State of New Hampshire

BIENNIAL REPORT

of the

FORESTRY DIVISION

Concord, New Hampshire

1955 - 1956

William J. Ahern, Administrative Assistant, 1909 - 1956

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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 two fiscal years ending June 30, 1956. This consists of a record of the activities of the Forestry Division and brief accounts of related agencies prepared by the State Forester and his staff.

HARRY K. ROGERS, *Chairman,*
OWEN JOHNSON,
RANDALL E. SPALDING,
CHARLES E. GREENMAN,
JASON C. SAWYER,
Forestry and Recreation Commission.

WILLIAM H. MESSECK, JR.,
State Forester

Photo — Victor Beaudoin, Brown Company

Paper Birch, the State Tree. ➔
A scene near Success Pond, Coos County.

ADMINISTRATIVE STAFF

State Forester
William H. Messeck, Jr.

Assistant State Forester
Lyle N. Watson

Administrative Assistant II
Everand D. Young

Administration

Alphonse J. Roy ..... Accountant II
Laurence M. Bean ..... Account Clerk III
Constance S. Parker ..... Clerk Steno III
Juliette V. Camire ..... Clerk Steno III
Pauline P. Chaput ..... Account Clerk II

INTRODUCTION

The two years just past have been marked by remarkably improved forest fire protection as evidenced by a record low acreage burned. Management of state forests has also made significant accomplishments. Much attention has been devoted toward improving the administrative machinery, not only of the Concord office, but throughout the state. Reduction in number of personnel, and in overall budget has been accomplished by better definition of field of responsibility.

Administrative overhead has been streamlined. As a result of this action, the Forestry Division has been proud to present a 1958-1959 budget that is not only 6 per cent less than the previous biennial appropriation, but is also $400.00 less than the 1954-1955 figure. At the same time services have been expanded. These accomplishments are not the work of any one individual, but represent the combined teamwork of the staff.

We report with regret the death of former State Forester, John H. Foster on September 6, 1956. He served in this capacity from 1920 until his retirement in 1951.

William J. Ahern, Administrative Assistant, and one of the original members of the staff, retired August 29, 1956 after 47 years of state service.

Also to be mentioned is the honor roll of forest fire wardens of long service. These are listed on page 9.

FOREST FIRE SERVICE

Administration

The administrative organization of the forest fire service functioned essentially the same in this biennium as in the previous one but with a gradual tightening up of controls. New controls, forms and accounts were initiated. Standard orders of procedure were worked out and adopted. Changes were made in accounting and making out the budget to conform to new regulations and forms. New inventory forms for the districts and fire equipment were devised and used. Uniforms and insignia for fire personnel were designed, adopted and obtained, resulting in a greatly increased respect for our field men as law enforcement officers.

A change in the law to allow appointment of wardens and deputies for three years relieved the office of much time-consuming work. A new addressograph system and a spirit duplicator were purchased and the old mimeograph machine replaced. Town Resource sheets for Districts 1B, 2 and 5 were completed. The salary of a technician to help in radio maintenance under the State Police was paid by Forestry Division to cover maintenance work from that source.

Two of our personnel were lost through death during the biennium. District One District Chief Guy Hollis of Antrim died of a heart attack in April, 1956. Fire Lookout Watchman Wyman Larrabee died en route to his cabin on Cardigan in a storm in August, 1954. An intensive search of the trail area was made before his body was found. Winthrop Hannaford, Deputy Warden of Hudson and a District One Special Deputy was appointed Acting District Chief in District One.

Fire Control Assistant Diehl attended meetings of the Forestry Conservation Communications Association in Charleston, South Carolina and St. Louis, Missouri. He served the region as Regional Co-Chairman for two years and in 1955 was elected Administrative Vice-President. This required the editing, publishing and distributing of 250 copies each of three editions of the Association's publication "FCCA News and Views."

The administration has worked closely with the ten Forest Fire Wardens' Associations and its State Federation to keep the members informed and to aid informational training programs. The Federation Legislative Committee worked with the Division in helping back needed fire control legislation. These included: (1) the paying of fire bills from unappropriated funds, (2) new control of dumps to eliminate hazards, (3) method by which the state can pay the bills on large fires in the first instance, (4) a change in the appor-

FOREST FIRE SERVICE
Organization as of December 1956

Fire Control Assistant II
Richard B. Diehl

Fire Control Assistant, Administration
George F. Richardson, Jr.

Clerk-Stenographer
Carolyn B. Eldridge

Fire Prevention and Training Officer
James Q. Ricard

Fire Control Assistant I
Gerald H. Hight

Maintenance Mechanics
G. Welch (Radio)
W. Turner
W. Martin

District Fire Chiefs and Lookouts

District	Counties	Chief	No. Lookout Watchmen
1	Hillsborough	W. Hannaford	5
1A	Rockingham	M. A. Webber	3
1B	Cheshire and Sullivan	C. Wood	2
2	Merrimack and Belknap	T. J. King	4
3	Sullivan, Grafton and Merrimack	G. Gross, Asst. Chief	3
4	Grafton - Coos	H. Hartwell, Jr.	1
5	Strafford, Belknap and Rockingham	R. W. Smith	2
6	Carroll and Belknap	R. B. Smith	3
7	Coos (West)	H. B. Chase	4 and Conn. Lakes Patrolman
8	Coos (East)	E. R. Buckley	2

tionment of the towns' share of fire bills to keep in line with the change of assessed valuation and, (5) allowing the state to share with the towns in opening up old roads and trails.

The Division participated in forestry field days at Wilton and Gilford both with an exhibit and by actual field demonstrations of various practices by its personnel.

HONOR ROLL OF FOREST FIRE WARDENS AND DEPUTY WARDENS WITH 25 YEARS OR MORE SERVICE

The following 21 forest fire wardens and 86 deputy wardens have earned a well-merited commendation for long service. The list starts with those with the longest service and ends with those with 25 years' service as of June 30, 1956. Within each group, names are arranged alphabetically. Each name is followed by the town served by the warden. Wardens are indicated by (W) following the town. Names with no symbols are deputy wardens.

46 Years (2)

Fred L. Gove, Nottingham
Arthur W. McDaniel, Nottingham

45 Years (3)

Fred A. Conrey, Milford
Roy E. Emery, New London
William H. Felker, Barrington

44 Years (4)

Ernest M. Hunter, Tuftonboro
Arthur G. Low, Derry
Arthur G. Scruton, Farmington
Walter P. Tenney, Chester

42 Years (3)

Willis P. Gray, Portsmouth
Leon E. Hoyt, Francestown
Ralph K. Jordan, Plainfield

41 Years (2)

Herbert A. Curtis, Bennington (W)
John W. Emery, Stark

40 Years (3)

Hugh H. Johnson, Stratford
Walter H. Morgan, Wilmot
Glenn H. Thayer, Bath

39 Years (2)

C. Sumner Card, Kensington
Palmer C. Read, Plainfield (W)

38 Years (1)

Roger A. Haskins, Troy

37 Years (2)

John B. Crosby, Jr., Rindge
Edgar J. Rand, Rye

36 Years (5)

Leslie N. Boomhower, Franklin (W)
Walter D. Lynch, Hill
Frank I. Mack, Auburn
Henry J. Ormsby, Langdon
Milton D. Wright, Hollis

35 Years (10)

Mark W. Baldwin, Langdon
Daniel E. Hathorn, Keene
Allen E. Hazen, Bethlehem
Edward R. Lupien, Warren (W)
Thomas T. Rowe, Nelson
H. Russell Sawyer, Rye
John H. Simpson, Keene
William G. Weeks, Wakefield
Charles A. Wiggin, Bedford
Fred E. Wood, Derry

34 Years (6)

Wendell D. Crowell, Hancock
Thomas E. Currier, Newton
Ralph L. Hoyt, Rindge (W)
Reuben P. Lang, Wakefield (W)
Lloyd H. Stone, Webster (W)
Arthur H. Sullivan, Epsom (W)

33 Years (5)

Roy W. Berry, New Durham
Elmer B. Knox, Allenstown
Clifford E. Monroe, Winchester
Harry D. Munsey, Hampton
V. Albert Sprague, Meredith (W)

32 Years (7)

Ralph E. Bailey, Rumney
Raymond K. Bassett, Sandown
George A. Cook, Hooksett (W)
Albion E. Robie, Candia (W)
Paul D. Smith, Dorchester
G. Wesley Tarlson, Laconia
Howard E. Turner, Salem

31 Years (5)

Simeon J. Brown, Seabrook
Roy C. Hathorn, Lebanon
Fred W. Hodgdon, Tuftonboro
Kenneth D. McClure, Stoddard
William B. Wason, Chester

30 Years (8)

Leon H. Amidon, Richmond
E. F. Ayling, Jefferson (W)
George E. Bartholomew, Auburn
Harry J. Bennett, Richmond
Frank A. Brewer, Jr., Richmond
Charles DiPrizio, Middleton
Chester L. Hinkson, Rumney
Fred H. Thompson, Newbury

29 Years (9)

Charles R. Andrews, Sr., Marlow (W)
Kenneth G. Bell, Plymouth
Warren H. Bliss, Derry
Howard S. Bronson, Landaff
Paul S. Durgin, Plymouth
Harry E. Poor, Landaff
Clark L. Stevens, Durham
Raymond E. Stevens, Hampstead
Ernest K. Wheeler, Bedford

28 Years (11)

Edgar C. Bacon, Dummer
Joshua F. Drake, North Hampton
Lyle R. Gale, Alexandria (W)
Carl H. Holland, Milford
Albert H. Leighton, Sanbornton
Draper W. Parmenter, Londonderry
Lawrence E. Philbrook, Shelburne
Leon W. Priest, Jaffrey
Edwin E. Ridley, Swanzey
James V. Tuttle, Wilton
Herbert G. West, Chichester

27 Years (5)

Frank I. Caldwell, Lee
Leon A. Sanborn, Chichester (W)
Philip H. Sherburne, Pittsfield
Guy W. Smith, Hale's Location (W)
Joseph E. Woods, Rochester

26 Years (7)

Melvin G. Armstrong, Kensington
Fred S. Brown, Woodstock (W)
Ralph I. Peabody, Shelburne (W)
Sylvester A. Sanborn, Fremont
Sidney W. Stearns, Hancock
Wilbur H. Vaughn, Bow
Victor L. White, Francestown (W)

25 Years (7)

Earl T. Buzzelle, Plaistow
Wilbur P. Hunt, Chester (W)
Martin J. Keenan, Peterborough
Elmer A. Kimball, Plaistow (W)
Clarence W. King, Plainfield
John A. Palmer, Plaistow
Charles E. Rodimon, Piermont

Central Supply Depot — Concord

The facilities at the Forestry Supply Depot on Ferry Street were greatly improved by the erection of an indoor fire hose drying rack, work benches and cupboards for carpentering, iron work, pump repairs and car maintenance. Storage facilities were improved and a saving in heat effected by a partition to separate storage and work areas. The district office was improved by a wooden floor, ceiling insulation, painting and venetian blinds. Changes were also effected in the heating system for greater comfort in work and office areas. The vehicle lift was fitted with new seals and oil was replaced. Future plans include a second floor in the main storage area with eventual storage and distribution of town tools which are now being handled at the nursery. There is also need for an

additional garage and lumber storage building, thus providing more room for equipment in the main building. When future highway plans are completed, the entrance road and gravel aprons should be tarred.

AVERAGE ANNUAL FIRE LOSS

Period	No. of Fires Reported	Area Burned (Acres) Total	Area Burned (Acres) Av. Per Fire	Damage Total	Damage Av. Per Fire
1955	413	$370.80	$.90	$1,712.50	$4.14
1956	442	498.67	1.13	2,779.00	6.29

Review of Forest Fire Conditions

The 1954 Season — July 1 - December 31

Frequent rains held the fire danger down until mid-August when a potential buildup was stopped by hurricane "Carol" with its 3 to 5 inches of rain across the southeastern portion of the state. Rains and hurricanes "Edna" and "Hazel" contributed to a light season with most of the lookouts closing on October 31st. The total precipitation at Concord was 9.64 inches above normal with hurricane rains accounting for 7.73 inches of this.

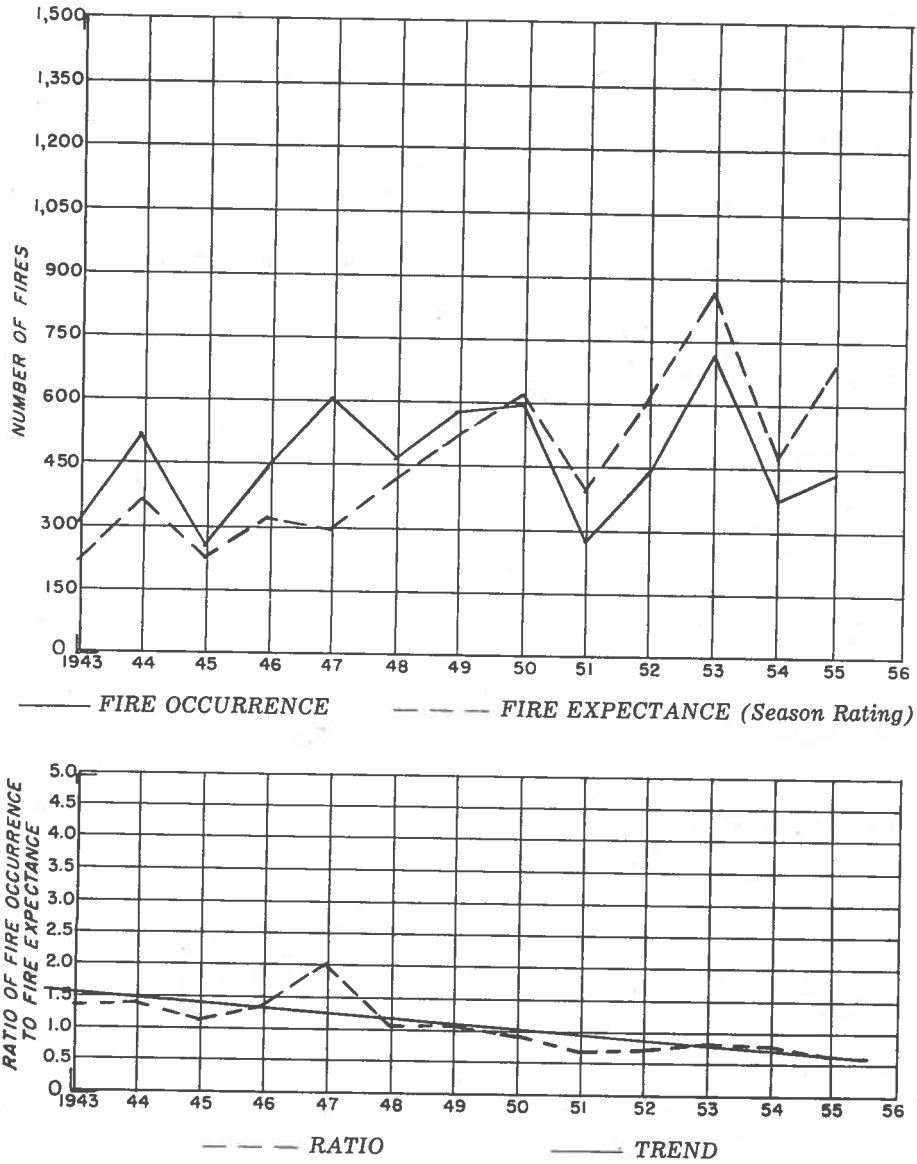
The 1955 Season

The snow went off normally in late March. Thereafter, the fire danger rose rapidly in the southern part of the state in April, with a high peak in burning index of 140 and 120 on the 9th and 10th, continuing high until the 21st. Out of 162 fires reported (with only 110 acres of woodlands burned) in April, 56 occurred on the two high hazard days, burning 40 acres. Fires in uncut hayfields presented a threat to woodlands during this period. Fire danger increased again during a dry period until May 25th; 126 fires burned a total of 193 acres of woodland during the month of May.

Following a normal June, July equalled low records for rainfall and made new records in excess temperatures with a resulting rise in buildup index until the 28th. Sixty-two fires, many from lightning, burned 69 acres in this period. The dry weather continued into the fall with ground water levels remaining very low until near freeze-up in November. Late summer conditions in the spruce-fir ridges were drier than in 1953 but there were few lightning strikes in these areas and surface and ground fires were quickly controlled.

