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Forest Management Plan; Revision of

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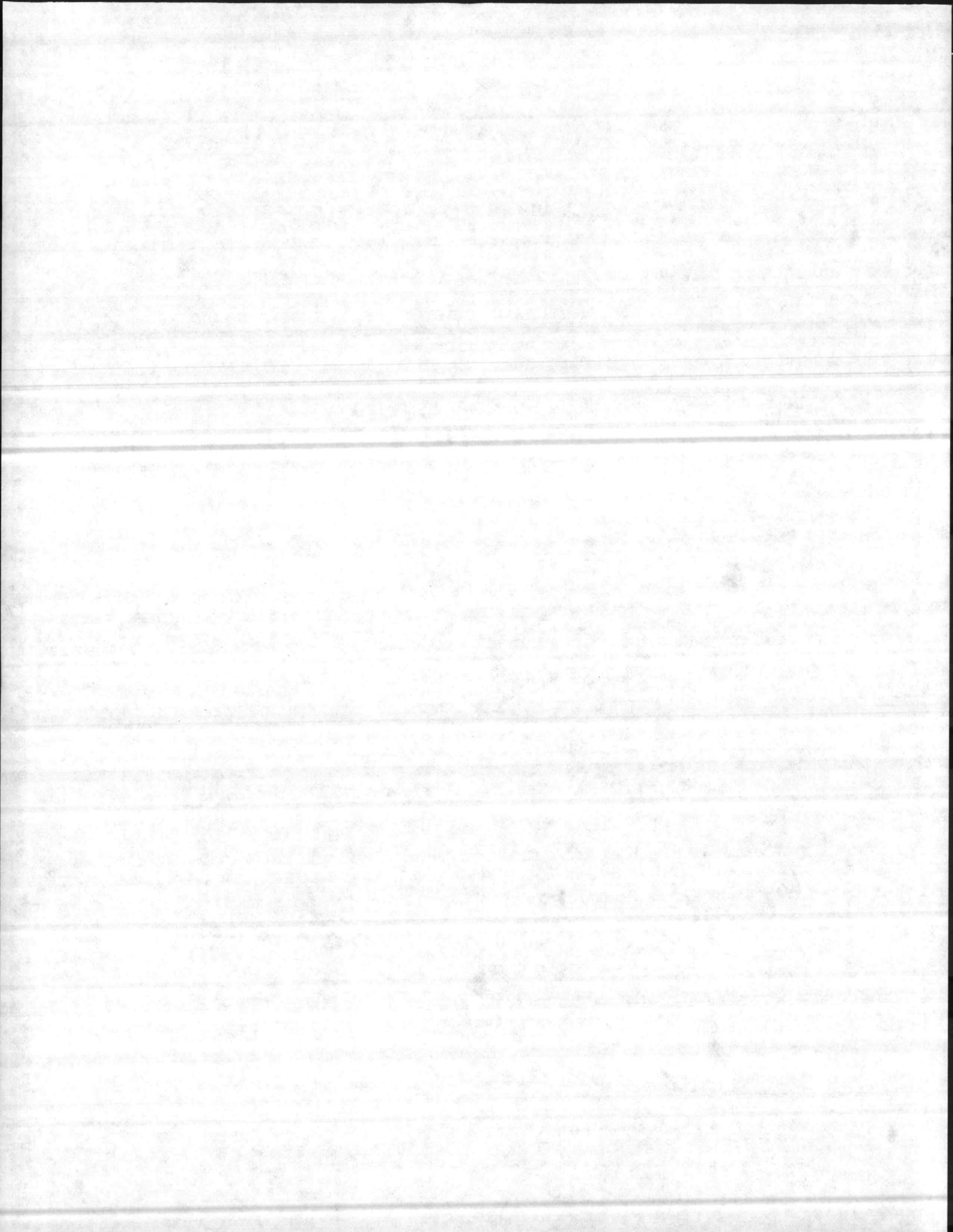
1946

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MR. REE

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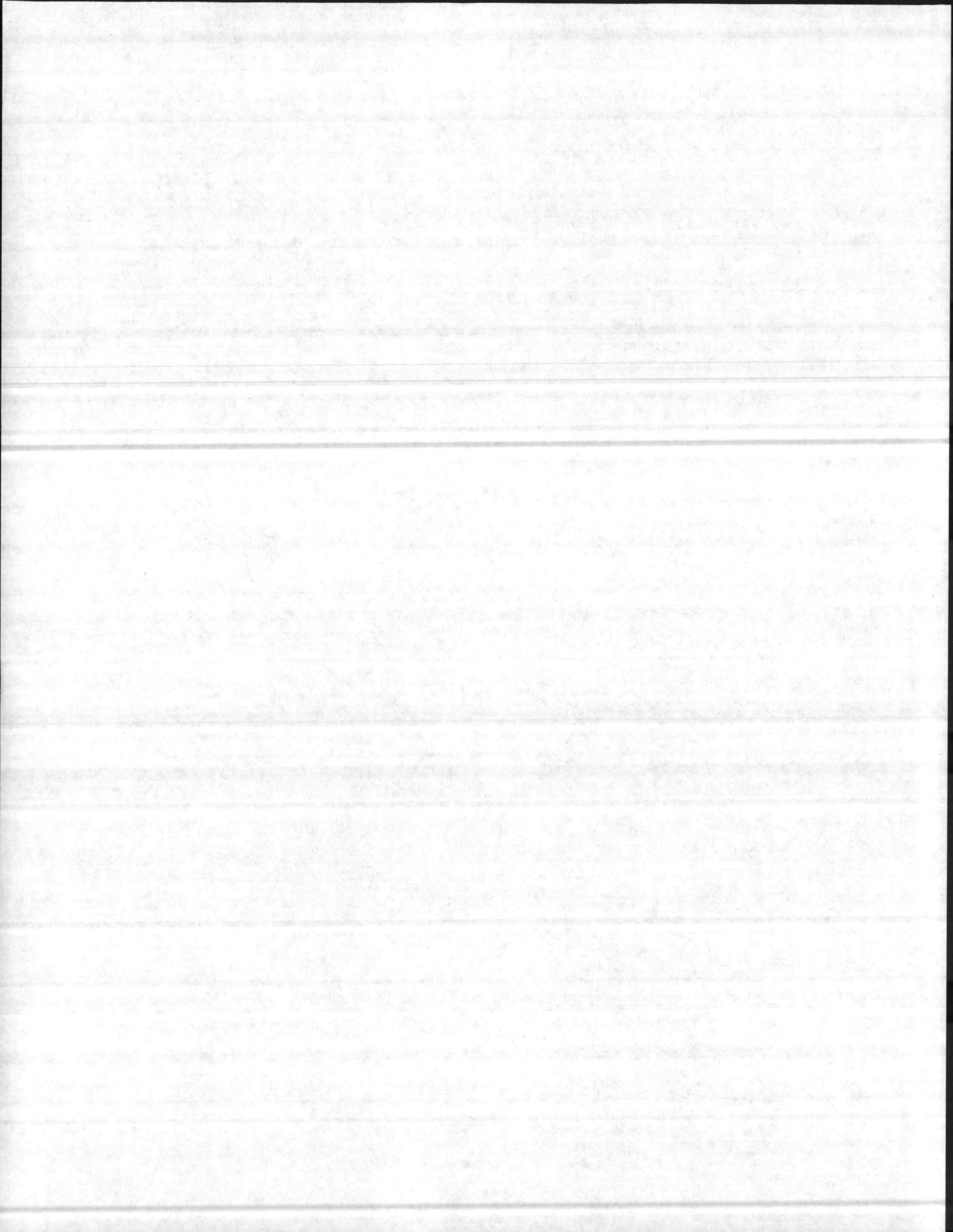


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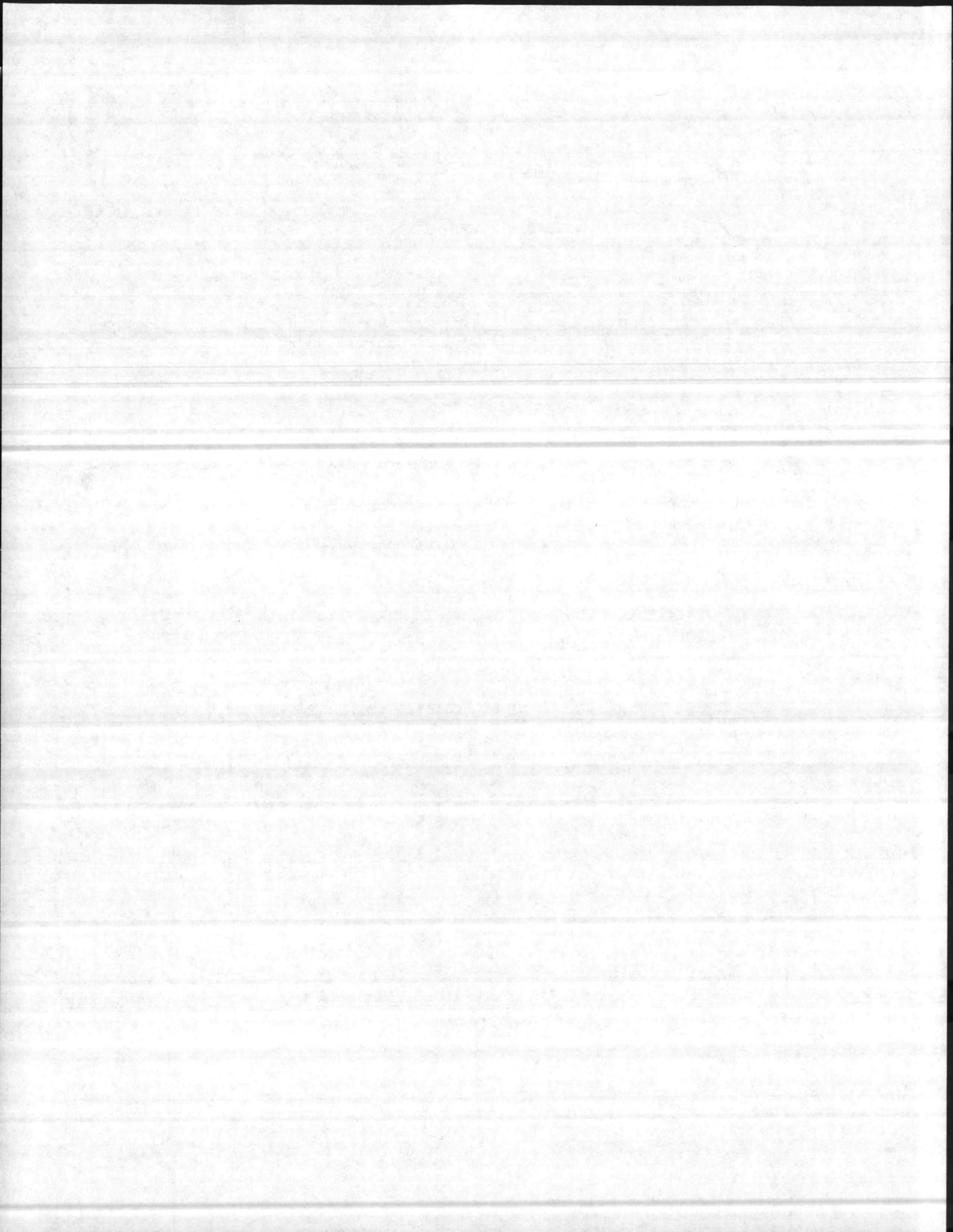
Forest Management Plan; Revision of

In 1946 a timber survey of the entire reservation of Camp Sycamore was made. From the data obtained a Forest Management plan was drawn up and put into effect. Since that time a considerable amount of timber has been cut and a lot of acreage has been taken up for other purposes such as firing ranges, housing projects, etc. Therefore it is felt that the Management plan should be revised and brought up to date. To make this revision more real and accurate another timber cruise has recently been made and completed.

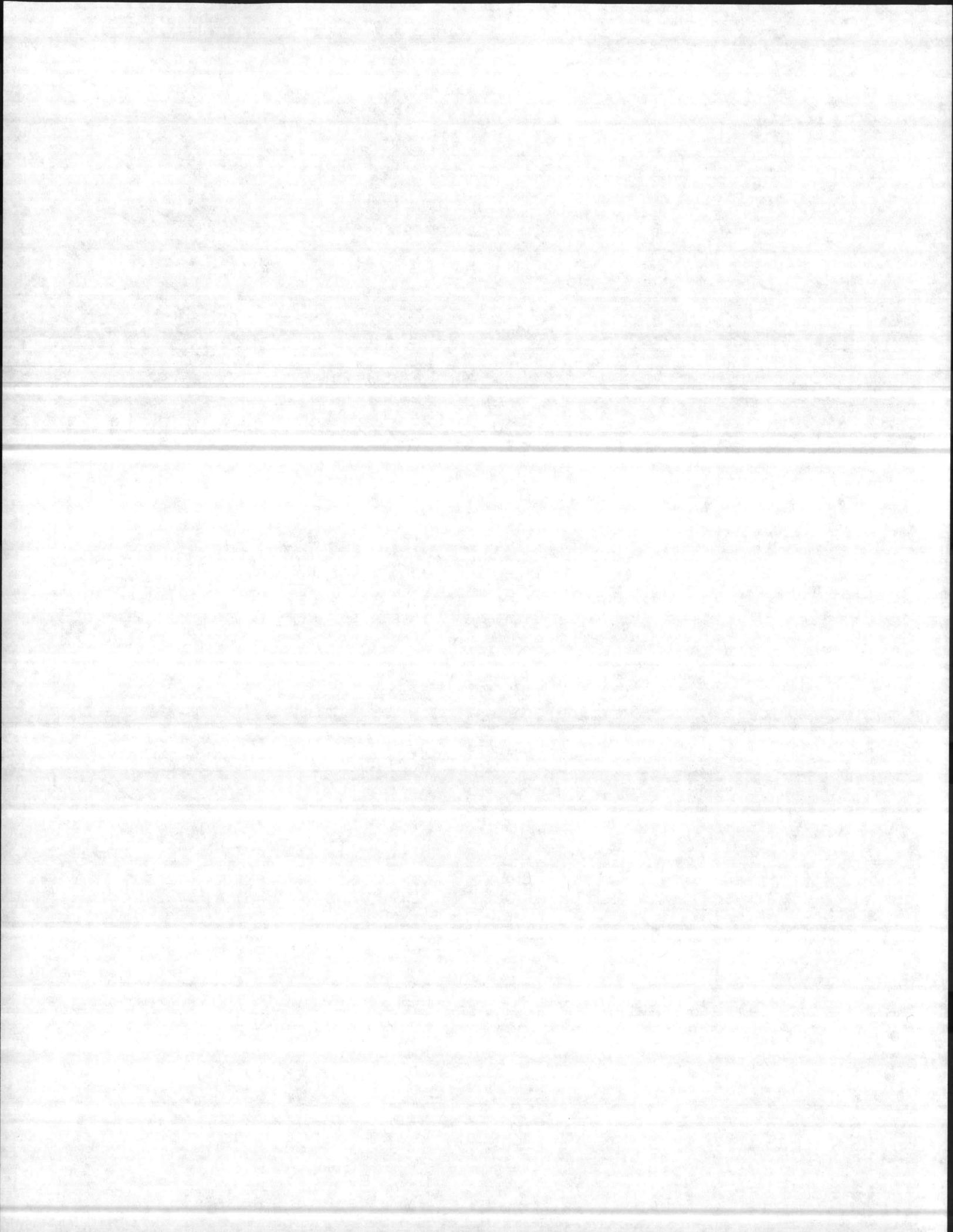
~~The fifteen working units will be considered individually and the 1954 status will be compared to that of 1946. As acreage and forest type have not changed (except in those units that have had a loss in acreage) volume now standing will be the main point discussed.~~



It is not intended that this report should supersede or ~~be added~~ ^{replace} the 1946 Management Plan. It is intended only to bring up to date the figures on acreage in growing timber, board foot volumes now on ~~the~~ band (1957) and various recommendations for future cutting.



The acreage as of 1954 will be shown. On some units the acreage will be the same as in 1946, and other will show a loss in acreage. The 1954 volume will be shown, also the amount of timber cut since 1946. Then a gross and net increase in volume can be calculated.



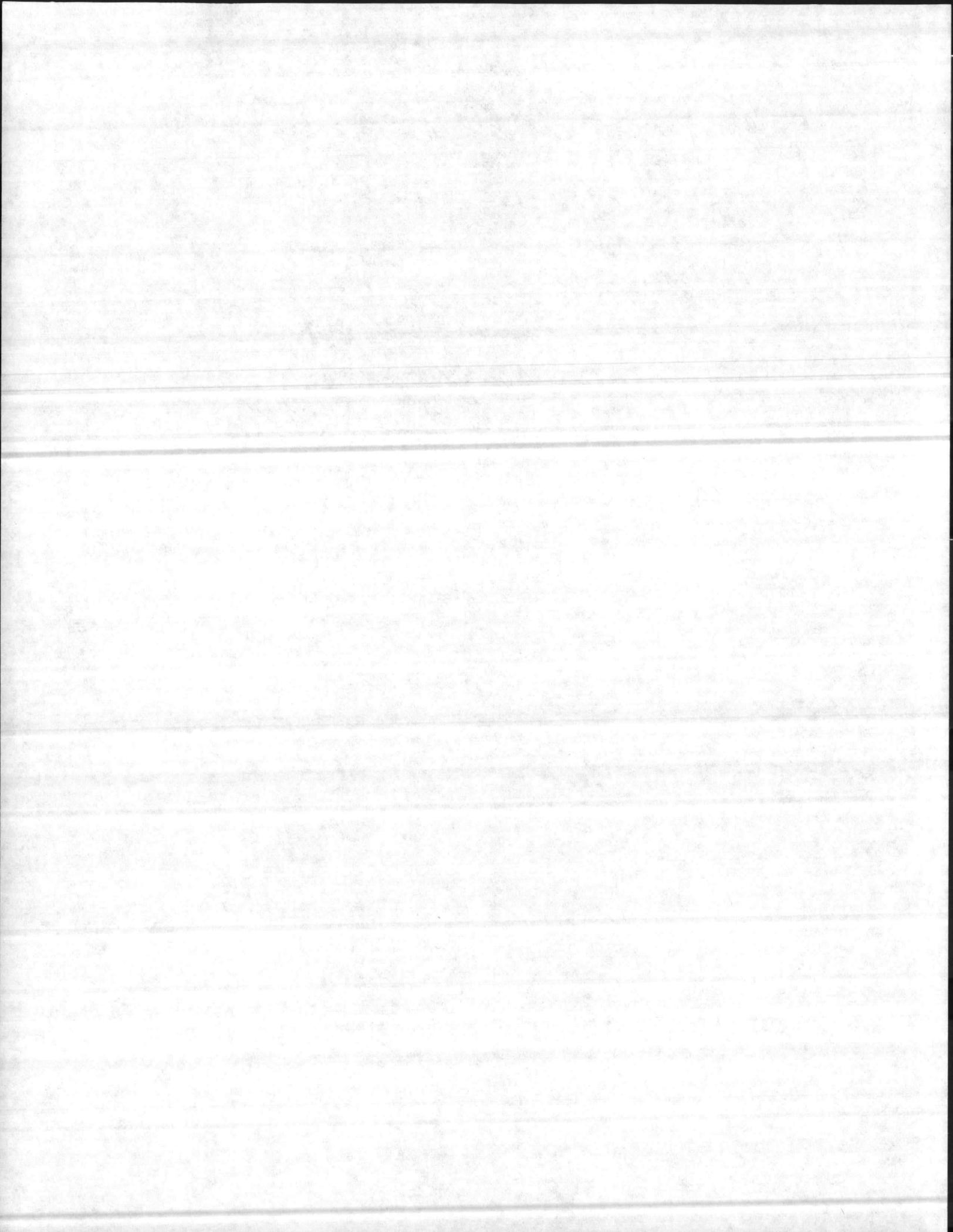
4

Northeast Creek - Willow Creek Unit

Acreages

Total acreage	- - -	4425
Acreage not suited to timber growth		95
Acreage reserved for other uses		1400
Acreage producing timber		2930

New sheet



~~Northeast Creek - Wallace Creek Unit~~

~~Acreage~~

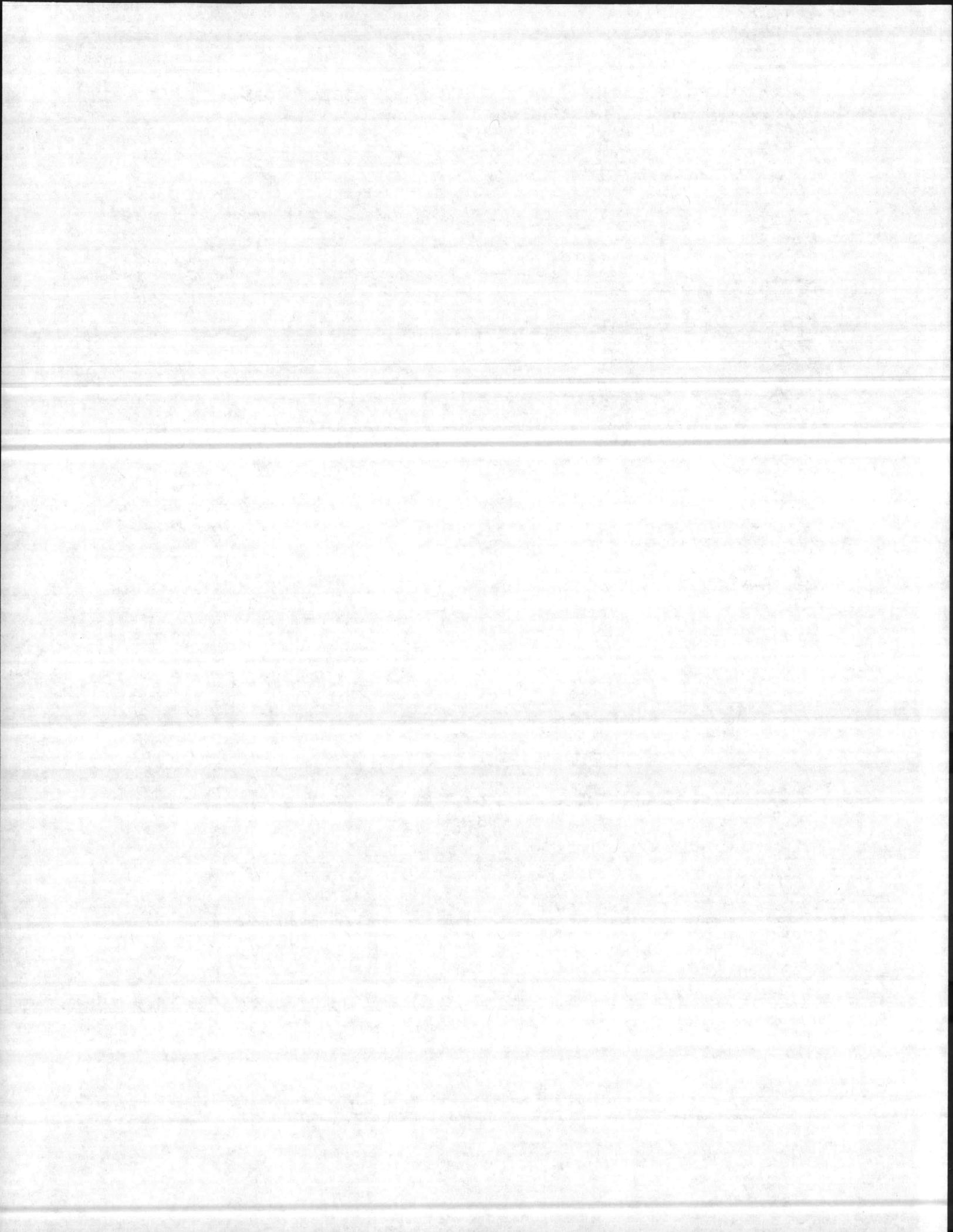
~~The acreage in this unit is unchanged from 1946 to 1954. It is considered one of the better units so far as amount of timber, soil type and growth is concerned.~~

Present volume now standing (1954)
on 2930 acres

Pine timber	- - - -	11,083,600 bd. ft.
Sum and Poplar	- - - -	1,600,400 bd. ft.
Oak	- - - -	864,400 bd. ft.
Total timber	- - - -	13,548,400 bd. ft.

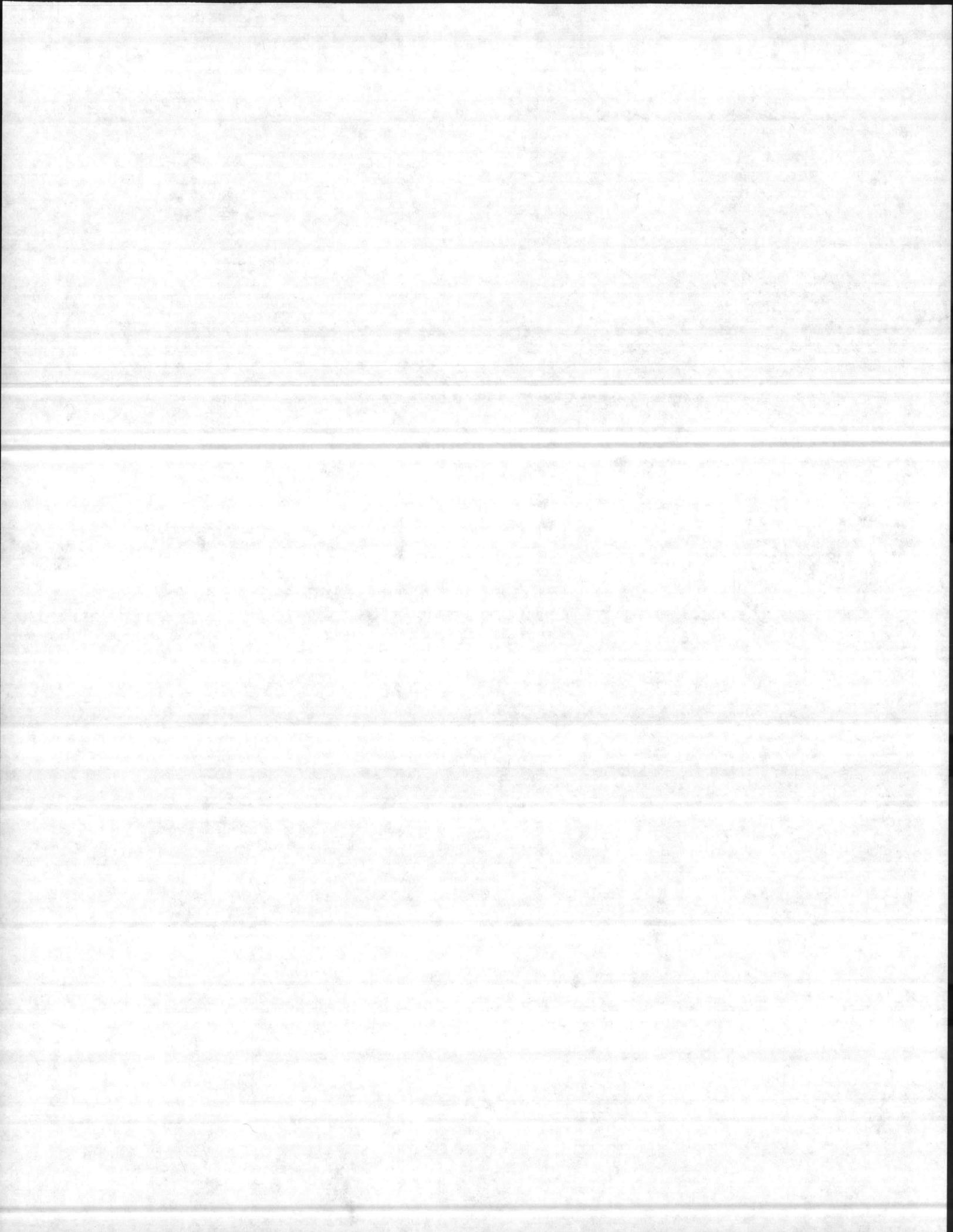
Volume cut from 1946 to 1954

Pine	- - - -	954,100 bd. ft.
Hardwood (oak + sum)		279,000 bd. ft.
Total timber cut		1,233,100 bd. ft.
Pulpwood cut	- -	7838.07 cords



Comparing the 1946 Volume to the 1954 Volume it is found there was a gross increase in volume of 5,312,200 board feet. Subtracting the volume that was cut during this period there is found a net increase in volume of 4,079,100 board feet. The pulpwood cut was mostly salvaged wood from thinnings and clean up after saw log operations.

This unit is now in good condition and the timber is growing rapidly.

