendations made by the New Hampshire Maple Producers Association.

Plans are under way for growing at the nursery stock suitable for orchard planting, but little is known to date either about nursery culture or field planting of sugar maple.

Type of Trees

The planting stock recommended for New Hampshire as shown in Figure 1 is of two kinds: three-year root-pruned seedlings and four-year transplants. The seedlings remain in the beds where originally planted until they are dug for shipping. This three-year root-pruned seedling was developed in our State Forest Nursery by pruning the root system four inches under the surface of the ground with a tractor-drawn steel blade. This is done after the second growing season and forces the seedling to develop a denser root system close to the surface during the



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 seedling, 3 yrs. 6"; (6) Red pine transplants, 4 yrs. 10".

(Departmental photo by Ellis)

third year. Seedlings are much less expensive than transplants, and equally good for general planting. Transplants, grown in the seed bed for two years, are transplanted in the nursery to give them space to develop into a stocky tree with a heavy root system. This makes them preferable for planting where ground cover and other root growth make competition severe.

Time to Plant

Forest planting is best done during a short period of about three weeks in the spring when the trees are still dormant. The frost is seldom out of the ground under the nursery beds before April 20th, and most

forest planting areas will be free of frost before the trees can be lifted in the nursery. Trees planted during the last week of April and the first two weeks in May are usually in the dormant stage and therefore are in better condition to survive when planted.

Due to the new growth on seedlings in the nursery following the dormant stage, planting should be avoided after June 1st. Fall planting, after September 1st, may give satisfactory survival if there is a fair amount of rainfall or the subsoil is moist. Trees set in heavy soils in the fall may heave from freezing and thawing.

It is important that newly cut-over areas should be planted as soon as possible in order that the planted, or crop, trees may be able to start in advance of sprout growth and the growth of undesirable species already on the land. This prompt planting will reduce the amount of weeding and release cutting later, thus lessening the cost of carrying the crop trees to the time when they are dominant and can take care of themselves. Here is one of the important periods in the management of this type of forest area.

Care and Handling of Planting Stock

Shipments of trees, packed in wet moss, are sent by express collect from the state nursery. Notices are sent a few days in advance of the shipment as there should be no delay in getting the trees from the express office and removing them from the crate. If not planted at once the trees should be "heeled in" in a cool, shady spot on the planting area and near water if possible.

The "heeling-in" trench should be at least eight inches deep, six to eight inches wide and a little sloping on the back side. Keep the dirt removed just in front of and close to the edge of the trench. Take two or three bundles of trees from the crate, dip in a pail of water and set them in one end of the trench. Cut the string on each bundle and arrange the trees in a thin layer along the sloping side of the trench. The trees should be held upright with one hand while the soil which has been removed from the trench is pulled back over the roots and packed down firmly. If delays in planting are unavoidable, keep the soil moist and the trees will remain in reasonably good condition for a week or more.

Planting Methods

There are two recommended planting methods in New Hampshire: the hole and the slit method. The hole or earlier method requires the use of a grub hoe or mattock and is suited to rough, stony ground. The work can be accomplished by two men with less lost motion, although a man can work alone at a slight disadvantage. In a two-man crew one digs the holes with the mattock, keeping the dirt removed from the hole close beside it. The hole should be deep enough to allow the roots to occupy as natural a position as possible. The second man follows with the trees in a pail with sufficient water to keep the roots from drying out. One tree is removed from the pail at a time by the second man, who sets

the tree in the hole, fills in the earth by hand and tamps it solid with his heel.

The slit method, while not so well known, is usually preferred to the hole method when understood and used on a suitable area. It is less back-breaking for the planter, quicker and the tree is left in a better position to withstand drought. On moist, compact soil, free from stones, drive a planting spade or grub hoe into the ground and bend it back and forth to open up a hole. Withdraw the implement. Place a tree in the side of the opening, push the roots well down and straighten them with the fingers. Tamp the ground firmly around the tree with the foot. As in the other method, two men can do the job more easily than one, but it is possible to do it alone. Special planting spades are sold by the department at a cost price of about $4.00.

Planting sites with a heavy cover of grass or vines should be planted with a grub hoe or mattock. The proper procedure under such conditions is to turn back a turf 12 to 15 inches square and set the tree in the center of the opening. This will keep back the encroaching grass and vines until the tree has a chance to start growing.

Spacing

The spacing of planted trees is one of the most important decisions that has to do with the whole planting operation. It not only has a direct bearing on the initial cost, as it determines the number of trees, but it also influences the growth of the tree, and thereby, the kind and quality of the product.