FIRE RECORD BY COUNTIES FOR FISCAL YEARS 1955 AND 1956

County	Year	No. of Fires	Area Burned (Acres) Total	Area Burned (Acres) Av. per Fire	Damage Total	Damage Av. per Fire	Cost of Fire Fighting Total	Cost of Fire Fighting Av. per Fire
Belknap	1955	30	70.10	2.33	$1,002.00	33.40	$1,151.59	38.38
	1956	36	9.81	.27	77.00	2.14	1,404.28	39.00
Carroll	1955	22	9.90	.45	80.00	3.63	1,459.50	66.34
	1956	21	22.40	1.06	None	None	1,798.16	85.62
Cheshire	1955	54	43.80	.81	127.00	2.35	3,259.48	60.36
	1956	40	19.88	.49	85.00	2.12	2,861.62	71.54
Coos	1955	10	1.00	.10	50.00	5.00	344.79	34 48
	1956	19	6.15	.32	145.00	7.63	1,466.44	77.17
Grafton	1955	42	35.50	.84	131.00	3.12	2,390.58	57.15
	1956	46	18.29	.39	145.00	3.15	1,761.73	40.01
Hillsborough	1955	86	29.60	.34	155.00	1.80	3,178.85	36.96
	1956	111	120.00	1.08	1,325.00	11.94	8,913.48	80.30
Merrimack	1955	60	40.10	.66	47.50	.79	2,540.55	42.34
	1956	74	193.24	2.61	236.50	3.11	5,042.51	68.14
Rockingham	1955	61	71.80	1.17	90.00	1.48	2,239.15	36.71
	1956	58	86.25	1.49	525.00	9.05	4,752.19	81.93
Strafford	1955	32	63.80	1.98	None	None	604.04	17.00
	1956	17	15.56	.81	5.00	.28	619.65	36.45
Sullivan	1955	16	5.20	.32	30.00	1.66	470.72	28.42
	1956	20	7.09	.35	235.00	11.75	795.74	39.78
State Total	1955	413	370.80	.90	$1,712.50	4.14	$17,639.25	42.71
	1956	442	498.67	1.13	2,779.00	6.29	29,415.80	66.55



Fire occurrence and season ratings in New Hampshire, 1943-55.

The 1956 Season — January 1 - June 30th

January was warmer and wetter than normal so much so that ice went out of streams and rivers. The last week was dry and on January 28th, ten acres of grass and brush burned in Bristol.

February weather was more normal with frequent light snows. March was colder than normal and snow continued to accumulate through the middle of April in the south and into mid-May in Pittsburg. A few lookouts were opened on April 21st with the start of the grass fire season.

On the 23rd, a snow storm covered most of the southern half of the state. The state slowly dried out and fire conditions reached their peak only on May 9th, when, driven by a strong southwest wind, 36 fires burned a total of 275 acres of grass and woodlands. The largest of these fires were:

Town	Area Burned (Acres)	Cause
Derry	15	Dump
Loudon	90	Incinerator
Franklin	30	Smoking
Merrimack	60	Railroad
Merrimack	18	Railroad

The burning index on this day (May 9th) averaged 100. The fire season continued through most of May with many small fires. June was warm and dry but few fires occurred in the new green foliage condition.

Fire Prevention

The state received special recognition from the U. S. Forest Service for its excellent fire record in 1954. Such a record, and those in succeeding years, was attained through a combination of prevention efforts, partly law enforcement and partly good publicity.

The practice of reporting all smokes seen by the lookouts to the warden to check against his permits appeared to cut down the number of illegal fires. This, together with increase of fire prevention efforts aimed at informing the public through press and radio when there is a build-up of fire danger, contributed in a large measure to this record. The continued distribution of fire prevention posters, blotters, and other printed material; talks and the showing of films to schools and organizations throughout the state, and work of the fire wardens' associations in using and distributing automobile posters all helped. The Smokey Bear campaign with its national radio and television coverage was no doubt a large factor in general fire prevention education.

Starting in the spring of 1956 the Division took a very active part in the Smokey Bear Program by having District Chief James Ricard impersonate Smokey Bear and seek enrollment of 10,000 "Smokey's Junior Rangers." Newspaper, television and radio appeals coupled with Smokey's personal appearances at schools and many organizations resulted in a flood of requests. Each Junior Ranger received a kit containing a letter, membership card, window card, pledge, Smokey song sheet, blotter, bookmark and Smokey stamps. When schools closed, the program continued in boys and girls camps and summer outings. At close of fire season the program was concluded — more than 10,000 Junior Forest Fire Ranger appointments have been made. All the various means of prevention were stressed at wardens and deputies training meetings. Prevention was featured in various exhibits especially at fairs. Investigation of fire causes has helped to prevent future fires by pinning down the individual or practice that led to fires. This is a continuing program with the definite need of some individual in the Division who can devote more time to its promotion. Present plans include the establishment of such a position.

Fire Informational Films

The states in Region 7 combined to produce another film in their services of fire fighting training and informational films. This latest release stresses the relationship between forests and water. Filmed in Maine and entitled "Days of a Tree" it shows, through the eyes of a family seeking good fishing, the drying up of streams

NUMBER OF FOREST FIRES, AREA AND DAMAGE BY CAUSES
Total for Two Fiscal Years 1955 and 1956

Causes	No. of Fires	Total Forest Area Burned (Acres)	Damage
Railroad	51	28.65	$535.00
Smokers	222	338.85	2,281.00
Debris Burning	236	190.07	363.00
Miscellaneous	123	138.32	371.00
Lumbering	15	31.50	464.00
Incendiary	58	45.10	122.50
Lightning	53	50.90	119.00
Campfire	40	17.98	111.00
Unknown	57	28.40	125.00
Totals	855	869.77	$4,491.50

through forest destruction by fire and what the fire services are doing to prevent and control fires.

Fire training and prevention films in our library continue to have active circulation to fire departments, schools, clubs and other organizations. There is no charge for this service except transportation charges one way. It is believed that this free circulation is returned in savings in fire prevention and faster control.

Northeastern Forest Fire Protection Commission

States belonging to the compact held a training meeting in Concord in February of each year to which all district chiefs and supervisory personnel attended as trainees. District Chief Goodhue succeeded Fire Control Assistant Diehl in the training team which prepared the assigned lesson outline and presented the subject at the meeting.

Members of the Commission from New Hampshire in 1955 were: State Forester William H. Messeck, Jr., Wakefield Dort of Chesterfield and George L. Porter of Langdon. Harvey Converse of Pittsburg succeeded George L. Porter in 1956.

The Commission published a manual on fire control based on lesson material prepared for the training meetings; established a policy on training meetings, reference manuals for the training team, and adopted the policy of planning to get any fire controlled in the first work period and failing in that, by 10:00 a. m. of the following day.

The organization for forest fire control having been covered in previous sessions, the seventh session in 1955 was devoted to prevention and the use of hand tools and equipment in suppression and mop-up. The eighth session in 1956 covered control of fires in the various forest types represented in the 7-state area and a presentation of the use of visual aids in teaching. The liberal use of these and the lively discussion of techniques by experienced fire control men made the session exceedingly interesting as well as very informative. Maine presented a "live" board of review of a typical north country fire which was very helpful.

Training of Wardens and Deputy Wardens

Following a number of years of in-district training of town wardens and deputies with the district chiefs, special deputies, and members of the Concord Office assigned as instructors, a new system of a training team was tried in 1955 and 1956. With

NUMBER OF FIRES BY MONTHS

Month	Fiscal Year Ending June 30th 1954-55	1955-56
July	31	62
August	25	52
September	4	23
October	22	3
November	12	4
December	0	0
January	3	1
February	1	0
March	14	0
April	162	38
May	126	200
June	13	59
Totals	413	442

this method each instructor presented his own subject at each meeting. Charts and training aids were prepared ahead of time and a definite schedule followed. The training in 1956 covered such subjects as administration, fire weather, fire suppression in deep duff, prevention and the proper preparation of fire reports and fire bills. This method of training proved so successful that it will be continued with a rotation of instructors among the district chiefs and Concord office.

While there was very good attendance of appointed wardens and deputies at these meetings, matching funds for this training proved more than adequate since many of those attending did not present bills to their towns. This training has been supplemented by many local meetings at fire stations where fire training films were shown and local fire problems were discussed. This resulted in the training of volunteer fire fighters which has proven of great value in recent years.

District Special Deputy Training

The training of the district special deputies in the 1954 biennium consisted of in-district training with meetings arranged and instruction given by the district chief. The problems presented by the campaign fires of 1953 were reviewed with the result that many new operational procedures were established for future use.

In 1955 a committee of district chiefs planned and conducted a one-day training school for all special deputies at Bear Brook State Park. This instruction concentrated on relaying water by pump and hose up Catamount Hill. Each of four crews with individually

COMBINED FOREST FIRE RECORD FOR FISCAL YEARS 1955-56

	1955			1956			Total 1955-56		
	Number of Fires	Area Burned Acres	Damage	Number of Fires	Area Burned Acres	Damage	Number of Fires	Area Burned Acres	Damage
All Causes	413	370.80	$1,712.50	442	498.67	$2,779.00	855	869.47	$4,491.50
White Mountain National Forest	5	0.50	None	5	2.70	None	10	3.20	None
Totals	418	371.30	$1,712.50	447	501.37	$2,779.00	865	872.67	$4,491.50

assigned positions were issued 4 portable pumps and hose enough to reach the top. Each pump crew, under the crew boss, set up its own pump line, established telephone communications at the pumps to regulate the flow of water, requisitioned equipment and supplies from a supply depot, kept records and at the conclusion picked up equipment and checked it back into the supply depot. Jobs were rotated during the run and at the end of the field exercise a critique was held and the conclusions recorded. At this time a small complete fire camp headquarters unit (since stored at Mt. Prospect) was set up and demonstrated. In all, it was a most successful field training meeting, but it used about all the limited training funds. In some districts the special deputies continued to meet regularly on their own time for additional training with their district chief. If additional funds were available for more of this type of training, it is believed that sizable savings could be realized in the control of future large fires.

Lookout Watchman Training

In the springs of 1955 and 1956 one-day training schools were held for lookout watchmen in Concord and Lancaster. These covered such subjects as fire organization, working hours, wages, proper filling out of reports, safety, airplane spotting and reporting as well as care of equipment and structures. For the new men, instruction was also given in the use of fire-finders, maps, radio and telephones. Such instruction for new men was followed up by practical exercises on the job by the district chief and experienced watchmen. Radio has proved to be of great value in speeding up training of new watchmen.

Although there has been a large increase in the salary, plus improvement in living conditions and working hours in recent years, it has been difficult to find and retain men in this position. Under present conditions this trend will continue into the next biennium.

At the start of the 1956 season the record of service stood as follows:

No. of Years Service	No of Men	No. of Years Service	No of Men
1	9	8	1
2	2	9	1
3	5	11	1
4	1	12	1
5	1	15	2
6	2	17	1
7	2	18	1

Lookout Maintenance

The maintenance of lookout installations is accomplished in the following ways: First, many of the minor repairs such as replacing stair treads, simple carpentry, painting of cabins both inside and out and trail maintenance is done by the watchmen; second, jobs on tower cabs, tower steel, road jobs, electricity and radio installations and skilled carpentry and cement work are done by the regular two-man maintenance crew; third, some jobs such as tower painting and road construction are done by local contract. This approach is used when job analysis shows (because of long travel distances) that the job can be completed cheaper by using local contractors.

During two rather quiet fire years, the maintenance crew and lookout watchmen were able to catch up on some of the backlog of work piled up in severe fire years. The change-over to dial phones necessitated telephone line improvement at Stratham, Cardigan, Jeremy, Kearsarge, Red, Green and Great Hill. New cinder block chimneys were erected at Jeremy, Miller Park, Uncanoonuc, Oak, Warner, Croydon, Hyland, Pitcher, Milan and Blue Job. New stoves were put in at Uncanoonuc, Hyland and Jeremy.

The specified improvements and major maintenance at each station were as follows:

Bear Hill — Painted tower, tower cab and interior of cabin.

Blue Job — Erected permanent chimney.

Cannon — An emergency telephone line was laid while repairs on the tramway were in progress. Painted the steel on tower. A new power line to the top eliminated the need of a generator at the top.

Cardigan — The hermitage shelter on Cardigan was destroyed by fire and was rebuilt by the watchman in 1956. The telephone was changed to dial in the spring of 1956.

Craney — Condemnation procedure for acquiring land is in process. The present owner desired relocation of road to avoid travel past his home, this necessitating considerable survey work.

Crotched — Purchased Osborne Fire Finder and built and installed stand.

Deer — Purchased Osborne Fire Finder and installed stand. Painted cabin inside.

Federal — Tower guy anchors replaced. Electric wiring replaced. A lightning strike on the telephone line near the top in 1955 killed all of the pine trees to the south of the cabin. Those on state land were cut and slash cleaned up during the winter.

Great Hill — The barn roof at the Fisher Place was shingled on one side. This barn houses the standby equipment trucks for the district. A new water line to the house was installed and roof and ceiling repairs made. A mouse-proof stall for storage of fire hose was built in the tool house.

Green Mt. — The cabin interior was insulated, rearranged and painted. New flooring was laid in the tower and the road to the garage graded and gravelled. The work at Great Hill and Green Mt. was done by District 6 watchmen.

Hyland Hill — Road was gravelled and graded and a new chimney built. The pine around this tower cut to clear the view, necessitated extensive slash cleaning around the cabin. The road was all but destroyed in this logging and needs extensive repairs. This station should have electricity for radio since it is the natural station in the district for a dispatcher station. This would allow relocation of the telephone line to bring it up to dial standards.

Jeremy Hill — The tower was scraped, primed and painted, and a chimney erected for the cabin. There was extensive cleanup and replacing of wire on the telephone line since it was changed to dial.

Kearsarge — Telephone line was relocated on power line poles and new wire installed because of change to dial system.

Magalloway — With installation of a wind-charger on the tower and permanent storage batteries allowing the use of a 6-volt radio receiver, the telephone line was abandoned. The new road now approaches from the north much closer to the base of the mountain than before. An old camp building at Barrell Brook was obtained as a trail cabin taking the place of the camp across Second Lake. The cabin roof was reshingled. The tower was painted in the fall of 1955 and the roof repaired.

Milan Hill — Since the watchman's wife took over the job as park superintendent here, they have lived in the superintendent's cottage. A new chimney was erected and remote control wires strung to the tower for the radio. The old water tank on the tower was taken down and the steel and copper salvaged.

Oak Hill — The tower cab was painted, and extensive repairs made to the road. A new chimney was built. The pitcher pump at the well was replaced after being damaged by hunters. The generator for charging the battery gave increasing trouble necessitating frequent repairs. This station needs electricity.

Pawtuckaway — A new plastic pipe line was installed from the well to house. The south side of house was shingled. The telephone poles here are in poor condition and need replacement.

Much of this area has been closed to public entry due to logging slash following hurricane cleanup and improvement cuttings.

Pitcher Mt. — Repairs were made to outside wiring due to ice and lightning damage. The cabin floor was strengthened, a new chimney built and the porch screened, shuttered and strengthened. The property owner wished the relocation of the telephone line on power line right-of-way.

Prospect Mt. — Trees were cut to improve the visibility from the tower. Tower cab interior was painted and some improvements made in the cottage.

Rock Rimmon — The cabin interior was repainted and the ground cleaned up after hurricane blowdown. The road was repaired.

Signal Mt. — The tower was painted by contract job. An Osborne Fire Finder was purchased and installed on a new stand. The garage was built by the watchman at the end of the road at Millsfield Pond Brook. Extensive repairs to trail and telephone line were necessitated by washouts on the logging road.

Stratham — A new electric line and radio were installed. The telephone line up from the north side of the mountain was relocated. Damage done by vandalism to the garage was repaired. The lightning cable and points were stolen from the cabin and need replacement.

Sugar Loaf — With the installation of radio the long telephone line was abandoned. Only the telephone line to Nash Bog Pond Dam was kept up. The watchman built a garage near the base camp.

Uncanoonuc — The entrance road to cabin was gravelled and a culvert laid. The cabin interior was repainted and a new chimney, stove, sink and drain put in. A toilet was rebuilt at the tower location.

Warner Hill — The entrance road was retarred.

Moose Falls — The patrolman tore down the old dynamite cap house, moved the flagpole and installed new tables. A new flag, a gift of the Henniker American Legion, is now being flown at this entrance to the state from Canada. A new water supply and extension of the camping area are needed.

Radio Communications

Radio is not only one of the most important factors in speeding up communications and thus decreasing acreage loss due to fire, but it is increasingly useful in administration for keeping in touch with

field men. It has proved of great value in Civil Defense and other emergency communications. Much of the advantage of this is lost when the lookouts, who relay messages, are closed or shut off by power failures. There is definite need of an automatic relay station on Kearsarge and portable gas generators at key stations. Additional portable radios and small speaker units are also needed to use with the Handie Talkies. Present use of the small sets at towers which do not have electricity has cut down the number available for field use.

During the biennium Edison 6-volt storage batteries were placed at Oak Hill and Magalloway. A 6-volt wind charger attached to the side of the tower on Magalloway powers a 6-volt radio receiver there, saving the batteries in the pack set transmitter. Radio was installed in the Stratham Hill tower. At West Stewartstown and Groveton the radios were moved to new locations for

LOOKOUT STATION STATISTICS

	Number of Smokes Discovered		Number of Fires Reported		Number of Visitors Registered	
	1955	1956	1955	1956	1955	1956
Bear Hill	146	135	75	61	716	605
Belknap Mt.	331	119	222	61	1,386	1,278
Blue Job Mt.	764	426	269	145	1,947	1,214
Cannon Mt.	193	260	14	25	2,372	3,433
Cardigan Mt.	70	30	70	30	2,622	2,399
Craney Hill	140	84	83	41	256	107
Crotched Mt.	95	81	51	50	643	612
Croydon	30	29	28	27	29	22
Deer	4	0	0	0	12	35
Federal	85	74	72	70	630	335
Great Hill	9	7	6	4	313	258
Green Mt.	122	95	29	40	1,281	1,058
Hyland Hill	36	22	24	14	196	85
Jeremy Hill	169	103	97	70	550	441
Kearsarge	199	131	44	16	8,568	6,076
Magalloway	0	9	0	6	14	69
Milan Hill	4	13	4	13	475	810
Miller Park	66	29	48	19	5,142	4,775
Oak Hill	345	228	187	137	406	386
Pawtuckaway	1,065	755	191	119	1,089	770
Pitcher	27	6	15	5	1,009	645
Prospect	26	26	10	7	1,029	2,600
Red Hill	126	60	22	34	1,880	1,423
Rock Rimmon	81	86	48	34	860	481
Signal Mt.	2	2	2	2	22	23
Stratham Hill	48	94	25	92	1,761	1,732
Sugar Loaf	3	5	3	4	17	9
Uncanoonuc	455	283	63	84	1,480	1,261
Warner	186	92	84	43	716	681
Totals	4,827	3,284	3,572	1,253	37,421	33,623

better reception but operated by remote control from the old sites. Remote control wire was strung from the tower to the superintendent's cottage at Milan Hill. A new antenna at the Concord Supply Depot greatly increased the range of this station which now also has a new control in the District office. Three used Motorola Mobiles were purchased and the Motorola Handie Talkies, with the Civil Defense fund sharing the cost, were shifted to dry battery power by purchase of new battery cases.