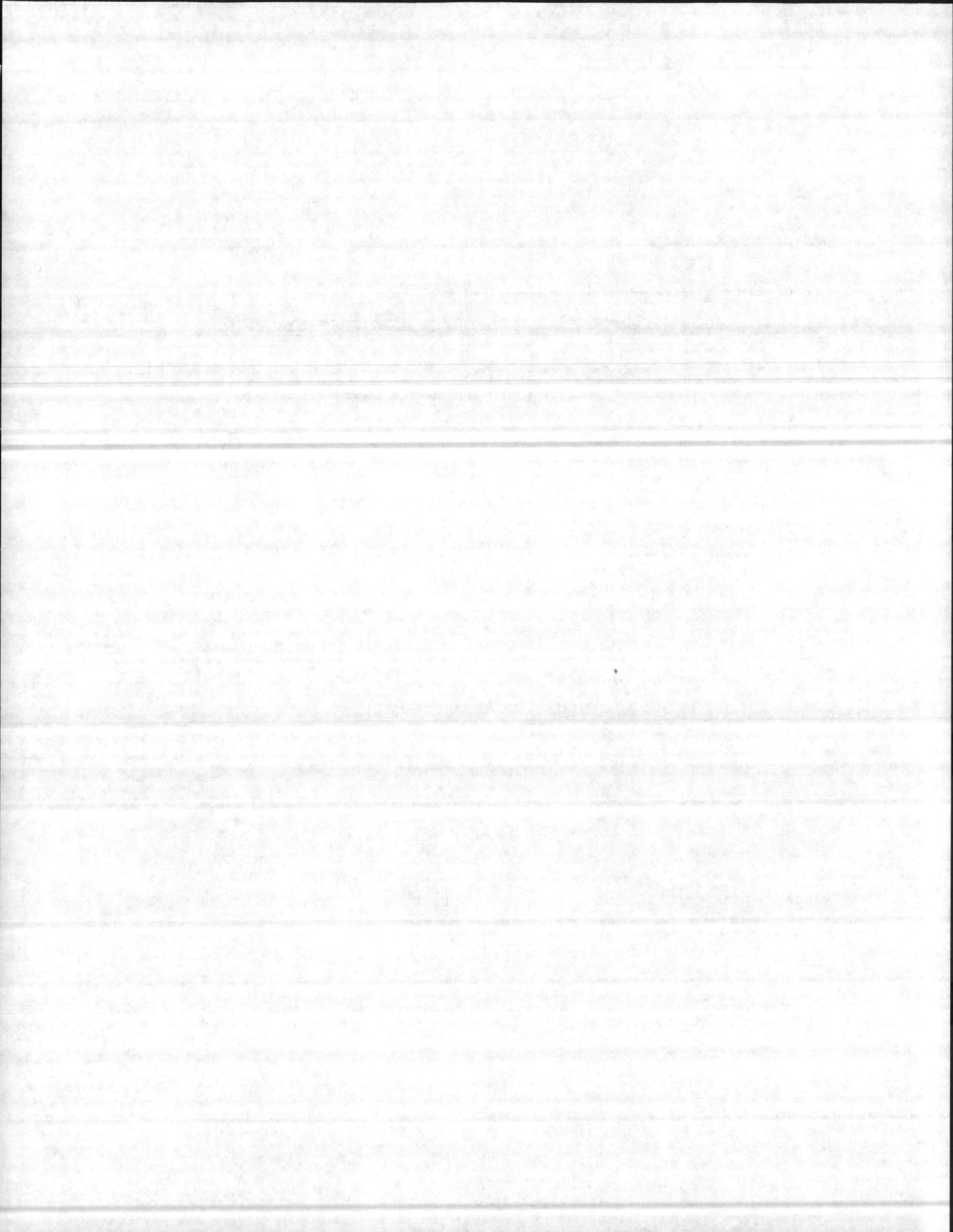


Duck Creek Unit

Acreages

Total acreage	- - -	4542
Acreage reserved for other uses		0
Acreage reserved for timber production		0
acreage producing timber		4542

new sheet



8
~~Sack Creek Unit~~

Present Volume Now Standing (1954)
on 4542 Acres

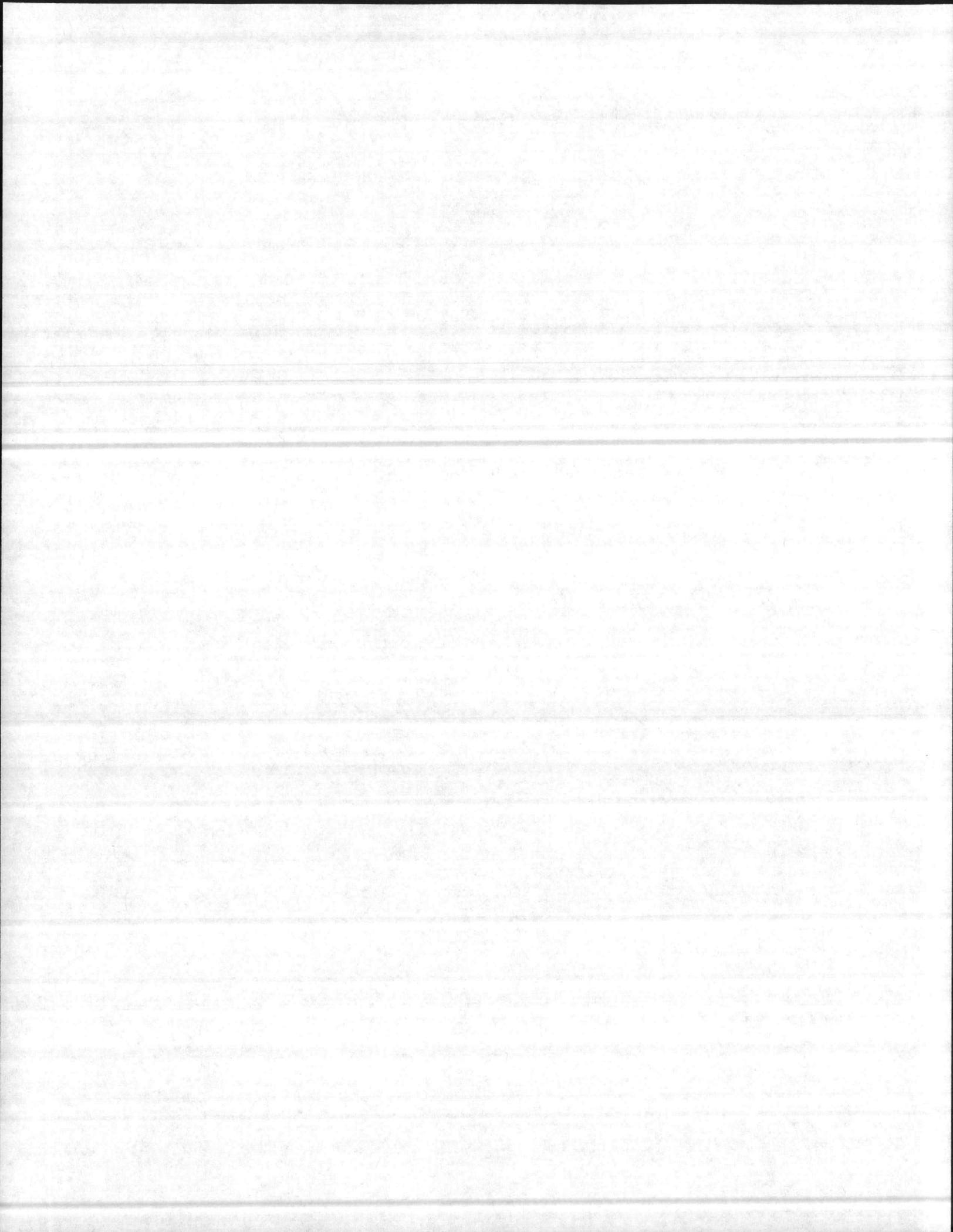
Pine timber	-----	12,620,800 bd. ft.
Gum and Poplar	-----	1,703,000 bd. ft.
Oak	-----	716,000 bd. ft.
Total timber		15,039,800 bd. ft.

Volume cut from 1946 to 1954

Pine	321,800 bd. ft.
Hardwood (Gum + oak)	42,700 bd. ft.
Total timber cut	364,500 bd. ft.

Pulpwood cut 5674.63 cords

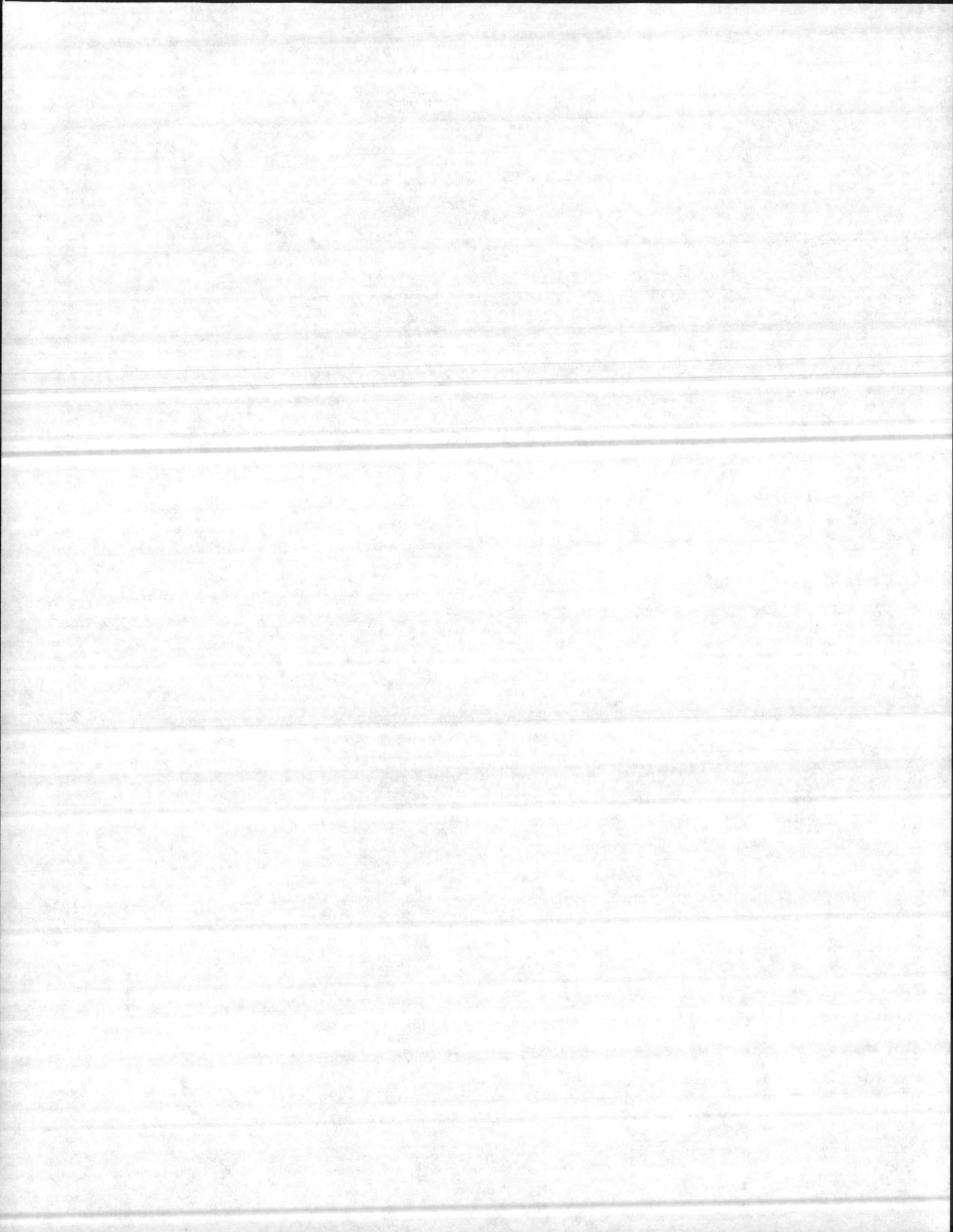
Comparing the 1946 volume to the 1954
volume it is found there was a gross
increase in volume of 4,893,350 bd. ft.
Subtracting the volume that was cut



during this ~~the~~ period there is found
a net increase of 4,528,250 bd.ft.

The pulpwood cut was salvaged mostly
from thinnings and clean up after saw-
log operations.

This unit is in good condition and
growing rapidly. There still remains about
700 acres to be thinned for pulpwood.

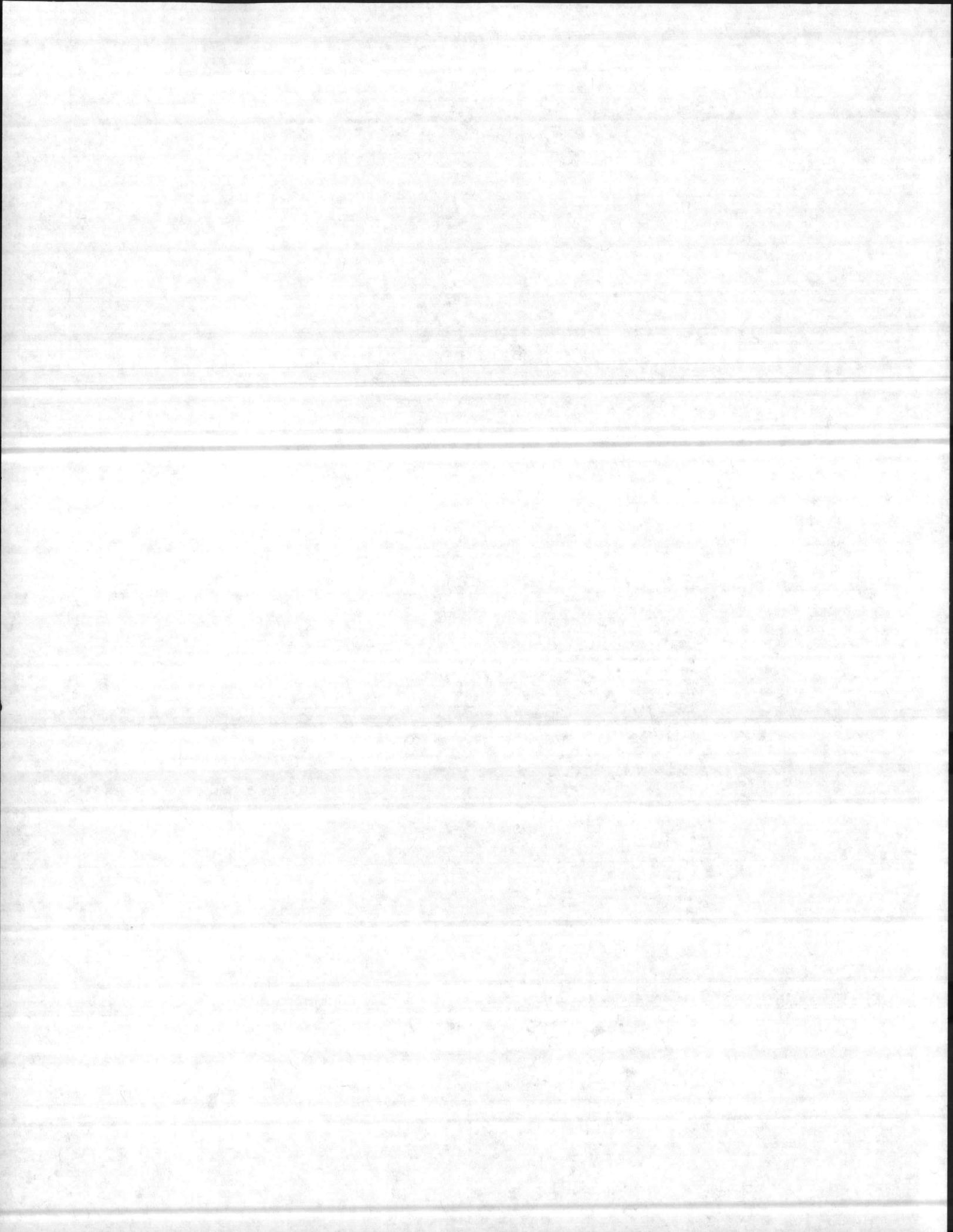


Sneads Ferry Road Unit

Acreages

Total acreage -	5675
acreage not suited to timber production	946 (Pocosin)
acreage reserved for other uses	0
acreage suited to timber production	4729

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~~Sussex Ferry Road Unit~~

Present Volume now standing (1954)

on 4729 acres

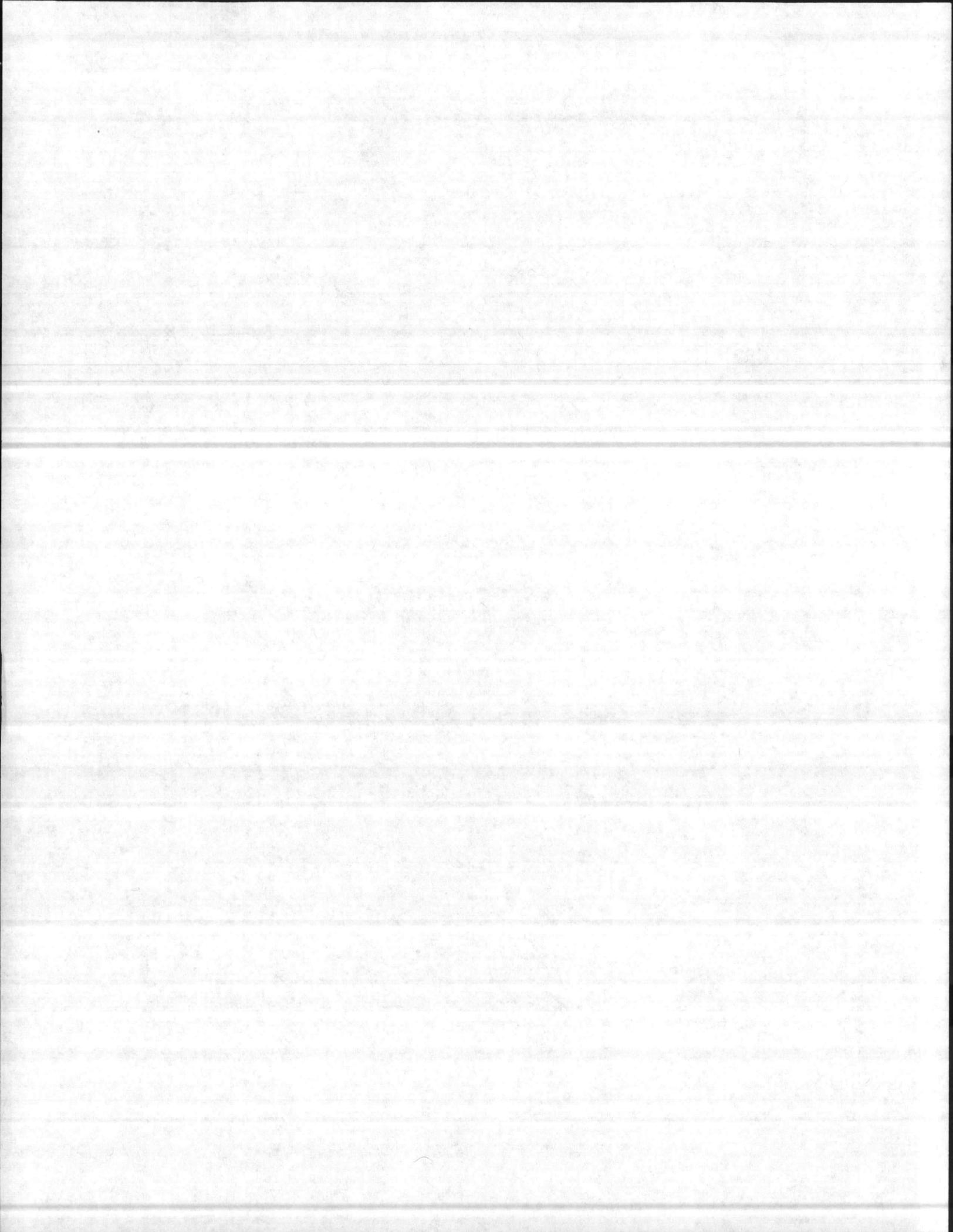
Pine timber	- - - - -	3,301,000	bd. ft.
Hardwood	- - - - -	530,200	bd. ft.
Total Timber	- - - - -	3,831,200	bd. ft.

Volume cut from 1946 to 1954

Pine	- - - - -	95,700	bd. ft.
Hardwood	- - - - -	,900	bd. ft.
Total timber cut		96,600	bd. ft.

Pulpwood cut 457.42 cords

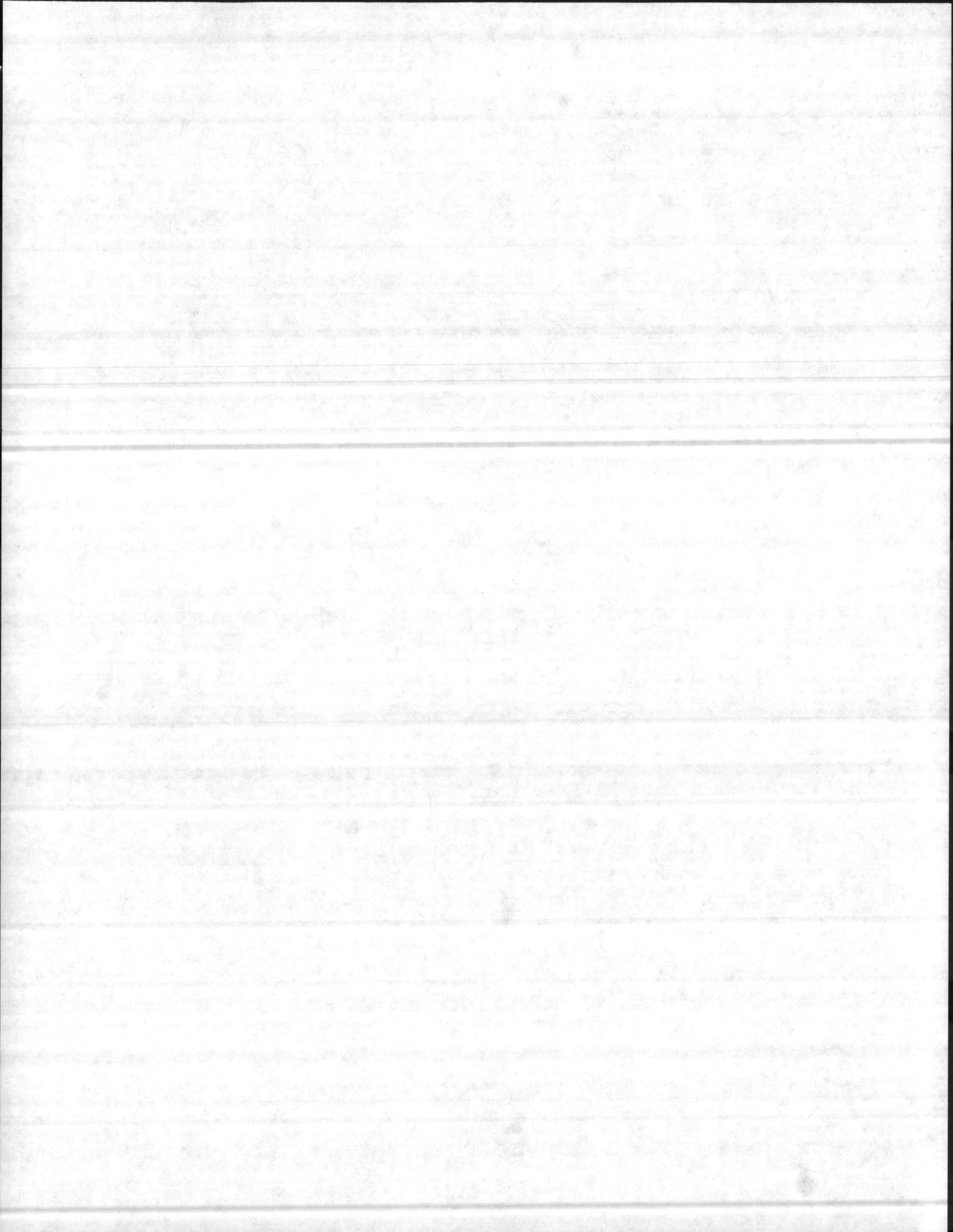
This unit is made up almost entirely of white sand and porous area. There has been a very ~~negligible~~ negligible gain in volume over the past eight years



Wallace Creek - French Creek Unit

Acreages

Total acreage	— — —	4809
Acreage not suited to timber production		0
Acreage reserved for other uses		2405
Acreage producing timber		2404



10

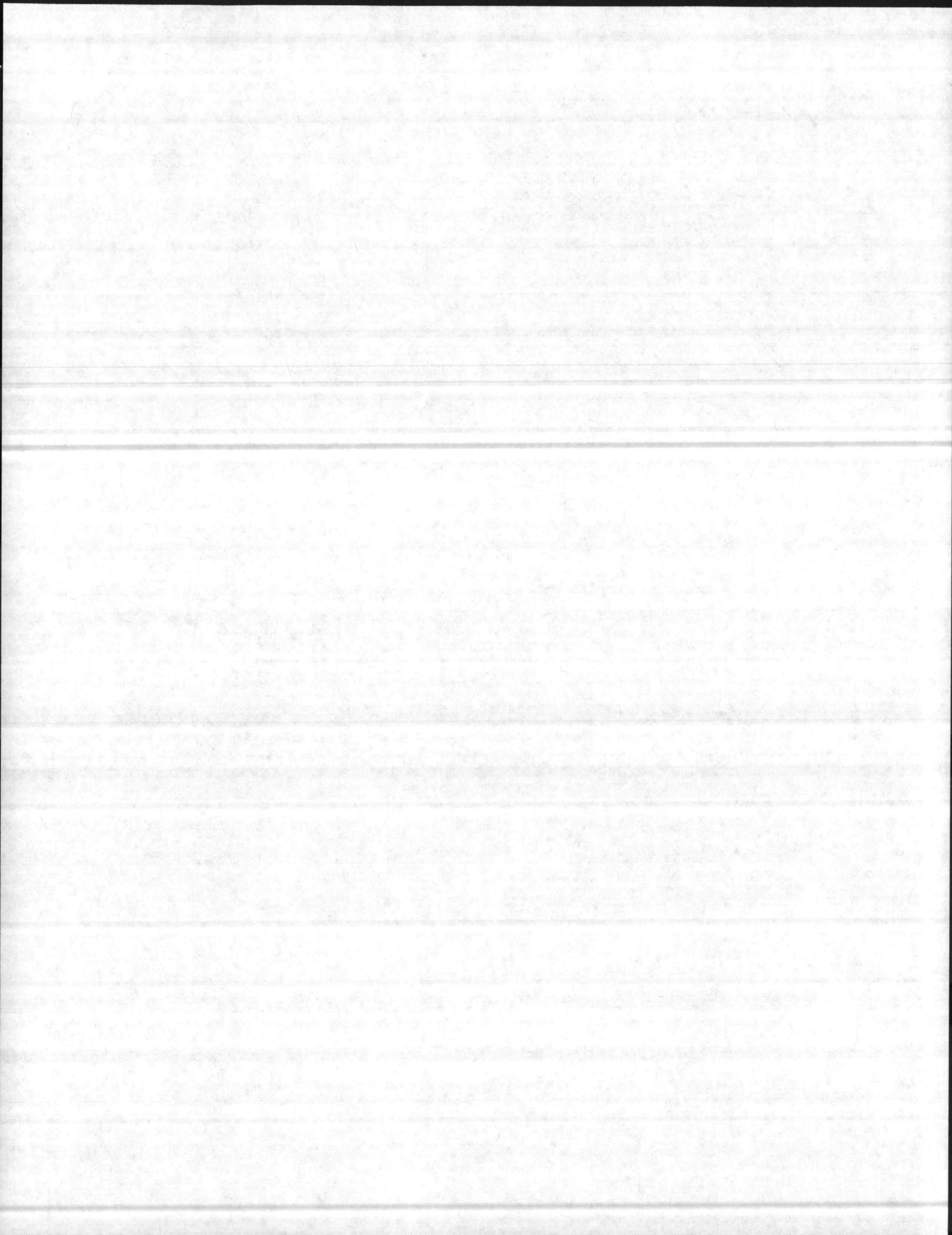
~~Wallace Creek - French Creek Unit.~~

Present Volume Now Standing (1954)
on 2504 acres

Pine	- - - - -	3,911,800 bd. ft.
Gum and Poplar	- - - - -	505,400 bd. ft.
Oak	- - - - -	495,200 bd. ft.
Total timber	- - - - -	4,912,400 bd. ft.

Volume cut from 1746 to 1954

Pine	- - - - -	842,800 bd. ft.
Hardwood	- - - - -	481,500 bd. ft.
Total timber cut	- - - - -	1,324,300 bd. ft.

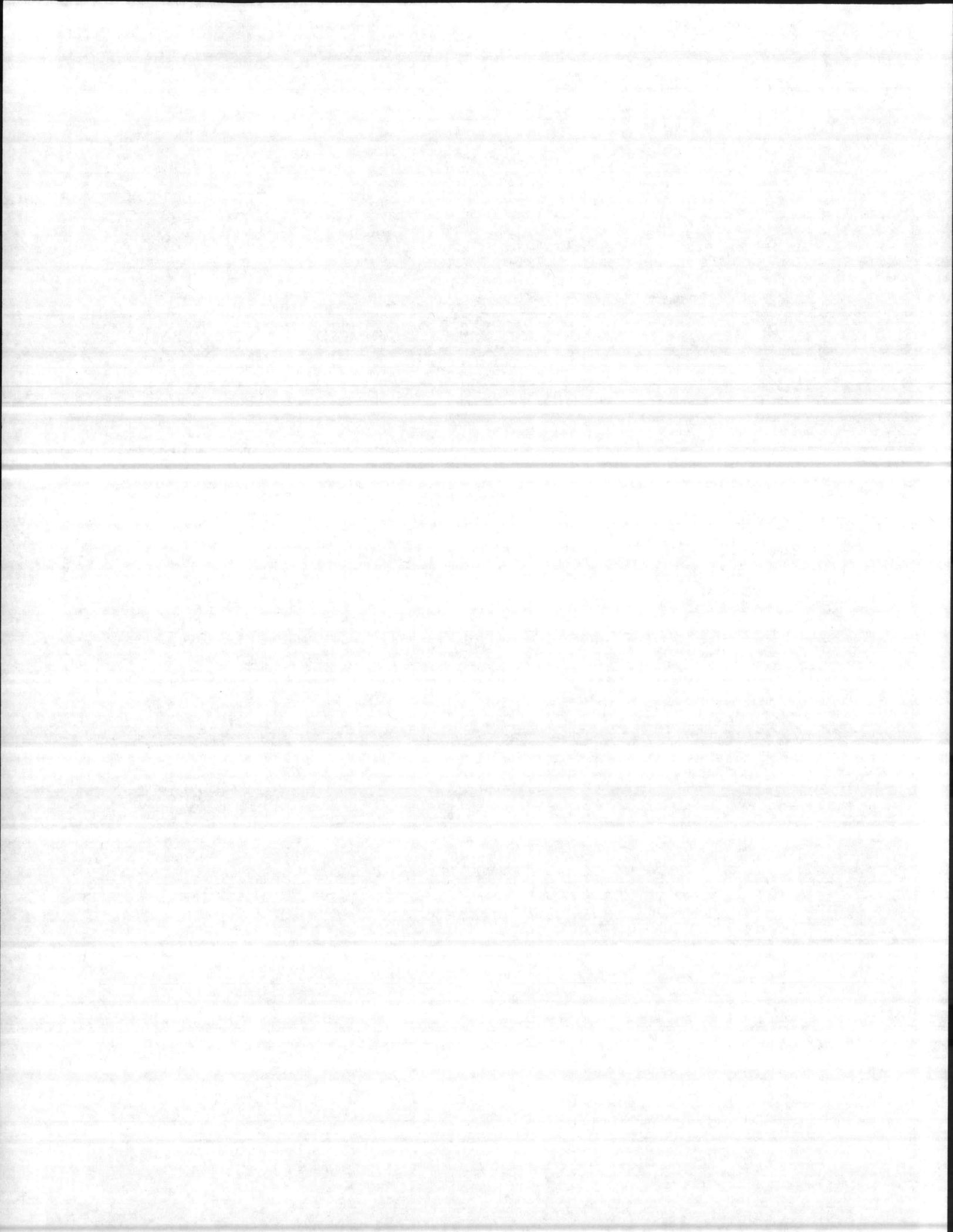


Southwest Creek Unit

Acreages

Total acreage	— —	4727
Acreage reserved for other purposes		170
acreage suited for timber production		4607

new plant



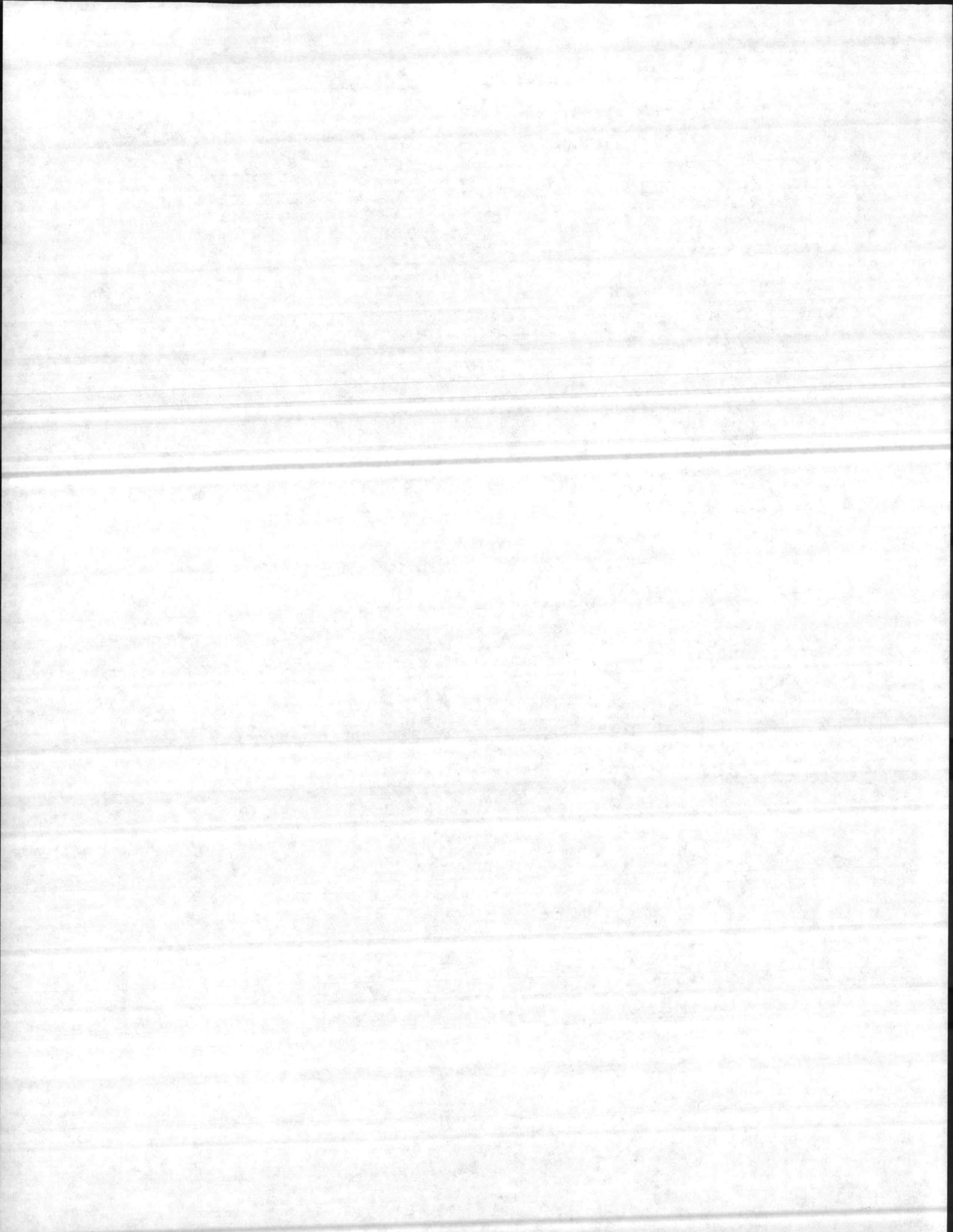
Southwest Creek Unit

Present volume now standing (1954)
on 4607 acres

Pine	- - - -	10,329,600 bd.ft.
Gum + Poplar	- - - -	2,692,800 bd.ft.
Oak	- - - -	815,000 bd.ft.
Total timber	- - - -	13,837,400 bd.ft.