A spacing of 6 x 6 feet for open planting has been used generally for most species, and, while a closer spacing is excellent for a young plantation, the trees become crowded after 18 or 20 years and diameter growth practically stops. Such trees become weak in both stem and root system, and groups of them may be forced to the ground by heavy snow and unable to recover. If the trees are thinned, as they should be to continue to make normal and satisfactory growth, the cut trees are too small for use except for an undesirable grade of fuelwood and the operation will be expensive.

If open area planting of pines is on an 8 x 8 foot spacing it will take two or three years for the side branches to grow the additional two feet before they begin to be retarded and killed off. The knots in the lumber will be a little larger, unless the trees are pruned, but the additional space will permit more vigorous crown and diameter growth until the results of a later thinning operation could produce logs, poles and other worthwhile products. Another advantage is the reduction in planting costs, as only 680 trees are needed to plant an acre spaced 8 x 8 feet as compared to 1,210 for the closer spacing. Labor cost is reduced in almost the same proportion, as it will continue to be in further work done on the plantation. Pine when planted on poor quality sites, however, requires the closer spacing.

When pine is planted in sprout land where competition is keen and more than one weeding is to be expected, the seedlings may be spaced 10 to 12 feet apart, or placed wherever it is desirable to establish additional trees and mixed growth in the final stand. All failures in this type of planting should be replanted, while 80 per cent survival in more closely spaced plantations is usually satisfactory.

Spacing and approximate number of trees per acre are as follows:

Spacing	*Trees*
3 x 3 ft.	4,840
4 x 4 ft.	2,720
5 x 5 ft.	1,740
6 x 6 ft.	1,210
7 x 7 ft.	890
8 x 8 ft.	680
10 x 10 ft.	440

Group Planting

Planting in small oblong or rectangular groups is the best method of mixing two species in the same plantation. It allows either or both species to be kept and developed as crop trees. The combination most often used is white and red pine. It has been shown that in the planting of alternate *rows* of these species, red pine, which grows faster for the first 25 years, will overtop and damage white pine to such an extent that the white pine cannot develop. When planted in groups the inside trees are in a position to make normal growth.

Christmas Trees

The roadside market for Christmas trees in New Hampshire has become well established and satisfactory. This market has been supplied from naturally seeded trees but many landowners are interested in artificial restocking to give them a share in the business. Inquiries from wholesale buyers indicate that supplies of good trees in central and southern New Hampshire are hard to find. This market readily absorbs spruce or mixed lots of spruce and fir, untied, and in the usual four to ten-foot sizes and quality. Good trees have wholesaled at the roadside in recent years at 50 cents each and are trucked to local and southern New England markets. The same trees have retailed at the roadside for 75 cents to $1.50 each.

Christmas trees cut in Coos County are for the most part bundled and shipped by freight to distant markets. Firs in the usual sizes are preferred and are tied in bundles of one to seven trees, averaging three, depending on their size. The landowner has received 50 cents per bunch for his trees on the stump, less the cost of transporting the bunches to the roadside. If the owner wishes to do the whole operation, he has been paid $1.50 per bunch for satisfactory trees delivered to the railroad. Spruce trees are seldom sold for shipping to distant markets due to the needles shedding after a short time.

Plantations made for the purpose of growing Christmas trees should be in open areas where the side branches can develop without interference, spaced 3 x 3 feet, or 4 x 4 feet, depending on the site and the size of tree desired. Spruce develops more foliage and heavier branches than fir on the average planting site and may well be given the wider 4 x 4 foot spacing. Excessive fertility of the soil has a tendency to grow spindling trees, with too much space between the whorls of branches, and lacking the foliage and conical shape that are characteristic of the best trees.

Care of Plantation

Inspection of a plantation should be made during the first growing season and also in the second spring to determine if there are appreciable losses and if replacements are necessary. After 80 per cent or more of the trees are established they will not require much attention for four or five years. When trees are set among bushes and dense sprouts they must be checked at shorter periods. Hardwood limbs or sprouts interfering with the tops of the trees should be cut or broken about two or three feet from the ground; this will discourage vigorous re-growth of new sprouts. The amount of work involved in a "releasing" operation will depend on the density of the sprout growth, the size of the planted stock and the period of time the plantation has been without attention. Plantings under larger hardwoods should be watched and the overstory removed or opened up as soon as there is any indication that the crop trees are not making satisfactory growth.

REMEMBER

Select the best kind of tree for your planting site.
Keep the roots wet at all times before planting.
Do not plant white spruce any deeper than it stood in the nursery; other species not over one inch deeper.
Do not bunch the roots or crowd them into a small hole.
To make sure that the tree is firm in the ground, test by lifting lightly.
Do not allow livestock to graze on a planted area.
Check your plantations yearly for necessary replacements, release cuttings and pruning.