During this period, 21 new base stations in connection with town fire departments were licensed and put into operation. Merrimack County, which now has radio in all but six towns, conducted a radio alert with excellent results in base and mobile reporting. Our present system is as follows:

NUMBER, TYPE AND OWNERSHIP OF RADIO APPARATUS IN THE FOREST FIRE NETWORK

Type and Location	Forestry Division	Town Fire Departments	Special Deputies and Private Co-operators	Totals
Base Stations	27	38	6	71
Mobile Units (in vehicles)	23	150	29	202
Portable	55	14	....	69
Totals	105	202	35	342

Fire Tools for Resale to Towns

An increase of funds budgeted for this program in the biennium allowed a greater number of tools and back pack fire pumps to be purchased for resale to the towns at one-half the original cost. This has brought this program up to the point where it is no longer necessary to restrict the sale of certain items to a town in any one year as in the past. An increasingly large portion of the funds are for repair parts for back pack pumps. Changes such as substituting the Maine Fire Axe for the Pulaski and dropping the crosscut saw are in keeping with progress in fire tool use.

Fire tools in which the state has a one-half interest are regularly inspected and inventoried by the district chief and the towns are encouraged to mark them for ownership and keep them in condition, the state sharing in this cost. Marking of town fire tools and equipment was a subject of the 1955 training at which time a state-wide system of simple marking was proposed with detailed instructions as to where to mark each tool. The state assisted in securing branding irons.

FIRE TOOLS SOLD TO TOWNS 1955-56

Knapsack pumps, brass	288	Kinney fire rakes, spring steel	35
Knapsack pumps, galvanized	78	Pulaski tools	35
Shovels, size No. 0 LH	214	Hazel hoes	42
Shovels, size No. 2 DH	18	Lanterns, oil	59
Axes, Maine type fire	34	Headlights, electric	61
Axes, single bit	41	Brooms, rattan	150
Fire rakes, mowing machine type	78	Water pails, galvanized	196
		Canteens, one gallon	25

Total spent for town tools 1955-56: $14,111.46.

State Equipment

Three two-door sedan passenger autos were purchased for Districts 2, 5, and 7, two station wagons for the State Forester and District 6, and two one-half ton pickups for District 8 and the maintenance crew. Six old sedans and one pickup were traded in. The Willys 1 ton 4-wheel-drive pickup from District 8 was repaired and kept as a general fire and maintenance vehicle. A new platform body was built on the 1½ ton stake body truck used by maintenance crews and all of the stand-by fire equipment 1939 trucks were fitted with new tires.

Three new power fire pumps were purchased. One new four-stage centrifugal pump powered by a light weight chain saw motor gave excellent performance until the motor broke down in long use on a fire; the other two were Pacific Marines, a Type "Y" and an A-7. This latter is a 35-pound portable capable of high pressures and uses 1" hose. Five thousand feet of 1" linen hose for the A-7s and 6000 feet of 1½ inch linen hose all packed in canvas carrying bags together with the necessary hose accessories were purchased.

Four Osborne Fire Finders were purchased and stands made for Deer, Sugar Loaf, Signal and Crotched Mountains thus completing the furnishing of all towers with this equipment. New binoculars were purchased for Cardigan to replace some stolen by a visitor. All stations now have excellent binoculars.

Six small folding oak tables made by the maintenance crew in the winter are an addition to our fire headquarters kit. A small but complete headquarters unit was boxed and placed at Mt. Prospect for northern area use. This consisted of tents, cots, cot pads, blankets, table, lighting and emergency messing and toilet equipment for four men.

One new movie projector and screen were purchased for combined use in Districts 1A and 5. A second-hand refrigerator serves the warehouse as a water cooler. A portable typewriter was purchased for District 4. A sixteen-foot aluminum ladder with the

necessary hooks, brackets and hangers was purchased for a swing staging kit for painting towers.

Fire Weather Stations

The theme of the 1955 fair exhibits and part of the Warden Training in 1956 was "Prevention based on Fire Weather." An enlarged fire danger meter was used to illustrate the danger ratings and to interpret the various readings. The Division operated seven fire danger stations at lookout stations and received reports of two run by co-operators.

Measurements from all stations are compared and computed against actual fire occurrence by the Southeastern Forest Experiment Station and these readings give an interesting picture of the result of prevention efforts in New Hampshire during the biennium. In spite of high fire danger at times the ratio of expected fires to actual fires shows a downward trend as shown in the chart under Administration.

Civil Defense and Ground Observer Corps

Lookout watchmen received instructions and continued to report planes to the filter centers. Because of wind noise and the restricted field of view upward from a tower, it is not the best kind of observation point. However, in a test, a radio installed at the filter center received calls directly from the towers proving that this system would work very well.

The fire service participation in Civil Defense plans, communications and exercises and the forestry radio communication system has proved of great value in state-wide communication during the period when the lookouts are on duty. In the hurricane emergency in the fall of 1954, the lookout stations which still had power rendered excellent service. Automatic relay and generators at key stations would enable the Division to give this service the year round. Matching Civil Defense funds for the purchase of radio have been of the greatest help to the town fire departments and wardens in acquiring radios.

Special Problems

Fire service personnel aided in the search for the downed Northeast Airlines plane in the Carroll-Coos County area in December, 1954. Because of special knowledge of the country, skill in

use of maps, radio and equipment suited for such a search, they were most helpful. Later they worked with officials on investigations and reducing the fire hazard both before and during the salvage operations. Fire personnel also aided in searches for lost persons. Again this knowledge of organization, maps and the country communications equipment were a great help. There is a need for more inter-department planning to save time and wasted effort in these searches.

Fire Protection in Unorganized Towns

Provision of the Timber Tax Law as enacted by the 1955 legislature provided that income from the yield tax on timber in the unorganized towns be set aside for the protection and improvement of forest lands in these towns. Plans were made for basic protection for these areas which included access roads and trails, tools and equipment caches. Work was started under the direction of the district chiefs using local crews to open up trails and old logging roads including brushing out, repairs of bridges and bulldozing in some cases.

Rates of Pay for Fire Fighting:

The Commission approved March 23, 1955, the following rates of pay as the maximum in each category that would be shared equally with the towns:

Wardens	$1.50 per hour
Deputy Wardens	1.25 " "
Special Deputy Wardens	1.50 " "
Firemen (Town and City Fire Dept.)	1.10 " "
Special equipment operators	1.10 " "
Timekeepers	1.10 " "
Experienced fire fighters	1.10 " "
Laborers	.90 " "
Transportation Rates:	
Passenger car and driver	.07 per mile
Passenger car, driver and one passenger	.08 " "
Passenger car, driver and two or more passengers	.09 " "
Trucks	.10 " "
Equipment Rental:	
Chain saw and operator	2.50 per hour
High pressure pumps	3.00 " "
Low pressure pumps	2.50 " "
Radio cars	1.00 " "
Jeeps, with operators (contract)	3.00 " "
Power Wagons, with operator (contract)	4.00 " "
Tank Trucks, 500-1,000 gal.	5.00 " "
Fire Department Pumpers (per pumping hour)	5.00 " "

WOOD PROCESSING MILL REGISTRATIONS

An important phase of fire prevention work by the District Forest Fire Chiefs involves the inspection of all types of sawmills and wood working plants where inflammable wood residues are produced such as sawdust, shavings, slabs, edgings, cuttings, chips and bark. Pulp and paper mills are so far the only types of wood using industry exempted from registration by law. The fees from registration help to meet the cost of inspection. Most of the calls by the District Chief are educational in nature, explaining to the owner or operator how he can reduce fire hazard for his own benefit, and also how he can comply with the forest fire laws. Education of the mill owner extends back into the woods, since often the mill operator has charge of the woods operation and must be made aware of fire hazards and laws there also.

Commercial mills, (Class I), pay an annual registration fee of $25.00 ($10.00 after Oct. 1st) and part-time or farm mills (Class II) $10.00 ($3.00 after Oct. 1st). Mill registrations run for the calendar year.

NUMBER OF MILLS REGISTERED
(Calendar Year)

	1955	1956
Class		
I	391	395
II	51	53
Type		
Sawmill	409	413
Planing Mill	17	12
Shingle Mill	1	1
Other	15	22
Power		
Steam	2	4
Gasoline	192	176
Diesel	176	162
Electric	51	46
Water	7	6
Combination	14	54
Total Mills	442	448

RECEIPTS FROM REGISTRATIONS

	1955	1956
Class I	$9,715	$9,670*
Class II	496	499**
Total receipts	$10,211	$10,169

*11 mills registered after Oct. 1st @ $10.
** 5 mills registered after Oct. 1st @ $3.

There was a great increase in the proportion of mills employing a combination of power sources, such as both diesel and electric power. This reflects the more stationary character of the majority of sawmills. At one time it was customary for most mills to move frequently from setting to setting. Now over 70% of the mills do not move at all during the year, as shown by the following table:

NUMBER OF MILLS MOVING TO NEW SETTINGS

Number of Additional Settings

	0	1	2	3	4	5	6	7	8	9 or more	Total
1955	318	67	26	16	8	5	1	0	1	0	442
1956	304	80	24	16	10	8	1	2	0	1	448

Figures in the first column represent the number of mills that did not move at all, but remained at the same site throughout the year. The weighted averages of those that moved give an average of slightly over two settings per year in both years. This compares with an average of over 3½ moves per year 5 years ago.

DIVISION OF PEST AND DISEASE CONTROL

LEONARD E. NEWMAN, *Chief, Forest Pest Control*

WHITE PINE BLISTER RUST CONTROL

Economic Value of White Pine

Recent surveys by the United States Forest Service disclosed that New Hampshire, with 84 per cent of its land area covered by forests is, **"one of the most extensively forested states in the Union."** According to the 1950 report of the Bureau of the Census, New Hampshire has a labor force of some 200,000 persons, and that one out of every five is dependent, directly or indirectly, upon forest resources as a means of livelihood.

Our commercial forest area has been determined to be 4,682,200 acres. Of this, Eastern White Pine occupies, in round figures, 1,221,400 acres, or about 26 per cent of the entire forest area. While this is only slightly in excess of one-fourth of the commercial forest, the importance of white pine is better appreciated when it is realized that this species contributes nearly 70 per cent of the state's annual lumber cut. For the ten year period of 1946-

Forestry Division Photo.

White pine contributes annually nearly 70 per cent of New Hampshire's lumber cut

1955 inclusive, the average yearly cut of pine was 230,279,800 board feet. Data compiled in recent years indicate that from the sale of stumpage, logging operations, transportation, and processing into products of many kinds, the annual revenue derived from our native pine exceeds twenty millions of dollars.

It is evident that this forest species is a state-wide source of great revenue, and one not to be regarded lightly. To increase the supply and quality of this most valuable of all our native softwoods calls for more intelligent management, closer utilization, and adequate protection from fire, insects and diseases.

Management

Since the subject of better forest management is discussed elsewhere in the Commission's Biennial Report, it does not appear necessary to treat it in this chapter in any detail. However, there is a wealth of assistance available to the 35,000 woodland owners of New Hampshire. Through aid and advice from the county foresters, district forest advisory boards, consulting foresters, and the Forestry Division of the Commission, there should be every incentive for the smaller timber owner to put his forest holdings under some form of management to his ultimate benefit.

Protection

Fire is an ever-present menace to our woodlands, private or public. Since the majority of forest fires are due to human carelessness, it behooves all citizens, and particularly the woodlot owner, to observe state laws and regulations, and to encourage others to do likewise. As a project, forest fire prevention and suppression, has developed into a state and town function, and the New Hampshire Forest Fire Service has attained a very creditable record and degree of efficiency.

Other forms of protection needed by our forests are from various insects and diseases. Some of these can be effectively combatted by the individual owner through learning to recognize them, and by practicing the proper methods of control. Where the problem may be beyond the scope or ability of the smaller timber owner, and has become a public project, the individual can still obtain protection by giving moral support to the agencies responsible for suppression or control. In the realm of forest tree diseases, the one requiring whole-hearted support of all white pine owners, as well as those dependent upon this species, is the White Pine Blister Rust, a bark disease of all five-needled pines.

USDA Photo

Blister rust can kill pines of all ages and sizes

Nature and Development of the Rust

White Pine Blister Rust is a fungus disease, having two hosts, or plants, necessary for its development and spread. These are the five-needled pines (of which our eastern white pine is one species) and all members of wild and cultivated currant and gooseberry bushes, known botanically as Ribes.

In the spring, around late April or early May, blisters breaking forth through the bark of infected pines release millions of tiny, rust-colored spores, or seeds. These are distributed by the wind,

and falling on the leaves of ribes bushes commence anew the seasonal development of the rust. During the late spring or early summer months, orange-colored growths appear on the undersurface of ribes leaves. This stage spreads from leaf to leaf, and from bush to bush, and in this manner the disease may travel considerable distances during the summer. These spores can infect ONLY ribes, not white pines. Developing out of this stage there is another spore which, spread by the wind, and falling on white pines enters the tree through its needles. This completes the life-cycle of the rust.

The fungus works gradually downward from the needles into the bark of the young twigs, or branches, killing as it goes. Finally, upon reaching the trunk, and rupturing the bark, this girdling process cuts off the flow of sap and eventually kills the pine.

Since the spore that infects pines is short-lived, its infecting range is limited, seldom exceeding 900 to 1000 feet under ordinary forest conditions. By destroying ribes within, and around, white pine stands, the cycle of the rust is broken, and protection to this tree assured.

Cooperative Control

In New Hampshire the campaign against this serious disease is an outstanding example of successful cooperation between a state, its political sub-divisions and individual forest owners. Since the inception of this undertaking, generous support has been received from the U. S. Department of Agriculture. Aside from providing the technical and supervisory personnel, so essential to a state-wide project, additional federal allotments have yearly been available to aid in the preliminary control work as well as in the eradication of ribes.

Two years ago, the federal field organization consisted of six districts, with a leader in charge of each. Since then, due to retirement from federal service, and increased territory being put under control, the number has been reduced to four. The area supervised by each leader, at present, varies from 26 towns with 357,000 acres of control lands, to 69 towns with 836,000 acres. Variation in the size of these districts is due in part to topographic conditions, status of control, and the existing work-load. These leaders are responsible for many details essential to successful control of the rust. Among the more important are detailed mapping and scouting of white pine stands and their environs; employment and supervision of field units; educational and service work with

white pine owners; infection and damage studies, and other duties pertinent to blister rust control. Assisting the leaders, one or more to a district, are personnel skilled in mapping, control area examination, and training of eradication crews. At present, district leaders and their headquarters are as follows: S. H. Boomer, North Conway; W. S. Codman, Forest Service Building, Laconia; S. D. Conner, 40 Mechanic Street, Keene, and R. E. Curtis, Farm Bureau, Rochester.

The destruction of millions of wild ribes has definitely controlled spread of the rust. Under certain conditions spraying with chemicals has supplemented hand-pulling

Cooperative Control in 1955

At their annual meetings on March 8, 1955, following recommendations by the State Forester, 92 towns and cities appropriated $29,300.00. Of the total number cooperating in blister rust control, 63 per cent voted $400.00 each. State and federal funds available for ribes eradication amounted to $8,796.24, which permitted increasing town funds on the average 30 per cent. This was somewhat in excess of the cooperative aid assured towns prior to their annual meeting. Where available, local labor was employed to

make up the field units, obtaining them through contacts with town officials, or from individual applications to the district leaders.

The following table constitutes a summary of all town cooperative control work, as well as that conducted under authority of Section 9, Chapter 238, of the Revised Laws, for the season of 1955.

BLISTER RUST CONTROL — 1955

First Workings		Second and Other Workings		All Workings	
Acres Covered	No. Ribes Destroyed	Acres Covered	No. Ribes Destroyed	Acres Covered	No. Ribes Destroyed
8,807	46,634	156,235	530,456	165,042	577,090

Through scouting and detailed mapping, during the summer, fall and winter periods, a reduction in the state-wide control area was effected in the amount of 35,759 acres. These areas included lands previously occupied by white pine, but which, following logging or other disturbances, had failed to reseed to this species, and indicated little prospect of doing so in the near future.

Application of Section 9, Chapter 238: Revised Laws

On July 29, 1955, the Governor and Council approved the application of this section of the state blister rust statutes in eleven towns where control measures were necessary, and in which appropriations had not been made at the previous town meeting. As required by Section 9b, the boards of selectmen were given written notification two weeks or more in advance, stating the proposed date when control measures would commence, and the location of such work in their town. The accomplishments in control are included in the 1955 summary.