Volume cut from 1946 to 1954

Pine	- - - -	571,700 bd. ft.
Hardwood	- - - -	114,900 bd. ft.
Total timber cut		726,600 bd. ft.



Verona Road Unit

Present volume now standing (1954)
on 4,463 acres

Pine	7,057,400 bd. ft.
Gum + Poplar	1,144,600 bd. ft.
Oak	306,200 bd. ft.
Total timber	8,502,200 bd. ft.

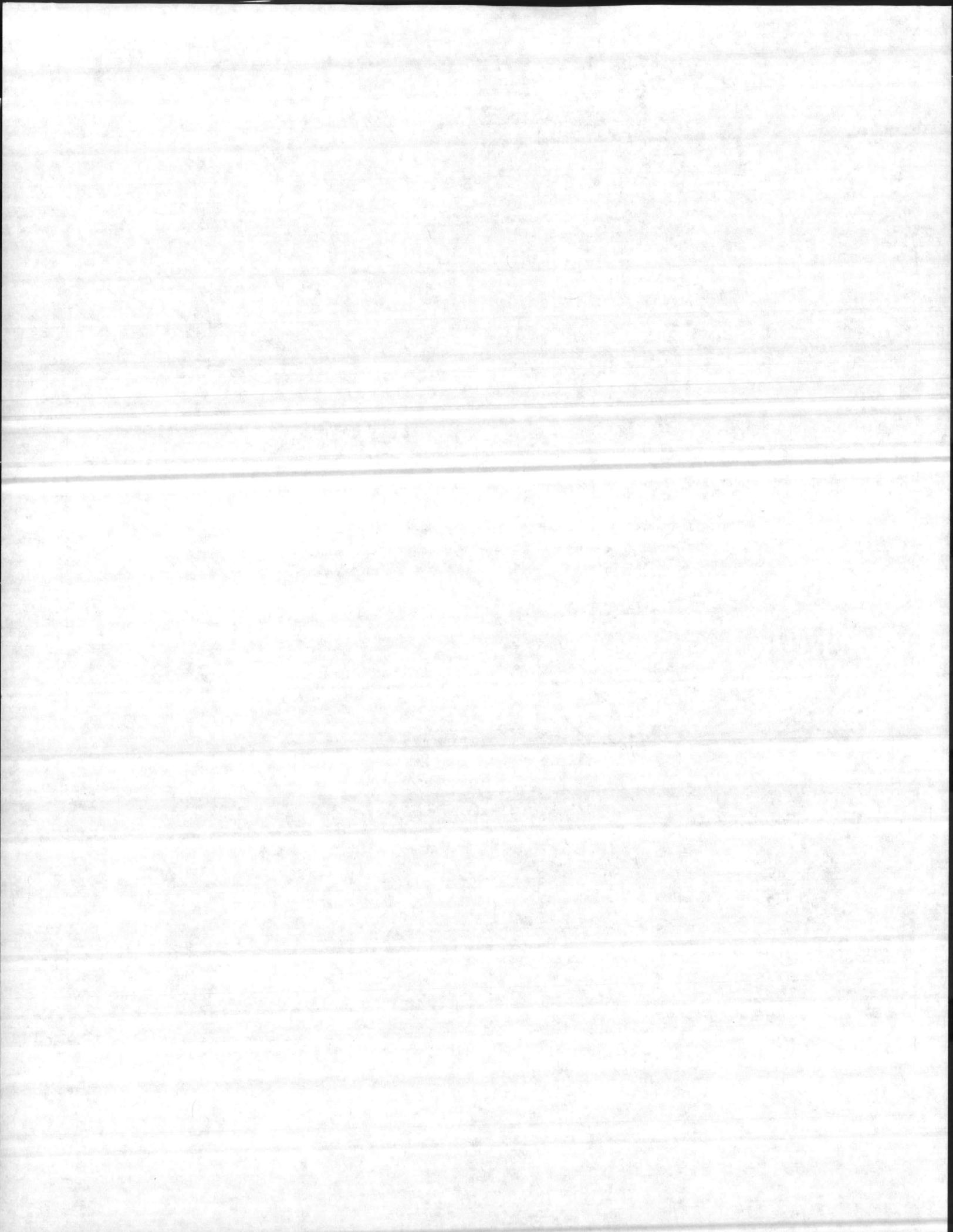
Volume cut from 1946 to 1954

Pine	297,800 bd. ft.
Hardwood	128,450 bd. ft.
Total timber cut	426,200 bd. ft.

Acreages

Total acreage	4463
acreage reserved for other uses	0
acreage producing timber	4463

next sheet



Cowhead Creek Unit

Present Volume Now Standing (1954)

on 2938 acres

Pine	- - - - -	1,749,000 bd. ft.
Sum + Poplar	- - - - -	82,400
oak	- - - - -	8,600
Total timber	- - - - -	1,840,000 bd. ft.

Volume cut from 1946 to 1954

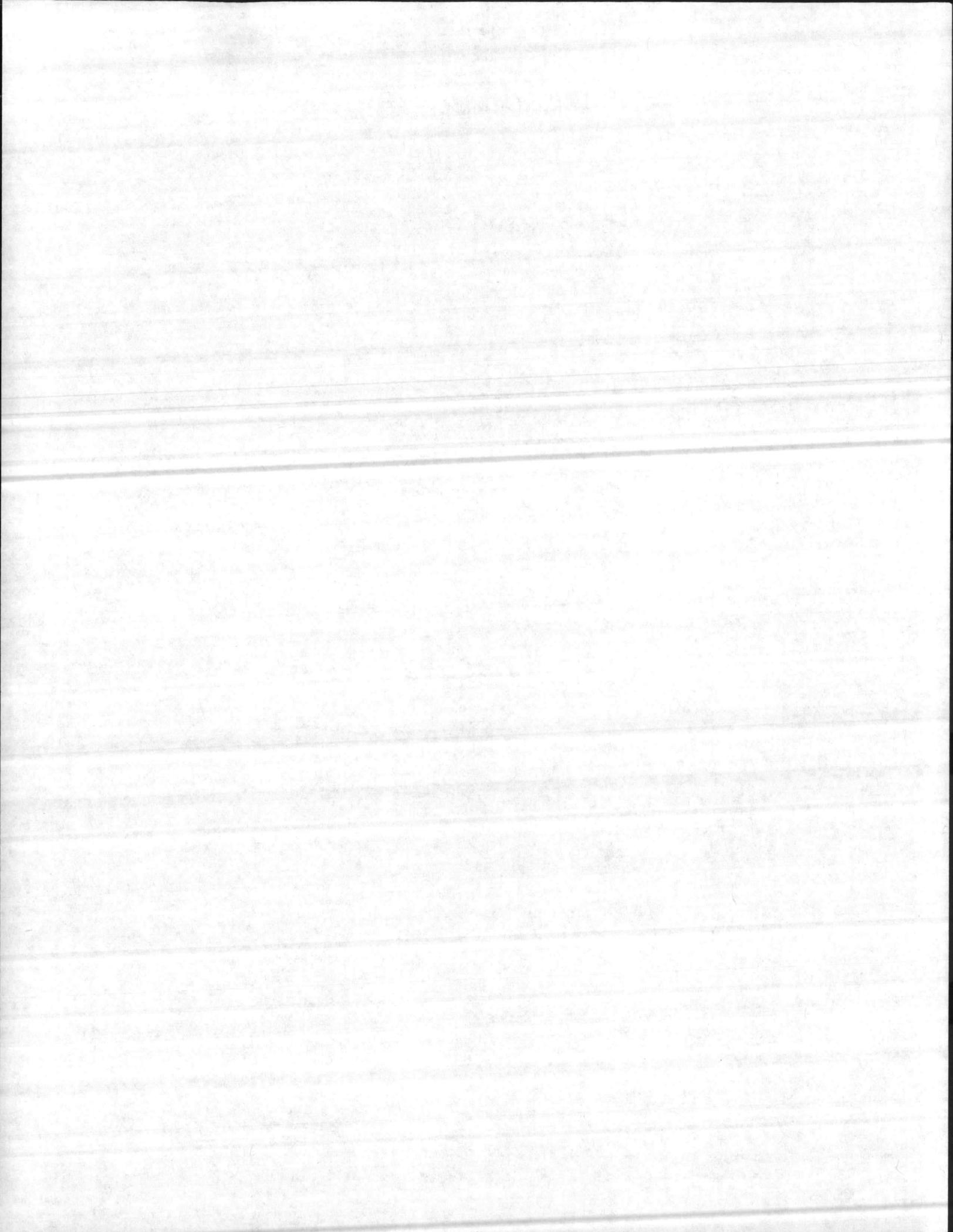
Pine	- - - - -	193,000 819,900 bd. ft.
Hardwood	- - - - -	9,800 bd. ft.

In 1946 this unit had a area of 4,099 acres.

In 1950, 1,487 acres were taken up by a firing range. This leave only 2,938 acres in this unit suitable for growing timber. The 1,487 acres were clear cut in order to salvage the timber. Most of it was put into pulpwood due to the small size of the trees.

Total acreage	- - - - -	4,958 4,099
acreage reserved for other uses	- - - - -	1,487
acreage suitable to timber production	- - - - -	2,938

2938



Bear Creek Unit

Present volume now standing (1954)
on 1540 acres

Pine - - - - - 1,362,800 bd. ft.

Sum - - - - - 24,200 bd. ft.

Total timber - - - - - 1,387,000 bd. ft.

Volume cut from 1946 to 1954

Pine - - - - - 290,200 bd. ft.

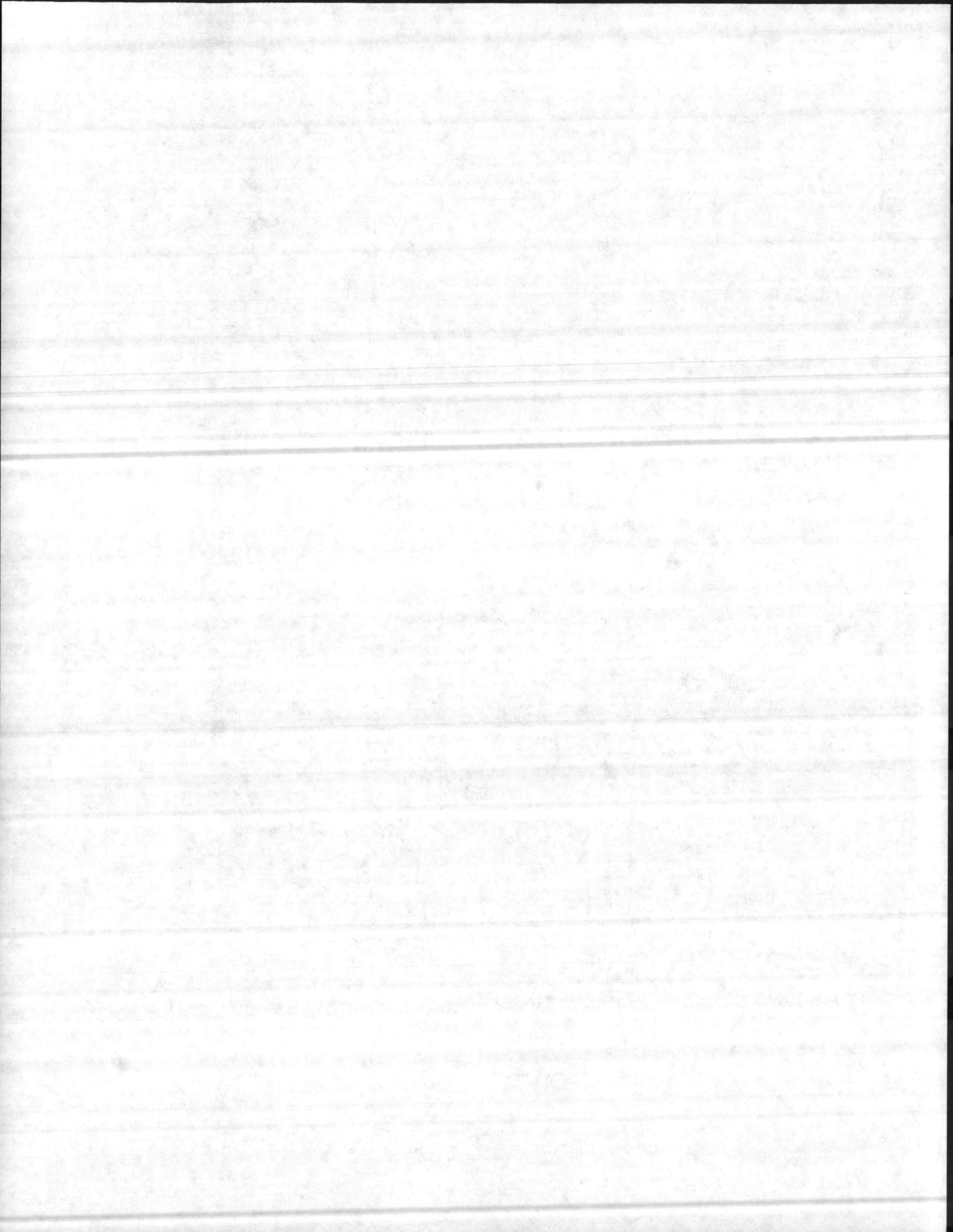
Hardwood - - - - - 105,300 bd. ft.

In 1946 this unit had an area of 3,614 acres ~~for 1950~~ suitable for timber production.

In 1950 about half the area was taken in a firing range. This left approximately 1540 acres suitable for timber production, the remainder being in ~~some~~ process. The merchantable timber lying within the firing range was cut into pulpwood.

new sheet

Total acreage	_____	- 3614
acreage reserved for other purposes	_____	2074
acreage suitable to timber production	_____	1540



East Walker Creek Unit

Present Volume Now Standing (1954)
on 43 47 acres

Pine - - - - -	4,781,200 bd. ft.
Spruce - - - - -	902,200 bd. ft.
Oak - - - - -	1,556,500 bd. ft.
Total timber	5,839,000 bd. ft.

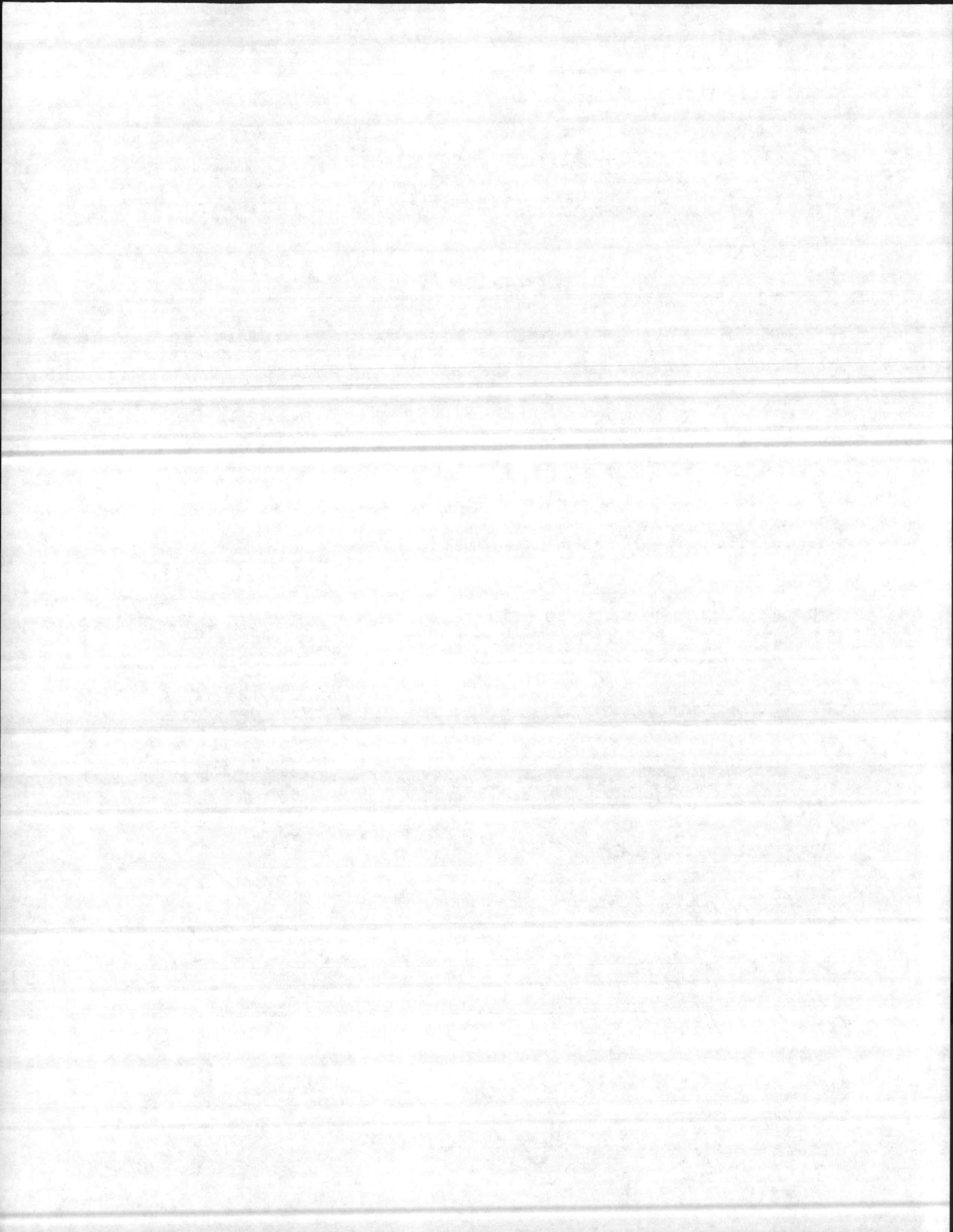
Volume cut from 1946 to 1954

Pine - - - - -	989,900 bd. ft.
Hardwood - - - - -	119,800 bd. ft.
Total timber cut	1,109,700 bd. ft.

In 1946 this unit had an ~~acreage~~ ^{area} of 6297 acres suitable for timber production. In 1950, 1670 acres were taken in the firing range. This left 4347 acres suitable for timber production.

Total acreage	6,882
acreage reserved for other uses	2,535
acreage suitable for timber production	4347

vertical



Starting Unit

Acreage

Total Acreage - - - - -	5103
Acreage reserved for other uses	806
Non timber producing acreage	492
Acreage producing timber	3805

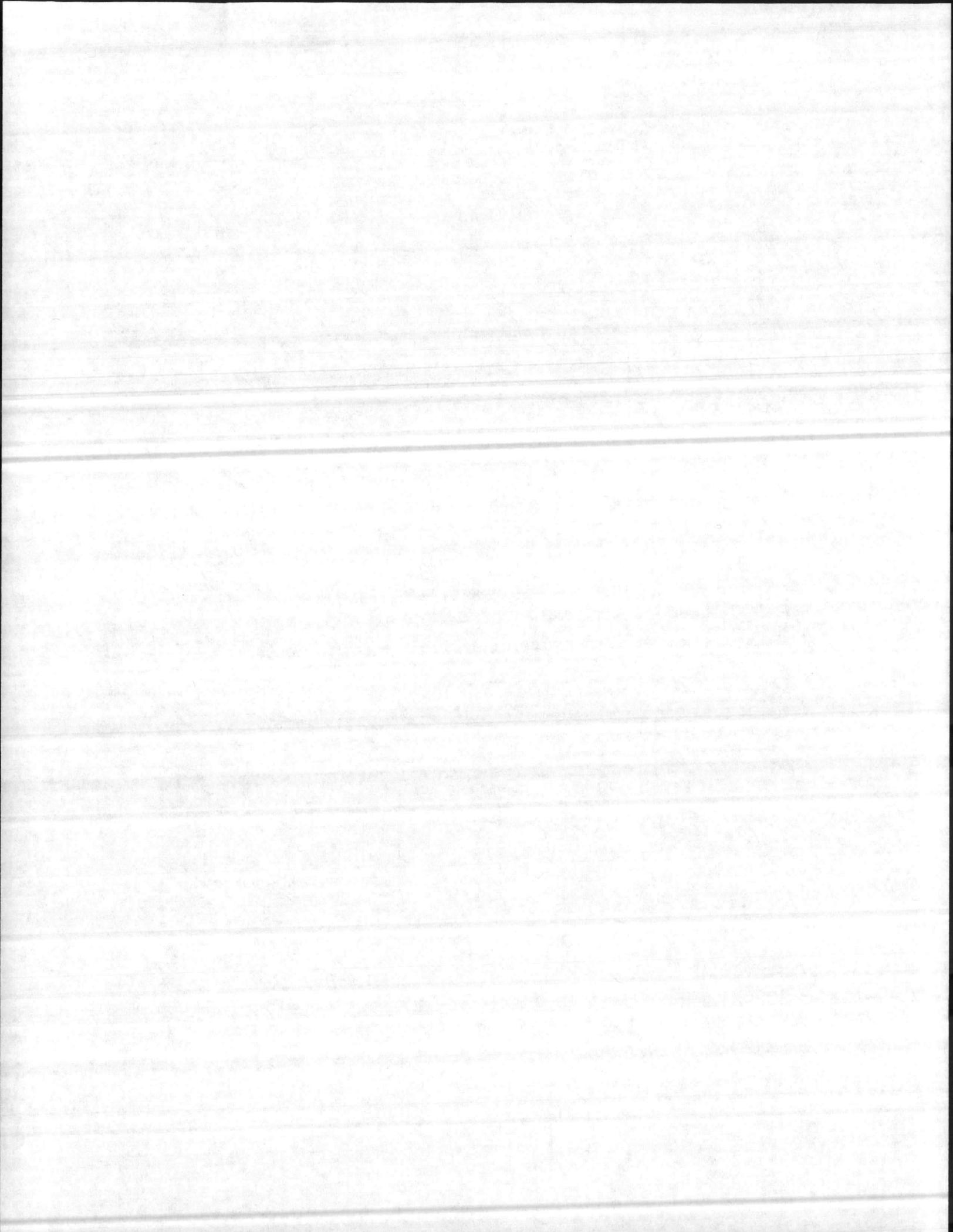
Volume

Present Volume Now Standing 1954 on 3805 acres

Pine - - - - -	3,982,000 bd. ft.
Gum - - - - -	453,800 bd. ft.
Total timber	4,435,800 bd. ft.

Volume cut from 1946 to 1954

Pine - - - - -	453,500 bd. ft.
Hardwood - - - - -	28,100 bd. ft.
Total timber cut - - - - -	481,600 bd. ft.
Pulpwood cut - - - - -	1206.03 cords



Sneads Point - Ouslow Beach Unit

Acreages

Total Acreage	7,007
Acreage reserved for other uses	279
Non timber producing acreage	1,724
Acreage producing timber	5,004

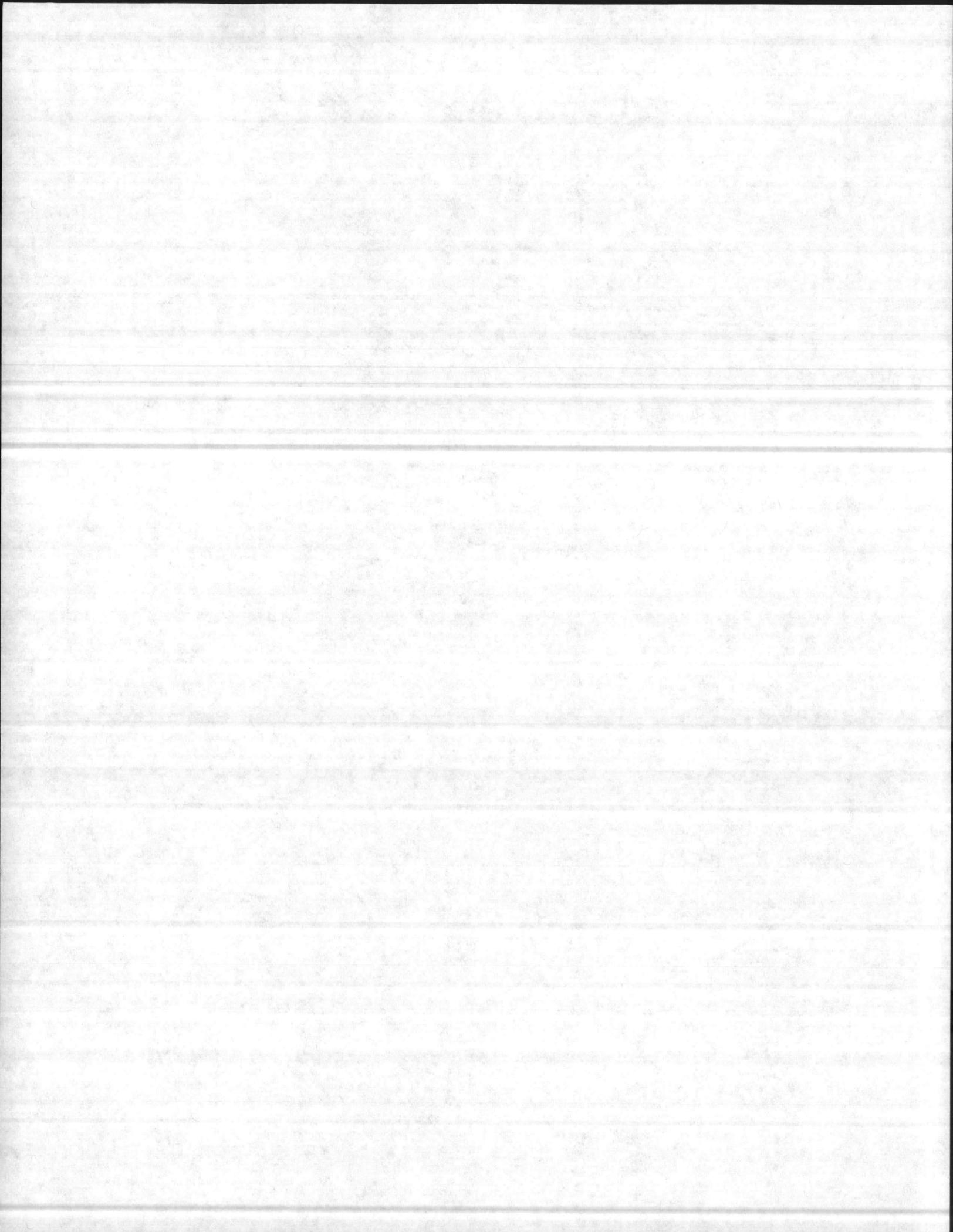
Present Volume Now Standing (1954)
 on ^{5,004}~~7,007~~ Acres

Inventory

Pine	8,050,600	bd.ft.
Gum	395,000	bd.ft.
Oak	52,800	bd.ft.
Total timber	8,498,400	bd.ft.