WHITE PINE BLISTER RUST CONTROL

ALTHOUGH ranking among the smaller states of the nation in land area, New Hampshire has, in recent years, cut a greater volume of eastern white pine than any other state. The New Hampshire cut constitutes a remarkable record in view of the fact that the *commercial* range of white pine is situated principally south of the White Mountains. It is in this region that the bulk of the cut of this species was obtained.

For the seven-year period 1938-1944 inclusive, records indicate a total white pine cut of 1,633,147,925 bd. ft. This is an annual average of over 233 million bd. ft. Demands due to World War II have, undoubtedly, influenced such a high production since for the four-year period 1941-1944 inclusive, the lumber cut of white pine amounted to 57.89 per cent of the entire output of the seven-year period above mentioned.

Studies of damage to merchantable pines by Blister Rust on 40 one-acre plots have indicated a loss of 32 percent of board foot volume.

That the white pine region of this state has been able to maintain a cut of over 233 million bd. ft. annually, for a seven-year period, is certainly indicative of two facts: *first,* that the volume of standing timber was much greater than was commonly supposed, and *second,* the annual growth must have been far in excess of estimates.

The economic history of New Hampshire indicates beyond dispute that white pine has contributed very materially to the state's welfare. Irrespective of this great exploitation during the past decade, the present abundance of *growing* white pine shows that this forest species is far from becoming one of minor importance. Given adequate protection from fire and disease, supplemented by proper management, a sizable cut of pine should be possible indefinitely and even be greater as productivity increases under better management.

Recognizing that the large area stocked with immature white pine can, if properly handled and protected, develop into a source of much revenue, state, federal and town agencies have mutually cooperated during the war period in giving as much protection from the white pine blister rust disease as available labor permitted.

Town Cooperation—1943

Appropriations by eighteen towns aggregated $4,725; with the exception of 1934, this amount was the smallest voted by towns for this purpose since the inception of blister rust control. Labor scarcity, travel restrictions, such as gasoline and tire rationing, and wage rates were factors governing the volume of work performed. Distances from towns where labor was available to other towns where none could be procured were too great to warrant traveling back and forth. Thus, the idea of using so-called "State Crews," advocated by many town officials and other persons, could not be put into effect. Recognizing too, the great need of food production, the employment of labor in farming sections was avoided, except where it was found that such employment would not interfere with agricultural work.

Federal Cooperation—1943

In 1942, the so-called "Lea Bill," passed by Congress, provided for financial cooperation with states in white pine blister rust control upon public and private lands. Allocations were made to states on the dollar for dollar basis, and appropriations by the state, towns and individual land owners were allowed as offsets. For the fiscal year 1943, the sum of $11,171.31 was expended in actual control work—(the destruction of currant and gooseberry bushes)—in various towns throughout this state. Results of this federal aid will be found in the table entitled "Biennial Summary of Control Work".

Other Control Programs—1943

Three other somewhat minor projects were carried on during the 1943 season. Included was work on the lands of one of the largest private forest holdings in this state. This program, inaugurated in 1941, involved a three-year plan and was completed during the past summer. During the course of the control measures the abundance of dead and dying pines proved conclusively what the blister rust disease can accomplish, if unchecked, and the urgent need of protecting immature trees.

Certain areas on the White Mountain National Forest were rechecked in order to determine whether any regeneration of wild ribes had taken place, and to destroy such as were found. This work was financed by the U. S. Forest Service, but the actual control measures were conducted by local crews working under state supervision.

During 1943, while rechecking areas worked some years previously, district blister rust control leaders gave protection to a considerable area of white pine lands. Where ribes were too numerous for one man to destroy, such sites were carefully plotted on maps and reserved for future crew work.

Accomplishment of all three programs will be found in the control work summary.

Town Cooperation—1944

Reports made to the State Forester, following the annual town meetings in March, disclosed that twenty towns appropriated a total of $4,915. From the general sentiment expressed it was evident that the failure of many towns to continue their cooperation in blister rust control was due

Over 70 million wild currant and gooseberry bushes destroyed by Blister Rust crews.

not so much to lack of interest, as to the local labor shortage, which was even more acute than in 1943. Through a careful study of local conditions, however, and with the assistance given by Selectmen and other

town officers, a limited number of crews were obtained for work in the cooperating towns. As in the previous years of the war, every effort was made to avoid employment of farm labor. Men under or over military service age were obtained, and through intensive training and careful supervision, were developed into satisfactory field units. Acknowledgment should be made of cooperation given district leaders by town officials and those connected with employment offices who did everything in their power to assist in obtaining labor. Transportation of crews employed on town cooperative control work was, as in 1943, made possible through the use of federally-owned trucks loaned to the department for this purpose. A summary of the town work will be found in the combined tables appearing at the conclusion of this report.