Pine and Control Area Surveys

In preparation for the 1955 season, detailed mapping was conducted in road blocks scheduled for control work. These surveys were made by personnel experienced in both forest mapping as well as in all phases of ribes eradication. Other areas, previously mapped and coming up for attention in 1955 were rechecked to determine whether any change in the white pine acreage had occurred since originally surveyed. Such examinations were responsible, in part, for the reduction of the state control area

reported above. In all, areas aggregating 128,630 acres were detailed-mapped.

The value of detailed maps of the local control areas cannot be over-estimated. Not only do they indicate the white pine stands. but also drainages, stone-walls and fence-rows, likely sites for wild ribes. In addition, woods roads and trails are shown, thus providing the field units with a knowledge of means for getting in and out of the road blocks with a minimum of time and expense. Furthermore, when future examinations of an area are planned, the details are invaluable since they denote the location of former ribes concentrations, sites most likely to produce a regrowth of these plants. Through the use of aerial photographs as a base, such maps are produced at a cost of but a few cents per acre.

Cooperative Control in 1956

From returns by the boards of selectmen to the State Forester it appeared that 70 towns and cities voted $22,249.00 for blister rust control. In addition, funds were made available by the Interlaken Camps, Inc., for recheck of its property in the Town of Croydon. Aside from state and federal funds expended in detailed mapping during the winter of 1955-56, aid to appropriating towns in ribes eradication totaled $10,767.02.

In the following table is a condensation of accomplishments in ribes eradication with cooperating towns and cities, as well as work conducted under legal authority.

BLISTER RUST CONTROL — 1956

First Workings		Second and Other Workings		All Workings	
Acres Covered	No. Ribes Destroyed	Acres Covered	No. Ribes Destroyed	Acres Covered	No. Ribes Destroyed
10,581	85,181	252,657	394,418	263,238	479,599

Since the composition of forest growth constantly changes due to human and natural influences, so is the case throughout blister rust control areas which formerly supported white pine stands. Inasmuch as the objective of this program is to protect existing white pine to maturity, and at the lowest possible cost, non-pine lands are discontinued through re-examinations. However, often these surveys, or rechecks, disclose new areas which, over the years, have reseeded to white pine, thus increasing local lands requiring protection from the rust. For the calendar year the **net** reduc-

tion, state-wide, aggregated 30,630 acres. As of October 1, 1956, the control areas of 221 towns and cities totaled 2,509,021 acres.

Pine and Control Area Surveys

Elsewhere in this report will be found a statement as to what "detailed" blister rust maps constitute, their use and value. As an aid in planning eradication programs for another season, it is customary to conduct these surveys during the fall and winter months. For the period of October 1, 1955 to April 30, 1956, mapping was carried on 148,951 acres; being 20,321 acres more than for the preceding year and period.

Control Measures Effective

Control of the white pine blister rust in New Hampshire is moving forward at an encouraging rate. Of the present state control area of 2,509,021 acres, the combined lands on maintenance amount to 2,129,639 acres, or 84.8 per cent of the total. An area is said to be on a "maintenance basis" when the population of wild ribes has been so reduced that commercial protection to the pine growth is assured, and that no further control work is likely to be needed for nearly ten years. This statement should not be construed as meaning that ALL of the maintenance acreage given above will not require any attention until ten years from the present writing. A considerable portion has been in this category for more than ten years, but due to the press of initial and second workings, a reexamination of them at the proper interval has not been possible, and is needed at the present time.

On lands where the original distribution of wild ribes is not excessive, and no major soil disturbances take place, three workings should be sufficient to give white pine protection to maturity; sometimes this number is not required. Experience to date, upon areas previously placed on maintenance is most encouraging, as is shown by the following record:

In fourteen towns, taken at random, maintenance examinations revealed this situation. A total of 20,972 acres were examined and 6,193 scattering ribes pulled by the scouts. Crew work, consisting of heavy concentrations, was found upon only 97 acres, where 19,699 bushes were destroyed. This indicated that excellent control work had been performed in previous years, and furthermore, that upon only 97 acres had disturbances brought about ribes regrowth in any considerable numbers.

Blister rust control in New Hampshire has progressed to the point where heavy damage, so common years ago, is today comparatively small. Although evidence of those early outbreaks is still visible in the form of dead and dying pines, new and extensive infection areas are no longer the general rule. Of special concern however, is the loss of natural white pine reproduction on logged-off lands that could have been prevented through prompt application of control measures. The two major phases of control work are (1) immediate protection of these younger stands, and (2) examination of the areas now on maintenance in order that the benefits of the initial control measures be not lost.

OTHER FOREST INSECTS AND DISEASES

Dr. J. G. Conklin, *State Entomologist* — Durham, N. H.

The following brief summary is based on information supplied by the State Entomologist. More complete details may be found in the Report of the Commissioner of Agriculture, in whom responsibility for forest insect and disease control resides.

1. **The Gypsy Moth:** The gypsy moth is without question the most serious of defoliating insects attacking New Hampshire woodlands. In the current biennium, the insect has shown a marked but temporary decrease in abundance in this state. In 1955, an aerial survey conducted by federal agencies revealed a total of but 14,975 acres of recognizable defoliation. In 1956, defoliation was quite spotty and in general very low. It is anticipated that in 1957, the insect will show signs of the usual rise in gypsy moth population.

Observations made annually to determine something of the status of natural enemies of the gypsy moth indicate that the wilt disease and certain parasites and predators are responsible for a significant reduction of the gypsy moth in some years but they cannot be depended upon to keep the insect well under control without the need for spraying, particularly in recreational areas or where valuable timber is involved.

2. **Forest Tent Caterpillar:** In 1954, an outbreak of the forest tent caterpillar developed in the Connecticut River Valley and attracted the concern of maple sugar producers generally. In the fall of 1955, an egg mass survey was conducted in thirty-one towns having substantial stands of sugar maple and it was possible to advise maple sugar producers as to whether or not defoliation in

the spring of 1956 could be expected. In only a very few instances was the egg population sufficiently high to indicate the possibility of noticeable defoliation occurring during the 1956 growing season. Apparently natural control factors, including both parasites and disease, were chiefly responsible in checking what might have been a major outbreak of this pest.

3. **Satin Moth:** This particularly destructive insect, once a major problem in New Hampshire, appears now to be in check through the agency of natural enemies. In some years, however, noticeable defoliation of ornamental poplars, in particular, attracts attention. During the biennium, noticeable defoliation of individual trees was observed in Berlin, Laconia, Lyme, and Meredith.

4. **Pine Leaf Aphid:** This insect which attacks white pine and spruce has been unusually prevalent in 1955 and 1956 in central and northern New Hampshire. The browning of white pine twigs was especially noticeable and many complaints were received from timberland owners and the general public.

5. **White Pine Weevil:** Observations on the status of the white pine weevil are made each year in a series of permanently established plots. During the biennium, records indicate that the white pine weevil is causing a moderate amount of damage in young stands. No major fluctuations in the weevil populations have occurred in the biennium.

6. **Balsam Woolly Aphid:** This scale insect continues to cause serious damage to balsam fir particularly in the White Mountain area. No practical means of control are available at the present time and prompt salvage of infested trees seems to be the only practical means of combatting this pest. Federal agencies have liberated colonies of a natural enemy of the balsam woolly aphid at certain points in northern New Hampshire but it will be some years before the beneficial effect of such introductions can be appraised.

7. **Beech Scale:** The beech scale continues to extend its range and intensity of infestation. Mortality begins only when nectria disease, following the insect, has killed large areas of bark. Here again, salvage operations appear to offer the only practical remedy under forest conditions.

8. **Pine Needle Blight:** Pines affected by this condition in 1954 were found recovered in a high percentage of cases in a recheck made in 1955. During August 1956 a less severe recurrence of this condition occurred. Trees affected were different individuals than those in 1954.

STATE FORESTS AND RESERVATIONS

During the previous biennium, the Forestry and Recreation Commission expanded existing areas by the purchase of 549.5 acres of land at a total cost of $2,625.00. Areas more suitable for commercial or residential development totalling 28 acres were sold at a total of $5,953.00. The balance of funds is designated for additional purchase of lands adjoining presently-owned state areas. As of June 30, 1956, the state has title to 138 tracts in 103 towns totalling 61,068 acres.

The following tables and descriptions show the state land activities during the period July 1, 1954 — June 30, 1956:

ACQUISITIONS 1955-56

Purchases

Tract	Town	Acres	Cost
Bear Brook	Allenstown	10	$125.00
Black Mountain	Haverhill	100	450.00
Cardigan Mountain	Orange	21	125.00
" "	"	50	200.00
" "	"	60	300.00
Mascoma	Canaan	15	50.00
"	"	22.5	175.00
Wade	Hill	50	200.00
"	"	139	600.00
"	"	82	400.00
Total		549.5	$2,625.00

Gifts

Tract	Town	Acres	Cost
Wentworth-Coolidge	Portsmouth	2	
Total		2	
Total Acquisitions		551.5	$2,625.00

Transfers to Other Departments

Tract	Town	Acres	Cost
Hilton Park	Dover and Newington	24	

State Lands Sold

Tract	Town	Acres	Receipts
Kingston Dam	Kingston	1	$1.00
Ponemah	Amherst	6	2,400.00
Salmon Falls	Rochester	20	3,551.00
Waldron	Northwood	1	1.00
Total		28	$5,953.00

Summary

	Acres	Cost	Receipts
Total Acquisitions	551.5	$2,625.00	
Total Sales and Reductions	52		$5,953.00
Net Acquisitions	499.5		
Previously Reported	60,568.5		
Total Area, June 30, 1956	61,068		

PURCHASES

Bear Brook. A 10-acre tract adjacent to Bear Brook State Park in Allenstown was purchased from Charles H. Nixon of Pembroke. This brings the Bear Brook total to 7,243 acres.

Black Mountain. Purchase of a 100-acre tract adjoining the Black Mountain State Forest was made from William J. Eichhorn of Haverhill for $450.00. Total acreage of this tract is now 699 acres.

Cardigan. Expansion of the Cardigan Mountain Reservation was made possible by the purchase of three lots totalling 131 acres. The individual purchases are as follows: (1) 21 acres from Clarence M. Eastman of Canaan for $125.00; (2) 50 acres from J. Emery Dow of Canaan for $200.00; (3) 60 acres from Harry A. and Melvin B. Eastman for $300.00. This reservation now totals 5,425 acres.

Mascoma. Two small tracts totalling 37.5 acres were purchased bringing the total acreage to 231.5 acres. One of 15 acres was purchased from Joseph E. Bonner of Canaan for $50.00 and the other, a 22.5 acre tract, was purchased from Leon B. Tucker of Canaan for $175.00.

Wade. Three lots adjoining the original Wade lot gift were purchased bringing the total acreage to 331 acres. Fifty acres were purchased from Frank A. and Alice M. Robbins of Pittsfield for $200.00; 139 acres from Elmer H. Carleton of Bristol for $600.00; and 82 acres from Albert Pinker of Hill for $400.00.

GIFTS

Wentworth-Coolidge. The final one-third undivided interest in approximately 2 acres of land including and surrounding the Wentworth-Coolidge Mansion, Little Harbor Road, Portsmouth, N. H., was granted to the State of New Hampshire by Mary Abigail Parsons Coolidge of Boston, Massachusetts.

TRANSFERS TO OTHER DEPARTMENTS

Hilton Park. Approximately 24 acres of land comprising the roadside rest areas located at the General Sullivan Bridge and Colonel Scammell Bridge in the Towns of Dover and Newington were transferred back to the State Highway Department.

SALES

Kingston Dam. A one-acre lot was sold to the Town of Kingston for $1.00 for use as a right-ofway to the lake.

Ponemah. The six remaining house lots were sold for $400.00 each to the following: Arthur O. Robinson, Mt. Vernon; Edwin C. and Flora D. Harris, Nashua; Earl L. Lloyd, Milford; Roy Sessions, Charlestown; Alphonse C. and Aurore M. Levesque, Milford. The frontage on the highway has now been entirely disposed of except for rights-of-way reserved by the state.

Salmon Falls. The entire 20 acres comprising the Salmon Falls Tract were sold on public bid to Dwight F. Raab of Gonic for $3,551.00. Expansion of the Rochester suburbs in this area influenced the sale of this lot.

Waldron. A one-acre lot previously leased by the Town of Northwood was sold to the Town for $1.00. This lot is a public right-of-way to Bow Lake.

MANAGEMENT OF STATE LANDS

STATE FOREST MANAGEMENT

THEODORE NATTI — *Chief, State Land Management*
SARGENT GOODHUE — *Forest Operations Officer*
ALLEN E. GRASS — *District Forester*

The preceding biennium was highlighted by increased activity in the operational phase of the state land forestry program, due principally to good markets for products such as pulpwood, cordwood and small fence posts, and partly to the necessary salvage of material windthrown during the hurricane of 1954. The important basic considerations of boundary work and cruising, working toward the completion of the state land inventory was not neglected however, and progress was made in this direction.

Appraisals and surveys of acquired lands required considerable work as did the initiation of a management program for the Blackwater Dam area in Salisbury and Webster leased for a period of twenty-five years from the U. S. Corps of Engineers. The program for this area, as for any new tract, requires preliminary planning but the work load gradually stabilizes and becomes more administrative in nature.

Following are brief descriptions of forest operations conducted on state lands during the preceding biennium. Complete volume, cost, and income data appear in the tables:

Bear Brook: (Allenstown)

White pine was salvaged over the entire park after the hurricane of 1954, and two small areas of mature pine were harvested, the major volume coming out of the old Nursery area. Thinnings were completed in the Hayes Farm, Spring Brook, and Smith Pond sections. A sale of 170 sticks of piling was made from the Pitch Pine Trail area. Releasing of approximately twenty acres of pine was accomplished, and 30,000 red pines were planted but due to severe drought, the catch was very poor.

Blackwater: (Salisbury, Webster)

The operational phase of management was initiated on the Blackwater flood control area with a pine harvest cutting near the Greenough Pond area. A road improvement program was also started, opening existing roads which have been unused for twenty years. All timber is being marked selectively with emphasis on close utilization in order to minimize slash hazards in the event of flooding. Boundary work is nearly completed and cruising will

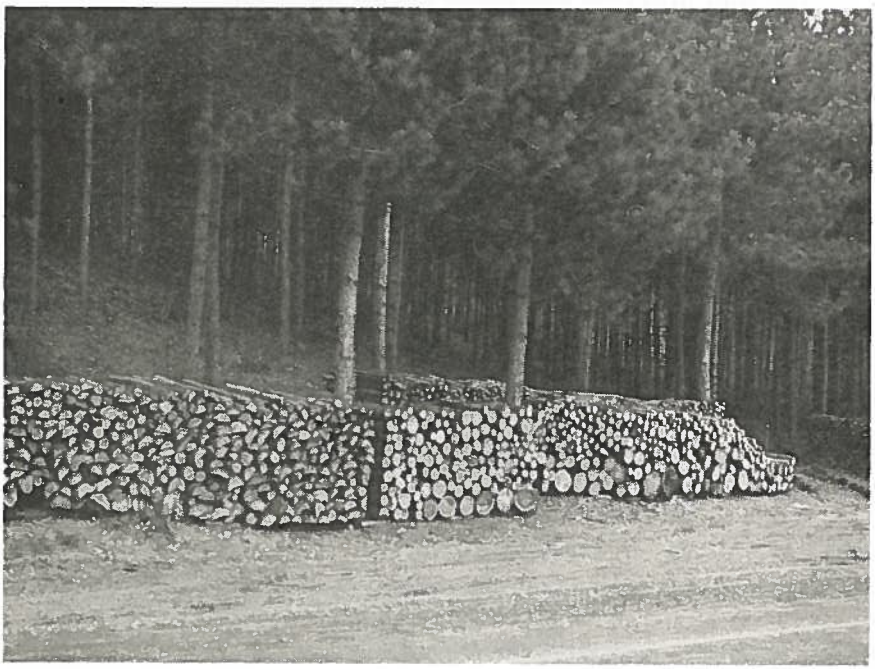
begin in the near future. Some open areas have been planted. An expanded operational program is planned both in harvest and improvement work.

Clough: (Weare)

A small volume of pulpwood was produced from a roadside improvement cutting.

Connecticut Lakes: (Pittsburg)

Pulpwood harvest over a thirty-acre area near the West Inlet has been partially completed. Continuous windthrow with subsequent losses in volume has dictated a rather heavy cutting in this area. Salvageable logs will be harvested from dead and dying birch also.



American Forest Products Industries, Inc.

Pulpwood and cordwood at Contoocook State Forest, Hopkinton, N. H.

Contoocook: (Hopkinton)

Weeding of hardwood stands is in progress.

Craney Hill: (Henniker)

Weeding of poor quality hardwood along the roadside has been completed.

Davisville: (Warner)
A thinning in the pine area has been finished.

Dixville Notch: (Dixville)
Salvage of pulpwood and logs from a right-of-way cutting is nearly complete.

Duncan Lake: (Ossipee)
Thinning of white pine stands, removing inter-planted scotch pine is continuing.

Eaton: (Kensington)
A heavy blowdown of pine is being worked out in conjunction with a thinning. Quality is low and most of the volume is being cut as pulpwood.