Volume Cut from 1946 to 1954

Pine	1,074,100	bd.ft.
Hardwood	119,200	bd.ft.
Total timber cut	1,193,300	bd.ft.
Pulpwood cut	2,241.77	cords



North ~~Intercoastal~~ ^{Intra-coastal} Waterway Unit

Acreages

Total Acreage - - - -	7,225
Acreage reserved for other uses	777 509
Now timber producing acreage	3,231
Acreage producing timber	3,485

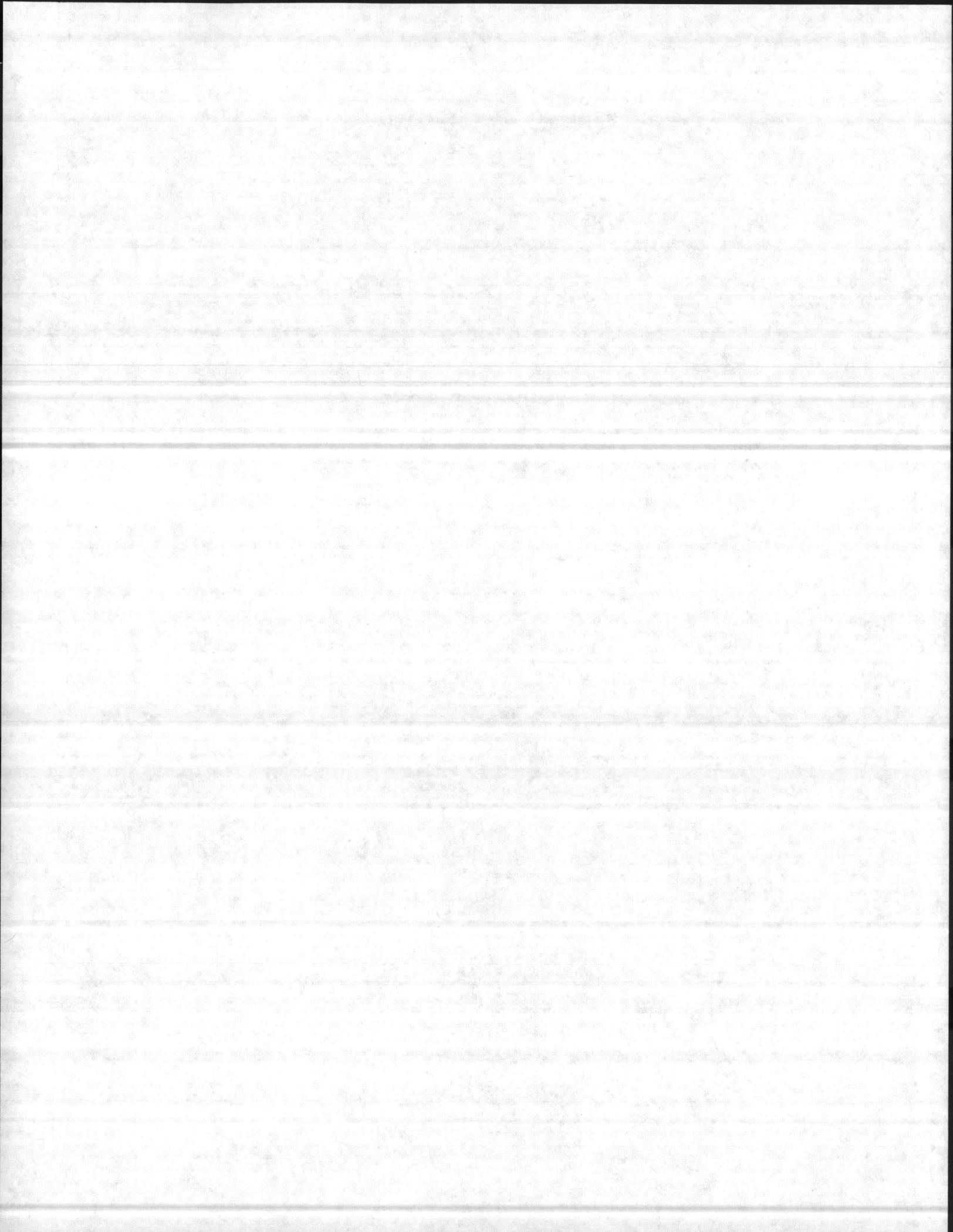
Present Volume Now Standing (1954)
on 3,485 acres

Volume

Pine - - - - -	3,438,200 bd. ft.
Shum - - - - -	239,400 bd. ft.
Oak - - - - -	24,200 bd. ft.
Total timber - - - -	3,701,800

Volume cut from 1946 to 1954

Pine - - - - -	350,400 bd. ft.
Hardwood - - - - -	248,700 bd. ft.
Total timber cut - - - -	599,100 bd. ft.
Pulpwood cut -	346.23 cords



Mountford Pt. - Camp Knox Unit
Acreages

Total acreage	- - - - -	2,910
Acreage reserved for other uses		1,120
Non timber producing acreage		0
Acreage producing timber		1790

Present Volume Now Standing (1954)
on 1790 acres

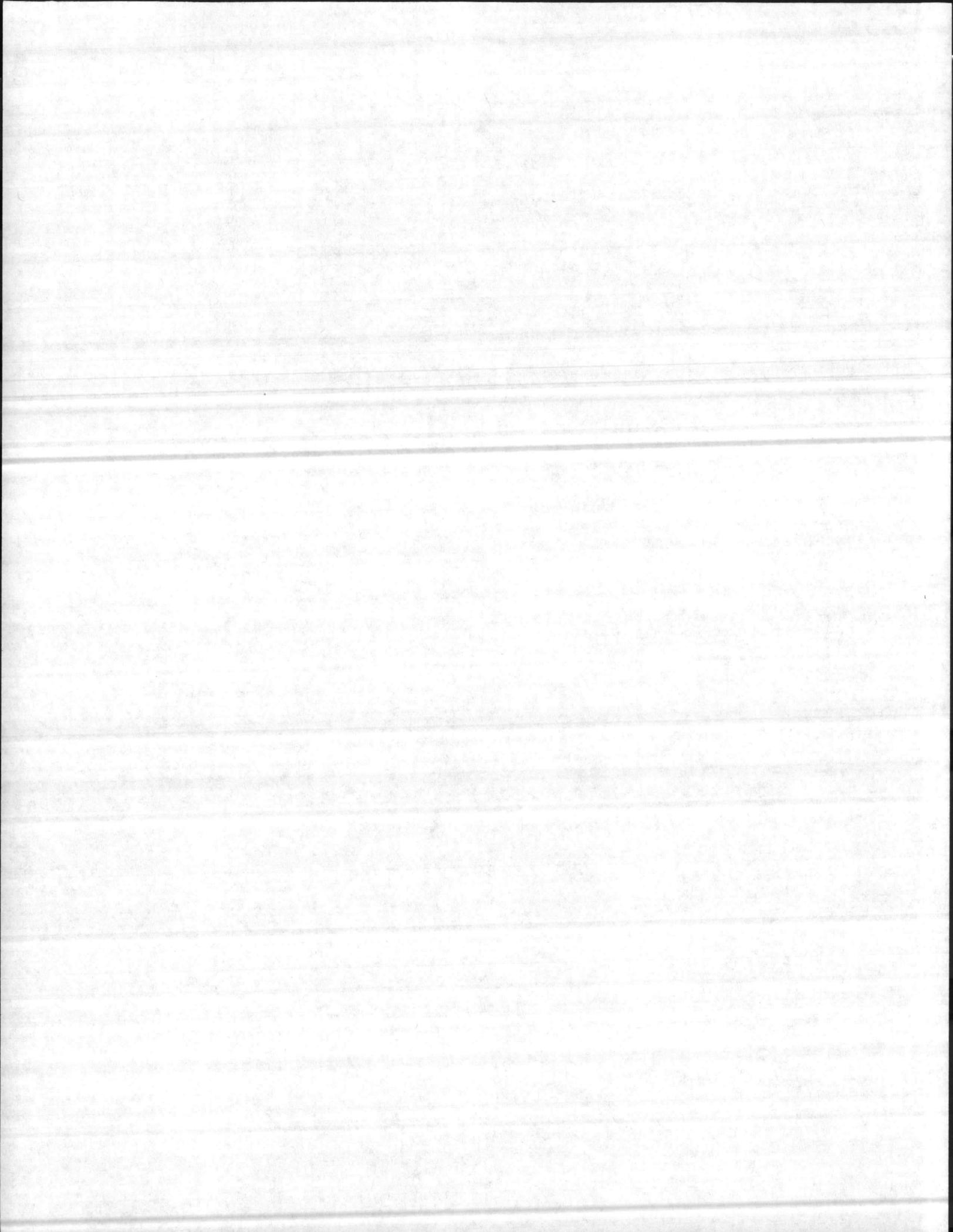
Mountford

Pine	- - - - -	2,439,800 bd.ft.
Spruce	- - - - -	259,800 bd.ft.
Oak	- - - - -	127,000 bd.ft.
Total timber	- - - - -	2,826,600 bd.ft.

Volume cut from 1946 to 1954

Pine	- - - - -	850,000 bd.ft.
Hardwood	- - - - -	252,300 bd.ft.
Total timber cut		1,102,400 bd.ft.

Pulpmat cut 3392.90 cords



Airfield Unit

Acreage

Total Acreage	- - - -	5073
Acreage reserved for other uses		4014
Non timber producing land acreage		49
Acreage producing timber		1010

Present Volume Now Standing (1954)

on 1010 acres

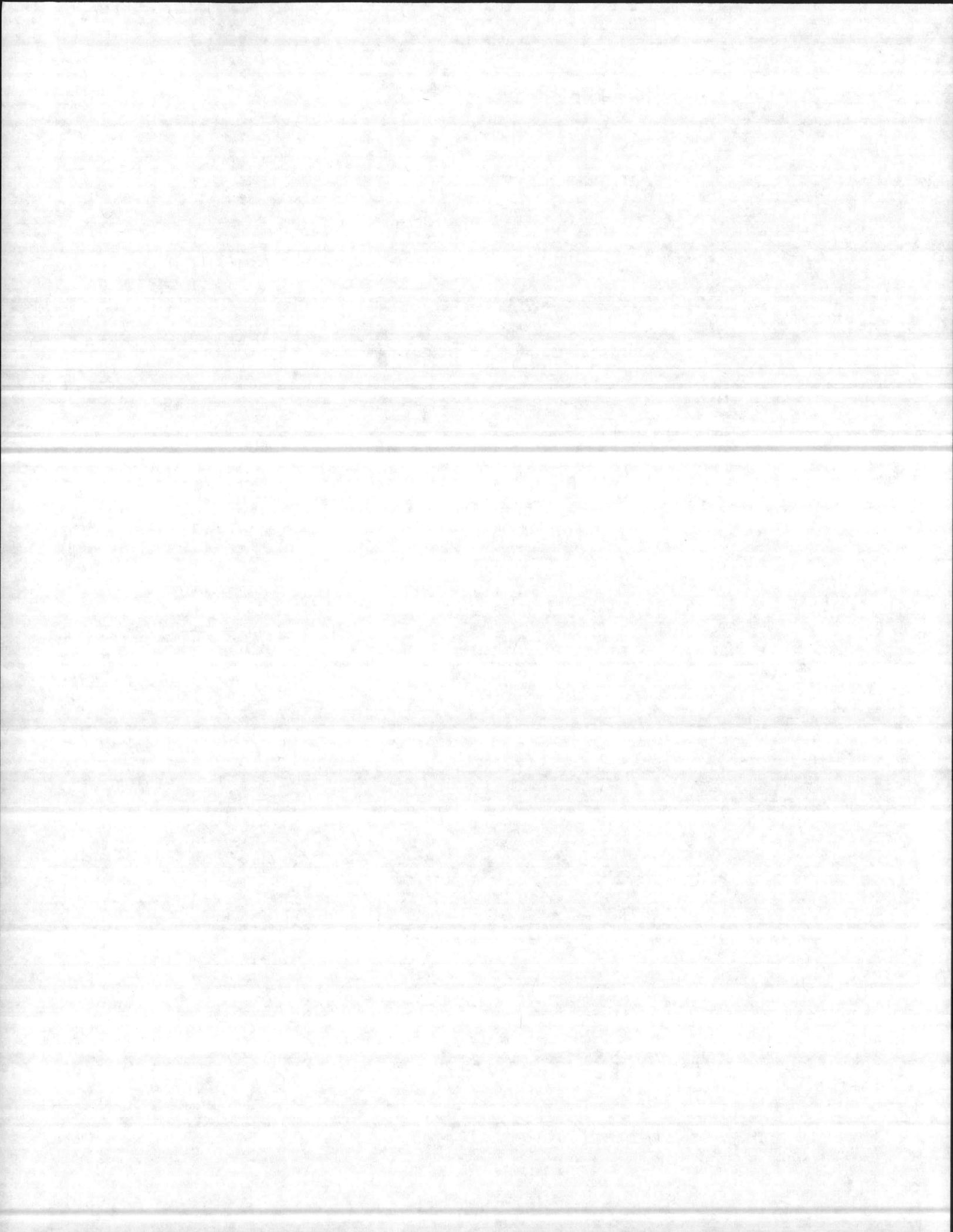
Pine	- - - - -	3,190,000 bd. ft.
Sum	- - - - -	979,600 bd. ft.
Oak	- - - - -	211,400 bd. ft.
Total timber	- - - - -	4,381,000 bd. ft.

1010 acres
 4381000 bd. ft.

Volume cut from 1946 to 1954

Pine #	- - - - -	400,800 bd. ft.
Hardwood	- - - - -	110,900 bd. ft.
Total timber cut		511,700 bd. ft.

Pulpwood cut 4724.44 cords



Dixon Unit

Acreages

Total acreage	- - - - -	7,308
Acreage reserved for other uses		1,000
Non timber producing acreage		0
Acreage producing timber		6,308

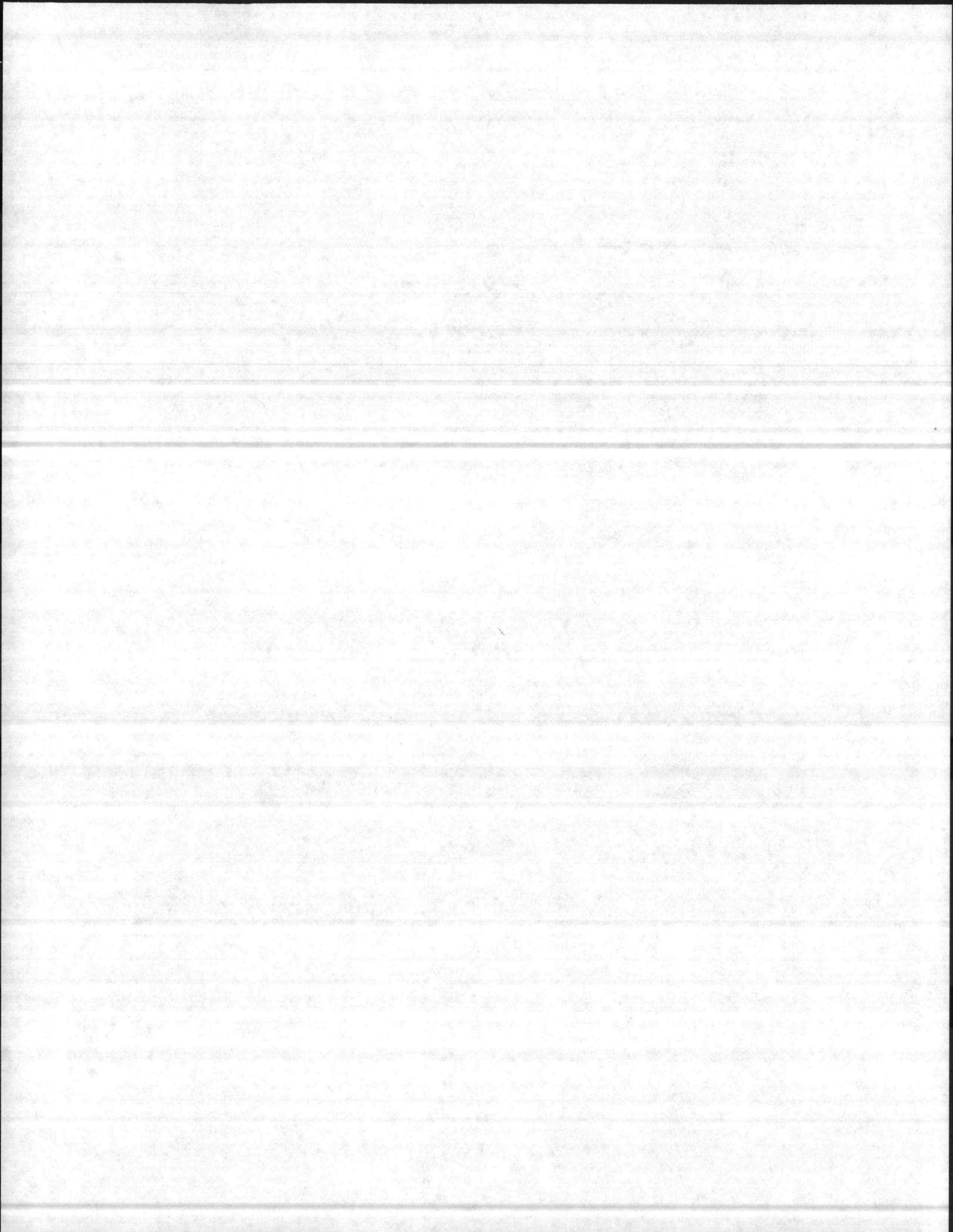
Present Volume now standing (1954)

Pine	- - - - -	14,484,000 bd. ft.
Gum	- - - - -	3,485,800 bd. ft.
Oak	- - - - -	1,243,800 bd. ft.
Total timber		19,213,600 bd. ft.

new cut

No saw timber has been cut in this unit since 1946.

Pulpwood cut - - 3660.60 cords



Totals for The Camp

Acreage

Total acreage (including water)	111,154
Acreage under water	26,000
Land acreage	85,154
Land acreage exclusive of Midway Park	84,629
Acreage reserved for other uses	23,178 24,190
Acreage not suited to timber production	6,537
Acreage suited to timber production	53,902

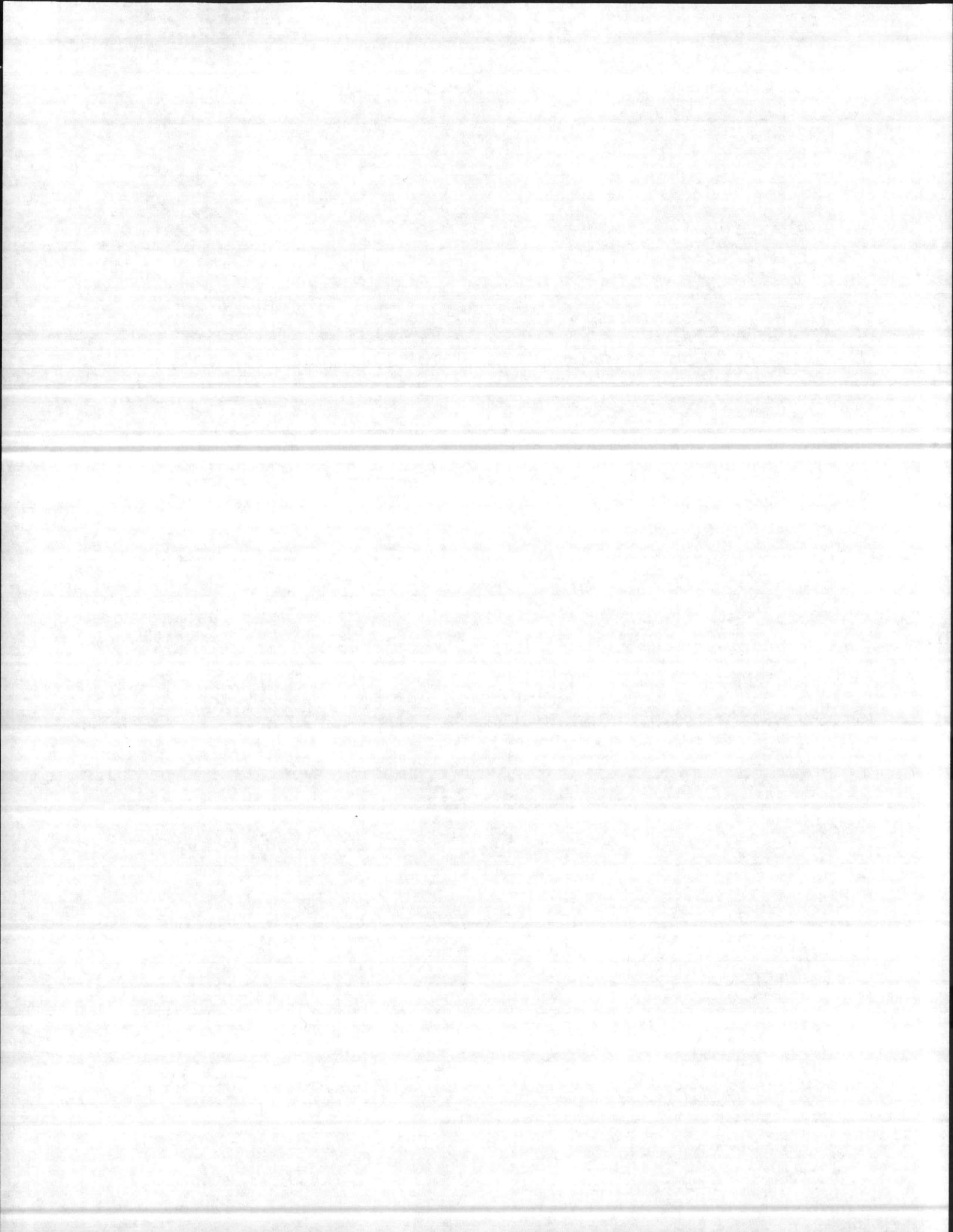
Present Volume Now Standing (1954)

Pine	91,778,800 bd. ft.
Sum	14,998,600 bd. ft.
Oak	5,020,200 bd. ft.
Total timber	111,797,600 bd. ft.

Volume cut from 1946 to 1954

Pine	8,252,800 bd. ft.
Hardwood	2,041,500 bd. ft.
Total timber cut	10,294,300 bd. ft.

Mean



Pulpwood cut (1946-1953)

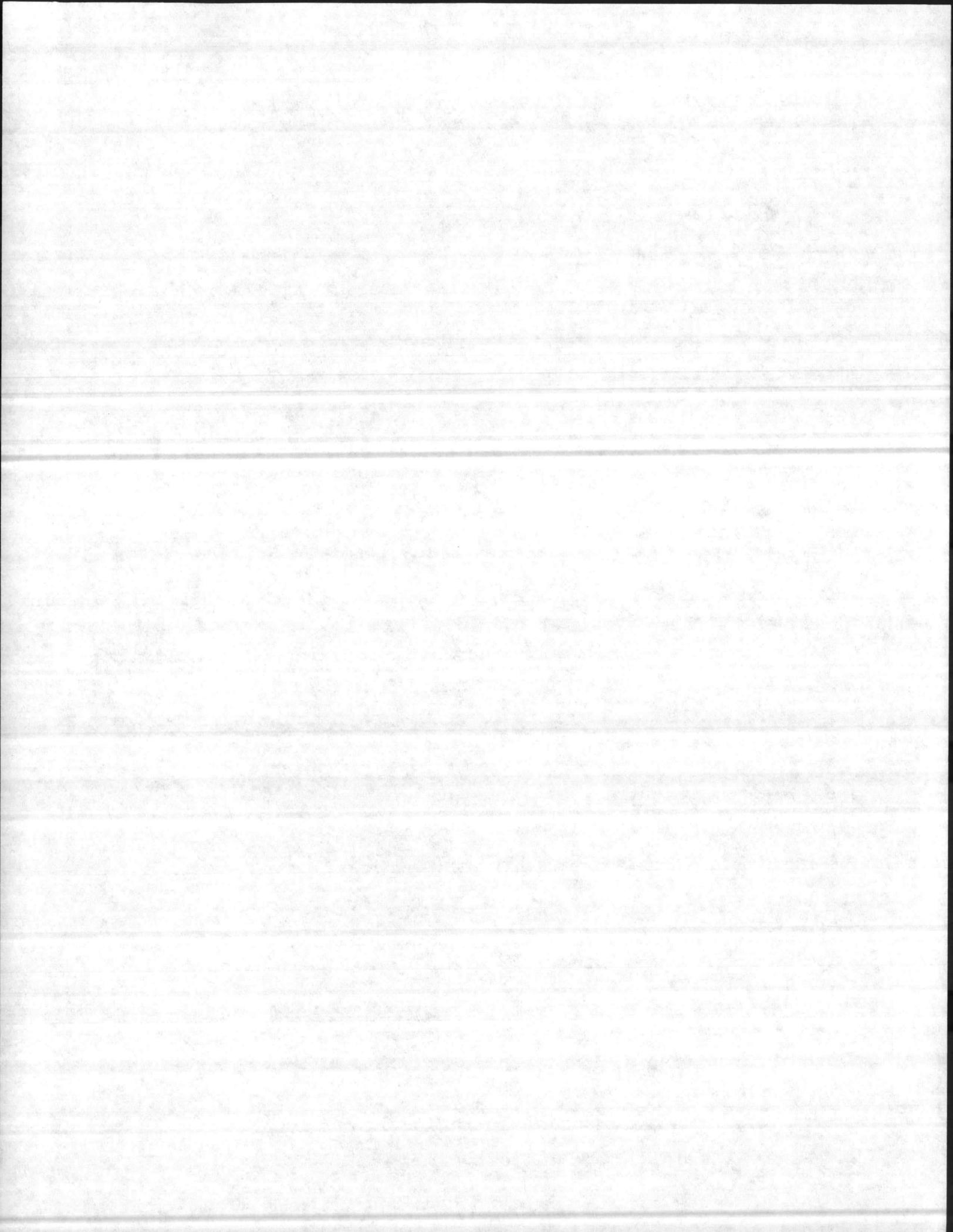
Clear cut

Area K - - - - - 42,499.22 cords
 other areas - - - - - 15,792.45 cords

Thinning - - - - - 75,243.98 cords

Total pulpwood cut 83,535.65

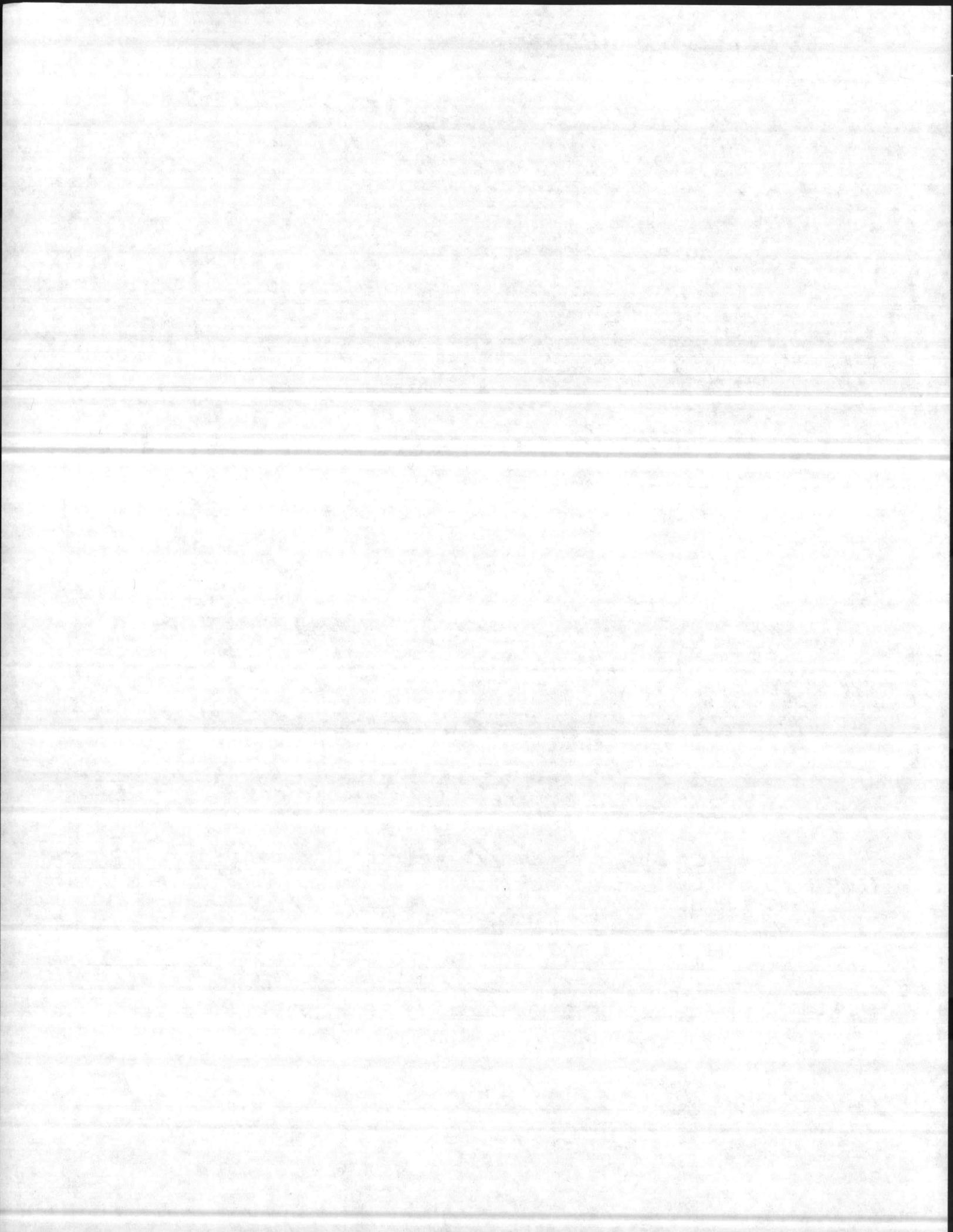
There has been a considerable amount of ~~lumber~~^{timber} cut ~~by~~ by the Camp sawmill from various areas on the Camp not already shown in this report. From area K, the artillery impact area there was 1,294,700 board feet cut. From areas set aside for other purposes there was 1,240,700 board feet cut. This make a total of 2,495,400 board feet of lumber that was actually salvaged from areas that had to be cleared. Had it not been cut



(it would have been a talent loss.

It should be remembered that the total board foot volume, ^{now standing on the base} was arrived at by the Scribner Decimal C Log Rule, the ~~the~~ same log rule that was used in the 1946 cruise. It has been shown that the actual amount of lumber that can be sawed from a tree gives an overrun of 17% on the Scribner Decimal C. Rule. So the cruised volume of 111,794,600 board feet would actually saw out 130,799,700 board feet if every tree 10 inches and up were cut.

As was pointed out in the 1946 plan and should be stressed again here, one of the main difficulties is caused by the unusual proportion of hardwood that is mature and ready for harvesting. Of the ^{approximate} 10,000,000 board feet that has been cut since 1946, only 2,000,000 board feet was hardwood. The proportion of hardwood



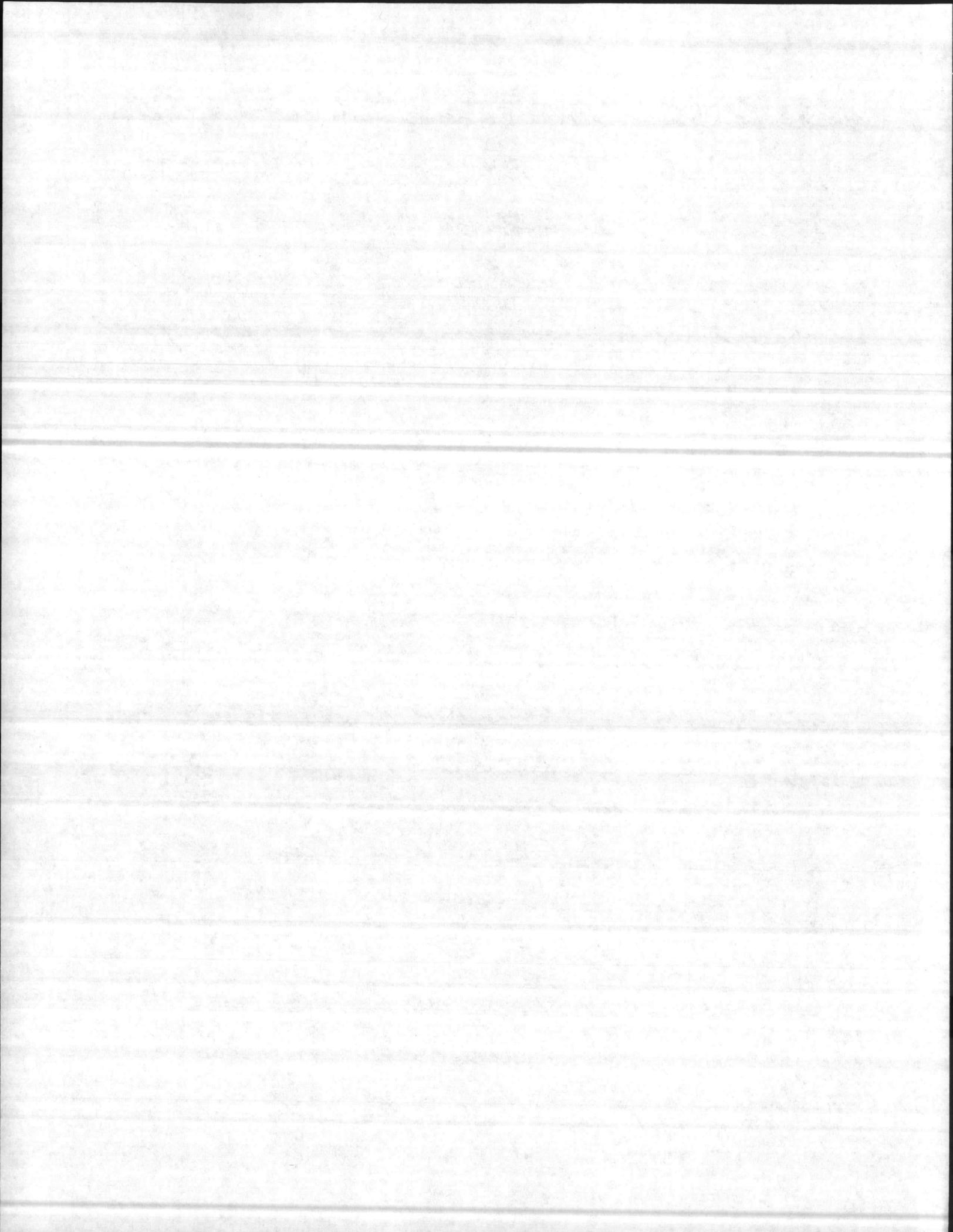
should have been much higher. If there in no way the Marine Corps can use their excess amount of hardwood it is suggested that it might be sold by contract similar to the way pulpwood is now sold.

Silviculture Needed

As has been stated before, protection is still of prime importance. Keep fire down to a minimum and nature will take care of the rest. This has been very well done during the past eight years.

Considering the tremendous fire hazard encountered on a military reservation the acreage burned over has been relatively small. Many fires have been set but they have been restricted to small areas.

It is hoped that fire protection and suppression will remain at its high degree of efficiency in the future years.