Federal Cooperation—1944

For the third consecutive year a federal allotment for control work on both public and private lands was made to the state by the Bureau of Entomology and Plant Quarantine. Owing to the labor shortage the actual allotment was not expended. However, the amount totaled $9,779.68 and permitted the coverage of additional pine areas in several townships without any cost to the towns wherein this work was conducted. Accomplishments under this program will be seen in the summary for the two fiscal years.

Other Control Programs—1944

In addition to the town and federal projects, control measures were conducted on private holdings in certain sections of the White Mountain National Forest, and through rechecking by the district leaders.

Biennial Summary—Blister Rust Control

Town, State, Federal and Private
1943 and 1944

	Initial Eradication		*Re-eradication*	
	Area	*Ribes*	*Area*	*Ribes*
Program	*Covered*	*Destroyed*	*Covered*	*Destroyed*
Town	*Acres*	*Number*	*Acres*	*Number*
1943	786	40,389	4,528	95,013
1944	1,273	20,211	4,699	76,535
Federal				
1943	1,850	121,276	8,478	85,226
1944	4,192	65,238	8,258	119,445
National Forest				
1943			3,082	727
1944			243	2,334
District Leaders				
1943	2,791	3,605	639	148
1944	347	92	1,470	741
Totals	11,239	250,811	31,397	380,169

Pine and Control Area Mapping—1943-1944

Although the number of men experienced in forest mapping was limited due to resignations occasioned by the war, this phase of blister rust con-

trol was given as much consideration as funds and personnel permitted. With state and federal funds a total of 19,121 acres was mapped during the winter and spring months of 1943 and 1944.

The principal purposes of these maps are two-fold: (1) to determine the acreage and location of white pine control areas and the probable sites of wild ribes, and (2) to aid in the actual eradication of these plants. Due to their detailed information, however, these blister rust maps have also proved valuable to other public agencies.

Prior to World War II many competent men were available and considerable progress was made in this particular field of white pine blister rust control. The following table summarizes the status of mapping to date:

Pine and Control Area Mapping

Period	*Area Mapped in Detail* *Acres*	*Eliminated (non-pine lands)* *Acres*
1932-1942	1,475,227	259,702
1943-1944	19,121	450
Totals	1,494,348	260,152

FARM FORESTRY

LEWIS C. SWAIN, *Acting Extension Forester*

FOUR and at times three farm foresters serving in districts roughly delineated by county lines have brought on-the-ground professional assistance to farmers and owners of small woodland tracts in the northern counties. The Cheshire-Sullivan District was without a forester part of this time. Four districts were under the supervision of the Extension Forester according to agreement by the Director of Extension, the State Forester and the U. S. Forest Service. A fifth district, including the counties of Merrimack and Hillsborough, was established by the State Forester in cooperation with the Forest Service, near the end of this biennial period.

In addition to personal contacts, including on-the-ground advice about handling woodlands, market bulletins were prepared and issued, giving prices, specifications and outlets within the district.

Work among 4-H Clubs and young farmers' groups has been of a highly commendable nature. The importance of dealing with landowners and managers of the future is not overlooked by any farm forester. Among those woodland owners whose forests show the application of careful planning are men who were formerly members of farm youth clubs.

The services rendered by farm foresters in behalf of farm woodlands constituted a significant achievement during the war. They were not only instrumental in enlarging the total area of well-managed woodland, but assisted materially in the task of meeting needs of the state and nation for timber and fuel.

FOREST RESEARCH

WAR CONDITIONS, including shortage of personnel and curtailment of travel have restricted normal research activities. Research personnel and labor have been devoted to production of wood and lumber or service in the armed forces. Activities under the Fox Trust Fund and the operation of the Fox Research Forest have necessarily been confined to maintenance of the buildings and equipment under a resident caretaker. Field experiments have been developing meanwhile and should produce noteworthy results upon re-examination at the end of the emergency period.

The Northeastern Wood Utilization Council with which foresters in the state have cooperated closely, has been very active and discovered many new possibilities for the utilization of waste wood and low grade forest products.

The State Planning and Development Commission administers an annual appropriation of $2,500 matched by an equal amount subscribed by wood-using industries for research in wood utilization. The work has been done by the Engineering Experiment Station at Durham, working closely with the Northeastern Wood Utilization Council. These efforts promise to give stimulus to the practice of intensive forestry by making possible the utilization of poor quality trees now usually left to encumber the land and retard growth of valuable timber.

It has been estimated that the average acre of woodland produces about one ton of carbon compounds per year, only a small fraction of which is presently utilized as lumber or pulpwood. Chemical methods for making profitable use of a larger portion of forest production will open enormous opportunities for utilization of the state's greatest natural resource.