Fay: (Lincoln)
A combination improvement-harvest cut is producing a diversity of products.

Fox Forest: (Hillsboro)
Improvement and harvest cuts in various forest types are being conducted in line with the experimental work on this forest.

Governor Wentworth: (Wolfeboro)
Work in a very densely stocked pine stand has been initiated.

Harriman-Chandler: (Warner)
Sale of merchantable birch over the northern half of this tract has been made and the operator is ready to commence work.

Hemenway: (Tamworth)
Cutting of the stumpage sale near the Duck Pond is progressing.

Hodgman: (Amherst)
A very marginal thinning of red and white pine stands was completed.

Hyland Hill: (Westmoreland)
Harvest of all merchantable timber to improve lookout tower visibility was handled for the Forest Fire Service.

Kearsarge: (Warner, Wilmot)
Harvest of good quality softwood and hardwood in the Morey Pond area has been started.

Lead Mine: (Shelburne)

Hardwood boltwood and pulpwood cuttings have been expanded to more difficult terrain, most of the volume being beech and soft maple.

Photo — Brown Company

Row thinning in red pine plantation. Mast Yard State Forest, Hopkinton

Leighton: (Dublin)

A fairly heavy thinning in a stand of poor quality pine, with rough terrain to go along with it, was completed. Damage to residual trees was heavier than normal due to the use of tractor with boom. This method of operation appears to be satisfactory in this type of operation, although careful tractor work is necessary.

Mast Yard: (Hopkinton)

Extensive thinnings in red pine have been in progress during the past two years. Removal of every fifth row accompanied by selective thinning in between have made this a very efficient operation. Pitch pine scattered throughout the tract is being removed as logs, posts, or pulpwood. Some road work will be necessary to finally complete work over the entire area.

Nottingham: (Nottingham)

Salvage of blowdown was completed. One of the most impressive pine stands under state ownership from the standpoint of growth rate was hit fairly hard by the hurricane.

State Forest Nursery: (Gerrish)

Improvement work and thinnings conducted by the Nursery crew during their winter off-season produced approximately 100 cords of pulpwood.

Pawtuckaway: (Nottingham, Deerfield)

An intensive improvement program in plantations resulted in the thinning of over 100 acres. Heavy blowdown in the Pawtuckaway Boulder area, an area reserved for its aesthetic value, necessitated a salvage operation. Sale of 400,000 bd. ft. of pine on the ridge of Middle Mountain was made on public bid. This stand was in a very decadent condition and a heavy cut was made. Conversion to red pine is anticipated. Erosion control on the logging road to the ridge was practiced with the use of water bars and planting of rye grass seed.

Rye Harbor: (Rye)

Stumpage sale of merchantable timber over the entire area accompanied by release work in young stands, and planting of open fields was completed. Unfortunately, the bulk of the merchantable timber was windthrown after the sale contract was made, which resulted in increased cost of operation to the purchaser.

Smith: (Nottingham)

The sale of blowdown timber was handled for Miss Smith by the Forestry Department. This lot will revert to the state upon the passing of the owner.

Soucook River: (Loudon)

A thinning in red pine produced pulpwood and posts. A few scattered merchantable pines were harvested for logs.

Stevens Pines: (Nottingham)

Continuing blowdown in this once stately stand of pine has resulted in the loss of its aesthetic value. A final harvest cutting may be necessary to recover remaining trees after the area has regenerated.

Taylor: (Concord)

Thinning of a small area by-passed during the previous years' work plus the removal of several elm trees bordering the pine stands was done.

Walker: (Concord)

Weeding of an extensive area was initiated and a six-acre red pine stand was released.

White Lake: (Tamworth)

A stand of chemically peeled pitch pine was harvested and the releasing of red pine was continued. Fairly heavy damage to the understory resulted.

PRODUCTS HARVESTED FROM STATE LANDS DURING BIENNIAL PERIOD 1955-1956

Forest	Area Operated (Acres)	Type of Cutting	Pine Pulpwood (Cords)	Hardwood Pulpwood (Cords)	Sp. & Fir Pulpwood (Cords)	Sawlogs (Bd. Ft.)	Birch Bolts (Cords)	Fence Posts (Pieces)	Fuelwood (Cords)
Bear Brook	200	Thinning	275.81	250.14		257,068 soft.		6,076	
		Salvage				3,783 hard.			
		Harvest							
Clough	2	Thinning	8.53	3.27					
Connecticut Lakes	20	Harvest			324.34				
Contoocook	5	Weeding		23.22					
Craney Hill	1	Weeding		4.30					
Davisville	10	Thinning	39.13						
Dixville Notch	4	Salvage			9.11	7,880 soft.			
						2,065 hard.			
Duncan Lake	10	Thinning	62.37					595	
Eaton	10	Thinning	111.50			830 soft.			
		Salvage							
Fay	40	Harvest	108.74			30,510 soft.	11.75		
						16,250 hard.			
Fox Forest	126	Harvest	71.27	176.37	3.04	78,926 soft.	14.06	300	206.00
		Thinning				10,684 hard.			
Governor Wentworth	3	Thinning	17.23						
Harriman-Chandler	15	Harvest		87.51		550 hard.			
Hemenway	60	Harvest		12.00		1,000,000 mix.			
Hodgman	8	Thinning	25.07					239	
Hyland Hill	20	Harvest				90,000 soft.			
Kearsarge	200	Harvest	2.00		3.00	100,000 mix.			
Lead Mine	50	Harvest		44.08		31,191 hard.	139.51		7.98
Leighton	10	Thinning	61.60						
Mast Yard	200	Thinning	1,148.05			34,634 soft.		4,596	
Nottingham	5	Salvage	19.40			9,985 soft.			
State Forest Nursery	20	Thinning	103.22					330	
Pawtuckaway	200	Thinning	510.98	165.21		400,000 soft.		1,693	
		Salvage				65,024 hard.			
		Harvest							
Rye Harbor	50	Harvest				349,000 soft.			
Soucook River	10	Thinning	15.72			2,840 soft.		452	
Stevens Pines	4	Salvage	14.19			27,155 soft.			
Taylor	5	Thinning	20.00					512	
Walker	5	Weeding		15.00					
White Lake	15	Weeding	84.57						
Totals	1,308		2,590.64	889.84	339.49	1,198,828 soft. 129,547 hard. 1,100,000 mix.	165.32	14,793	213.98
Lands other than state-owned under the jurisdiction of the New Hampshire Forestry and Recreation Department, Forestry Division:									
Blackwater	20	Thinning	28.64	6.00		68,715 soft.		1,538	
		Harvest							
Smith	20	Salvage	67.62			108,760 soft.			

COST AND INCOME FROM WOODS OPERATIONS

Fiscal Years 1955 and 1956

Forest	Operating Cost	Gross Income	Net Income
Bear Brook	$13,335.66	$11,607.18	—$1,728.48
Beech Hill	.....	10.00	10.00
Black Mountain	.....	400.00	400.00
Clough	361.95	* 5,161.82	4,799.87
Connecticut Lakes	6,291.56	11,273.24	4,981.68
Contoocook	273.35	155.99	—117.36
Craney Hill	37.50	30.97	—6.53
Davisville	546.99	1,016.80	469.81
Dixville Notch	273.74	938.49	664.75
Duncan Lake	1,257.43	2,078.21	820.78
Eaton	1,005.34	383.36	—621.98
Fay	3,166.71	4,464.01	1,297.30
Fox Forest	8,617.99	10,705.17	2,087.18
Franconia Notch	.....	178.27	178.27
Governor Wentworth	155.06	.....	—155.06
Harriman-Chandler	949.54	218.29	—731.25
Hemenway	82.51	*17,004.75	16,922.24
Hyland Hill	4.00	504.00	500.00
Hodgman	511.65	653.91	142.26
Kearsarge	68.95	*20,180.00	20,111.05
Kingston	.....	27.65	27.65
Lead Mine	857.57	3,568.99	2,711.42
Leighton	1,139.80	1,293.60	153.80
Litchfield	.....	10.76	10.76
Mast Yard	20,642.21	23,424.60	2,782.39
Nottingham	567.21	749.22	182.01
Nursery	244.90	2,743.20	2,498.30
Pawtuckaway	10,567.86	*16,494.87	5,927.01
Pillsbury	.....	3,085.25	3,085.25
Province Road	.....	569.67	569.67
Rye Harbor	.....	* 3,752.50	3,752.50
Salmon Falls	105.53	190.20	84.67
Sentinel Mountain	.....	18.00	18.00
Soucook River	406.35	514.03	107.68
Stevens Pines	1,249.60	2,474.85	1,225.25
Taylor	267.82	117.30	—150.52
Walker	105.00	.....	—105.00
White Lake	1,677.61	2,372.55	694.94
Totals	$74,771.39	$148,371.70	$73,600.31

* These figures include stumpage sales.

The following lots, of other agencies or individuals under the jurisdiction of the Forestry and Recreation Commission, are being handled on a cost basis:

Blackwater	$1,437.43	$2,542.48	$1,105.05
Smith Lot	2,512.76	5,081.43	2,568.67

CURRENT FOREST OPERATIONS

Bear Brook: (Deerfield)

Weeding and hurricane salvage jobs are in operation at the present time. An extensive area of soft maple overtopping young stands of pine in the South Deerfield area is being worked. Some road construction will be necessary. The hurricane damage occurred in groups and occasional individuals over the entire park area, therefore the salvage job is rather costly. Good progress has been made and most trees will be recovered before insect damage begins.

Photo — Brown Company

Pine pulpwood and posts removed in thinning plantations. Mast Yard State Forest, Hopkinton

Blackwater: (Salisbury, Webster)

This federal area, under the jurisdiction of the Forestry Division, is the scene of many activities. Planting of 30,000 trees has recently been finished and a pine release program has been initiated. Harvest operations are in progress in several areas, all cutting being done selectively. Specific operations include a 70,000 bd. ft. white pine sawlog cut, a 35,000 bd. ft. pitch pine sawlog cut, and a 200 stick piling sale. Marking of a 300,000 bd. ft. pine and hemlock bid sale is in progress. Boundary locating and painting is

nearly complete. Ribes eradication is in progress in the Salisbury block. Since this area has had no previous management activity, an extensive road improvement program is necessary. These roads are being cleared as operations progress.

Connecticut Lakes: (Pittsburg)

A harvest cut of softwood, mainly fir, in the vicinity of the West Inlet, is nearly completed. A cut of 500 cords is anticipated.

Dixville Notch: (Dixville)

Sale of sawlogs and pulpwood produced from a highway relocation has been made locally.

Duncan Lake: (Ossipee)

Thinning of red pine plantations is being done, the stumpage having been purchased by a private contractor. Farm fence posts are the main product, with pulpwood as a secondary product.

Eaton: (Kensington)

Only the hauling phase of a combination thinning and hurricane salvage job remains. Approximately 125 cords of pine pulpwood were produced.

Fay: (North Woodstock, Lincoln)

Improvement cutting over a forty-acre section has nearly been completed. As in most state operations, integrated logging is being followed with a diversity of products being produced for different markets. Hardwood and softwood sawlogs, birch logs, birch boltwood, cordwood, hardwood and softwood pulpwood are being sold to different buyers.

Governor Wentworth: (Wolfeboro)

Approximately fifteen cords of pine pulpwood has been operated to roadside and an additional 150 cords will result from a thirty-acre pine thinning.

Harriman Chandler: (Warner)

Operation of the white birch stumpage sale has begun and an agreement has been worked out with the contractor to remove undesirable and cull trees of other species as pulpwood. This area will be difficult to operate in some sections due to a rocky bottom.

Hemenway: (Tamworth)

Undesirable and cull standing hardwoods, windthrows, and non-commercial sawlog wood in tops are being salvaged as pulpwood from a recently cut timber sale area. This operation is to be

discontinued until snow time due to rough bottom. A cut of approximately 100 cords is anticipated.

Kearsarge: (Wilmot, Warner)

The sizable timber sale in the Morey Pond area is progressing satisfactorily, with some damage being done to the residual stand where the terrain is rough. This job will last for another year.

Lead Mine: (Shelburne)

A stumpage sale of hardwood boltwood is continuing. Long yarding distances over rough terrain make operation difficult but a good job is being done. Cull hardwood is being fitted into pulpwood.

Leighton: (Dublin)

Improvement work in a very rough pine stand has been completed, the wood being sold for cooperage stock. A heavier than normal thinning was necessary due to the very poor quality of trees.

Mast Yard: (Hopkinton)

Two years of operating has finally resulted in thinning most of this 400-acre planted area. Current row thinning in red pine will complete work at Mast Yard with the exception of weeding in some local areas. A cut of approximately 20,000 farm fence posts is anticipated. Cleanup of pulpwood is also in progress.

Pawtuckaway: (Deerfield)

Cutting of the area on the ridge of Middle Mountain has started. Approximately 400,000 bd. ft. of pine, most of which is in poor growing condition, is to be harvested. Poor site condition, windthrow, blister rust and other minor agencies are contributing to the decline of this stand.

Also, considerable yarding of hardwood cut during the winter is necessary. Very difficult operating conditions exist in many areas where improvement cutting has been done.

Soucook River: (Loudon)

Hauling of a small volume of pine pulpwood will complete a red pine plantation thinning, most of which was fitted into farm fence posts.

Stevens Pines: (Nottingham)

Hauling of pulpwood produced from tops following a hurricane salvage operation is in progress.

Homemade tractor yarding pulpwood. Mast Yard State Forest

Taylor: (Concord)

Yarding and hauling of pine pulpwood resulting from thinnings will complete work on this tract.

Walker: (Concord)

A weeding of poorly formed hardwood (mainly oak) is being accomplished. Cutting is being carried on experimentally to a two-inch top diameter with anticipated sale as cordwood. Although the cordwood market prefers cleft wood, indications are that some small round wood can be sold. If this is the case, hand weeding may possibly be done more economically than is now possible.

White Lake: (Tamworth)

Recovery of merchantable hardwood pulpwood from a transmission right-of-way clearing is progressing. This wood has been sold as it lies to a private contractor.

SUMMARY

Improvement and harvest operations have dominated the forest management program of the past biennium. With markets for low-grade and small wood available, the thinning schedule was accelerated considerably. Weeding and releasing work will have

to be emphasized in order to push the development of rapidly growing, quality stands. Increased utilization of small hardwoods (a regional problem) should advance the timber stand improvement program to the desired level. Use of chemical sprays in releasing is anticipated, several areas appearing suitable for helicopter spraying. Planting will continue as an integral part of the restocking program.

Sales of stumpage will continue to support the forest improvement program. The bulk of future sales will be in lower quality timber thereby increasing the quality and value of residual stands.

Surveying and cruising newly acquired lots and completion of inventories on existing lands is anticipated. Other activities such as cooperative work with other agencies, administration of the prospecting and mining code, and numerous other minor but no less important functions round out the state land management program.

Reorganization of the forest management division on a district basis is contemplated in the near future, which will provide the opportunity for an intensified program on state lands.

Lower Section of State Forest Nursery, Gerrish, N. H.

NURSERY

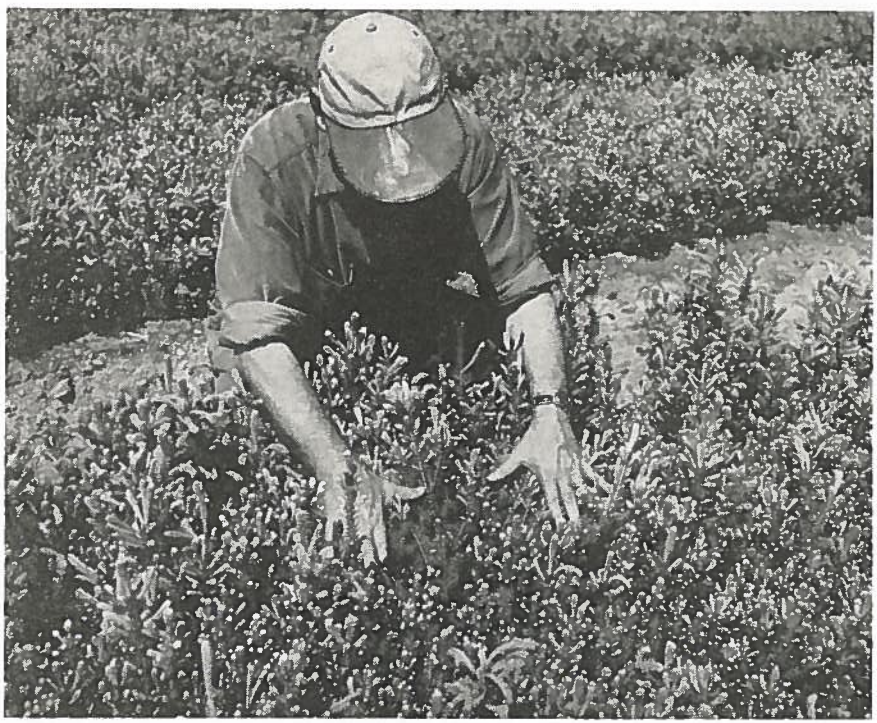
The most important development influencing the supply of seedlings for forest planting in recent years is the Soil Bank Program. Private land owners are expected to need large amounts of forest planting stock under this program and the government has asked New Hampshire to produce an extra 10,000,000 seedlings. To do this it will be necessary to use eight acres of new land for seed beds this year. Previous plans called for the use of a part of this area for growing seedlings under the state and CM-4 agreement, but when the Soil Bank Program came into existence the area was increased to eight acres. This new area will provide 211,800 square feet of seed bed area together with the necessary service roads and could produce 10,000,000 or more seedlings.