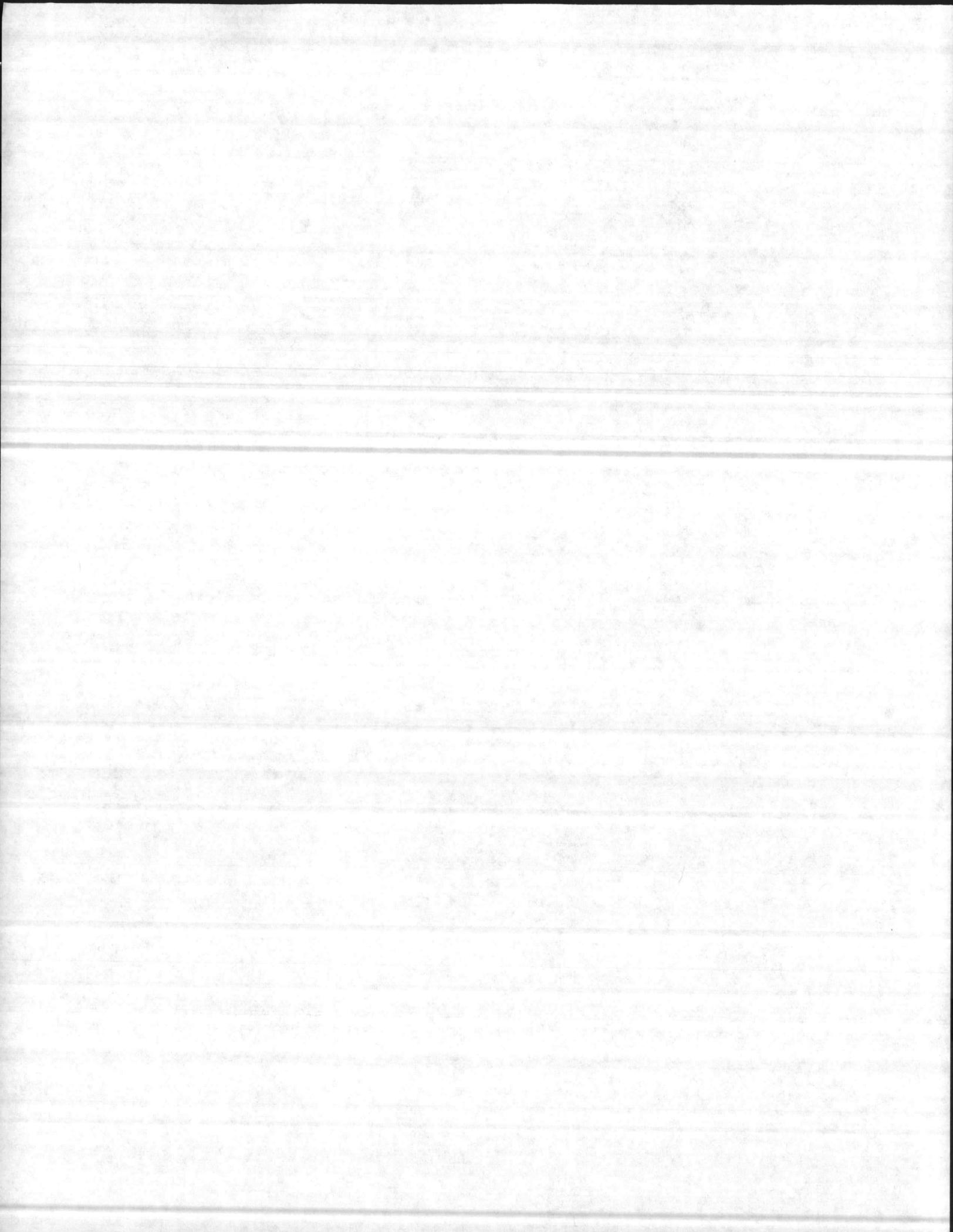
The 1946 plan stated that thinning was the main silvicultural operation needed. This has been carried ^{out} in the form of pulpwood cutting. About 85% of the stands needing thinning has been thinned.

However each year there are younger stands of timber reaching the size and age that they should be thinned. Therefore the pulpwood operation should be continued on a modified scale for at least the next ten years.

Natural reproduction is very well taking care of restocking cutover and burned out areas. So far little use of artificial planting has been seen.

Growth

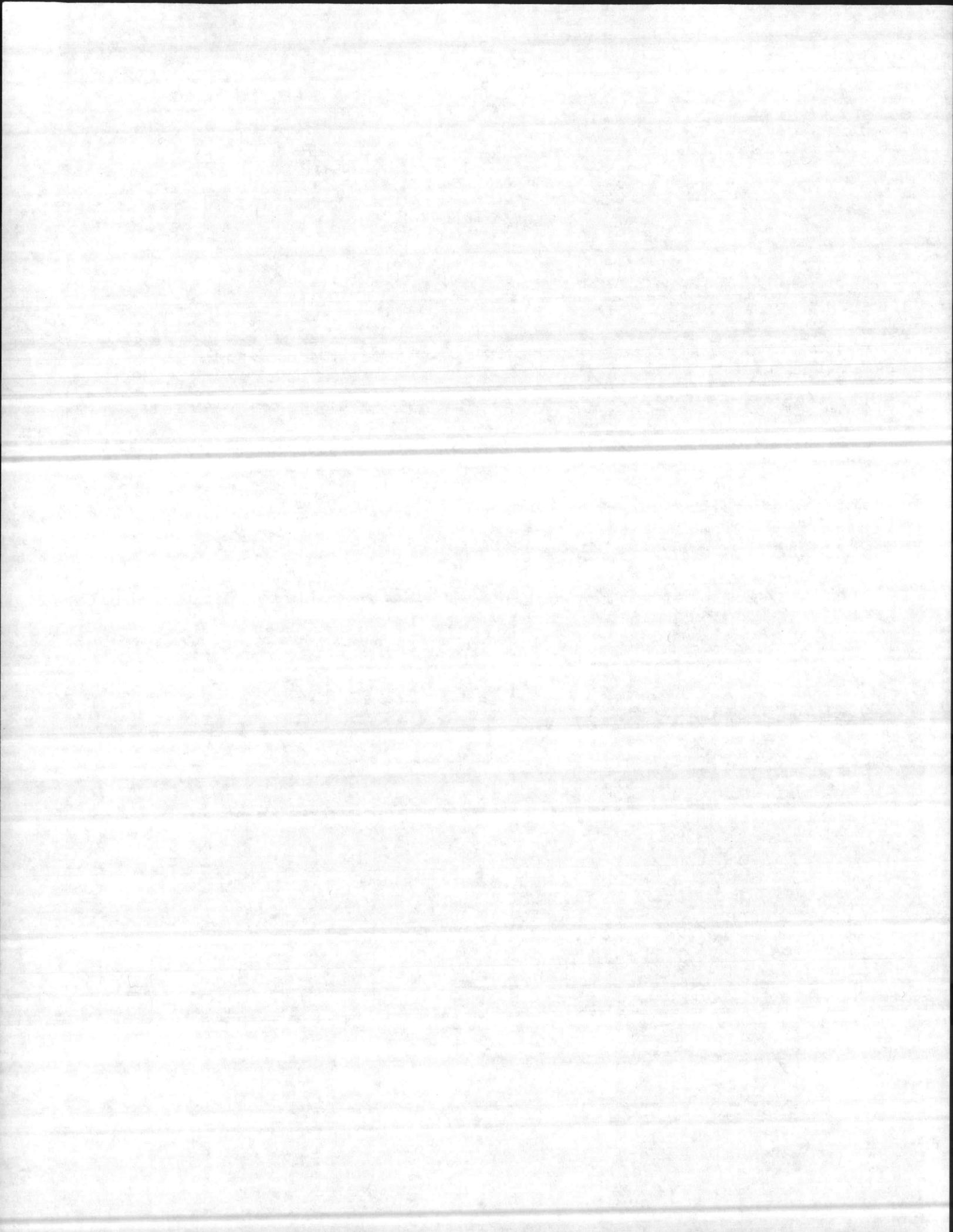
At the present time it is felt there is little need for revision on the subject of growth. So far as is known those figures set forth in the 1946



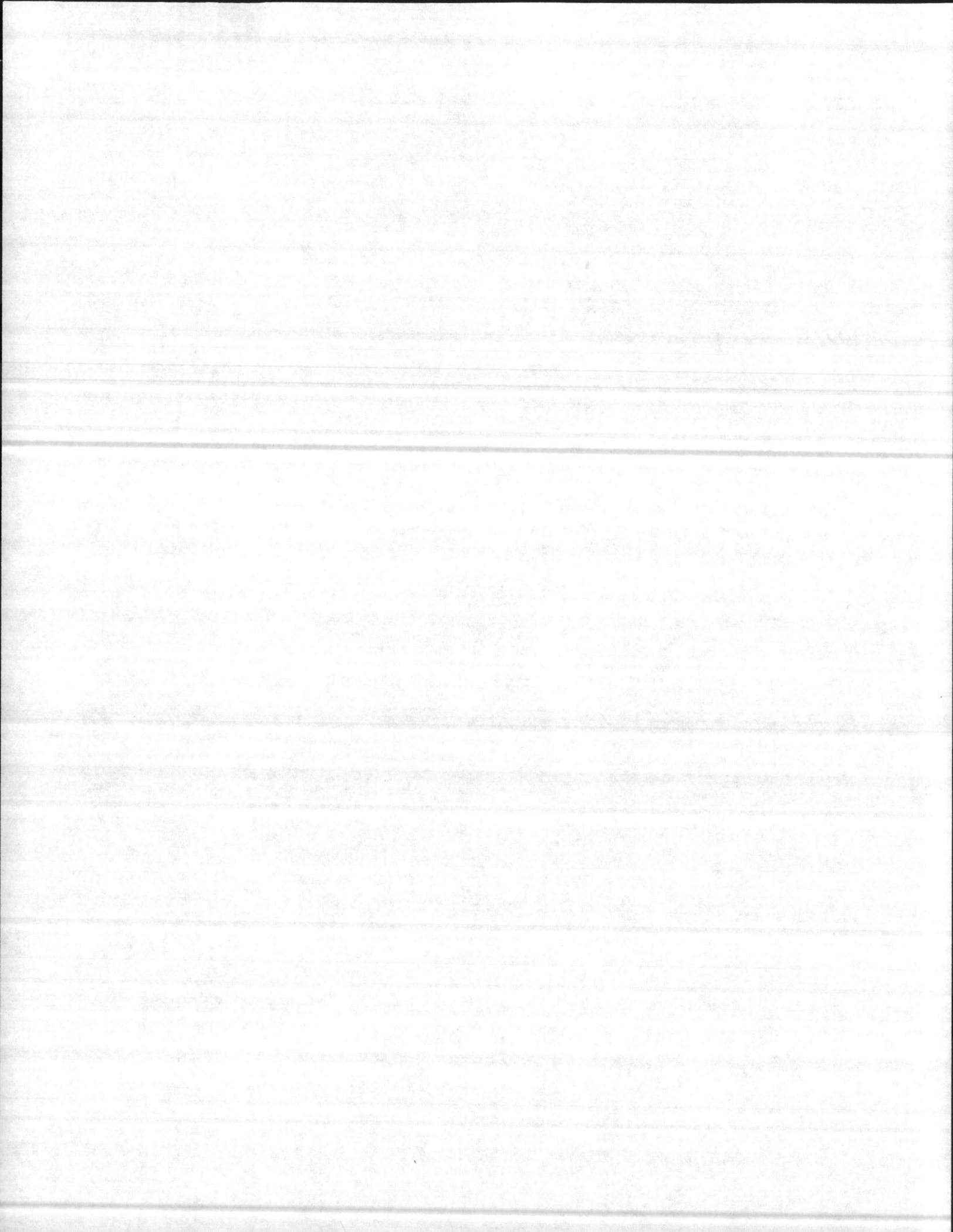
plan still holds true for growth, ^{and future volume} It
 is yet too early to make any growth studies
 on stands released by ^{pulpwood} thinning

Recommendation For Harvesting

It is extremely difficult to set forth a
 a plan or schedule for harvesting the timber
~~on~~ on this base when there is no assurance
 that the plan will be strictly ~~adhered~~ adhered
 to. The Camp sawmill has been closed since
 May, 1953 and it is not known by the writer
 if or when it will ever resume operation
~~again~~; or that any other plan for harvesting
 the timber will be made. When
 thinking in terms of forestry and
 timber management, one must consider
 the forest crop (standing timber) the same
 as the farmer considers his field crops.
 The forester strives to obtain the same
 objectives as the farmer. In general



term, that is, to obtain the maximum
 output in quantity and quality from a
 given area of land. The main difference
 being the time element. Whereas the farmer
 thinks in terms of one to two years, the
 forester must think in terms of fifty to
 a hundred years. When the proper time
 comes the farmer must harvest his
 crop or lose money. The same idea
 applies as well to forestry. On Camp
 Sijune there is a certain amount of
 timber that should be harvested each
 year. If not there is a definite monetary
 value lost. When a tree reaches
 maturity the increase in volume is
 very small, it ~~loses~~ loses vigor and then
 becomes more susceptible to insect
 and fungus attack. If a tree of
 this nature is not utilized it soon

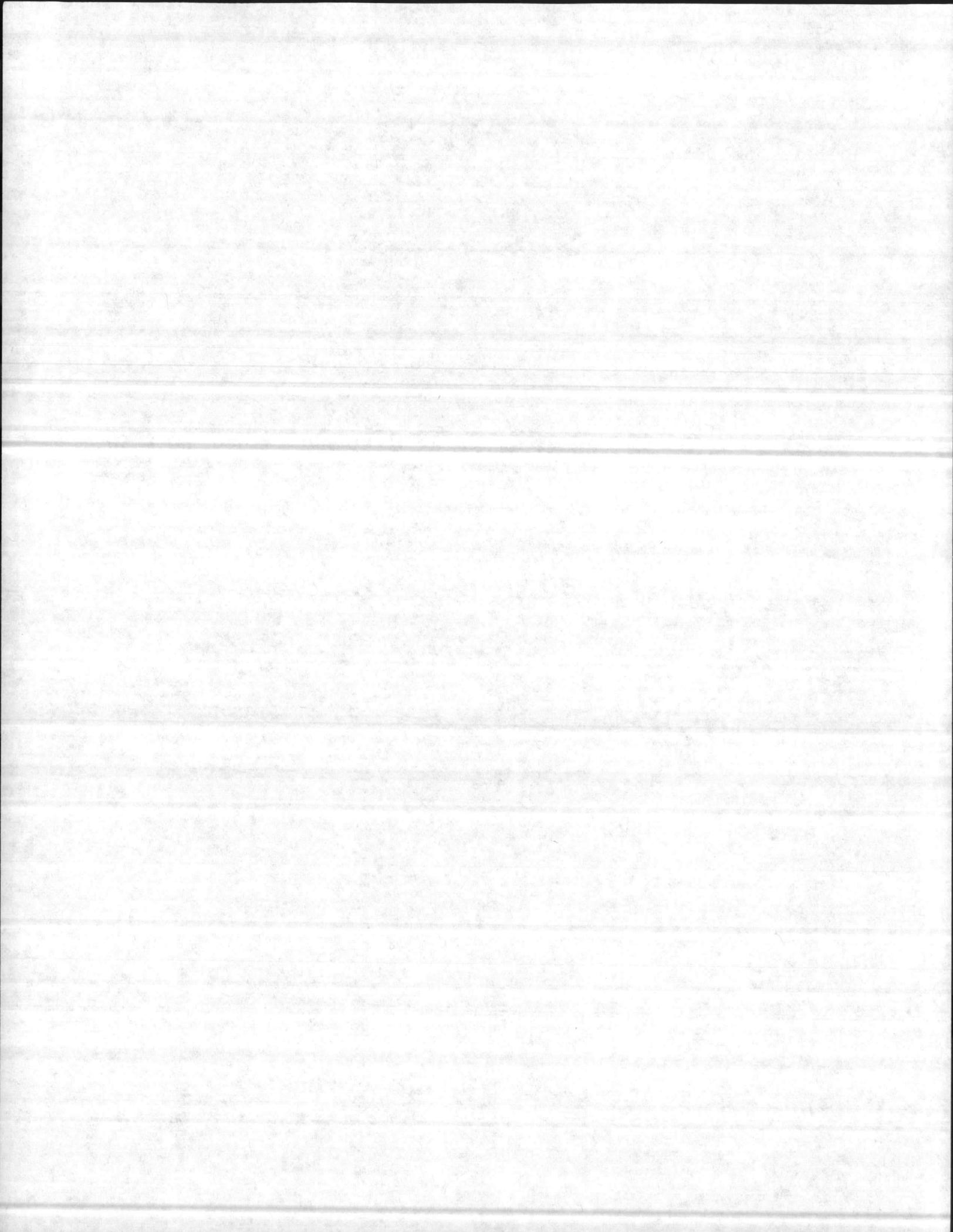


become a total loss.

At the present time there are about 1,500,000 board feet of timber coming to maturity each year on this base. A large portion of this is hardwood such as tupelo gum, red gum and oak. This timber needs to be and should be cut, otherwise there is a definite loss in value. Another point to keep in mind is that this amount of timber that needs to be cut will increase each year. As pointed out in the 1946 plan a maximum of 13,000,000 board feet annually might be produced within the next 15 years.

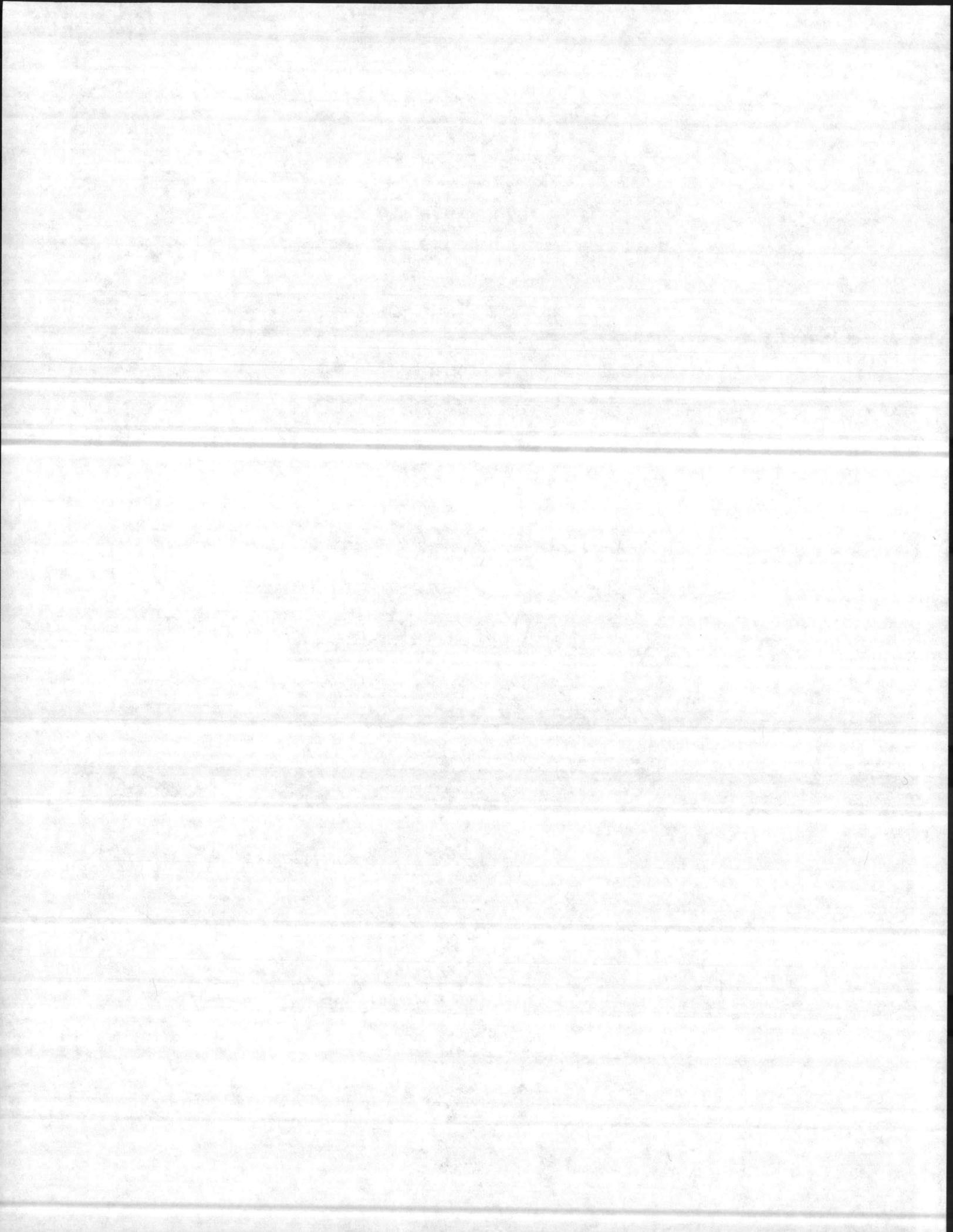
The following is a suggested schedule of cutting:

1954-1956 Make a maximum cut of not over 1,500,000 board feet a year,



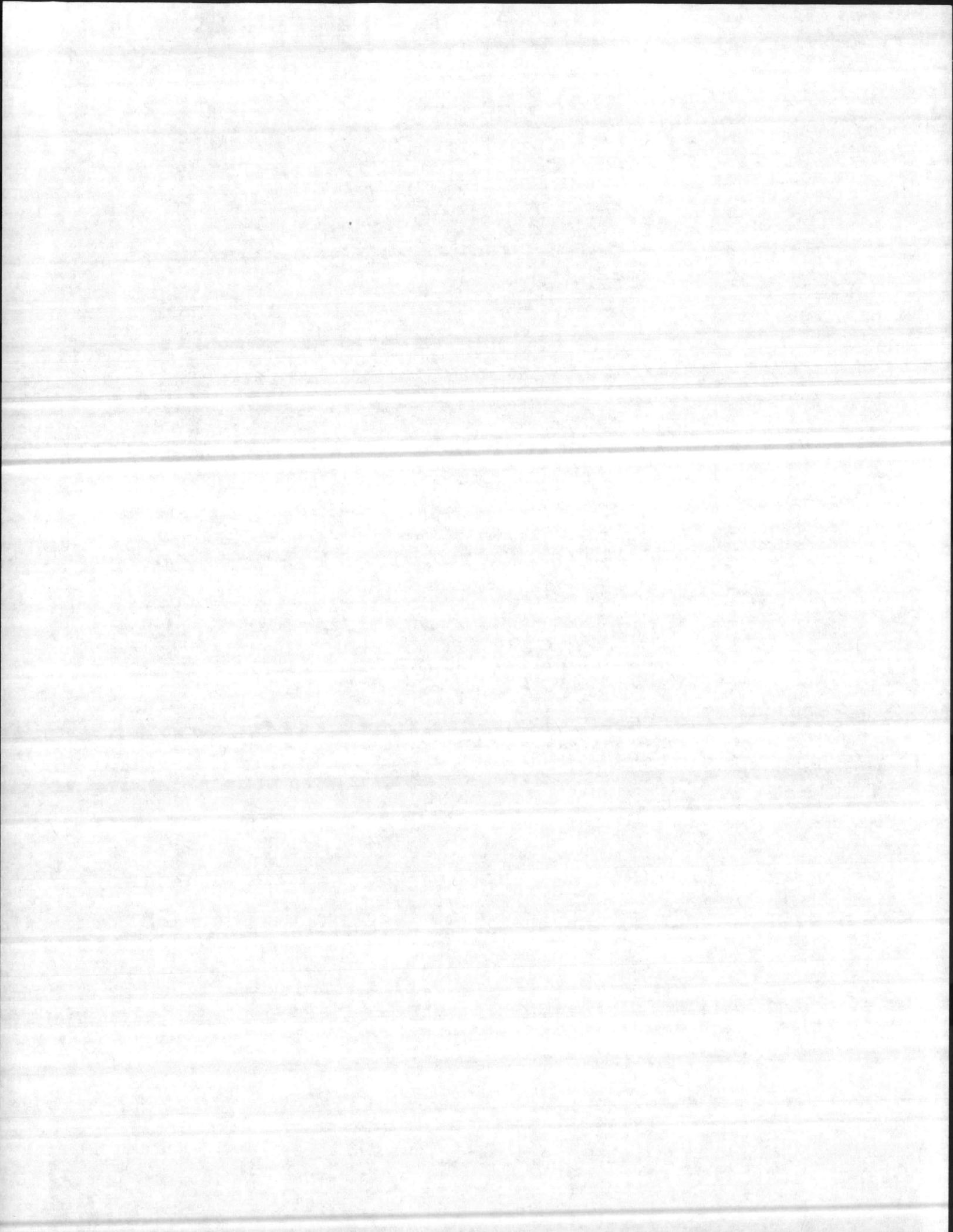
Continuing the type of cutting that has been taking place for the past eight years.

1957-1966 1957 and 1958 should each have a cut of 2 million board feet. This will ~~be~~ be in unit #10, ^(Dixon unit) or that unit has a larger volume of mature timber than any other. 1959 and 1960 will be cut in Unit #2 (Duck Creek) with a production from 2 to 2½ million feet a year. In 1961 3 million feet can be ~~produced~~ produced in unit #1. In 1962-1965 cutting will be from 3 to 6 million feet a year from Unit #5 (Southwest Creek) and Unit #6 (Veron Loop). 1966 will be taken care of by the 9th and 10th units, from which 6 to 10 million board



feet may be cut. The cutting for this 10 year period will be selective-release cutting. By that is meant only those trees over 14 inches DBH will be cut.

From 1966 on the actual plan for cutting should take place with about 2,000 acres of loblolly and 1,000 acres of longleaf cut yearly. The area to be cut must be determined by the forester in charge, but unless some factor changes, 13 million board feet can be cut every year.



46
PLAN
Projected for
20 YEARS



OFFICE OF THE ROADS AND FORESTRY OFFICER
CAMP LEJEUNE, NORTH CAROLINA

CWG/mh

29 July 1946

From: Camp Maintenance (Roads and Forestry)
To: The Quartermaster General of the Marine Corps
Via: (1) The Camp Maintenance Officer
(2) Camp Quartermaster
(3) The Commanding General

Subject: Forest Management Plan (Final Report).

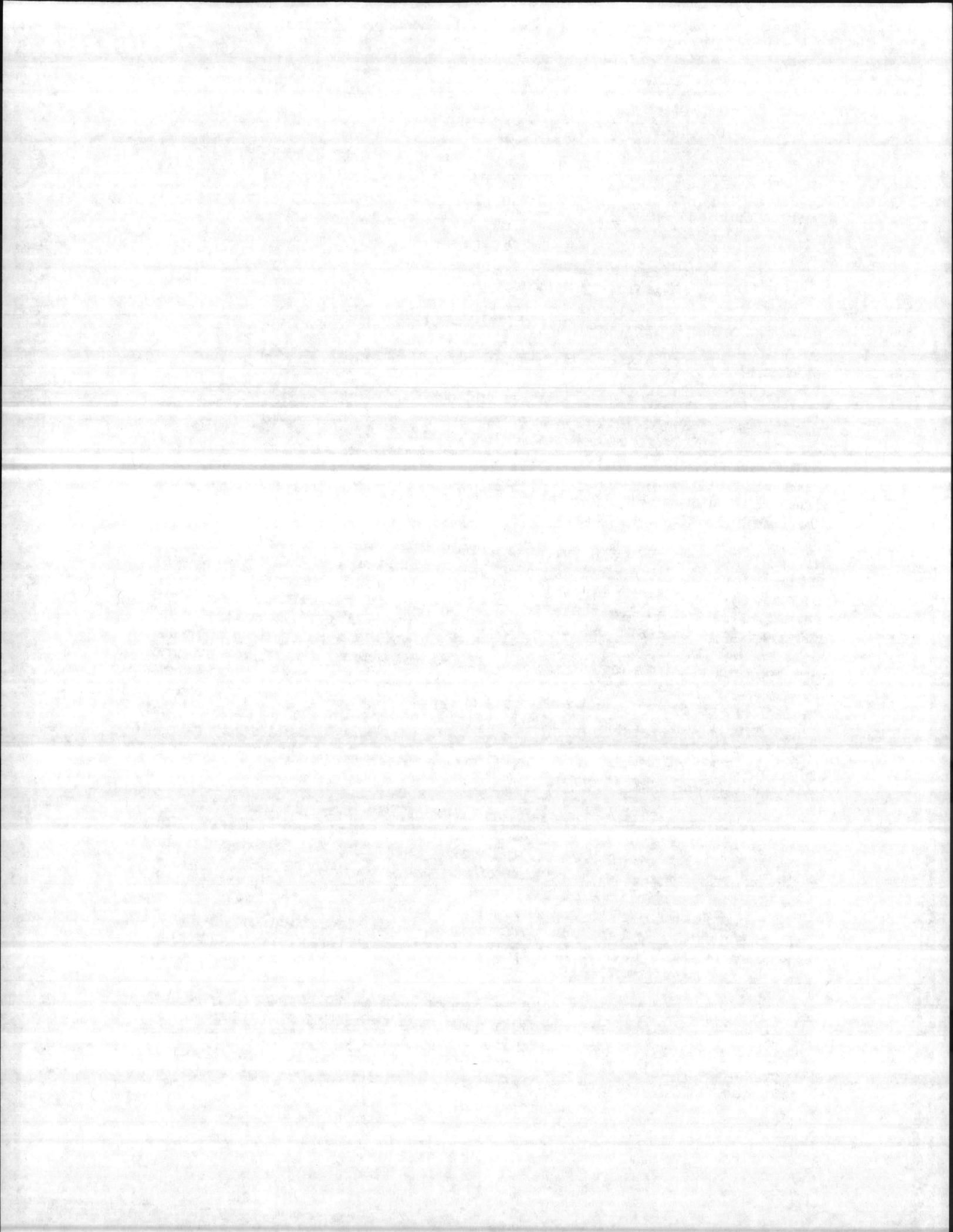
Reference: (a) Ltr dtd 9Jan46 fr Co-Roads and Forestry to CGM

1. This report is the summary and consolidation of all previous reports made for the forest management plan. This is the actual "plan", the results and recommendations for which all studies and the cruise have been made. To be successful, a forest must be managed like a business whose main objectives are a sustained yield and maximum production. The management plan is the skeleton of the business, the foundation on which the forest is to be operated.

2. The manager of a forest business must know four essential facts before he can operate successfully. There are (1) What timber is on hand at the present time. (2) What timber might be expected in the future. (3) How to use the area, both now and in the future. (4) Where and what type products can be marketed most profitably. To collect the data needed for this, a 10% cruise of the timbered area of Camp Lejeune has been made. This cruise gives definite figures of the timber on hand. It gives the necessary data and information so the volume of timber expected in the future can be accurately predicted. How to use the area must correlate all facts gathered and all information and studies. Since this is a Marine Corps base, the type of products and markets are predetermined by the needs of the service. This phase of the management plan will be treated very lightly.

3. To enable the efficient handling of the base, it was broken up into 15 working units of approximately 5000 acres each. Reports were submitted at the completion of each unit, including the findings in that unit and suggestions on how it should be handled. The management plan coordinates the findings of all these units and includes a complete set of recommendations as to how the area as a whole should be handled. These recommendations are based on the findings of the individual units enabling one large overall plan to be made for Camp Lejeune area. This overall plan is the management plan.