DISTRICT FOREST ADVISORY BOARDS

HE SIX district forest advisory boards of five members each were established in 1941 under the provisions of Chapter 235, Revised Laws, for the purpose of studying forest conditions, formulating proposals for legislative action when, in their judgment, such action is advisable to conserve the public interest in forest land.

During the period covered by this report the boards have met as often as wartime travel conditions permitted in their respective districts and several times with the State Forester and the Forestry and Recreation Commission. Their considerations have covered the field of forest conservation—management, taxation and protection from fire and disease. They have learned that numerous forest problems needing solution lack public appreciation and interest.

The boards, however, rendered distinct service in the sponsoring and passage of the constitutional amendment on taxation of forests in 1942. During the biennium various members of the boards have served on an interim Forest Tax commission to study proposals for submission to the next session of the legislature. Bills have been framed to alter the present tax structure and also to modify cutting practices.

The membership of the boards through the past two years has remained substantially the same.

LUMBER CUT 1942 AND 1943

IN PREVIOUS years the survey of the lumber cut during the calendar year as required by Chapter 233, Section 66, Revised Laws has been made by canvassing timber operators, sawmill and stumpage owners. An increasing number so canvassed has reported no cut and despite efforts to revise the mailing list, it was evident that returns from this annual survey were failing to cover the entire forest depletion for sawlogs. In view of the field investigation conducted by the U. S. Forest Service in cooperation with the Bureau of the Census and the War Production Board, which yielded very accurate facts on lumber production, it was decided to rely on the U. S. Forest Service reports as long as these continued. Thus, in 1943 the state canvass was confined to wood consumers who produced other products than lumber, i. e. poles, posts, piling, veneer logs, bobbin and spool bolts and excelsior.

State Survey

The following gives the results of the state canvass in 1942. Returns from 420 of the 423 questionnaires or 99% were received, but 69% of these reported that no cut was made in 1942. In 1943, 112 cards were returned of 136 sent out or 82% and of these over 80% reported no cut. Incidental cut of lumber could not be separated from other products in this survey, but the list of operators canvassed was selected for non-lumber manufacturers. The totals tabulated from these surveys are as follows:

	Lumber Cut		Products Other Than Lumber	
	1942		1943	
	M Bd. Ft.	%	*M Bd. Ft.*	%
Pine	27,595	68.2	3,293	64.8
Spruce	1,718	4.2	282	5.6
Other Softwoods	2,925	7.2	637	12.6
Hardwood	8,279	20.4	863	17.0
	40,517	100.0	5,075	100.0

U. S. Forest Service Survey

The results of the field canvass of mills made by the U. S. Forest Service, as a basis for census reports, represent the actual lumber cut more accurately, although small mills (cutting less than 50 M bd. ft. annually) were omitted from the federal canvass. There are many small water-power mills, or those which do mostly custom sawing for farmers, that were not included in the federal canvass.

Lumber Cut for the Calendar Year

	1942		1943	
	M. Bd. Ft.	%	*M. Bd. Ft.*	%
Pine	278,329	76.7	319,612	80.8
Spruce	17,713	4.9	14,007	4.1
Hemlock and other softwoods	29,756	8.4	27,015	7.0
Total Softwood	325,798	90.0	360,634	91.9
Birch	18,761	5.2	15,333	4.0
Beech	3,062	.8	1,739	.4
Maple	9,156	2.6	7,674	1.0
Oak	4,185	1.2	5,296	1.3
Other hardwood	532	.2	1,656	.4
Total Hardwood	35,696	10.0	31,698	7.1
Total All Lumber	361,494	100.0	392,332	100.0

It may be stated that the 1942 cut of eastern white pine was exceeded only by Idaho's cut of western white pine, a closely related species. In 1943 New Hampshire was reported as the leading producer of white pine lumber, Idaho producing 21 million feet less than New Hampshire in that year.*

Cut for Products Other than Lumber

The state survey in 1943 obtained the figure of approximately 5 million bd. ft. as the consumption of wood-using plants for veneer, bobbins, excelsior and similar products. These plants are required by law to report their cut just as are sawmills.

* Census of Forest Products 1943, Bureau of the Census P. 3.

THE DRAIN UPON FOREST CAPITAL DURING 1942 AND 1943

VICTOR S. JENSEN, *U. S. Forest Service*

NEW HAMPSHIRE lumber production during 1942 and 1943 was on the level well above the peacetime rate but still substantially less than in the early years of World War I. From a low of less than 100 million feet in 1932, production showed a gradual increase through 1938. The salvage programs, private and public, after the 1938 hurricane resulted in a marked stimulation in lumber production. This salvaged timber was an important factor as late as 1942, when 19 million feet of lumber was cut from pond stored logs. Direct and indirect war demands for lumber became apparent in 1941 and lumber production increased until in 1942, 361,494,000 feet of lumber was sawed in New Hampshire, the largest amount since the 389 million feet of 1915.