Women were employed for the first time in the spring of 1956 to help sort and count seedlings after they were dug in the field and brought to the nursery barn for packing. A sorting and count-

Seedbeds are separated by cultivated paths

ing table with traveling belt was also used for the first time to help handle the seedlings. The table itself is a wooden frame structure five feet wide by twenty feet in length with an endless canvas belt three feet wide running lengthwise of the table on rolls that are powered by an electric motor. The belt is marked off in small sections that are numbered. Five or six women stand on each side of the table; sort, count and drop five good trees onto the belt which carries them to the end of the table, where a woman picks up five or ten bunches of trees and places them on another table in bunches of twenty-five or fifty, depending on the age of the stock, where two women tie the bunches with jute twine for ease of handling in packing for shipping or storage. Trees are supplied to the sorters and counters at the sides of the table in small square galvanized tubs, and the amount of trees that can be handled in an eight hour day depends on the species and evenness of size of the seedlings.

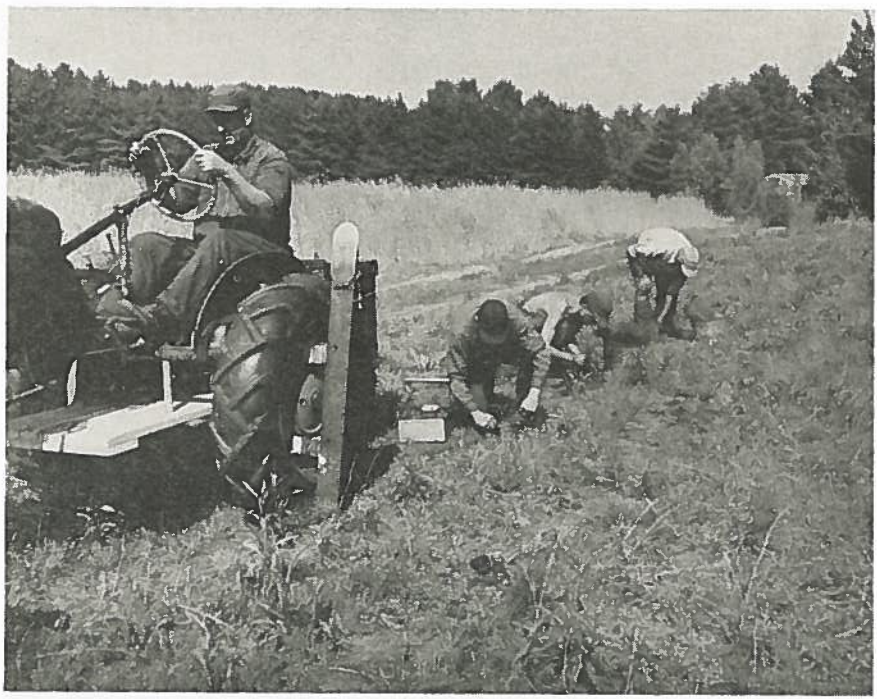
A test was made to determine if a small amount of tankage or bone meal sifted over the roots of a bundle of five hundred trees, when they were packed in November for storage through the winter



Spruce seedbeds

in 34° temperature, would be of any value to the trees. Three separate plantings of these trees were made by the Forestry Department at the University of New Hampshire, the Massabesic Experiment Station at Alfred, Maine, and our Fox Research Forest at Hillsboro. The results were all quite similar and the survivals in all plantings were only about fifty per cent of untreated trees.

Unsatisfactory growth of seedlings in spots in sections of the older nursery area caused some concern, when foresters, entomologists, pathologists, and agronomists that looked at the area were uncertain as to just what the difficulty might be. It was felt that increased production and continued use of the old nursery area over a period of many years might in some way contribute to the trouble. An experiment was tried on a few beds of all species of seed sown in the fall of 1955. A one to five solution of formaldehyde was sprayed on the surface of the beds at the rate of one gallon to six square feet. The ground was then rototilled to a depth of six inches and allowed to stand for two weeks before the seed was sown. By the middle of the summer of 1956 it was quite clear



Improvised planting machine. A steel bar bolted to tractor wheel digs holes at regular spacing fast enough to keep several men busy planting

that the seedlings were fifty per cent larger, had longer needles and better color than those in untreated beds. It is believed that sections of the old nursery area may be infested with nematodes that are detrimental to seedling growth.

Planting

The importance of reducing costs and eliminating hand labor in forest planting brought about the development of a planting bar or spade that could be bolted to a tractor wheel and make the holes for setting the trees. An old Model B Allis Chalmers tractor that had a rear wheel twelve feet in circumference was used and the bar was made from four-inch angle iron with steel points welded on the ends of the bar. Bars of different lengths and widths were tried, but a bar that extended eight inches outside the tire, with a one inch point and three inches wide eight inches back from the point, made the best hole in the lighter loam soils. Longer or wider points made holes that were too large and were difficult to stamp solid around the tree. It is possible that still better results could be had if the end of the bar that extends beyond the tire was bent at an angle. This piece of equipment proved to be quite satisfactory, easy to handle on rough ground and with a good driver would make holes for ten or more planters to follow with pails of trees.

The same policies of growing and distributing seedlings have been continued as in previous years and the same services rendered to other agencies. The following tables show the distribution of forest planting stock to different agencies; the value of the stock distributed to each agency, the nursery output by age, species and years, and the planting on state forest areas by species and amounts.

FREE DISTRIBUTION OF PLANTING STOCK

Fiscal Years 1954-55 and 1955-56

(Number of Trees)

Agricultural High Schools and Other Schools	
Alstead, Vilas High	6,450
Center Sandwich, Quimby	1,000
Colebrook, Colebrook Academy	5,500
Contoocook, Hopkinton High	7,500
Conway, Kennett High	1,250
Derry, Pinkerton Academy	7,300
Dover, Dover High	5,450
Dover, Guppy School	500
Hudson, Alvirne High	3,300
Keene, Keene High	5,550
Laconia, Laconia High	5,900
Nashua, Quincy Street	4,900
New Boston, New Boston High	16,150
Orford, Orford High	4,500
Rochester, Spaulding High	6,950
Tilton, Tilton-Northfield High	7,500
Walpole, Walpole High	1,150
Warner, Simonds High	3,550
Weare, Weare High	6,800
West Lebanon, West Lebanon High	500
Total — 20 schools	106,200

4-H Clubs	
Belknap County	6,750
Carroll County	15,400
Cheshire County	2,000
Coos County	1,750
Grafton County	10,000
Hillsborough County	17,075
Merrimack County	24,800
Rockingham County	46,050
Strafford County	11,200
Sullivan County	5,500
Total — 540 members	140,525

Arbor Day	
1 Troop Boy Scouts	4,000

Cities and Towns	
Claremont	3,300
Dover — Strafford County Farm	5,000
Dummer	2,000
Farmington	1,000
Gilmanton	2,000
Greenfield	3,500
Henniker	8,000
Manchester	2,000
Newport	2,000
Ossipee — Carroll County Home	1,000
Walpole	9,250
Weare	500
Total — 12 Cities and Towns	39,550

State Agencies	
Laconia State School	1,750
State Hospital	400
State Prison	18,500
Toll Road — Manchester	500
University of N. H. — Greenland	2,000
Total	23,150

Federal Agency	
Blackwater Dam	27,550
Grand Total	340,975

VALUE OF NURSERY STOCK PRODUCED

Fiscal Years Ending June 30, 1955 and June 30, 1956

	1955	1956
Trees sold to private planters	$7,025.99	$8,102.95
Trees given to 4-H and other juvenile clubs	823.88	492.12
Trees given to towns and cities	102.90	86.38
Trees used on state lands	424.65	399.58
	$8,377.42	$9,081.03

NURSERY OUTPUT

Age of Stock	White Pine	Red Pine	White Spruce	Balsam Fir	White Ash	Total
		Number of Trees				
		Fall, 1954 — Spring, 1955				
4 year seedlings		84,175	70,200	160,525		314,900
3 year seedlings	241,775	487,350	143,425	233,500		1,106,050
2 year seedlings					2,425	2,425
Total	241,775	571,525	213,625	394,025	2,425	1,423,375
		Fall, 1955 — Spring, 1956				
4 year seedlings		128,100	238,375	405,050		771,525
3 year seedlings	27,300	435,325	50,050	16,000		528,675
2 year seedlings					3,550	3,550
Total	27,300	563,425	288,425	421,050	3,550	1,303,750

REFORESTATION ON STATE LANDS
1954-55 and 1955-56

Forest	White Pine	Red Pine	White Spruce	Balsam Fir	Total
Bear Brook State Park	5,100	50,900	.....	.....	56,000
Echo Lake Reservation	.....	1,000	.....	.....	1,000
Fox State Forest	3,000	6,200	2,000	1,500	12,700
Mt. Sunapee State Park	.....	2,000	.....	.....	2,000
Pawtuckaway Reservation	.....	4,000	.....	.....	4,000
Pillsbury Reservation	.....	11,400	1,000	1,000	13,400
Rye Harbor State Park	.....	1,250	.....	.....	1,250
Taylor Reservation	.....	3,000	2,000	.....	5,000
Total	8,100	79,750	5,000	2,500	95,350

TOWN FORESTS

A complete survey of land owned by towns was attempted in order to obtain accurate statistics concerning this phase of forest land ownership. The response to this survey was poor, reasons for which are not known.

It appears that sufficient acreage is under town ownership to give various towns a source of annual or periodic income if lands were under a management program.

It is hoped that a more complete survey will result during the next biennium.

THE WHITE MOUNTAIN NATIONAL FOREST

There has been little change in the area included in the White Mountain National Forest during the past two years. As of June 30, 1956 it comprised 677,400 acres in Grafton, Carroll and Coos Counties, New Hampshire and 45,862 acres in Oxford County, Maine. It is the largest piece of public land in New England. As is true of all national forests, it is operated under the multiple use system of management which permits the use of several resources on the same area at the same time. On the timber producing areas of the forest, trees are harvested as they become mature and in many cases the same areas are also used for the production of water for local communities and resorts as well as for such types of recreation as hiking, fishing, and hunting, etc. During the past two years the sale of mature timber and charges for other special services resulted in national forest receipts in excess of $209,000. 25% of this amount was returned to the towns having national forest land in lieu of taxes. These amounts are in addition to the substantial income to the national forest towns from the timber tax. The national forest has had two very favorable fire seasons. During calendar year 1955 it had 7 fires and during calendar year 1956 3 fires. Together the fires in these two calendar years burned a total of 4 acres. In protecting the national forest from fire the Forest Service co-ordinates its plans with the State Forester and his organization in the detection of forest fires, the measurement of fire weather conditions, and in training fire fighting personnel. In many cases town fire wardens are also national forest wardens.

Year by year there is a growing awareness of the importance of the national forest as far as water production is concerned. Over 40 communities and resorts obtain all or part of their water supplies from the national forest. During the past year the Town of Littleton has constructed a new dam on the South Branch of Gale

River in the National Forest to provide an additional supply to meet the increasing demands of its water users.

The national forest is experiencing heavier use each year by many people in the Eastern part of the United States seeking the various types of outdoor recreation that the White Mountains provide. In analyzing the requirements of recreationists and in preparing long range plans for development of summer and winter recreation areas, the Forest Service works very closely with the State Director of Recreation. During the past years it has been possible to provide better water and sanitary facilities at some of the national forest camping and picnicking areas as well as to develop plans for the construction of some new areas and expansion of established areas. During 1956 a refuge shelter for hikers was constructed on the Presidential Range above timberline in Edmands Col which will provide emergency shelter for hikers who may be caught out in this exposed area during periods of low temperatures and high winds while hiking between Mt. Washington and Madison Springs Hut. At this point there has been one fatality and several near fatalities and it has long been recognized as an unusually dangerous spot in the mountains. The materials for this shelter weighing about six tons were delivered to the site by a large helicopter provided through the co-operation of the U. S. Army.

The Forest Service has several co-operative projects with the Director of the New Hampshire Fish and Game Department pointed toward providing better hunting and fishing on the national forest. This large public area is open for hunting and fishing as long as one has a state license and obeys state laws. No areas are posted against use except a few small areas where there is an unusual forest fire hazard. A very interesting project is underway in the Swift River valley where the Fish and Game Department biologists are making a very thorough study of ways and means of improving brook trout fishing.

A contract for the construction of 3.1 miles on the Kancamagus Highway has just been completed. This leaves 1.2 miles to be built to complete this project running from Conway west to Lincoln. Prior to the construction of this last gap it will be desirable to improve some of the 33 miles that have been constructed since 1935.

There have been but few organizational changes within the group that administers and protects the White Mountain National Forest. Charles W. Hutchinson is now the District Ranger at Littleton and Kenneth I. Sutherland the District Ranger at Plymouth. The District Ranger's office formerly at Berlin has been moved to Gorham.

COUNTY FORESTRY PROGRAM

K. E. Barraclough, *Extension Forester*

County foresters are professional foresters engaged in work under the Cooperative Forest Management Act. Under this statute the federal government, represented by the U. S. Forest Service, entered into an agreement with the Forestry and Recreation Commission representing the State of New Hampshire, for the operation of the county forestry program. The Commission is thus responsible to the federal government for the expenditure of federal and state funds in accordance with this agreement. At the initiation of this program, since confirmed at intervals, the Commission entered into an unilateral agreement with the N. H. Extension Service. This specifies that the county foresters shall be supervised by the Extension Forester, in recognition of the long tradition of work by Extension Foresters with private owners, and because of a desire to coordinate these programs. The county foresters are employed by the University of New Hampshire through the Extension Service, enjoy federal appointments and are members of the federal retirement plan.

Six of the counties have a full-time forester and the other four counties — Belknap, Strafford, Cheshire and Sullivan — have the half-time services of a county forester. In these four counties, interested forest land owners and others have requested that a full-time forester be employed in each county. An assistant county forester has been working in Hillsborough County under the direct supervision of County Forester Breck. This resulted from limited federal funds available for the Baboosic Watershed project.

The State Forester has included in his 1957-58 and 1958-59 biennial budget to the Governor a recommendation that the annual appropriation of $16,286.00 for the state's share toward the support of the County Forestry Program be increased to $22,000.00. The recommended increase of $5,714.00 in state appropriated funds and a small increase in county expenditures in the four counties concerned will make it possible to employ ten county foresters, one per county.

During the fiscal year 1955-56 the county foresters worked with 1,460 woodland owners giving them assistance with forest practices on 64,844 acres and advising them in the marketing of their forest products. Forest marketing studies made by New England agricul-

Thinning a 35-year white pine stand for pulpwood.

tural experiment stations show that woodland owners who have obtained the advice and assistance of qualified forestry technicians have received higher stumpage values for timber than those selling stumpage without this marketing assistance. Also help and advice was given to several hundred other woodland owners and operators at meetings, by personal contact, through letters, radio, publications, etc. The county foresters have the responsibility of making prior approval and checking compliance with forestry practices car-

Photo — Frank H. Hill

Skidding sawlogs near Lisbon N. H.

ried on by woodland owners who enroll in the Agricultural Conservation Program. The Federal Government shares the cost with woodland owners when they complete satisfactory work of weeding, thinning, pruning, or tree planting, or a combination of these practices. During the year 1955 woodland owners who enrolled in the Agricultural Conservation Program completed 1,479 acres of improvement work on their woodlands and planted 270 acres to trees.

During 1956 the county foresters were instrumental in the organization of the New Hampshire-Vermont Christmas Tree Association. As a result of this activity in encouraging landowners to

grow quality Christmas trees the United States Department of Agriculture has undertaken a study for the purpose of establishing United States Standards for Christmas trees. The study was started in Northern New Hampshire during the fall of 1956.

One of the latest developments in the County Forestry Program is the establishment of the New Hampshire Pilot Woodland Management Program, sponsored by the Sears Roebuck Foundation. A group of 50 woodland owners, five in each county, has entered into an agreement to keep detailed records of woodland management operations for a period of at least five years.

This project is unique in New England. Systematic and comparable records of private woodland operations on small holdings have not been gathered before. When this information is available, foresters and land owners can use it as a measure of what similar operations will cost on other comparable areas. They will, also, have gauges of the longer-run results on growth. This will give a firmer foundation on which to base decisions affecting the management of small woodlots.

The woodland owners cooperating in the project represent a cross section of the type of people who own forest land in New Hampshire. Some are full-time or part-time farmers, some are business or professional men and some are non-resident or absentee owners.

The county foresters selected the cooperators for the PWM project. The field work of making forest inventories and establishing growth plots has been done by Dr. Ernest Gould, Harvard Forest, Petersham, Massachusetts, with the assistance of the county foresters. This has been completed and the cooperators interviewed by Dr. Gould and the county foresters. Each cooperator was shown different alternatives that he might follow in the management of his woodlands. These alternatives ranged from (1) clear-cut or liquidation of the growing stock on the entire property; (2) liquidation of just the larger sawtimber size stands; (3) selective cutting in the sawtimber stands; (4) partial harvest cuttings in sawtimber sized stands and improvement cuttings in pole timber stands; (5) in addition to the operations set forth in (4) carry on timber stand improvement work (weeding, releasing, pruning, etc.) in the younger stands where desirable. The cooperators were presented with estimates of costs, and returns for the various intensities of management as applied to their woodland properties.