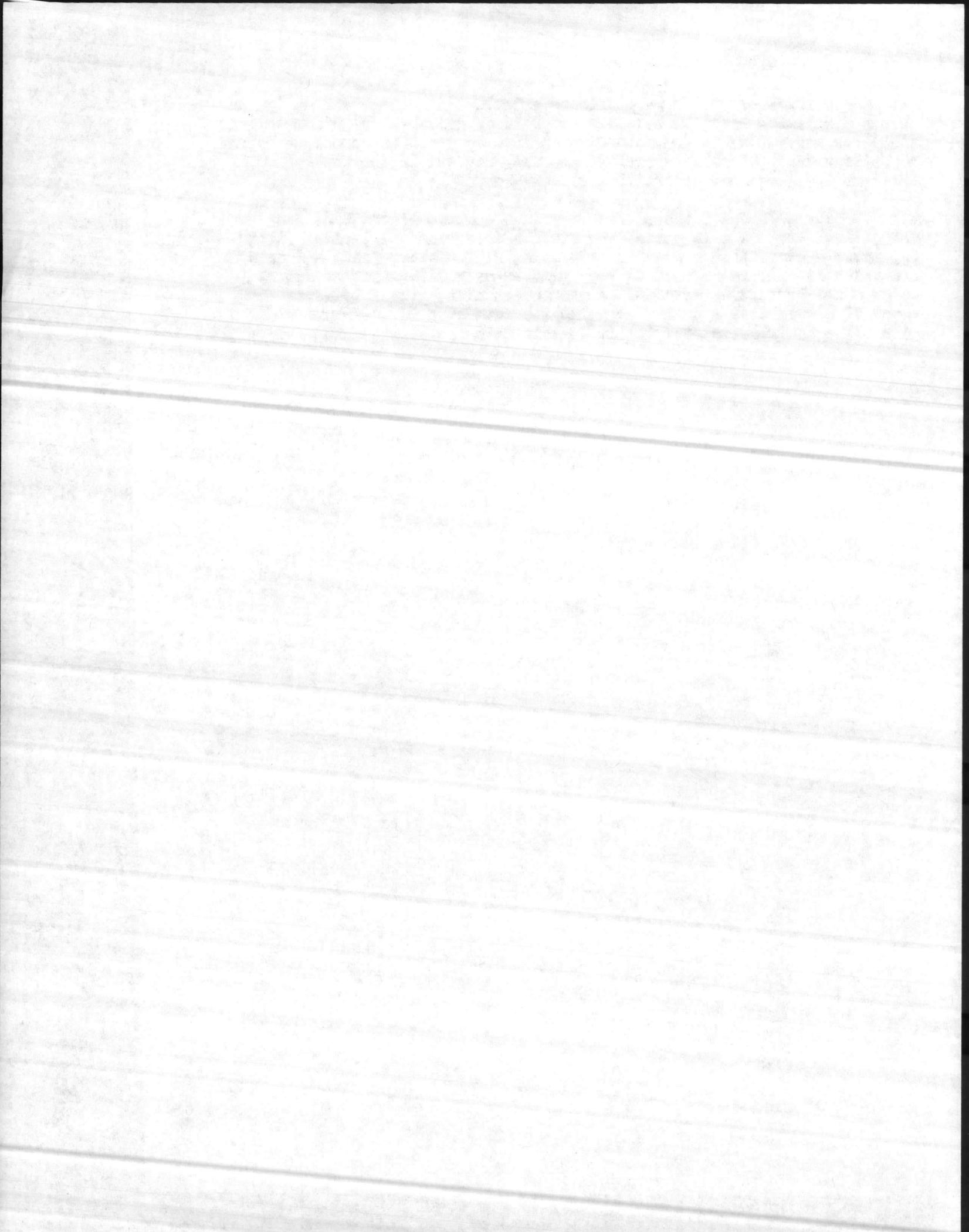
4. This final report will be broken down as follows: (1) Totals (statements of pertinent, absolute data such as acreages, volumes, forest types etc.). (2) Silviculture needed (needed silvicultural operations on the base). A comprehensive pulpwood report has been submitted previously which dealt with a large part of the silvicultural needed).



(3) Growth (rate of growth on different areas). (4) Future volume (an accurate prediction based on acreages and rate of growth). (5) Recommendations for harvesting (a comprehensive outline by years and areas of volume to be logged). (6) Mill (capacities needed, now and in the future). (7) Game (presence and possibilities). (8) Summary.

5. Items #4 and 5 above (future volume and recommendations for harvesting) are the main parts, the essence of a management plan. It is for those 2 items that a plan is made at all. The other facts and data are valuable only in-so-much as they tend to help determine the future volume and harvesting methods. A management plan, like a tree, is composed of a main stem and many branches the main stem is sustained yield with all other results subordinate to this main factor.

GEORGE W. GORD



TOTALS FOR THE CAMP

The following is the summary of results of the 10% cruise and survey made of Camp Lejeune. These results were shown on the maps, photographs, and data sheets that accompanied the reports for the individual units. This is a consolidation of these results.

Acresages

Total acreage (including water) -----	111,154.91	(Approximate)
Acreage under water -----	26,000	
Land Acreage -----	85,154.91	
Land Acreage exclusive of Midway Park -	84,629.31	(Incl. RR Right-of-way)
Acreage reserved for other uses -	14,158.31	
Acreage not suited to timber production	8,230	
Acreage suited to timber production	62,211	
Acreage badly burned, but capable of producing timber 877		
Acres Pine -----	56,883	
Acres Longleaf & Loblolly ---	15,326	
Acres Pure Longleaf -----	12,004	
Acres Pure Loblolly -----	29,553	
Acres Hardwood -----	4,451	

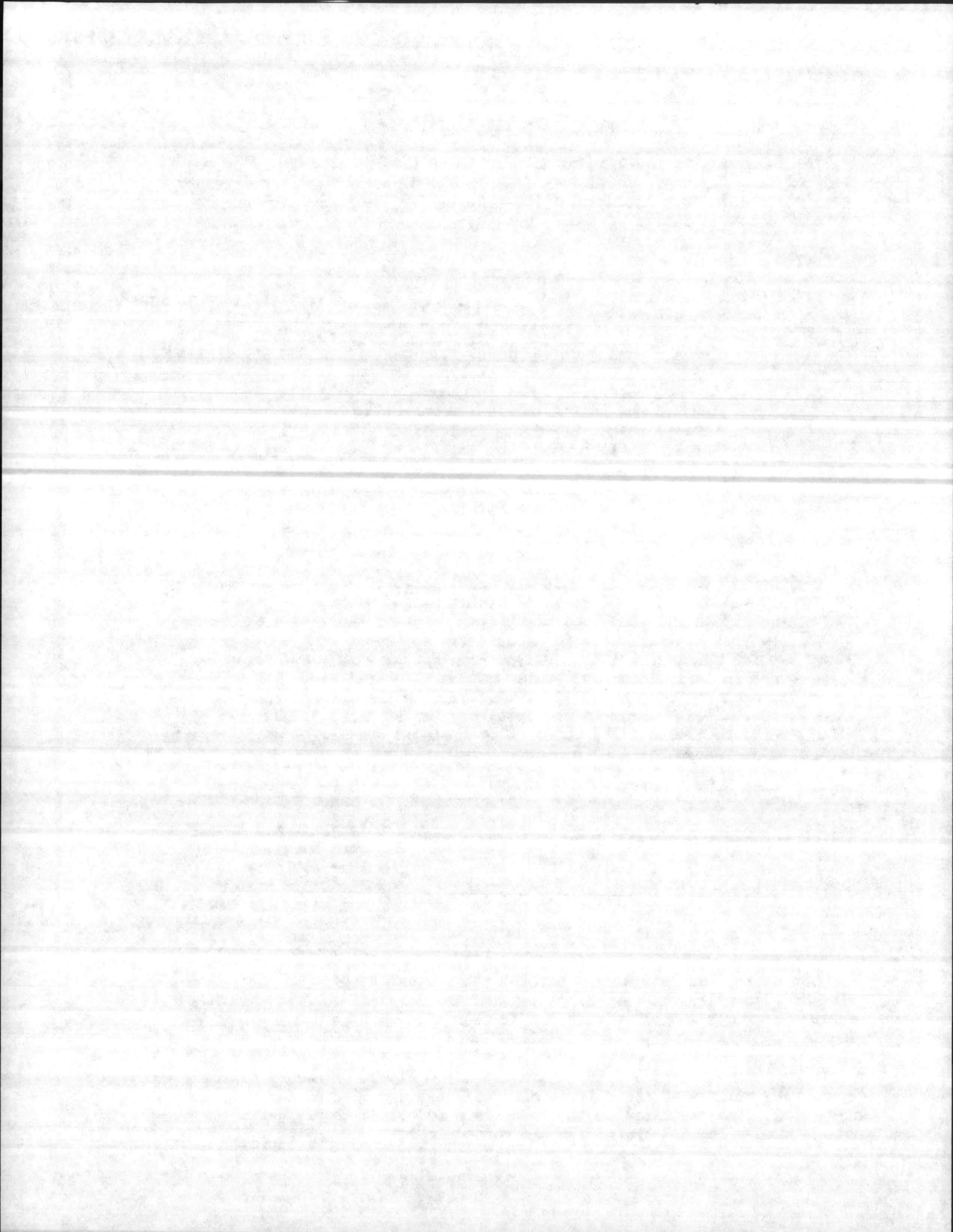
Included in the above acresages are 6,110 acres of old fields containing only reproduction and 1,080 acres of fields plowed within the past year for training purposes and game food plantings. Much of the land area has been burned, some so heavily there is practically no timber and others so lightly there are few obvious effects. On the base approximately 877 acres have been burned so badly in recent years that no value and very little growth is on the area at the present time. Included in the Acreage reserved for other uses are 5,429 acres in the Artillery Impact Area, 3,500 acres of which are to be clearcut for pulp. Also included are 11,180 acres that have been cutover within the past 6 years.

Forest Types

Pine -----	27% Longleaf and Loblolly
	21% Pure Longleaf
	52% Pure Loblolly
Hardwood -----	50% Black and Red Gum
	40% Red and White Oak
	10% Mixture of Ash, Yellow Poplar, Hickory, Maple, Elm and Ash.

Most of the longleaf on the base at the present time is in the reproduction or pole stage. A very large part of the longleaf-loblolly mixture has a few old growth loblolly trees for an over story and an under growth of longleaf.

In addition to listed types there are a few stands of cedar, cypress, and juniper. The volumes of these types are small but may be used for special purposes. Also scattered on the base are a few black cherry and black walnut trees, mostly located around the old house places.



There are 3,150 acres on the base which can be termed pine - hardwood mixture. These are generally on good land, well drained, and have growing on them fine mixture of white and red oaks with loblolly pines. These acres are growing wood at a very fast rate and represent an ideal type of forest land.

PRESENT VOLUMES NOW STANDING

PINE TIMBER (On 56,383 Acres)

Board Feet Volume by Scribner Log Rule (10 inches DBH and up)
 Total Board Feet Volume ----- 79,772,320
 Per Acre Volume ----- 1,400 Board Feet

Cubic Volume (8 inches DBH and up)
 Total Cubic Feet ----- 14,691,931
 Total Cords ----- 163,240
 Cords per Acre ----- 2.9

HARDWOOD TIMBER (On 1,451 Acres)

Board Feet Volume by Scribner Log Rule (10 inches DBH and up)
 *Total Board Feet Volume ----- 18,607,830
 Per Acre Volume ----- 3,610 Board Feet

Cubic Volume (8 inches DBH and up)
 Total Cubic Feet ----- 3,026,620
 Total Cords ----- 33,630
 Cords Per Acre ----- 6.2

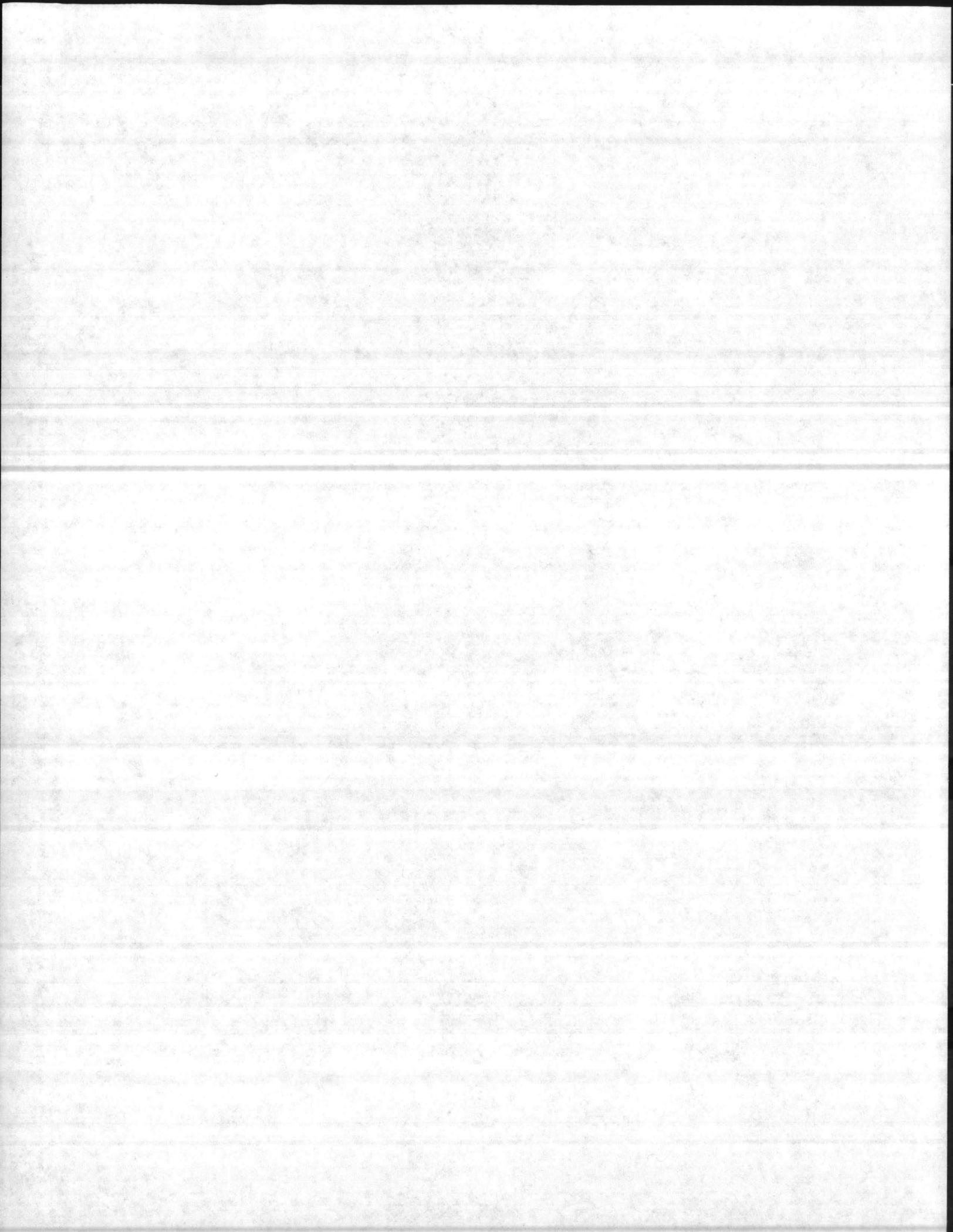
* The discrepancy between acreages and volume per acre is due to approximately 2,543,000 board feet of hardwood, mostly oak, found on 3,150 acres of pine-hardwood mixture.

TOTAL PINE AND HARDWOOD TIMBER (On 61,334 Acres)
 (Does not include 377 Acres burned)

Board Feet Volume by Scribner Log Rule (10 inches DBH and up)
 Total Board Feet Volume ----- 98,380,150
 Per Acre Volume ----- 1,600

Cubic Volume (8 inches DBH and up)
 Total Cubic Feet ----- 17,718,551
 Total Cords ----- 196,870
 For Acre ----- 3.2

It is very important that the reader realize the board feet volume shown here is based on the Scribner Dec. 6 Log Rule and not the more common Doyle Rule which is used extensively in the south. As shown in the report on the 1st unit, the Doyle Rule would be very inaccurate and would give results very much under what could actually be saved. Since, at present, the mill on the base here has an overrun of 17% on the Scribner



Rule, the reported board foot volume of 98,380,150 board feet would actually saw out 115,104,800 board feet. This volume would be obtained if every tree 10 inches or more in diameter were cut. However, the percentage of this total that is actually ready for cutting at the present time is about 20%, with half of this represented by hardwoods. For this reason cutting at the present time must be slow until the trees under 14 inches have time to grow to the desired size. Approximately 30% of the volume is from trees 13 inches or over, but many of these are scattered throughout younger stands, and will yield a satisfactory volume on only a few acres.

There is an estimated 12,000,000 board feet of timber found on the base not included in the above totals. This volume is found in the acres reserved for other uses, the greater part (about 10,000,000 board feet) being in the artillery impact area. This timber will be cut, either for sawlogs, or in the 3,500 acres to be clearcut, for pulpwood.

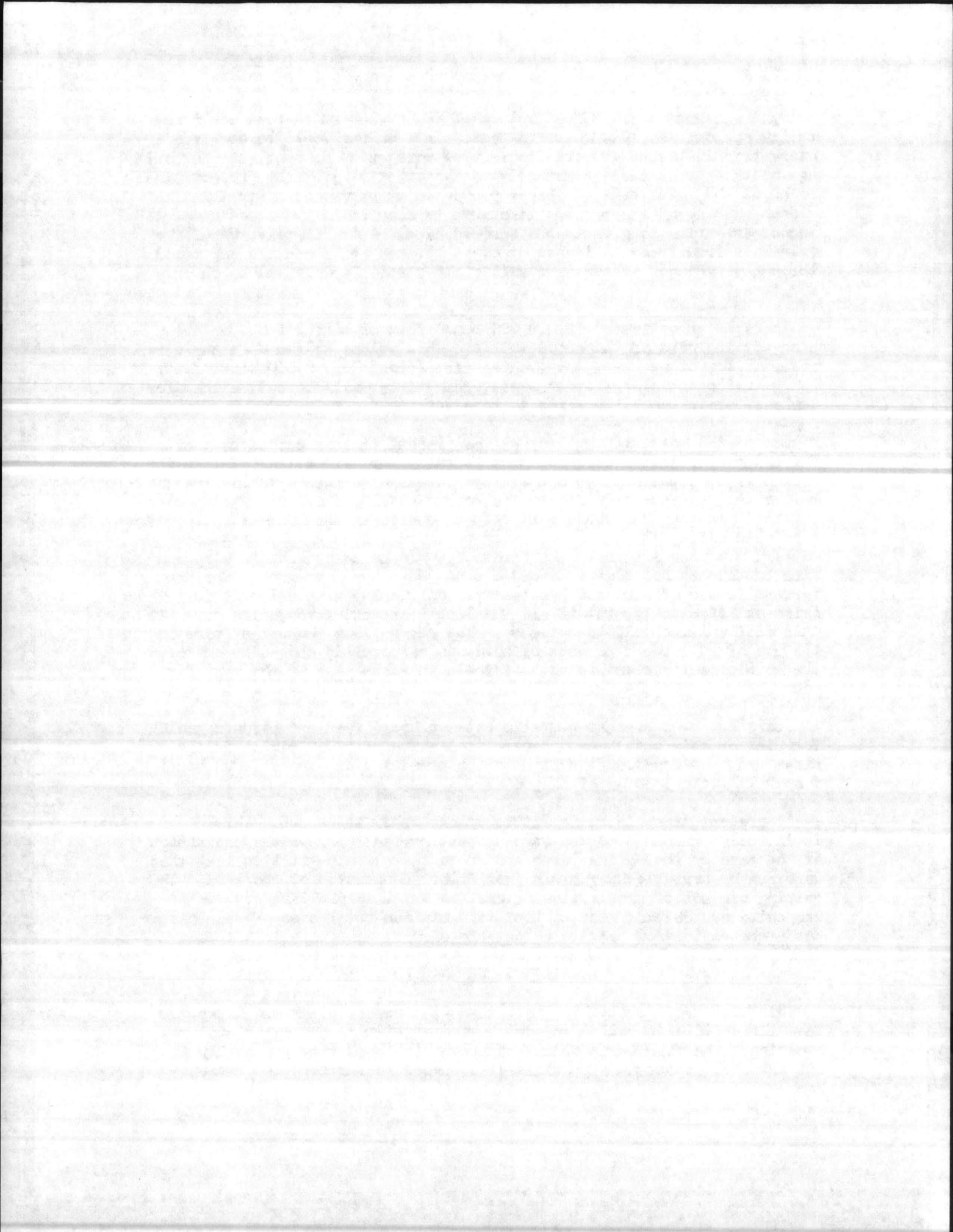
One of the main difficulties at the present time is caused by the unusual proportion of hardwood that is ready for harvesting. This is the result of the area having been stripped of all the merchantable pine before the base was acquired by the Marine Corps. The lower value, more difficult logging hardwoods were left untouched in the branches. To overcome this difficulty, more ways must be found for using the hardwood timber. In many instances the hardwood would be as satisfactory as the pine but custom has always demanded pine so it has been used. One deterrent to use of hardwood has been the difficulty with which it is dried satisfactorily, but if all the lumber is sent through the dry kiln this difficulty should be overcome. The change from the use of pine to the use of as large a percent of hardwood as possible should be one of the main objectives and results of the management plan in the next few years.

There has been a constant ratio between board feet and cordage yield for pine on this base. As a generalized statement, for timber of the sizes and ages found on the base at the present time, every 1,000 board feet will yield 3 cords of pulpwood.

At present time, there is little volume ready to be cut. This is directly traceable to the wave of cutting that preceded the acquisition of the base by the Marine Corps and approximately nine million feet that were cut by portable Navy mills just after acquisition of the land. This cutting was not of a selective nature, so any tree yielding any lumber was cut. Now cutting must be kept to a minimum until some of the timber has a chance to grow back to a loggable size.

SILVICULTURE NEEDED

This base needs protection more than it does any other one thing. The Silviculture operations needed here are thinning and artificial restocking. The thinning problem has been discussed very thoroughly in the pulpwood report made previously, so needs no further elaboration here.



Planting is needed on some parts of the base, but these are mostly localized and restricted. Some old fields and severely burned areas need restocking. However, there is only one major burned area that is not restocking naturally. This has grown up a great deal into brush and scrub hardwoods, but a small planting was made in February to see how well the young pines would survive. So far the results have been entirely satisfactory, with a survival of over 85%. The methods of replanting and conditions under which this work should be done were discussed in the report on unit #2, the Duck Creek Unit.

Many of the fields not producing are being worked up for game plantings and for training purposes. So far 1,000 acres have been completed. Most of the rest of the open fields are reproducing naturally, but those that aren't should be planted. These fields often are on the best land areas which should be made to reproduce very rapidly.

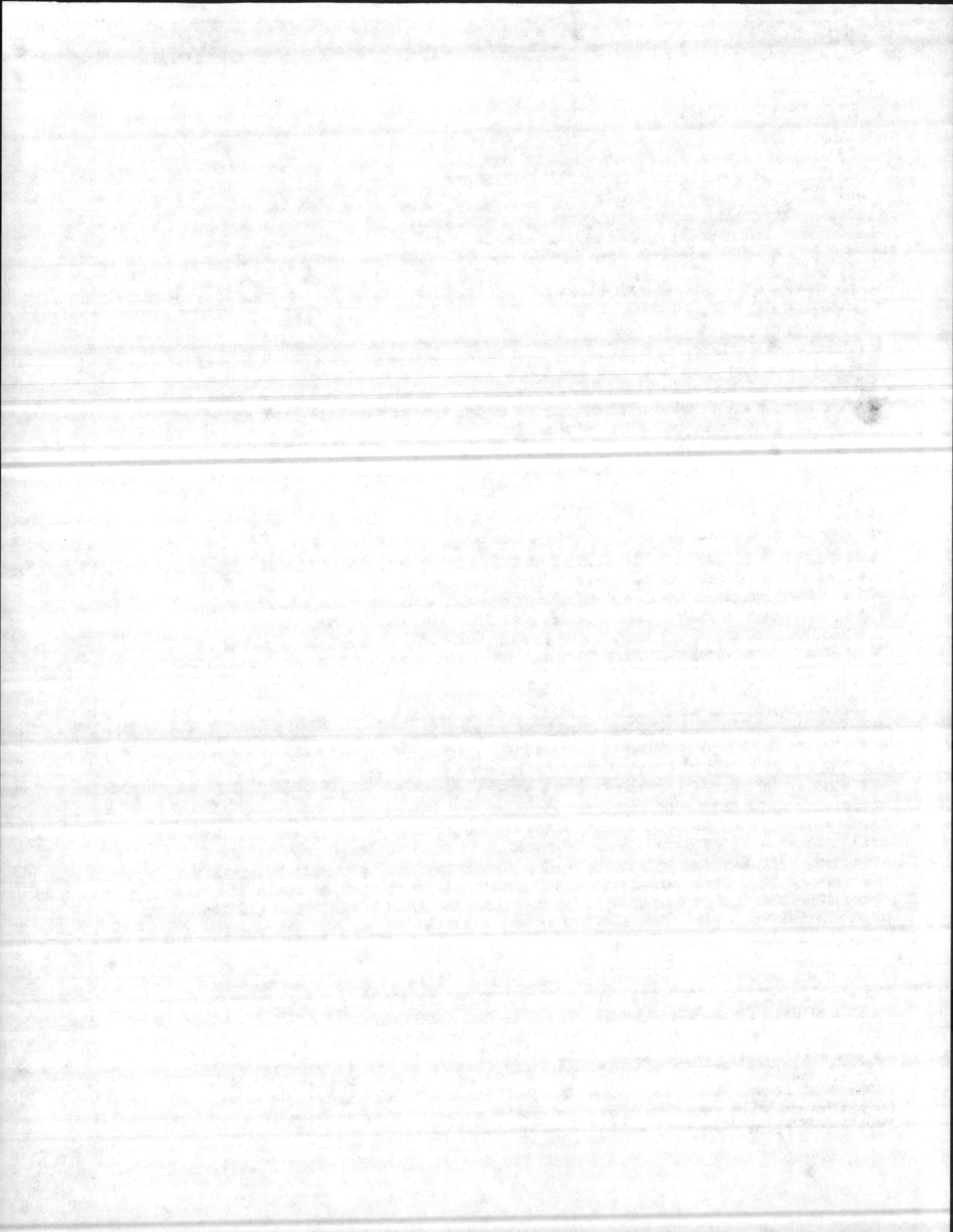
GROWTH

Growth on this base varies from almost nothing to an individual rate of an inch a year per tree. Generalized for this area however, there are 29,550 acres capable of growing timber at a rate of 300 board feet per acre per year if the area is fully stocked. These are the loblolly areas, most of which border on the river. There are another 27,320 acres of the white sand, longleaf areas on which growth will average at least 200 board feet per acre per year. The remainder of the base is the damp to wet pecan and branch areas containing mostly hardwoods. A great majority of this area supports little tree growth, but small parts do produce merchantable timber.

As compared with surrounding areas, growth on this base is as good as and in some places superior to them. The main thing holding down the present growth is the poor stand, or stocking, and the relatively young age of the timber to be found here. Probably an average age for the loblolly on the base is 20 years; for longleaf it is from 10 to 15 years. Of course, all age classes are to be found on the base but the majority of areas are stocked with young trees. These trees, while growing at a rapid rate, are still not of a large enough size to contribute much to board foot volume produced. The figures of future volume growth produced per acre per year are based upon a more normal age distribution of trees such as would be found in a forest that has been under management. This means there will be approximately an equal distribution of age classes from mature trees down to reproduction.

No study of hardwood growth has been made. It is largely dependent on the species of tree for most hardwoods are found in the damp, branch areas and grow at a rate characteristic to the individual tree.

In figuring growth for fully stocked stands it must be understood that part of the area will be recently cutover or in such a condition that full production is not possible. Therefore, of the potential 15,600,000 board feet that could be produced under theoretical conditions, at least 13,000,000 board feet will actually be produced yearly.



As so often stated the above growth can only be realized if fire is kept out. The whole balance of growth and age classes will be upset if fire is not controlled in this area.

FUTURE VOLUME

The following figures on future volumes are based upon land with an average stocking, land not producing the theoretical maximum volume but producing the maximum as far as practically possible.

There are 56,883 acres of land producing pine and 4,431 acres of land producing hardwoods. At the present time the pine acreage is producing 5,442,000 board feet yearly. If this area is managed properly, in 20 years it will be producing at least 13,000,000 board feet of pine timber annually. This means that 13,000,000 board feet can be cut every year without any depletion of the growing stock.

No estimate of future volume will be made for hardwood. Growth studies have not been made for hardwoods and, since a great deal of the present stand is merchantable, it is being harvested as fast as possible. Also during the thinning operation for pulp, as much as possible of the poor grade hardwood, such as gum, will be removed.

At the rate of growth mentioned above, in the future, approximately 2,000,000 board feet a month or 40,000 to 50,000 board feet a day must be harvested. The volumes listed are in excess of wood removed as thinnings most of which never could have produced saw timber even if it weren't removed.

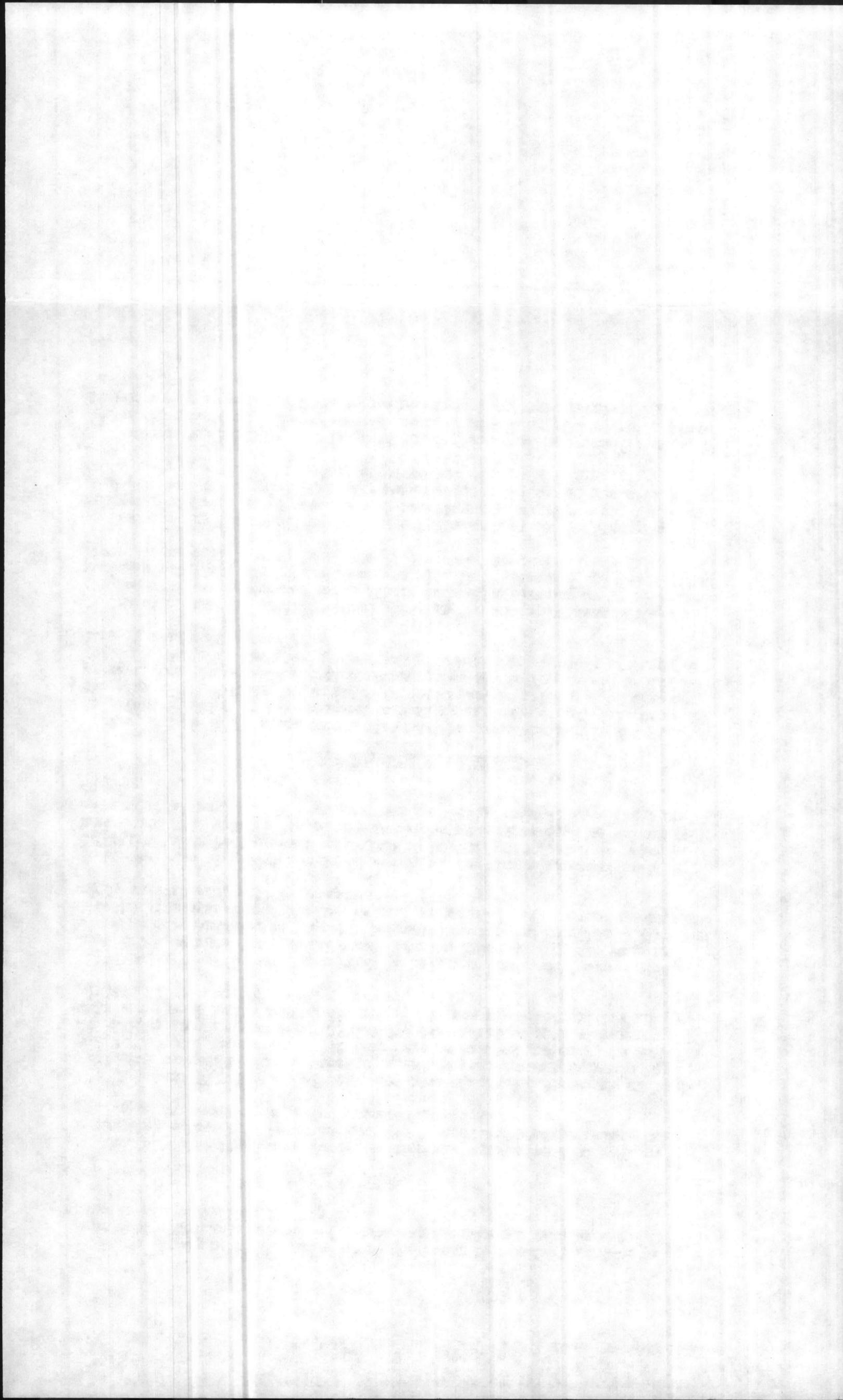
RECOMMENDATION FOR HARVESTING

Two terms used in a management plan must be explained here. The first is rotation, which is the approximate falling age of a stand, determined by the size tree which may be logged. In this area, for the type of timber present, the minimum DBH on which the rotation age is determined is 14 inches. Fourteen inches is the size up to which growth is the greatest after which time it falls off gradually.

The other term is cutting cycle. This is the number of years between cutting over one designated area. There may be one cutting cycle or several during a rotation. If there is one it will be a clear cut operation and if there are several it will be a selective type of logging.

The base has two rotation ages. The loblolly pine area will grow to 14 inches diameter in 45 years so the rotation will be 45 years. The longleaf pine and the longleaf-loblolly mixed areas will take 75 years to grow to 14 inches, so have a rotation of 75 years.