Since the demand for forest products increased while lumber stocks steadily declined, lumber production in 1943 increased to 392,332,000 feet. In addition to sawed lumber, the equivalent of five million board feet of logs were cut for piling, hardwood bolts and other special products during 1943. Probably as much wood is used each year for pulp and fuel as for sawlogs. To put the forest drain resulting from all commercial operations on the same basis, a total of about 700 million board feet, or 1,400,000 cords, would seem a conservative estimate.

In 1943 labor was the principal bottleneck retarding production. Many of the best men were lost to the armed services and other industries and the average production rate per man per day steadily declined. Growing shortages of additional and replacement equipment, particularly tractors, power units and trucks, were additional obstacles in maintaining maximum production.

As yet there is little evidence of an acute stumpage shortage except in restricted areas, mainly in the southern part of the state. However, readily accessible stands of even fair quality merchantable timber are becoming increasingly scarce throughout the state. Undoubtedly the drain on forest resources during the present emergency is substantially greater than the growth.

REVISION OF LAWS—1943

The 1943 Legislature enacted the following laws directly relating to the activities of this department:

CHAPTER 44

AN ACT RELATIVE TO A GIFT TO THE STATE OF THE BEAR BROOK AREA

WHEREAS, in accordance with the provisions of an act of the Congress of the United States (Public Law 594 - - 77th Congress) The Secretary of the Interior of the United States has proposed to convey to the state of New Hampshire certain lands and property situated in the towns of Allenstown, Deerfield, Candia and Hooksett, known as the Bear Brook area, which have been developed by the United States as a recreational demonstration project, under the following conditions:

1. The state of New Hampshire shall use the property conveyed exclusively for public park, recreational and conservation purposes, and

2. The title to said property shall revert to the United States upon a finding by the Secretary of the Interior, after notice to the state of New Hampshire and after an opportunity for a hearing, that said state has not complied with the conditions of the gift during a period of more than three years, which finding shall be final and conclusive.

Be it enacted by the Senate and House of Representatives in General Court convened:

1. Gift Accepted. The state of New Hampshire gratefully accepts the gift of the Bear Brook area from the United States of America upon the terms and conditions hereinbefore set forth and the governor and council are hereby empowered to accept on behalf of the state a deed from said grantor of said property subject to said terms and conditions.

2. Application of Laws. The limitations contained in section 13 of chapter 234 of the Revised Laws shall not be construed as applying to the use of buildings on said Bear Brook area.

3. Takes Effect. This act shall take effect upon its passage. (Approved March 3, 1943).

CHAPTER 158

AN ACT RELATING TO A STATE FISH AND GAME REFUGE ON THE BEAR BROOK AREA

Be it enacted by the Senate and House of Representatives in General Court convened:

1. State Fish and Game Refuges. Amend chapter 246 of the Revised Laws by inserting after section 12 the following new section: 12-a. Bear Brook State Game Refuge. The limitations as to the area within refuges on publicly owned lands and as to distances between refuges as provided

for in section 11 of this chapter shall not prohibit the establishment of a game refuge on the Bear Brook area so-called in the towns of Allenstown, Deerfield, Candia and Hooksett now in process of transfer from the United States to the state of New Hampshire for public park, recreational and conservation purposes, provided that not less than two thousand acres within the boundaries of the area under transfer to the state shall be open to deer hunting and that all of said area shall be open to fishing in accordance with the laws of this state. If such a refuge is established, the expense of policing the refuge shall be assumed by the director.

2. Takes Effect. This act shall take effect upon its passage.

(Approved May 5, 1943)

CHAPTER 156

AN ACT PROVIDING FOR THE PURCHASE OF CERTAIN LAND IN THE TOWN OF CONWAY

Be it enacted by the Senate and House of Representatives in General Court convened:

1. Purchase Authorized. The governor and council may acquire by purchase or otherwise, as hereinafter provided, for public recreational and park purposes a tract of seventy acres more or less of land surrounding Echo Lake and extending to the East Side road, so-called, in the town of Conway.

2. Eminent Domain. If the governor and council for the purposes aforesaid deem it desirable or necessary to acquire such real estate by eminent domain proceedings, said real estate shall be acquired under the procedure provided in sections 24 to 33 of chapter 27 of the Revised Laws.