An interesting part of each visit was the surprise of the owner at the actual amount of wood and timber on his property. The discussion of the alternatives proved to be profitable for crystallizing

the objectives of the owner. It was left with each owner to decide which plan he wished to follow. This is a basic part of the project because each owner knows his own financial and physical capabilities better than anyone else.

It was interesting to note that each owner usually had some "plan" of what he wanted to do with his woodlot. Some cooperator's woodlots are an integrated part of a farm operation, some are strictly investment holdings, and some are owned by individuals who attach a large value to the recreational aspects of woodlands.

Photo — Neefus, Hudson, N. Y.

County forester points out value of natural reproduction

Following the interviews with each cooperator the final plans were prepared. The final plans include the statistics on the forest property, the plan of action that can be followed or used as a guide to management, samples of the forms to be used in keeping the necessary records, and information that may be used for reference regarding the project. Along with each plan is also a large aerial

photograph of the property. Three duplicate plans are made — one for the owner — one for the county forester's office — and one for the Harvard Forest research records.

With the field work completed and the plans completed, the individual counseling and assistance rests in the hands of the county forester. He can keep the owners posted on market situations and trends, and give professional assistance at any time it is needed. The county foresters will need, undoubtedly, to work very closely with the PWM cooperators for the first year or two, so that the county foresters will know what is being done on the lands of the cooperators, and what is more important, to be sure that the records are kept properly and accurately. The information requested from the cooperators is recorded by them on a simple form. It consists of time spent in the woodlot; where it was spent; what was done; what equipment was used; amount of work done or volume cut; price of removed materials; taxes; etc. These records will be analyzed at the Harvard Forest and progress reports sent to the cooperators from time to time.

Special appreciation is due the Sears Roebuck Foundation for making the PWM project possible. The fifty cooperators already have some feeling of satisfaction for their participation in the project. The Sears Roebuck Foundation sponsored a state-wide dinner meeting during the fall of 1955 for announcing the PWM project. Later at county dinner meetings during the fall of 1956 also sponsored by the Foundation, cooperators were presented their first annual $25.00 checks for keeping records.

The PWM project belongs not simply to the fifty selected landowners, or to the interested organizations, but it belongs to all New Hampshire and especially to its woodland owners. Steps have been made towards finding out what can be realized from small forest holdings, and with more information available it is hoped that the people of New Hampshire can take advantage of the results of the study to do a better job of managing one of the states most valuable resources.

The public agencies cooperating in the PWM project sponsored by the Sears Roebuck Foundation are the Forestry and Recreation Commission, the Cooperative Extension Service, and Agricultural Experiment Station of the University of New Hampshire, Harvard Forest of Harvard University, Northeastern Forest Experiment Station and Region 7 of the United States Forest Service and the Federal Reserve Bank of Boston.

REGISTERED ARBORISTS

According to law, all persons engaged in tree care including spraying and dusting, by air or from the ground, pruning of ornamental and orchard trees, cavity and bracing work, must be licensed if they do work outside the New Hampshire town in which they have legal residence. Non-residents must also be licensed. Applicants for registration must pass an examination in the subject or subjects in which they desire registration. A person may be certified in one or more of the following:

1. Pruning and care of orchard trees.
2. Pruning and care of shade or ornamental trees.
3. Spraying of orchard trees.
4. Spraying of shade or ornamental trees.
5. Treatment of cavities.

Application blanks for registration may be obtained from the "State Forester, Concord, N. H." and written examinations taken at 401 State House Annex, Concord, N. H. The Examining Board consists of the State Forester, Commissioner of Agriculture and State Entomologist.

During the past two years examination questions have been changed from the essay type to "true and false" and "multiple choice." These give a better test of the candidate's knowledge and make possible a completely objective scoring of the results.

Questions have occasionally been raised whether forest tree pruning or the simple removal of trees are included in operations for which the operator must be licensed. Forestry pruning for the purpose of producing knot-free lumber is usually selective, only a small percentage of trees in the stand being pruned, and these are clearly not ornamental or shade trees. The law states that registration is required of those who operate "to improve the condition of" or who "improve, protect or preserve" . . . Therefore there appears to be no requirement that a person who merely cuts down and removes a tree, nor for that matter one who plants a tree, need be registered.

The New Hampshire Arborists' Association continues to be an active and progressive organization and has cooperated fully with the Examining Board. It is hoped that in the future this Association will enlarge its activities to screening candidates for registration and sharing with state officials the responsibility for registration.

There are 61 registered arborists as follows:

Registered Arborists

(Address New Hampshire except as otherwise noted)

George R. Abbott, Upland Road, Andover, Mass.
Abbott Brothers Tree Service, Wells, Maine (William F. Abbott).
Karl F. Amalia, Amalia Tree Surgeons, Inc., 5 Elm St., Manchester, Mass.
John M. Bailey, 301 North Arthur St., Gladwin, Michigan.
Barber Tree Service, Peterborough (Eugene L. Barber).
F. A. Bartlett Tree Expert Company, 795 Memorial Drive, Cambridge, Mass. (Wilfrid Wheeler, Jr.)
Roscoe H. Batchelder, 14 Emerson St., Plymouth.
Robert J. Belanger, 50 Emerson St., Wakefield, Mass.
George W. Calnan, 6 Wilde Ave., Wilmington, Mass.
Robert B. Canney, 532 Pomeroy Ave., Meriden, Conn.
Ernest J. Chase, 686 Court St., Keene.
Leon H. Clark, Jr., 409 W. Cowden Ave., Midland, Texas.
Conley Tree Surgeons, Maple St., Middleton, Mass.
William M. Cook, Box 94, Penacook.
David W. Cupples, 39 Maurice St., Manchester.
Davey Tree Expert Company, Kent Ohio (Benjamin L. Brittain, 3 Newbury Terrace, Newton Centre 59, Mass.)
The Dodge Associates, Main St., Wenham, Mass. (Albert W. Dodge).
Joseph J. Edwards, 30 Ridge Ave., Hanover, Pa.
Edward O. Flint, Westminster, Vermont.
George W. Flint, Jr., 21 Park St., Keene.
Michael A. Foy, 110 Towtaid St., Cherry Valley, Mass.
H. L. Frost & Higgins Company, 20 Mill St., Arlington, Mass. (R. D. Keene and E. W. Higgins).
William A. Franke, 30 Cameron St., Brookline, Mass.
Franklin Tree Expert Company, 318 Main St., Greenfield, Mass. (C. T. Caldwell).
Remi L. Gendron, 156 Elm St., Claremont.
Herbert C. Gray, Jr., 12 Water St., Lancaster.
Henderson & Herndon Tree Company, Inc., 9 Story Ave., Beverly, Mass. (William P. Henderson).
Charles R. Kelley, Box 125, Jay, Maine.
Earl M. Kenyon, Box 639, Manchester, Vermont.
Thomas F. Kezar Tree & Landscape Company, 156 Billings St., North Quincy, Mass.
Thomas F. Kezar, Jr., 60 Storer St., Kennebunk, Maine.

Lakes Region Spray Service, New Hampton (Harold S. Sheffield).
B. F. Lawrence, 132 Davis St., Greenfield, Mass.
John Lucas Tree Expert Company, P. O. Box 965, Portland, Maine (R. E. Billings)
James E. Madden, 747 Union St., Manchester.
Elmer F. Mayberry, Lancaster.
Robert W. Meader, Greenland
Harry F. Melendy, Milford
Monadnock Tree Service, Peterborough (Laurence A. Laviolette).
William H. Nehring, Ridge Farm Nursery, New Durham.
North Shore Tree & Landscape Service, Central St., Middleton, Mass. (Clarence Osgood).
Leslie A. Peeke, 67 Monroe St., Amesbury, Mass.
Fred Ralston & Company Tree Service, 47 Braintree St., Allston 34, Mass. (Frederick R. Ralston).
Ralston Tree Service, Inc., 43 Cornwall St., Portsmouth (Byron L. Kirby).
Lester W. Robbins, 5 Ash St., Milford.
Rockingham Tree Service, Atkinson (Warren Kolb).
Rockingham Tree Service, Atkinson (Willard N. Myers).
Joseph D. Seeley, 17 Woodward Ave., East Providence, R. I.
Wayne F. Shipman, Jr., RFD 3, Laconia.
Alfred A. Smith, 156 Calef Road, Manchester.
Russell N. Stalbird, 422 South Nelson Road, Columbus 9, Ohio.
John P. Stevens, Stevens Tree Expert Company, Alfred, Maine.
Robert L. Tartalis, 13 Grand Ave., Nashua.
F. Bruce Tasker, RFD, Sanbornville.
John Tierney, 16 Liberty St., Manchester.
Robert L. Tufts, 20 Lincoln St., Stoneham, Mass.
W. F. Tuttle, Wolfeboro.
Walker Tree Expert, c/o James R. Walker, 6½ Harvard St., Concord.
David B. Watson, R. F. D., Portsmouth (Newington).
William H. Welchans, R. F. D. 1, Warner.
John W. Wholley, Bradford Tree Expert Company, Birch Road, Exeter.

THE NEW HAMPSHIRE TIMBERLAND OWNERS ASSOCIATION

One of the oldest organizations of forest owners in the country has just completed 46 years support of forest fire protection in northern New Hampshire. Organized early in 1911, after a meeting addressed by Governor Robert P. Bass the preceding summer, it became the model for similar organizations in neighboring states and provinces, the Kennebec Valley Protective Association in Maine, 1912, the Vermont Timberland Owners Association of Bloomfield, Vermont, in 1915, whose charter and assessments were almost identical to its New Hampshire pattern, and the St. Maurice River Forest Protective Association, in Quebec, 1916.

The leaders in the formation of the New Hampshire Association, W. R. Brown, State Forester Edgar C. Hirst and others, also assisted in the founding of sister associations. Frederick H. Billard was the first Secretary-Treasurer of the New Hampshire Association followed by William H. Morrison of Gorham, James W. Keenan, and the present incumbent Daniel J. Horan.

The main objective of the Association has always been forest fire protection, and this it accomplishes by patrolmen, leaving the purchase of tools, lookout towers, etc., to public agencies.

It has generously cooperated with the State Forest Fire Service on the occasion of warden training meetings in Coos County. This training meeting is always held on the day of the annual meeting of the Association. These meetings have strengthened the cooperative exchange and clarified the division of duties between the large timberland owners and the Forest Fire Service.

The Association employs eight full-time patrolmen during the forest fire season, and supplements this regular staff with five or six part-time patrolmen when there are extremely hazardous conditions. The Association routes are defined, and duties and responsibilities of the patrolmen who travel these areas of high fire hazard include public education such as contacting woods workers, fishermen, hunters and hikers and advising them of the restrictions on smoking or kindling fires that are in force at the time. The exceptionally low fire record in the areas patrolled testifies to the value of this program.

The Association also considers matters of forest policy such as timber taxation and forest practices that affect the members. Funds are raised by the assessment of a certain amount per acre (usually 1¢ annually), so that each member contributes in proportion to the area owned. Members include the larger forest owners, pulp and

paper companies, power companies, hotels, Dartmouth College, estates, private clubs and individuals. The lands owned by members are almost entirely in Coos County, but owners of land in other parts of the state are eligible for membership. In 1912 an effort was made at a large meeting in Concord to organize a similar association in southern and central New Hampshire, but nothing came of it. This illustrates the contrast between the cooperation of large owners, fully cognizant of the perils and seriousness of forest fire, and determined to cooperate in meeting a problem that affected each one equally, compared to the lack of recognition of the importance of fire protection and lack of interest in working together on the part of thousands of small owners with different ownership objectives.

Non-members of the Association are required by law to carry on patrol, however. In 1921 a law was enacted requiring owners of 1,000 acres or more in a contiguous area to provide patrol during times of fire hazard at one cent per acre. Such owners would therefore find it advantageous to join the Association.

The headquarters of the Association are in Berlin, New Hampshire, and officers and directors of the Association at present are:

President	— C. S. Herr, Berlin.
Vice-President	— F. E. Moses, Groveton.
Secretary-Treasurer	— D. J. Horan, Berlin.
Directors	— C. S. Herr, Berlin.
	F. E. Moses, Groveton.
	Lee Abbott, Bangor, Maine.
	W. A. Ruch, North Stratford.
	Merit Bean, Errol.
	H. V. Hart, Deferiet, New York.
	Robert S. Monahan, Hanover.

The New Hampshire Timberland Owners Association started with its membership representing about one million acres, and now has a membership of twenty-three with 607,000 acres under protection. It has always functioned quietly and efficiently; since its organization there have been no really large fires in the area served by it. When state protection had to be spread pretty thin in the North Country, the Association supplemented the state's efforts admirably and continues to do so today.

THE NEW HAMPSHIRE TREE FARM PROGRAM

Tree Farm is a term applied to private forest properties whose owners have carried out good forest management on them and have received certification by the State Tree Farm Committee. The Tree Farm Program in New Hampshire is part of a national effort to popularize forestry sponsored by the wood-using industries, whose organization is the American Forest Products Industries, Inc. The program was started in New Hampshire in 1950 under the auspices of the Society for the Protection of New Hampshire Forests and since 1955 has been sponsored here by the Granite State Forest Industries Committee, a group of 16 lumber and paper manufacturers with Henry C. Waldo of Lincoln as Chairman. This Committee represents the American Forest Products Industries, Inc., in New Hampshire and is interested in promoting better forest use. There were 194 tree farms with a total area of 116,986 acres as of June 30, 1956. Certification of new tree farms is usually announced at forestry meetings each autumn. Tree farming is one way in which wise forest practices can be demonstrated on the ground.

The program is now administered by a State Tree Farm Committee consisting of consulting and industrial foresters. Mr. William P. House of Chesham is Chairman. There are also County Chairmen who do most of the actual field work in selecting woodlands. Any owner of tax-paying private forest land may apply for certification. This can be done on a form available from the County Foresters or members of the Tree Farm Committee. The property is then inspected on the ground by a professional forester, usually one of the County Chairmen. The report of this inspection in written form is presented to the State Tree Farm Committee that meets several times a year. If the application is approved on the basis of the inspection report, the owner is notified and awarded an attractive enameled metal sign for posting on his forest, and an engraved certificate. He is then enrolled among the other 8,500 Tree Farmers in 43 states who own and practice good forestry on over 39 million acres.

Areas certified as Tree Farms in New Hampshire vary from twenty to 24,000 acres, the greatest number being farm woodlots and other small ownerships. Some are industrial forests. Products harvested include sawlogs, veneer logs, pulpwood, fuelwood, posts, poles and Christmas trees. Each adds raw material to the state's woodpile and contributes to the economy of the local community.

Three generations of a New Hampshire tree family. On this 100 acres of woodland, 70 mbf. of mature timber was removed in a partial cutting, 25 acres of 38-year old white pine plantation were thinned twice and 1600 selected crop trees were pruned. Also shown in this picture are the county forester whose predecessor helped initiate the work, the logger who made the thinnings and the consulting forester who managed the recent operations.

Standards for Tree Farm certification are high in New Hampshire, in fact higher than in most states, and the State Committee is determined to keep them so. In general to qualify for Tree Farm designation a minimum of 10 per cent of the forested area must have been worked over in the years immediately preceding application. Treatment of the operated area may include a combination of partial or harvest cuttings (provided they are controlled), thinnings, weeding, pruning, planting, elimination of cull trees, etc. A limit to the credit given for mere cutting of mature timber and planting is provided in scoring the practices—the idea being to encourage other long-range improvement practices as well. In addition credit is given for existence and completeness of a management plan, the condition of boundaries and maps, permanent road systems and special efforts carried out by the owner in fire, disease or insect protection. The emphasis is on long-continued sustained interest in the actual practice of forest management rather than on temporary or occasional activity, no matter how extensive this may be. If an application is not approved by the Committee, the reasons for disapproval are explained to the owner and recommendations are made on the type and extent of additional work needed to qualify.

Owners who have carried out management practices which they believe will qualify them are urged to apply for certification. Where no practices have been carried out, but where owners are interested in finding out what they can do better to manage their woodlands and eventually qualify as Tree Farmers, advice and assistance can be obtained from their County Forester or private consulting forester. These men as well as the Forestry and Recreation Commission, N. H. Extension Service, Society for the Protection of New Hampshire Forests and other agencies are cooperating in the program. Each has a deep interest in improving the quality and quantity of wood grown on the 35,000 private forests in New Hampshire. The Tree Farm Program provides a common meeting ground for these interests.

DIVISION OF FOREST RESEARCH

HENRY I. BALDWIN, *Research Forester*

This division includes information and demonstration activities of the Commission as well as investigation. Editorial work, writing, and publications are among the functions. The Division also has responsibility for annual census of the cut of lumber and other products, examination and licensing of arborists, answering inquiries and questionnaires, and advising private owners. Statistics are maintained on forest resources and other economic data. Printing, stocking and distribution of all publications are included.

Demonstration work involves displays at fairs and other gatherings, maintenance of the Forestry Museum at the Fox State Forest and establishment, treatment and maintenance of Roadside Demonstration Areas on state forests. Annual field days and special meetings are organized separately from or in co-operation with other agencies.

Research in the field is concentrated largely at the Fox State Forest in Hillsboro where experimental plantings, cuttings and a variety of investigations have been carried on for 34 years.