For both the loblolly and longleaf areas there will be three (3) cutting cycles per rotation. That means the loblolly pine area will be cut approximately every 15 years and the loblolly-longleaf and pure longleaf approximately every 25 years.



First it must be explained that the system of cutting to be applied to the base can not be correctly started for the next 10 years. This is due to the large acreage of young timber and the very small acreage of present merchantable timber. For that period of time cutting must proceed as it has the last few years. It will be harvesting in scattered spots of merchantable timber most of which are located on the branches. This cutting should be enough to fill the needs of the Marine Corps as much as possible but should in no case exceed 1,500,000 board feet a year. At the end of this period, cutting should start and proceed according to the following plans.

There are 29,553 acres classed as loblolly pine area. This means that area should be covered every 15 years, or 1,970 acres must be selectively cut yearly. For this, about 4,000 board feet an acre must be removed. This will mean the removal of 20 trees per acre.

There are 27,330 acres classed as longleaf or longleaf-loblolly pine area. This area should be covered every 25 years, or 1,090 acres yearly.

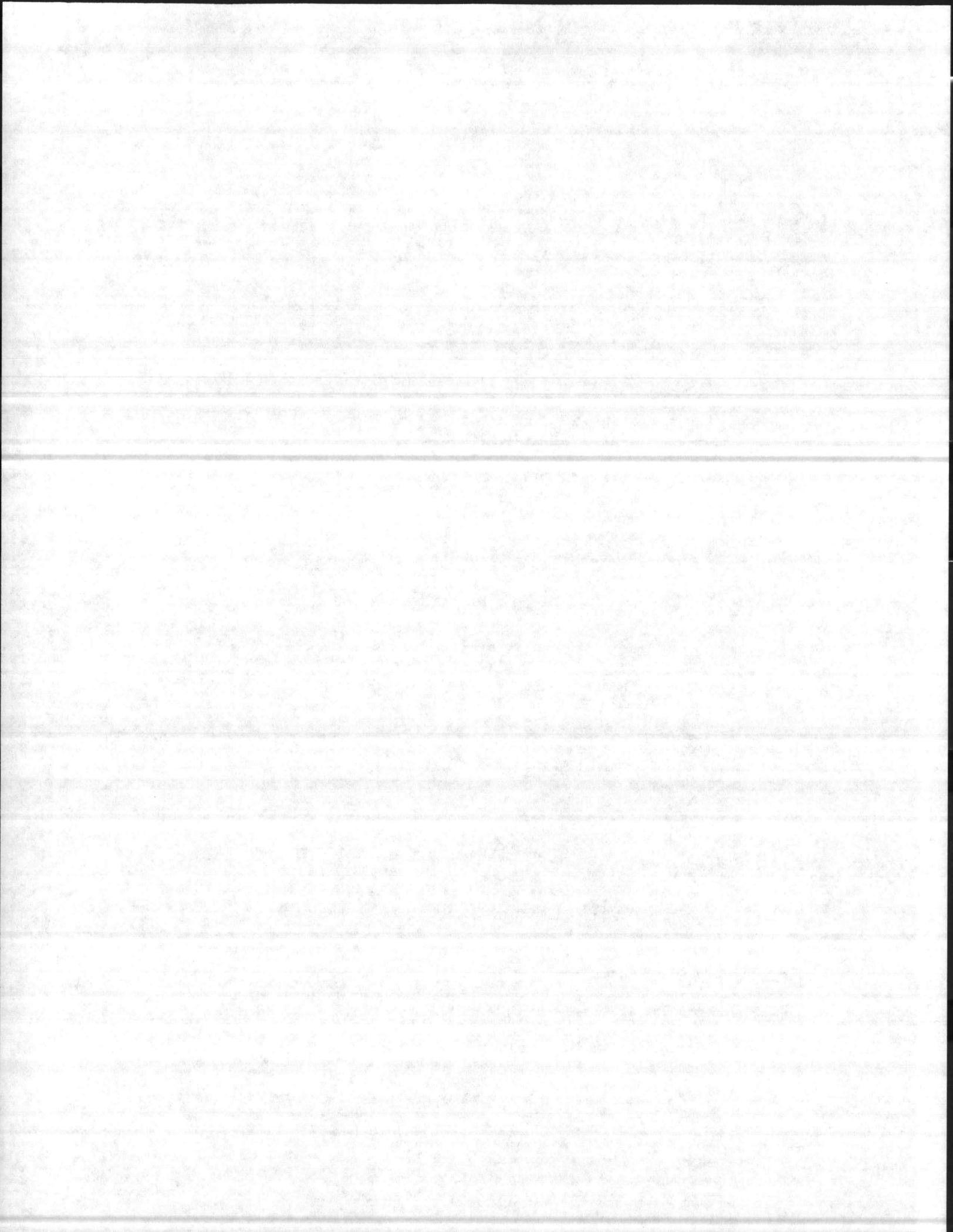
The above figures are theoretically accurate though not practical. For example, since the longleaf is slower growing and of a younger stand at present, almost the entire cut will come from the loblolly area for the next 20 years. But in the future actual cut, about 4,000 board feet should be selectively cut from approximately 3,000 acres.

Cutting won't begin on a scale of the size contemplated by the previous figures at least for 20 years. The volume of cut will increase gradually after the 1st 10 years, up to the contemplated 13,000,000 board feet in 20 years.

The second 10 years the cutting rate should gradually increase. Cutting should not exceed 2,500,000 board feet for the first 1/2 of this period and can get up to 10,000,000 board feet the last of the period.

The following is a suggested schedule of cuttings:

- 1947-1956 Make a maximum cut of not over 1,500,000 board feet a year. This will be done by cutting any large scattered timber such as is found on the branches etc. As large a percentage of this cut as possible should be hardwood. If a very heavy cut of hardwood is to be made this volume per year could be raised to 2 and 2½ million for there are approximately 10 million feet of hardwood ready for immediate harvest.
- 1957-1966 1957 and 1958 will have a cut of 2 million board feet. In 1957 the cut will be the acreage in unit #1 (Northeast Creek - Wallace Creek Unit) which at present contains over 6,000 board feet per acre. The cut for 1958 will be from the second unit, (Duck Creek) approximately 500 acres of which will be used. 1959 and 1960 will be also cut in this Duck Creek area, with a production from 2 to 2½ million feet a year. In 1961 3 million can be produced in the area of unit 1 which at present contains over 3,000 board feet to the acre. In 1962 - 1965 cutting will be from 3 to 6 million feet a year from the Southwest Creek Unit, the lower corner of the Verona Road Unit and the areas of the Impact Area, that have not been clear cut previously.



1966 will be taken care of by the 4th and 7th units, from which 6 to 10 million board feet may be cut. The cutting listed for the above 10 year period will be selective release cutting. By that is meant only those healthy trees over 14 inches will be cut but since this is the first recent cut over this area some large trees will be encountered, and the proportion of hardwood to pine will be above normal.

Since the 1957 - 1966 period is a transition period some leeway must be given in the cutting schedule. Since the change from $1\frac{1}{2}$ million board feet a year to 13 million feet a year will require either another mill or a new one, $1\frac{1}{2}$ million board feet a year cut could be continued until 1962 when the full production of 13 million board feet could begin. The sequence of areas cut should remain the same, however.

1966 -1

Now the actual plan for cutting should take place with about 2,000 acres of loblolly and 1,000 acres of longleaf cut yearly. The area to be cut must be determined by the forester in charge but unless some factor changes 13 million board feet can be cut every year. Since much of the longleaf area is young and it takes much longer to grow most of the cut will be on loblolly area for the period of time required to grow large enough timber on the longleaf area. Therefore approximately 3,000 acres yielding about 4,000 board feet per acre should be cut yearly.

MILL CAPACITIES

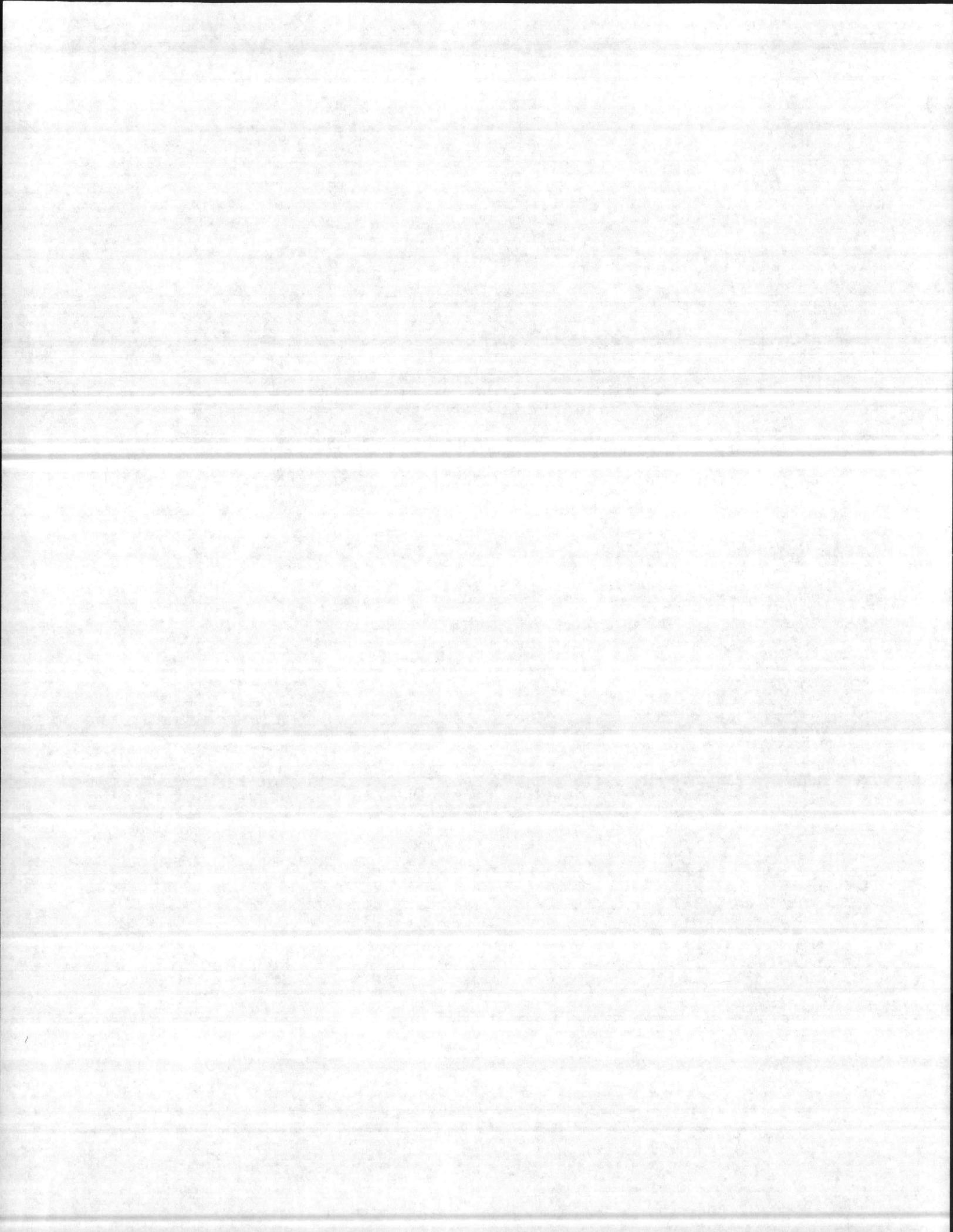
The subject of the mill and capacities on the reservation was largely covered on the small report submitted previously. However, one fact remains outstanding - after the preliminary years of adjustment required for the correct operation of the management plan, the means to step up production must be installed. This may be done by either installing several mills of about the same capacity as the present one or, more likely, the installation of one large, preferably band mill with a capacity of 40,000 to 50,000 board feet a day.

The new mill is not needed before 1962, after which time near full scale production should be possible. At the present time a pontoon barge has been constructed and landings made by which the timber will be transported across the river. The construction of one central mill allows the centralization of equipment and trained personnel.

As a summary, the mill now in operation is sufficient for at least the next 15 years, after which time the cut must be increased so as to eventually take care of growth taking place.

GAME

Camp Lejeune has been, and can be again, a game paradise. Game to be found here are fresh and salt water fish, bear, deer, turkeys, squirrels, ducks, quail, and many other animals such as skunk, coon, etc. In our cruise much game was encountered, especially in the areas along the river such as Duck Creek and Cedar Point. In the fall deer were seen almost daily, with a good percentage of them bucks.



At one time the survey party drove right into a flock of 15 turkeys and stray birds were seen often. Season was open for a short time for both turkey and deer. One day during the short deer season 13 bucks were killed. Quail hunting was only fair but some birds are to be seen at the present time.

Much is being done on the base to aid game. There is a staff of six marines which are permanent game wardens on the base. Very extensive plantings of game food have been made this last spring, with plantings including leg-pedese, millet, several species of clover, soy beans, peas, vetch, milo, etc. Also a good many thousand pounds of a specially prepared quail mix have been planted. On a few choice points jutting into the river food for ducks and geese has been planted. To date approximately 1000 acres have been planted with 70,000 pounds of food.

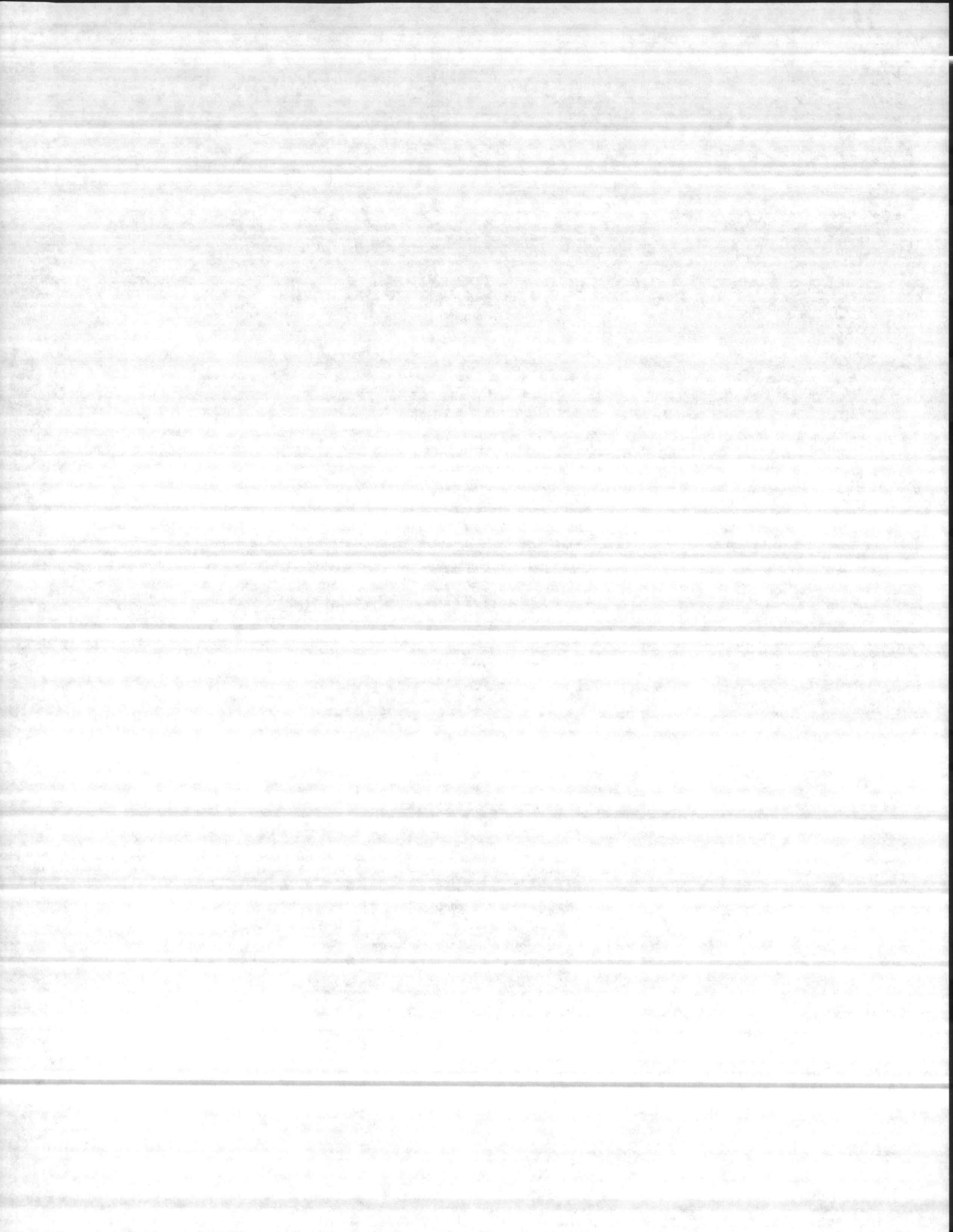
The game situation on the base is very good. Most of the area is excellent for game with the exception of some of the white sand areas where food and cover are scarce and in some of the more recent burned areas. Game is on the increase and with proper protection and future plantings of both food and birds it should continue to improve.

SUBSIANT

To operate this area successfully for a maximum of forest products, the management plan must be adhered to. However, it must be remembered the plan is not a set of rules that can not be changed but is a set of rules that should allow for small changes and revisions. These revisions will be constantly needed, both to meet changed conditions or emergencies. For example, constant logging is taking place necessitating a constant revision of volumes present. Since the plan has been started 363,800 board feet of pine and 30,100 board feet of hardwood have been logged from cruised areas. An accurate record is kept of the areas and volumes logged so they may be entered on the records and maps of the cruise. Other things causing revisions may be a bad fire, call for special rush products, adverse weather etc.

Constant studies of growth, release resulting from thinnings, and other related problems must be made and any revisions necessary effected. That is the responsibility of the forester on the job. Again it should be stated that the management plan should be flexible in nature but any revisions made should be done only after careful study by the forester.

The key to the success of the plan is fire control. The area covered by this plan for Camp Lejeune can be termed as a little better than average in site. It is not a mature forest, but is mostly a young vigorous growth of poles and reproduction whose products will be for the future. All present operations must be with a view to this future forest.



March - 1954

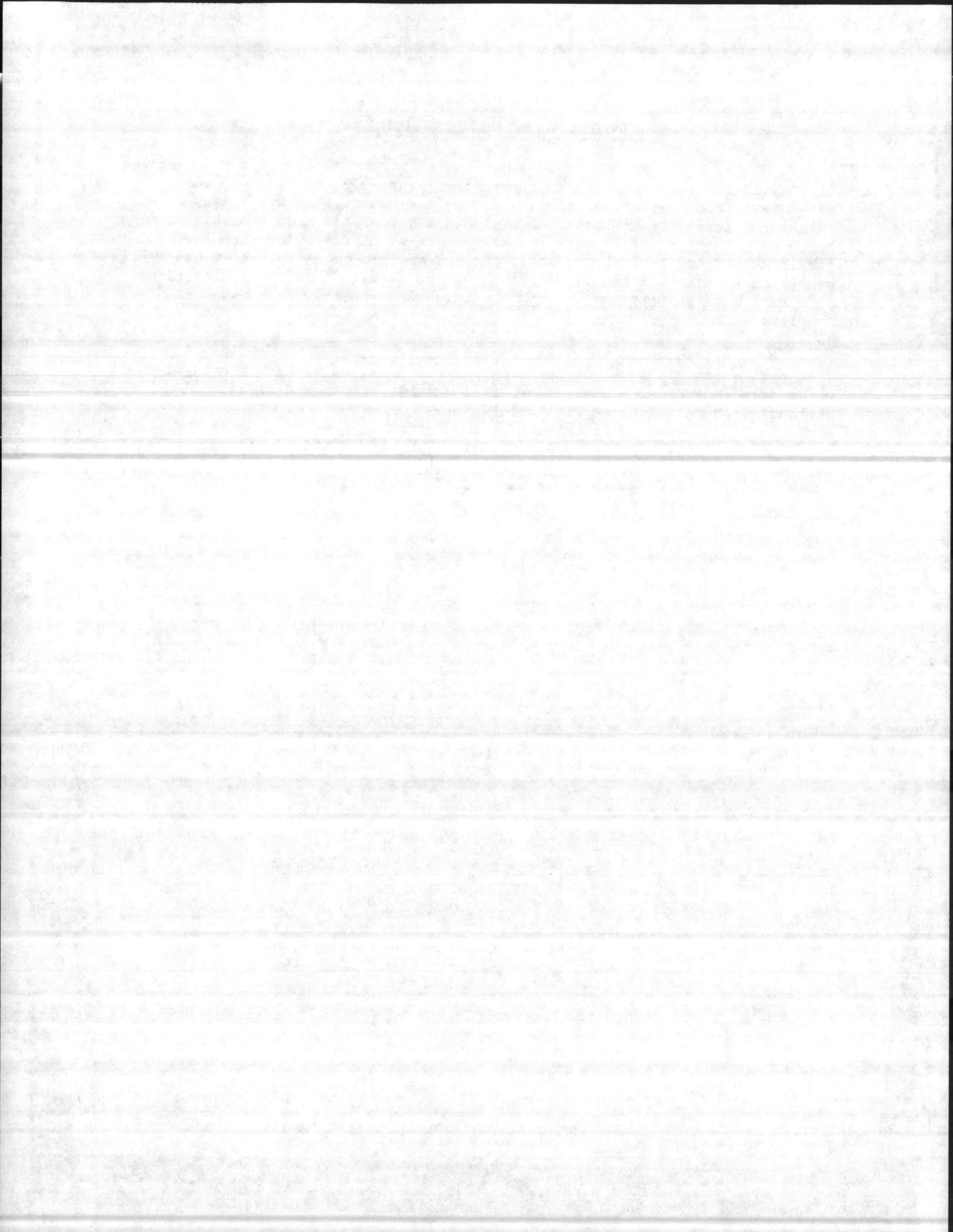
FOREST MANAGEMENT PLAN; REVISION OF

In 1946 a timber survey of the entire reservation of Camp Lejeune was made. From the data obtained a Forest Management Plan was drawn up and put into effect. Since that time a considerable amount of timber has been cut and a lot of acreage has been taken up for other purposes such as firing ranges, housing projects, etc. Therefore it is felt that the Management Plan should be revised and brought up to date. To make this revision more real and accurate another timber cruise has recently been made and completed.

It is not intended that this report should supersede or replace the 1946 Management Plan. It is intended only to bring up to date the figures on acreage in growing timber, board foot volumes now on hand (1954) and various recommendations for future cutting.

The acreage as of 1954 will be shown. On some units the acreage will be the same as in 1946, and others will show a less in acreage. The 1954 volume will be shown, also the amount of timber cut since 1946. Then a gross and net increase in volume can be calculated.

1954 REVISION OF 1946 PLAN



NORTHEAST CREEK - WALLACE CREEK UNIT

ACREAGES

Total Acreage..... 4425
Acreage not suited to timber growth 95
Acreage reserved for other uses 1400
Acreage producing timber 2930

PRESENT VOLUME NOW STANDING (1954)
ON 2930 ACRES

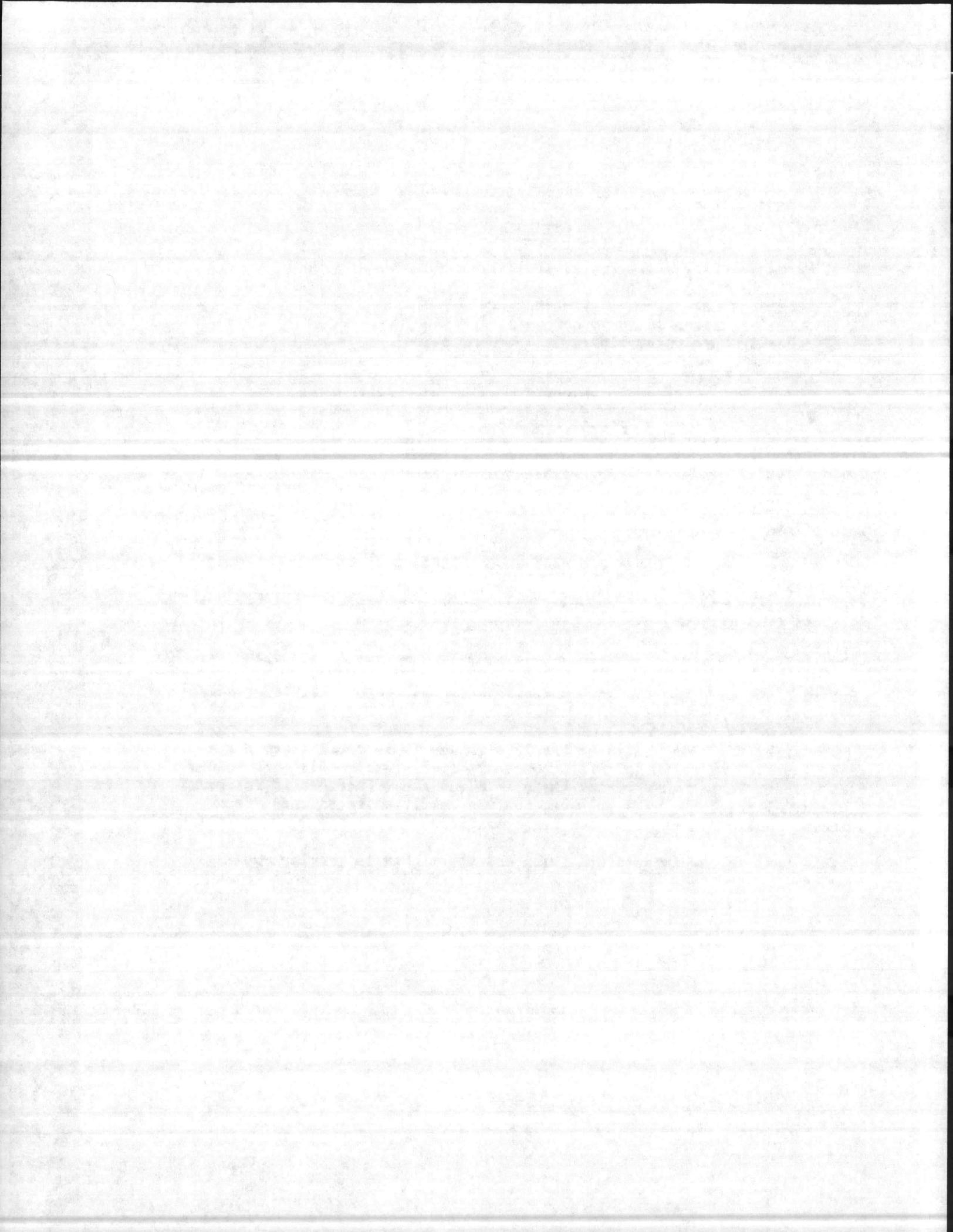
Pine timber ----- 11,083,600 bd. ft.
Gum and Poplar ----- 1,600,400 bd. ft.
Oak ----- 864,400 bd. ft.
Total Timber ----- 13,548,400 bd. ft.

VOLUME CUT FROM 1946 - 1954

Pine ----- 954,100 bd. ft.
Hardwood (Oak and Gum) ----- 279,000 bd. ft.
Total timber cut ----- 1,233,100 bd. ft.
Pulpwood cut ----- 7,838,02 cords

Comparing the 1946 volume to the 1954 volume it is found there was a gross increase in volume of 5,312,200 board feet. Subtracting the volume that was cut during this period there is found a net increase in volume of 4,079,100 board feet. The pulpwood cut was mostly salvaged wood from thinnings and clean up after saw log operations.

This unit is now in good condition and the timber is growing rapidly.



duck
DUTCH CREEK UNIT

ACREAGES

Total acreage ----- 4,542
Acreage reserved for other uses-----
Acreage producing timber----- 4,542

PRESENT VOLUME NOW STANDING (1954) ON 4542 ACRES

Pine timber - - - - - 12,620,800 bd. ft.
Gum and Poplar - - - - - 1,703,000 bd. ft.
Oak - - - - - 716,000 bd. ft.
Total timber..... 15,039,800 bd. ft.

VOLUME CUT FROM 1946 to 1954

Pine - - - - - 321,800 bd. ft.
Hardwood (Gum and Oak) - - - - - 42,700 bd. ft.
Total timber cut..... 364,500 bd. ft.

PULPWOOD CUT 5674,63 CORDS

Comparing the 1946 volume to the 1954 volume it is found there was a gross increase in volume of 4,893,350 bd. ft. Subtracting the volume that was cut during this period there is found a net increase of 4,528,750 bd. ft. The pulpwood cut was salvaged mostly from thinnings and clean up after saw-log operations.

This unit is in good condition and growing rapidly. There still remains about 200 acres to be thinned for pulpwood.

SNEADS FERRY ROAD UNIT

ACREAGES

Total Acreage.....	5,675
Acreage not suited to timber production - - - - -	946
Acreage reserved for other uses - - - - -	0
Acreage suited to timber production	4,729

PRESENT VOLUME NOW STANDING (1954) ON 4729 ACRES

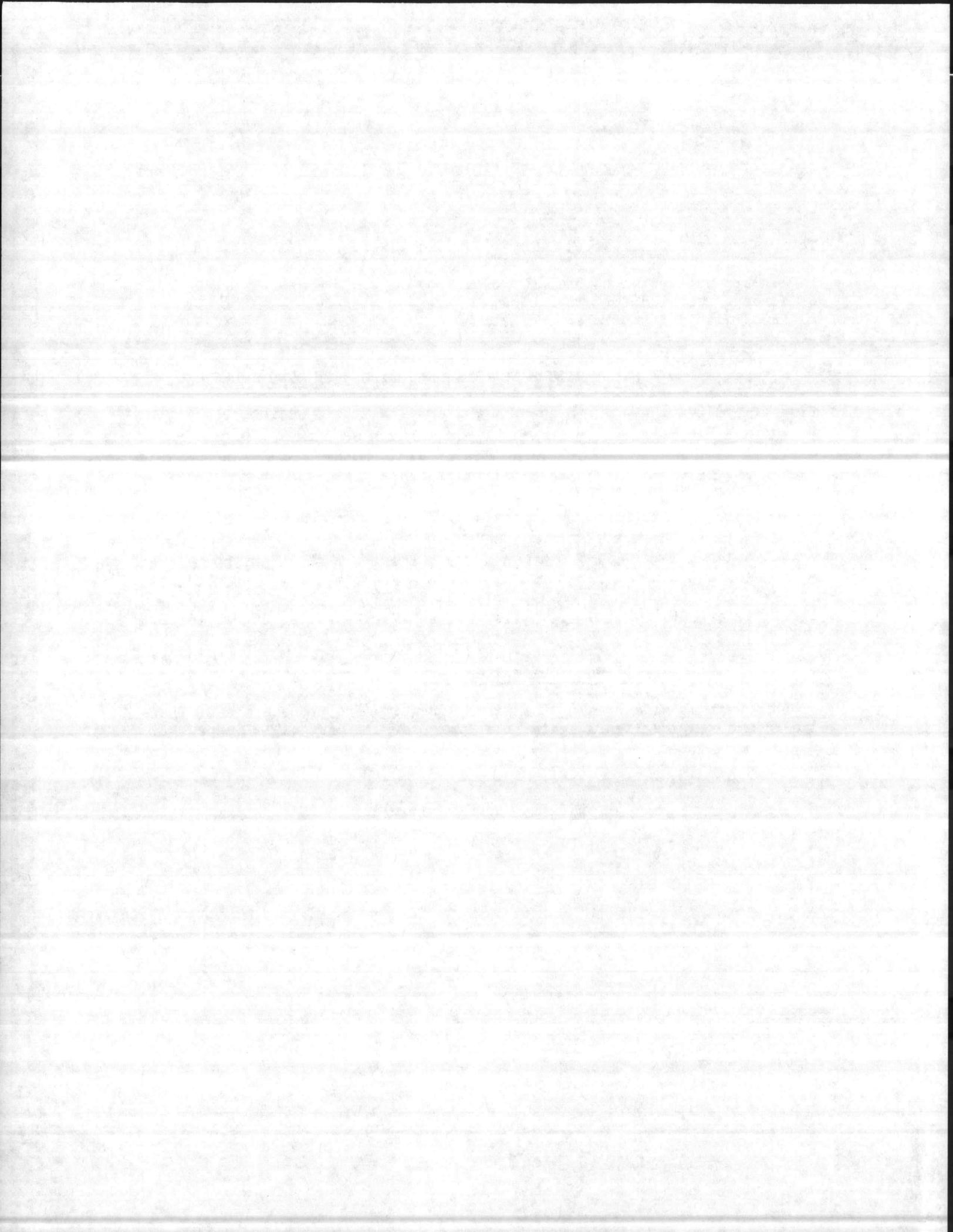
Pine timber - - - - -	3,301,000 bd. ft.
Hardwood - - - - -	530,200 bd. ft.
Total timber.....	3,831,200 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine - - - - -	95,700 bd. ft.
Hardwood - - - - -	900 bd. ft.
Total timber cut.....	96,600 bd. ft.