3. Appropriation; Contingency. A sum of not exceeding five thousand seven hundred and fifty dollars is hereby appropriated for the purpose of paying one-half the cost of acquisition specified in section 1, provided that said appropriation shall not be available until there is raised by subscriptions of interested persons or made available from other private or public sources a like sum for the same purpose. Sums so subcribed and otherwise made available shall be paid to and kept by the state treasurer in a separate account in the state treasury for the purposes of this act alone and the governor is hereby authorized to draw his warrant for the sum appropriated by the state, or so much thereof as may be necessary, out of any money in the treasury not otherwise appropriated.

4. Maintenance. The real estate acquired according to the provisions thereof shall be maintained under the supervision of the forestry and recreation commission.

5. Takes Effect. This act shall take effect upon its passage.

(Approved May 5, 1943)

CHAPTER 144

AN ACT RELATING TO ASSESSMENT OF GROWING WOOD AND TIMBER

Be it enacted by the Senate and House of Representatives in General Court convened:

1. Assessment of Growing Wood and Timber. Amend section 4 of chapter 76 of the Revised Laws by inserting after the word "land" in the second line thereof the following: of growing wood and timber separately from the land; so that said section shall read as follows: 4. Invoices. The selectmen shall set down in their invoice, in separate columns, the value of improved and unimproved land; of growing wood and timber separately from the land; of buildings separately assessed; of mills, factories and their machinery, wharves, ferries, toll bridges, locks and canals and aqueducts; the value of stock in trade; of carriages; the number and value of horses, asses, mules, cows, oxen and other neat stock; of sheep, hogs, and fowl; and of all other classes of taxable property.

2. Interpretation. The change in method of assessment of real estate by separating the assessment of growing wood and timber from that of the land on which it stands, as provided in section 1, shall be deemed to be for the purpose of information and the selectmen shall not increase the total valuation of the property unless it clearly appears from other factors that such increase is justified.

3. Owner's Estimate of Wood and Timber. Amend section 3, chapter 75 of the Revised Laws by adding at the end thereof the following: The blank shall also require the owner's estimate of the amount and kind of merchantable standing wood and timber on each parcel of land owned by him, or the amount and kind of merchantable wood and timber owned by him and standing on land of another, so that said section as amended shall read as follows: 3. Inventory Blanks. The inventory blanks shall be so arranged and formulated as to require, under oath, from the person or corporation to be taxed, in answer to interrogatories therein stated, a description of all real estate taxable to the person or corporation, and a statement of the gross amount or quantity of each class of personal property for which he or it is taxable, and such other information as will enable the selectmen or assessors to assess all the taxable property of such person or corporation and at its true value; also a list of the shares in railroad corporations of this state owned by such person or corporation. The blanks shall require the owner's estimate of the value of his stock in trade, but not of his other property. The blank shall also require the owner's estimate of the amount and kind of merchantable standing wood and timber on each parcel of land owned by him, or the amount and kind of merchantable wood and timber owned by him and standing on land of another.

4. Takes Effect. This act shall take effect April 1, 1944.

(Approved May 4, 1943).

CHAPTER 147

AN ACT RELATIVE TO THE FORESTRY AND RECREATION COMMISSION

Be it enacted by the Senate and House of Representatives in General Court convened:

1. Forestry and Recreation Commission. Amend section 1 of chapter 233 of the Revised Laws by striking out all of said section and inserting in place thereof the following: 1. Commission. There shall be a forestry and recreation commission of five members, appointed by the governor, with the advice of the council, each for a term of five years. One member shall be appointed each year and shall serve until his successor is appointed and qualified. Vacancies shall be filled for the unexpired term.

2. Present Commissioners. The present members of the commission shall continue in office until the expiration of their present commissions. The term of office of the member of the commission which expires May 1, 1943 shall in the first instance be filled for a term of four years.

3. New Commissioners. Upon the passage of this act, the governor, with the advice of the council, shall appoint two members of the commission, one of whose term in the first instance shall be for three years from May 1, 1943 and the other of whose term shall be for five years from May 1, 1943.

4. Takes Effect. This act shall take effect upon its passage.

(Approved May 4, 1943)

CHAPTER 229

JOINT RESOLUTION PROVIDING FOR A SPECIAL INTERIM COMMISSION FOR THE STUDY OF TAXATION OF GROWING WOOD AND TIMBER AND MEASURES TO CONSERVE AND INCREASE THE FOREST RESOURCES OF THE STATE

Resolved by the Senate and House of Representatives in General Court convened:

That the governor, with the advice and consent of the council, is hereby authorized and directed to appoint ten competent persons to constitute a commission for the study and analysis of public measures to assure greater productivity of New Hampshire forests. The study shall include but not be limited to the problem of special taxation of growing wood and timber as authorized by the recent amendment of the constitution of the state. If it appears desirable to said commission that measures to prevent wasteful methods in the cutting of forest growth on private lands be inaugurated in this state in order to conserve the forest resources, it shall advise and recommend with reference thereto and if it considers that said measures should be administered by local boards as created by chapter 235 of the Revised Laws, it shall advise as to any change in

the creation and composition of such boards. Said commission shall report to the 1945 legislature measures which in its opinion are necessary to effectuate the purposes of this resolution. Said commission shall, as far as practical, be so composed as to give due representation to the different sections of the state and the different classes of interest, primarily, the conservationist, the small woodland owner, the industrialist, the timber operator, and the general public, but shall include ex officio the chairman of the state tax commission. The members of such commission shall serve without salary but shall be reimbursed for their actual expenses on official business. Said commission shall have the power to purchase supplies and to employ clerical and stenographic assistance, with the approval of the governor and council and within the limits of the appropriation hereinafter provided. The commission shall request the state tax commission to advise and assist it in securing basic data and that may be required for its study and shall pay, from the appropriation hereinafter provided, for any additional field or office assistance which the tax commission may be required to employ to comply with the request of the interim commission. The sum of four thousand dollars, for each of the fiscal years ending June 30, 1944, and June 30, 1945, is hereby appropriated for the interim commission hereby constituted and the governor is authorized to draw his warrants for the sums hereby appropriated out of any money in the treasury not otherwise appropriated.

(Approved May 11, 1943)

The following references by title are made to other laws relating to forestry and recreation:

Chapter 155—An Act Relative to Mt. Sunapee Tramway. Provides for making available appropriation provided by Chapter 190 of the Laws of 1941 until June 30, 1945.

Chapter 209—An Act Relative to Porcupines. Increasing bounty to 50 cents for each porcupine destroyed.

Chapter 241—Joint Resolution establishing an Interim Commission to study the extent of soil erosion.

STATE APPROPRIATION ITEMS

THIS IS a statement of the department budget appropriations including amounts added from the general appropriation for emergency salary increases for state employees effective July 1, 1943. Financial statements in detail of all revenue, appropriations and special funds of the department are published in the annual reports of the State Comptroller and State Treasurer.

July 1, 1942 - June 30, 1943

	Appropriation	*Expenditure*	*Reserved For Bills Payable*	*Unexpended Balance*
Administration	$18,885.00	$17,799.65	$597.01	$488.34
Nursery	7,440.00	6,854.26	409.77	175.97
Reforestation	1,900.00	1,836.12		63.88
District Chiefs	7,915.00	7,901.18		13.82
Lookout Stations	12,297.00	12,297.00		
Warden Training Conferences	1,426.26	1,426.24		.02
Prevention of Fires	5,000.00			
Income—Sale of equipment to towns	3,660.16	3,023.52	5,439.48	197.16
Forest Fire Bills to Towns	7,500.00	6,525.88	500.00	474.12
White Pine Blister Rust	4,095.00	2,499.59	831.25	764.16
Forest Fire Equipment	7,182.67	2,657.86	2,851.05	1,673.76
Recreational Development:				
Appropriation	19,017.19			
Income	12,337.27			
Balance, 1942 Income	602.64	31,957.10		
Federal Emergency Program	5,000.00	4,560.15	439.65	.20
	$114,258.19	$99,338.55	$11,068.21	$3,851.43

July 1, 1943 - June 30, 1944

	Appropriation	*Expenditure*	*Reserved For Bills Payable*	*Unexpended Balance*
Administration	$19,780.43	$18,909.33		$684.55
To Lookout Stations	-186.55			
Nursery	6,547.00	6,547.00		
Reforestation	2,200.00	2,065.41		134.59
District Chiefs	8,513.50	8,513.50		
Lookout Stations	14,688.45			
From Administration	186.55	14,875.00		
Warden Training Conferences	1,000.00			
To Forest Fire Bills to Towns	-593.01	131.99	275.00	
Forest Fire Bills to Towns	7,500.00			
From Warden Training Conferences	593.01			
From Prevention of Fires	1,455.15	7,042.39	2,505.77	
Prevention of Fires	5,225.00			
Sale of equipment to towns	2,939.40			
To Forest Fire Bills to Towns	-1,455.15	3.419.85	3,289.40	
White Pine Blister Rust	6,147.93	5,197.68	950.25	
Sawmill Inspection	750.00	750.00		
Recreational Development:				
Appropriation	21,850.19			
From Federal Emergency Program	1.63			
Income	4,869.00	26,720.82		
Federal Emergency Program	2,505.89			
To Recreational Development	-1.63	2,357.72	146.54	
	$104,516.79	$96,530.69	$7,166.96	$819.14