The last report gave summaries of some of the investigations under way both at Fox Forest and on other state forests. The following are brief summaries of results achieved on some projects during the past two years. Most are in the nature of progress reports.

Cold Storage of Nursery Stock — 1955-1956

Experiments involved treatment of red pine roots before storage with bone meal or tankage. The latter resulted in poorest survival after spring planting, followed by bone meal. Trees that received no treatment during storage survived twice as well as treated trees. Unstored trees were superior to all other lots.

Planting in Ploughed Furrows

Trees planted in furrows running on the contour across a moderate slope exhibited not only better survival but greater annual height growth after 4 years compared to those planted directly in the sod between furrows.

Direct Seeding

Fall sowing of white pine seed in prepared spots on cutover land resulted in the same percentage of successful spots regardless whether the spots were screened against birds and rodents or not. These experiments are being continued on a variety of sites.

Seed Source of Douglas Fir for Christmas Tree Planting

Four years growth in the field has confirmed earlier evidence from nursery beds that coastal or low elevation Douglas-fir is less suitable for planting in New Hampshire than that from mountains, especially high elevations.

Height Growth of European Larch

Two years weekly measurement of 55 young larches showed that height growth continued over 15 weeks, beginning about one month after emergence of the new foliage, or the reverse of the behavior in other conifers. This may be related to frost hardiness and growth rate.

Winter Foliage Color of Scotch Pine

Because of the interest in some sections in growing Scotch Pine for Christmas trees, observations were made of the foliage color of the extensive origin of seed plantations maintained by the Division on the Vincent State Forest. Yellow or off-color needles are a detriment in the Christmas tree trade, and northern continental races of the tree exhibit this while maritime sources and trees grown from seeds originating farther south such as Scotland, Belgium, and Rumania tend to keep a green or bluish-green hue the winter through.

White Pine Needle Blight

Revision of the trees numbered and measured in 1954 showed complete recovery of trees in the majority of cases.

White Pine Tree Improvement Conference

On April 24, 1956, a special conference was held in Concord under the sponsorship of the Commission. The purpose was to review work being done on selection and breeding of white pine, in

order to ascertain if greater support and co-operation was needed, and whether progress could be hastened. About 30 scientists and foresters were present, some coming from Canada, New York, Wisconsin, and Pennsylvania besides New England. The recorded proceedings of the conference was mimeographed. It is hoped that a permanent steering committee may be formed as a direct result of the conference.

Charcoal kilns at Fox State Forest

FOREST PRODUCTS CUT IN 1954 AND 1955

Unlike other statistics in this report, most of which are reported on a fiscal year basis in conformity with the period covered by the text, lumber cut reports are required by law to be filed covering the calendar year. A discussion of the various aspects of lumber cut reporting was included in the last biennial report.

The figures given below were compiled in the same way and on the same basis as in previous years. Hence they are roughly comparable, although no statistical test of accuracy is possible. The data are consistent in quality from year to year.

Both lumber cut and pulpwood cut experienced a slight decrease during the biennium compared to 1952 and 1953, while general activity in wood-using industries continued at a high level. This is evidenced by the higher cut of miscellaneous products. There has been an encouraging trend toward better integration in wood utilization, some wood formerly used solely for pulpwood now being used for sawlogs or veneer logs. Furthermore, there have been some promising developments in the use of wood residues such as slabs, sawdust, and shavings. Debarking of sawlogs before sawing with resultant use of slabs and edgings for bark-free pulp chips, and debarking of slabs, separation of bark from sawdust and chips, are some of the more important developments.

Decrease in lumber cut can also be accounted for by a smaller number of mills reporting. This can be illustrated as follows:

	No. Mills Registered	No. Mills Reporting Lumber Cut	No. Idle Mills (reporting no cut)	Total Cut (Millions Bd. Ft.)
1947	419	743	No data	418
1948	389	614	No data	344
1949	403	598	No data	290
1950	441	552	No data	310
1951	485	558	No data	344
1952	540	506	43	307
1953	508	477	34	288
1954	466	478	24	248
1955	442	393	26	245
1956	448	(Returns incomplete)		

It should be noted that only in the last 4 years has registration of all mills been required.

LUMBER CUT BY NEW HAMPSHIRE MILLS

(Thousands of Board Feet)

	Calendar Year 1954	Calendar Year 1955
Softwood:		
Balsam Fir	1,161	971
Cedar	8	1
Hemlock	36,848	34,708
Larch (Tamarack)	12	26
Pine, Pitch	2,319	1,780
Pine, Red	1,462	1,461
Pine, White	209,122	174,473
Spruce	11,246	11,313
Other Softwoods	599	46
Total Softwood	262,777	224,779
Hardwood:		
Ash	643	701
Aspen (Popple)	7	14
Basswood	257	374
Beech	1,827	1,678
Birch	11,264	8,263
Elm	132	360
Maple	4,945	3,318
Oak	4,929	5,090
Other Hardwoods	1,442	552
Total Hardwoods	25,446	20,350
Totals, All Species	288,223	245,129
Number of Mills Reporting	478	393
Number of Idle Mills	24	26

SAWLOG EXPORTS

(Thousands of Board Feet)

	1954		1955	
Hemlock	331		553	
White Pine	290		2,493	
Spruce	286		128	
Total Softwood		907		3,174
Ash	32		580	
Beech	1,618		1,121	
Birch	2,797		2,213	
Maple	1,314		723	
Oak	5		92	
Total Hardwood		5,766		4,729
Totals		6,673		7,903

Photo — U. of N. H.

Mobile wood chipper, 1954

Photo — U. of N. H.

Much pulpwood is now delivered to the mill by truck

PULPWOOD CUT IN NEW HAMPSHIRE

(Cords: Rough Wood Basis*)

Kind	Total Cut (Including Exports) 1954	1955	Exports 1954	1955
Spruce and Fir	91,577	102,863	26,849	25,396
Hemlock and Tamarack	4,710	5,964	213	61
Pine	7,864	13,474	1,897	2,301
Miscellaneous	.....	714	.....	.....
Total Softwood	104,151	123,015	28,959	27,758
Aspen (Popple)	2,625	3,702	282	.....
Mixed Hardwoods	67,779	95,216	9,627	18,015
Total Hardwood	70,404	98,918	9,909	18,015
Totals	174,555	221,933	38,868	45,733
Number of Mills Reporting	13	9		

*Peeled wood converted to rough by adding 15%.

NEW HAMPSHIRE TIMBER CONSUMPTION BY WOOD-USING INDUSTRIES

(Exclusive of lumber and pulpwood)

Equivalent in Thousands of Board Feet

	1954 N. H. Mills	Out-of-State	1955 N. H. Mills	Out-of-State
Cooperage Logs	5,050	2,272	3,800	1,762
Excelsior Bolts	550	.....	571	.....
Turnery Bolts	2,419	1,732	6,288	955
Veneer Logs	1,734	4,363	19,928	6,329
Handle Stock	19	213	.....	.....
Box Shooks	108	142	605	.....
Piling	173	.....	1,035	.....
Posts and Poles	2,688	.....	1,645	.....
Miscellaneous	190	.....	126	.....
Totals	12,931	8,722	33,998	9,046
	21,653		43,044	

SUMMARY OF TIMBER UTILIZATION FROM NEW HAMPSHIRE FORESTS

	1954		1955	
	M Bd. Ft.	Cords	M Bd. Ft.	Cords
Sawlogs Used in New Hampshire	288,223		245,129	
Sawlogs Exported	6,673		7,903	
Pulpwood Used in New Hampshire		135,687		176,160
Pulpwood Exported		38,868		45,773
Industrial Products N. H. Mills	12,931		33,998	
Industrial Products Exported	8,722		9,046	
Fuelwood (Estimated)		50,000		50,000
Totals	316,549	224,555	296,076	271,933
Total Equivalent in Cords	857,653		864,085	

FINANCIAL STATEMENT

The following financial statement of General Fund appropriations and expenditures of the Forestry Division for the biennial period shows appropriation items only about 60% as large as the previous biennium.

This reflects savings of approximately $65,000.00 a year by (1) the elimination of ten positions together with their expenses, (2) greater efficiency and operating procedure in the repair and maintenance of buildings and other structures, (3) reduced fire suppression costs resulting from improved training and closer co-ordination between town and state officials.

FORESTRY AND RECREATION COMMISSION
FORESTRY DIVISION
July 1, 1954 to June 30, 1955

	Appropriation	Expenditure	Reserve for Bills Payable	Balance Available
Administration	$39,962.30	$39,805.41	$156.89	
Nursery	19,464.14	30,014.72	3,617.23	
Old Year Reserve	4,005.00			
Federal Grant C. M. 4	10,170.00			
Reforestation	3,787.42	3,622.72	145.35	
White Pine Blister Rust	17,152.50	16,123.15	875.25	
Old Year Reserve	273.40			
District Fire Supervision	40,371.81	102,358.17	76.68	
Federal Grant C. M. 2	57,545.63			
Old Year Reserve	4,561.30			
Lookout Stations	59,438.92	51,916.24		
Warden Training Conferences	4,000.00	4,151.77	113.36	
Old Year Reserve	265.34			
Prevention of Fires	11,320.00	12,153.91	402.63	
Old Year Reserve	1,238.89			
Forest Fire Bills to Towns	10,000.00	7,514.79	2,485.21	
Northeastern Forest Fire Protection Commission	692.50	660.22		
Crotched Mt. Lookout Tower	1,600.00	1,600.00		
Cooperative Forest Management Program	16,286.00	16,286.00		
	$302,135.15	$286,207.10	$7,872.60	

Photo — Neefus, Hudson, N. Y.

Forest land returns most profit when highly productive timber stands are maintained.

FORESTRY AND RECREATION COMMISSION
FORESTRY DIVISION
July 1, 1955 to June 30, 1956

	Appropriation	Expenditure	Reserve for Bills Payable	Balance Available
Administration	$39,418.72	$37,465.38		
Old Year Reserve	156.89			
Nursery	23,243.79	36,520.24		
Old Year Reserve	3,617.23			
Federal Grant C. M. 4	10,560.13			
Reforestation	3,772.42	3,704.10		
Old Year Reserve	145.35			
White Pine Blister Rust	16,955.00	16,126.83		
Old Year Reserve	875.25			
District Fire Supervision	48,275.41	107,670.87	6,540.00	1,399.03
Old Year Reserve	76.68			
Federal Grant C. M. 2	64,572.03			
Transfer	+1,333.21			
Lookout Stations	57,291.27	49,347.49		
Warden Training Conferences	5,500.00	4,095.21	1,517.94	
Old Year Reserve	113.36			
Prevention of Fires	13,176.68	13,338.12		
Old Year Reserve	402.63			
Forest Fire Bills to Towns	9,694.69	9,961.33		
Old Year Reserve	2,485.21			
Northeastern Forest Fire Protection Commission	692.50	692.46		
Cooperative Forest Management Program	16,286.00	16,286.00		
	$318,644.45	$295,208.03	$8,057.94	$1,399.03

LEGISLATION 1954-1955

Acts of the 1955 Session of the General Court that affect the field of interest or responsibility of the Commission are briefed below. Complete text of these may be found in "Public Acts and Joint Resolutions" published by the Secretary of State. No forestry legislation was enacted by the Special Session of April 6-9, 1954.

CHAPTER 83

An Act Establishing Plant and Seed Certification

Chapter 223-A is amended to include a new chapter (223-B) providing for voluntary certification of "any variety of horticultural plants or seeds" by the Commissioner of Agriculture. Freedom from disease and trueness to name are the characteristics for which certification is available.

CHAPTER 122

An Act Relative to Securing Certain Loads on Motor Trucks and Trailers

Requires chain and binder on last tier or row of pulpwood, boltwood or any wood product except long logs or lumber. Also required if load piled higher than truck stakes.

CHAPTER 146

An Act Relative to Forest Fire Protection and Appointment of Wardens

Town wardens to serve for 3 years or until a successor is appointed; cost of opening roads and trails for fire protection where approved by State Forester shall be shared by state and town. Also provides for governor proclaiming woods closure with verbal approval of council.

CHAPTER 188

An Act Relative to the Payment of Forest Fire Expenses

Provides for payment by the state of fire costs exceeding ½% of valuation with later reimbursement by the town.

CHAPTER 189

An Act Relative to Reimbursement of Municipalities for Forest Fire Expenses

Duplicate bill for forest fire suppression, paid by the town is to be submitted to the State Forester for approval and reimbursement of town for state's share of costs.

CHAPTER 199

An Act Relative to Erection of So-Called Historical Signs

Director of Recreation designated member of board for advice on location and wording of signs.

CHAPTER 205

An Act Relative to Regulations as to Boating on Certain Ponds in Pillsbury State Park and Bear Brook State Park

Commission may regulate use of motor boats.

CHAPTER 217

An Act Relative to the Use of Flashing Red Lights or Red Beacons on Motor Vehicles

Emergency vehicles may use flashing red light in place of siren when on emergency call.

CHAPTER 221

An Act Relative to State-owned Parking Areas at Hampton Beach

Commission may make rules and establish fees and fines for violation in cooperation with Hampton Police Department.

CHAPTER 222

An Act to Change the Method of Appointment of Members of the New Hampshire Commissioners of the Northeastern Forest Fire Protection Commission

Members to be appointed by the Governor consist of State Forester, a member of Legislature and citizen selected to represent the Governor.

CHAPTER 223

An Act Relative to Jurisdiction of the United States Over Land Within New Hampshire

Federal lands revert to the state when they cease to be property of U. S.

CHAPTER 235

An Act Relative to Use of Telephone Party Lines for Fire Alarms or Other Emergency Calls

Provides fine for failure to yield use of party line for fire alarm, etc.

CHAPTER 240

An Act Relative to Fees for Inspections and Sealing of Weighing and Measuring Devices

Provides for fees that state or city inspectors may charge for measuring and sealing vehicles carrying fuelwood, and forest product measuring devices.

CHAPTER 250

An Act Relative to the New Hampshire Shore and Beach Preservation and Kingston State Park

Residents of Town of Kingston to be permitted to use park free on weekdays.

CHAPTER 266

An Act to Establish a Comfort Station at North Beach in Hampton

$30,000 appropriated; subject to approval of plans by Governor and Council.

CHAPTER 275

An Act to Control Motor Vehicle and Machinery Junk Yards and Public Dumps

Incineration at public or private dumps shall be carried out in accordance with forest fire laws. State Forester upon advice of town forest fire warden that a high hazard exists may order area closed. Governor and Council upon advice of State Forester may order town to carry out measures to eliminate hazard.

CHAPTER 287

An Act Relative to Forest Conservation and Taxation

Sweeping amendments to the 1949 law were directed chiefly toward reducing state reimbursement obligations and to assisting heavily timbered towns, alleged to have suffered unequally by the abolition of tax on standing timber.

The yield tax was increased to 12% and all abatements for good cutting practice and definitions of good cutting practices abolished. Functions of District Forest Advisory Boards were abolished and replaced by new appeal boards. Forest Conservation Aid Fund was established for aiding certain towns. Excess yield taxes in unorganized towns to be used for conservation work in those towns.

CHAPTER 311

An Act Relating to the Apportionment of Expenses for Municipalities in Fighting Forest Fires and to Class V Road Aid

Change from one-half to one-quarter of 1% of assessed valuation as the limit for equal cost-sharing between town and state in payment of fire bills. Does not apply in case of fire caused by negligence of town.

CHAPTER 321

An Act Relative to the Change of Designation of the Deputy Director of Recreation and to the Salary of Said Office

Changes name from Assistant to Deputy.

CHAPTER 326

An Act Providing for a Study and Establishment of Recreational Areas in the Lake Winnipesaukee Region

Commission of 6 members to be appointed to report to Governor on sites for parks.

CHAPTER 337

An Act Making Appropriations for Capital Improvements and Long Term Repairs for the State of New Hampshire

Recreation Division $371,450; survey of top of Mt. Washington $5,000. Provides for continuation of reimbursement to towns in lieu of taxes on standing timber, bond issue authorized to finance this; a reimbursement fund created for timber tax reimbursement.

CHAPTER 338

An Act Making Appropriations for the Expenses of Certain Departments of the State for the Year Ending June 30, 1956

Under Forestry Division $5000 was appropriated from the Forest Improvement Fund for land purchase with the proviso that no part of it may be used to purchase land that will increase by more than 5% the total area of land held by the Forestry Division. Also $5,000 appropriated for silviculture and $6,000 for reimbursement to towns in lieu of taxes. Hilton State Park to be administered by Department of Public Works and Highways.

CHAPTER 339

An Act Making Appropriations for the Expenses of Certain Departments of the State for the Year Ending June 30, 1957

(Similar to preceding)

CHAPTER 342

Joint Resolution in Favor of the County of Coos

Authorization to pay county treasurer $18.21 to balance 1950 timber tax account.

CHAPTER 357

Joint Resolution in Favor of Alex E. Demers

Compensation of $332.64 for loss of time due to an accident at Lake Wentworth State Park. To be a charge on state recreational fund.

CHAPTER 363

Joint Resolution in Favor of Harry Pierce

Compensation of $300 for damage by elk to maple orchard and other growing timber.

CHAPTER 373

Joint Resolution Relative to a Road in Fitzwilliam and Providing for a Study of Access Highway to State Reservations

$10,000 appropriated for road to Rhododendron Reservation in Fitzwilliam. Department of Public Works and Highways authorized to make a study of roads to state reservations, parks and forests and report to 1957 Session.