PULPWOOD CUT 451,42 CORDS

This unit is made up almost entirely of white ^{sand} and pocosin area. There has been a very negligible gain in volume over the past eight years.



WALLACE CREEK - FRENCH CREEK UNIT

ACREAGES

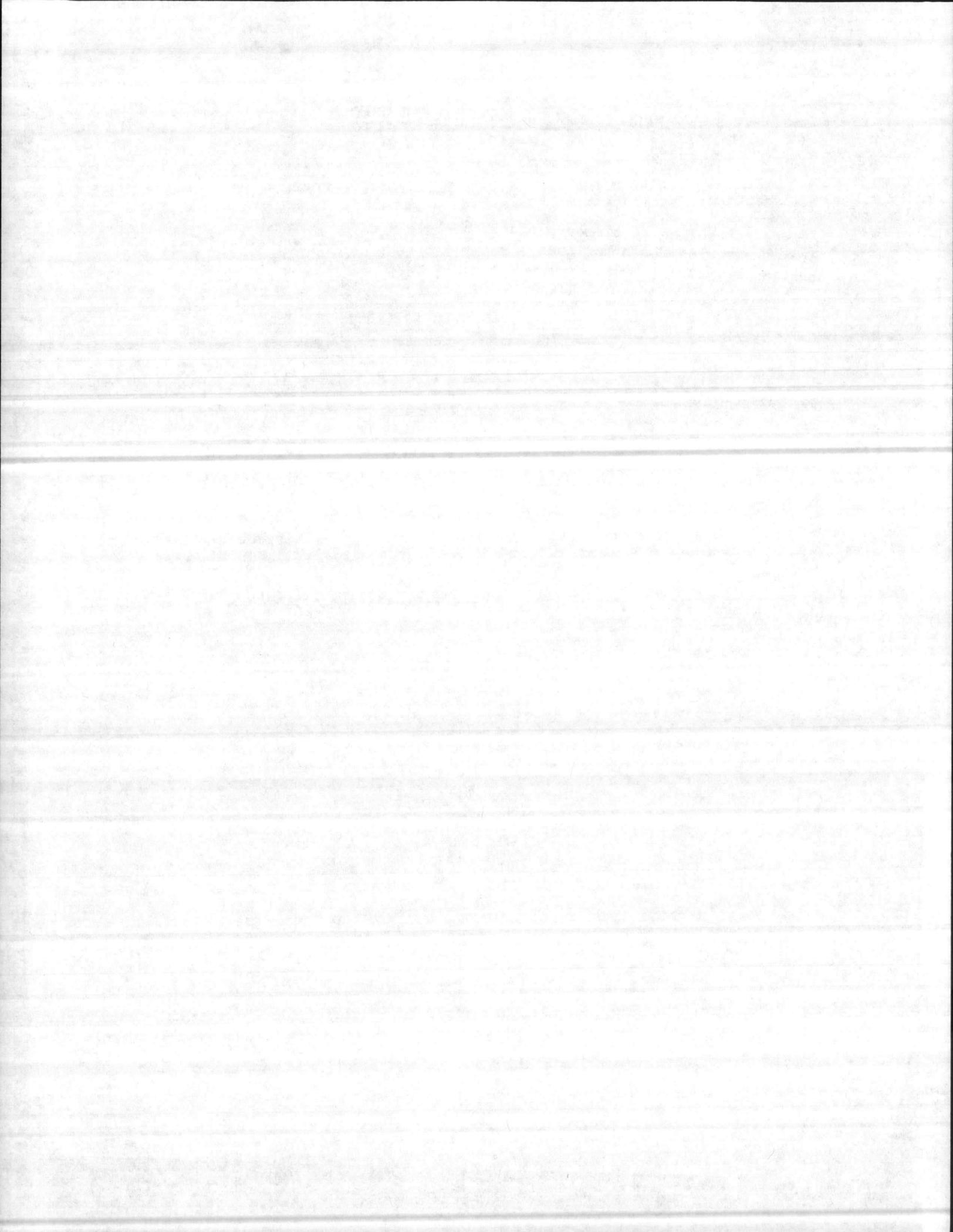
Total acreage.....	4,809
Acreage not suited to timber production - - - - -	0
Acreage reserved for other uses - - - - -	2,405
Acreage producing timber - - - - -	2,404

PRESENT VOLUME NOW STANDING (1954)
on 2504 Acres

Pine - - - - -	3,911,800 bd. ft.
Gum and Poplar - - - - -	505,400 bd. ft.
Oak - - - - -	495,200 bd. ft.
Total timber	4,912,400 bd. ft.

VOLUME CUT FROM 1946 to 1954

Pine - - - - -	842,800 bd. ft.
Hardwood - - - - -	481,500 bd. ft.
Total timber cut.....	1,324,300 bd. ft.



SOUTHWEST CREEK UNIT

ACREAGES

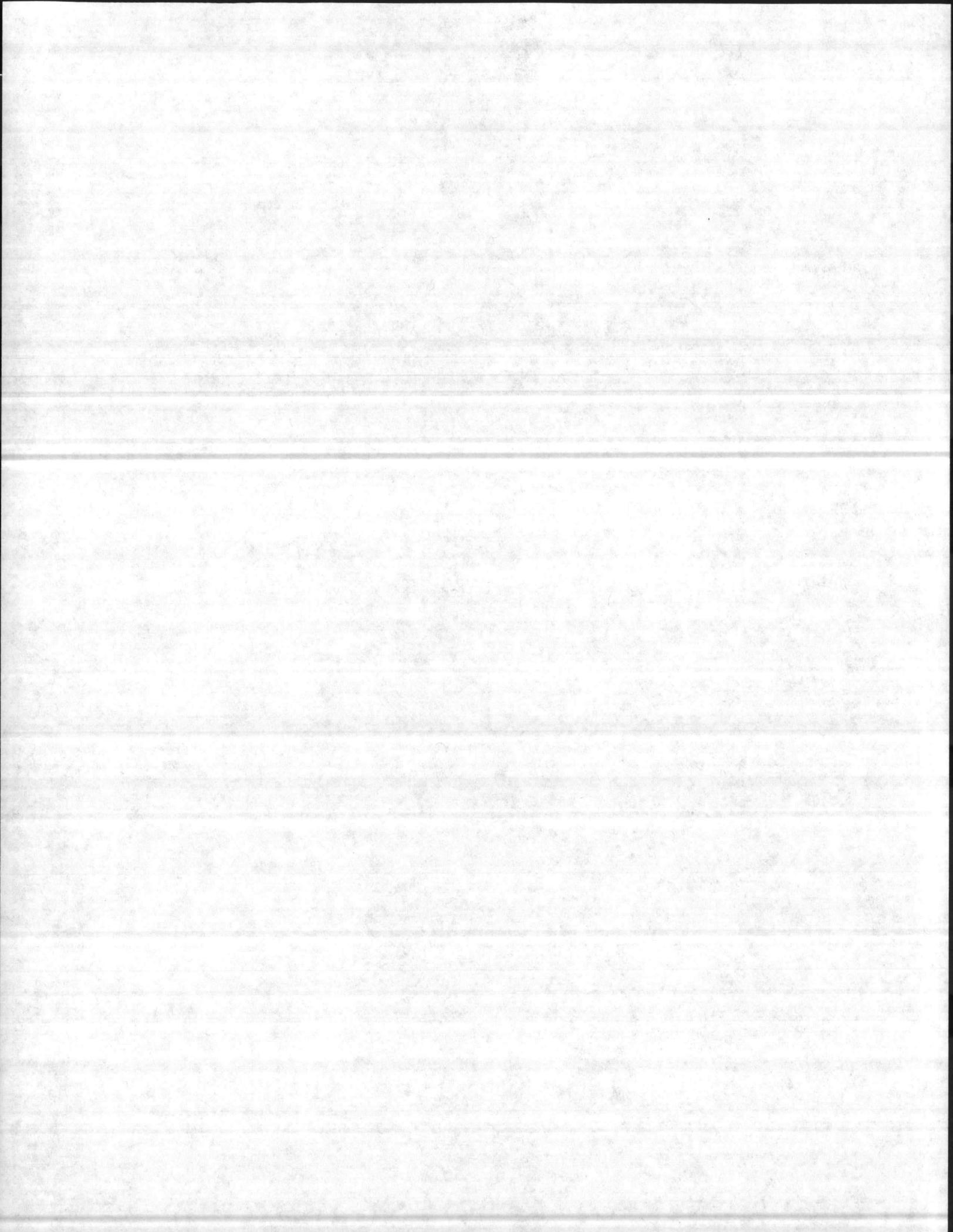
Total acreage..... 4,727
Acreage reserved for other purposes - - - - - 120
Acreage suited for timber production - - - - - 4,607

PRESENT VOLUME NOW STANDING (1954) ON 4607 ACRES

Pine - - - - - 10,529,600 bd. ft.
Gum and Poplar - - - - - 2,692,800 bd. ft.
Oak - - - - - 815,000 bd. ft.
Total timber..... 13,837,400 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine - - - - - 511,700 bd. ft.
Hardwood - - - - - 114,900 bd. ft.
Total timber cut..... 626,600 bd. ft.



VERONA ROAD UNIT

ACREAGES

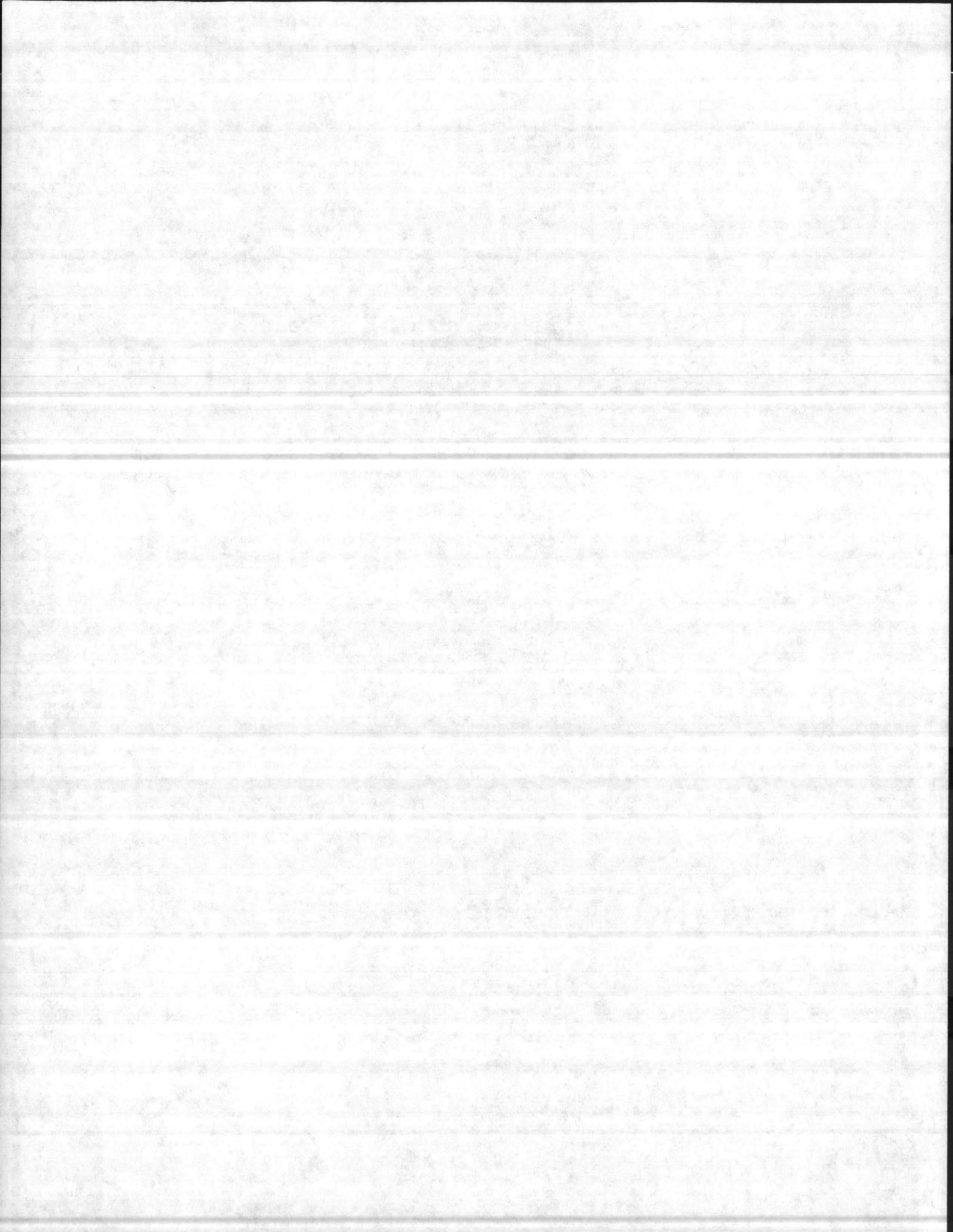
Total acreage..... 4,463
Acreage reserved for other uses..... 0
Acreage producing timber..... 4,463

PRESENT VOLUME NOW STANDING (1954) ON 4,463 ACRES

Pine..... 7,051,400 bd. ft.
Gum and Poplar..... 1,244,600 bd. ft.
Oak..... 306,200 bd. ft.
Total timber..... 8,502,200 bd. ft.

VOLUME CUT FROM 1946 to 1954

Pine..... 297,800 bd. ft.
Hardwood..... 128,400 bd. ft.
Total timber cut..... 426,200 bd. ft.



COWHEAD CREEK UNIT

ACREAGES

Total Acreage..... 4,099
Acreage reserved for other uses - - - - - 1,487
Acreage suitable to timber production - - - - - 2,958

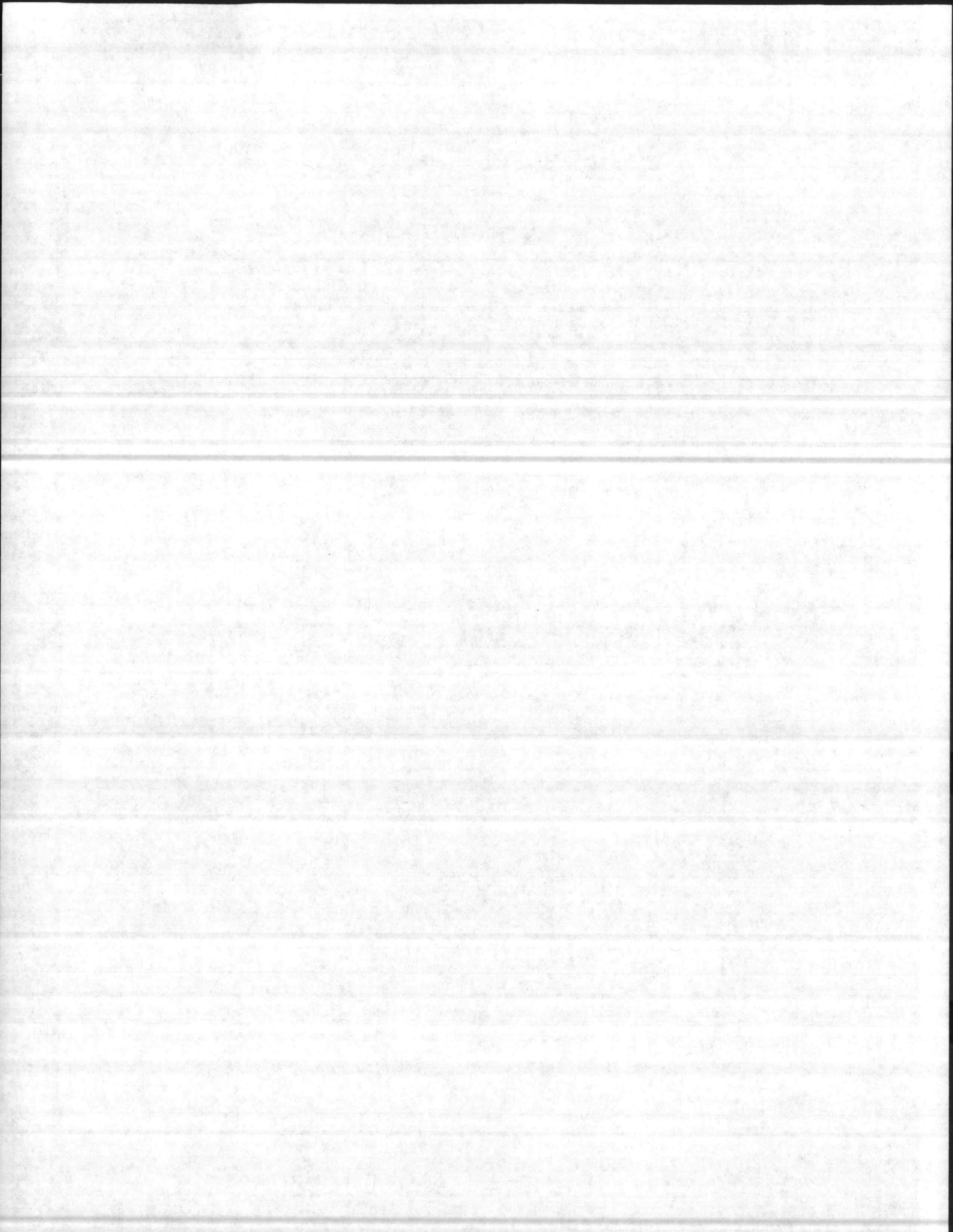
PRESENT VOLUME NOW STANDING (1954) on 2958 ACRES

Pine - - - - - 1,749,000 bd. ft.
Gum and Poplar - - - - - 82,400 bd. ft.
Oak - - - - - 8,600 bd. ft.
Total timber 1,840,000 bd. ft.

VOLUME CUT FROM 1946 to 1954

Pine - - - - - 819,900 bd. ft.
Hardwood - - - - - 9,800 bd. ft.

In 1946 this unit had a area of 4,099 acres. In 1950, 1,487 acres were taken up by a firing range. This left only 2,958 acres in this unit suitable for growing timber. The 1487 acres were clear cut in order to salvage the timber. Most of it was put into pulpwood due to the small size of the trees.



BEAR CREEK UNIT

ACREAGES

Total acreage..... 3,614
Acreage reserved for other purposes - - - - - 2,074
Acreage suitable to timber production - - - - - 1,540

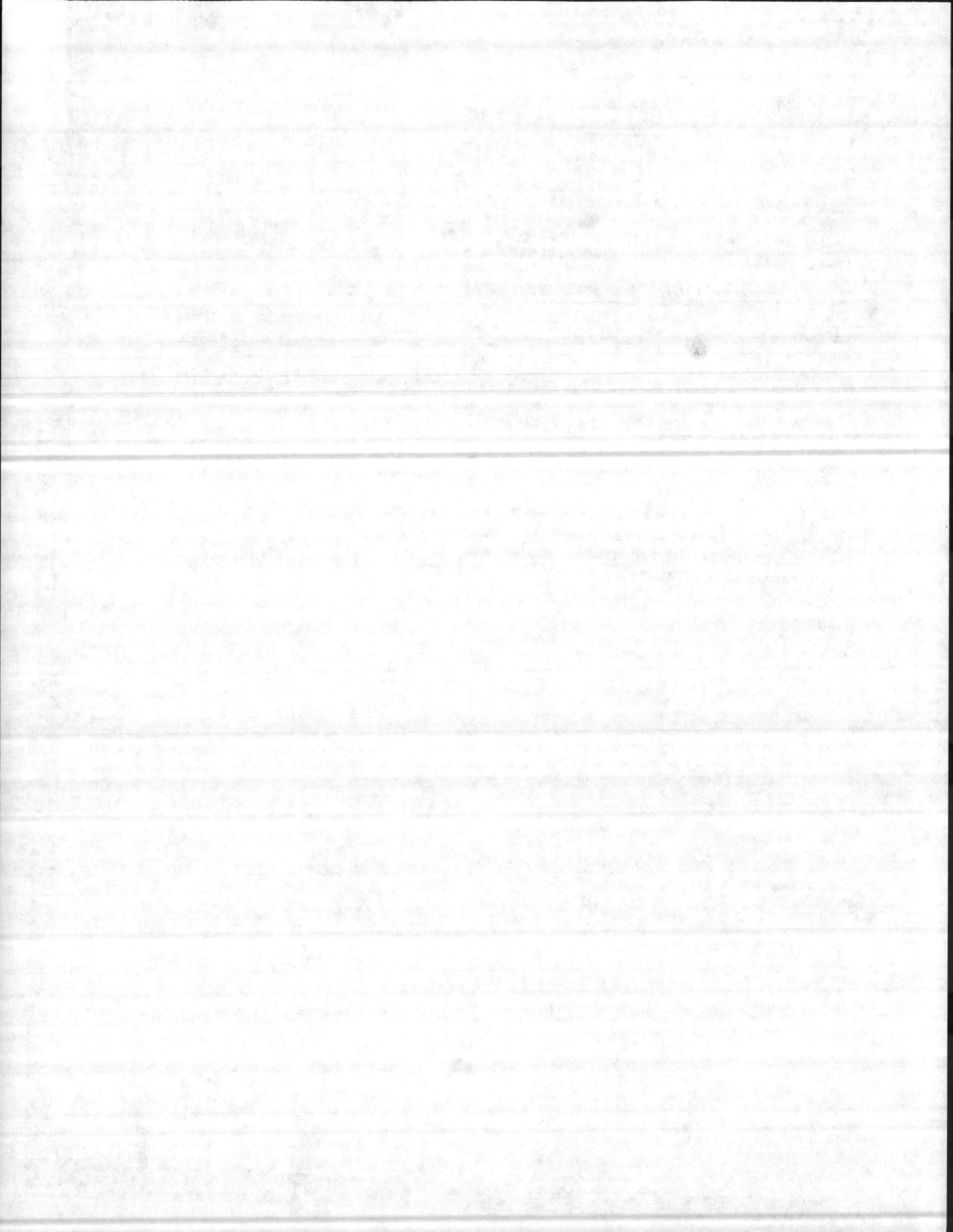
PRESENT VOLUME NOW STANDING (1954) on 1540 ACRES

Pine - - - - - 1,362,800 bd. ft.
Gum - - - - - 24,200 bd. ft.
Total timber..... 1,387,000 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine - - - - - 290,200 bd. ft.
Hardwood - - - - - 105,300 bd. ft.

In 1946 this unit had an area of 3,614 acres suitable for timber production. In 1950 about half the area was taken in a firing range. This left approximately 1,540 acres suitable for timber production, the remainder being in pecan. The merchantable timber laying within the firing range was cut into pulpwood.



EAST WALLACE CREEK UNIT

ACREAGES

Total acreage 6,662
Acreage reserved for other uses 2,556
Acreage suitable for timber production 4,547

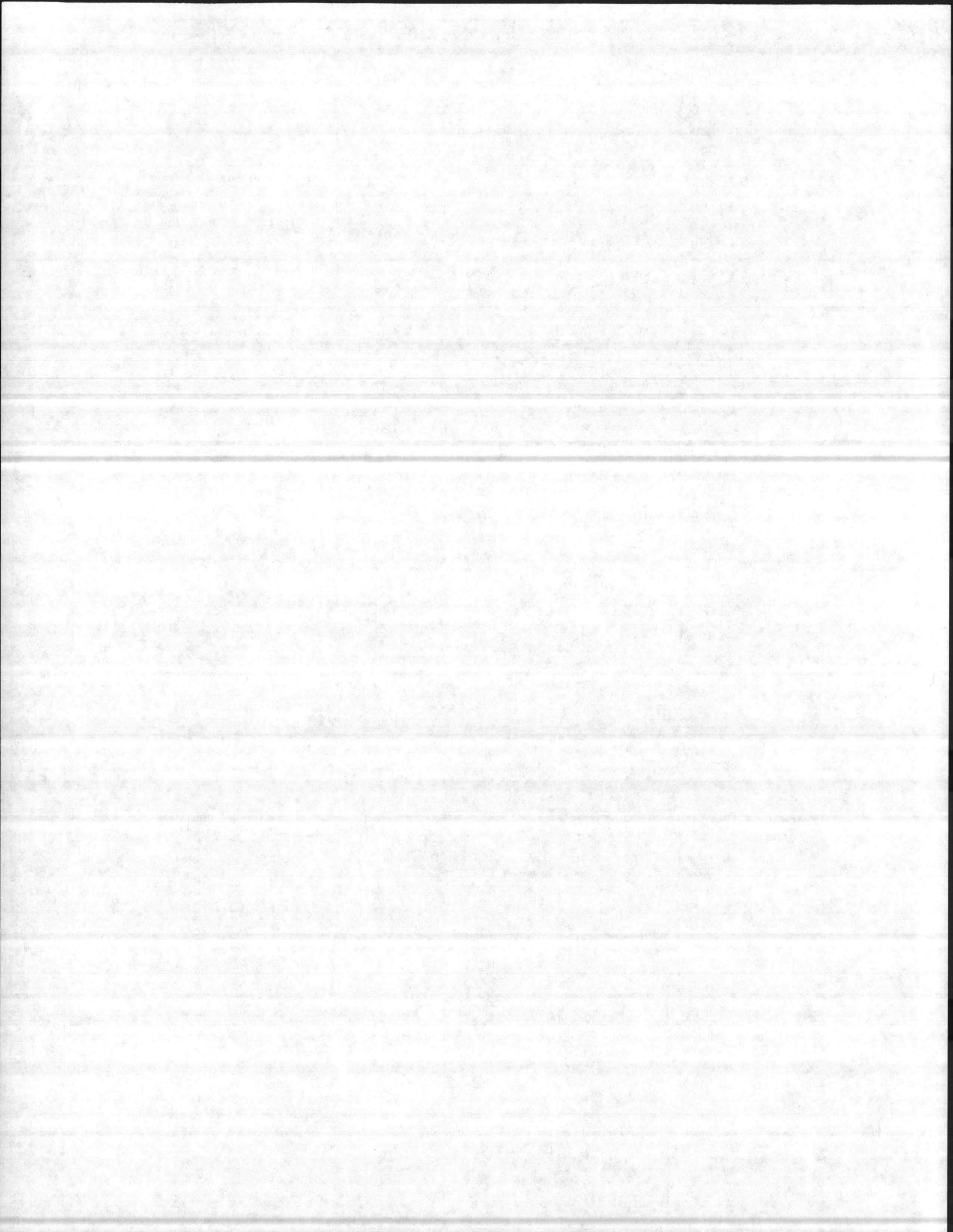
PRESENT VOLUME NOW STANDING (1954) on 4547 ACRES

Pine 4,781,200 bd. ft.
Gum 902,200 bd. ft.
Oak 1,155,600 bd. ft.
Total timber..... 5,839,000 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine 989,900 bd. ft.
Hardwood 119,600 bd. ft.
Total timber cut 1,109,700 bd. ft.

In 1946 this unit had an area of 6,297 acres suitable for timber production.
In 1950, 1,620 acres were taken in the firing range. This left 4,547 acres
suitable for timber production.



STARLING UNIT

ACREAGES

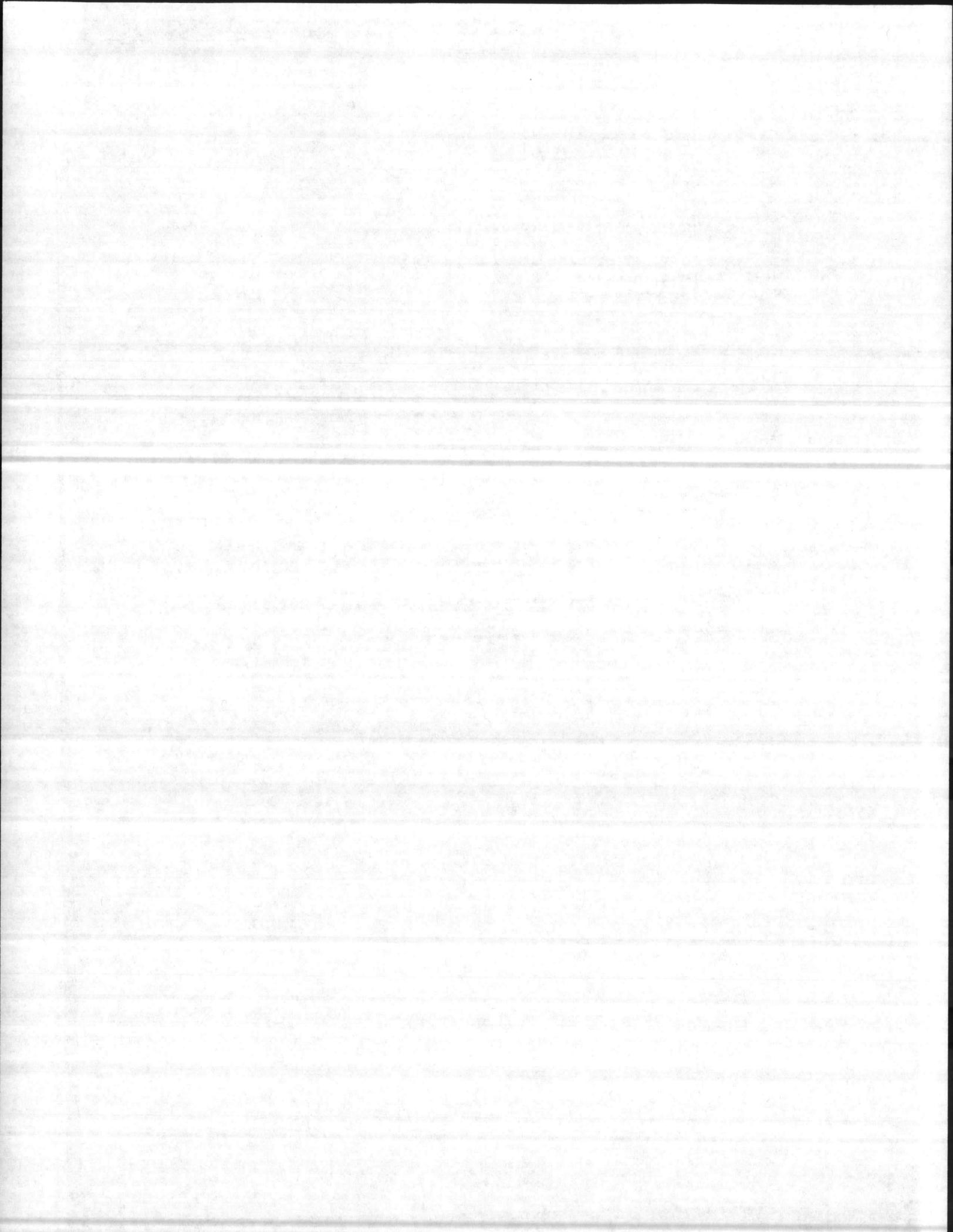
Total Acreage..... 5,103
Acreage reserved for other uses - - - - - 806
New timber producing acreage - - - - - 492
Acreage producing timber - - - - - 3,805

PRESENT VOLUME NOW STANDING 1954 ON 3805 ACRES

Pine - - - - - 3,982,000 bd. ft.
Gum - - - - - 453,800 bd. ft.
Total timber..... 4,435,800 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine - - - - - 453,500 bd. ft.
Hardwood - - - - - 28,100 bd. ft.
Total timber cut..... 481,600 bd. ft.
Pulpwood cut - - - - - 1206,03 cords



SNEADS POINT - ONSLOW BEACH UNIT

ACREAGES

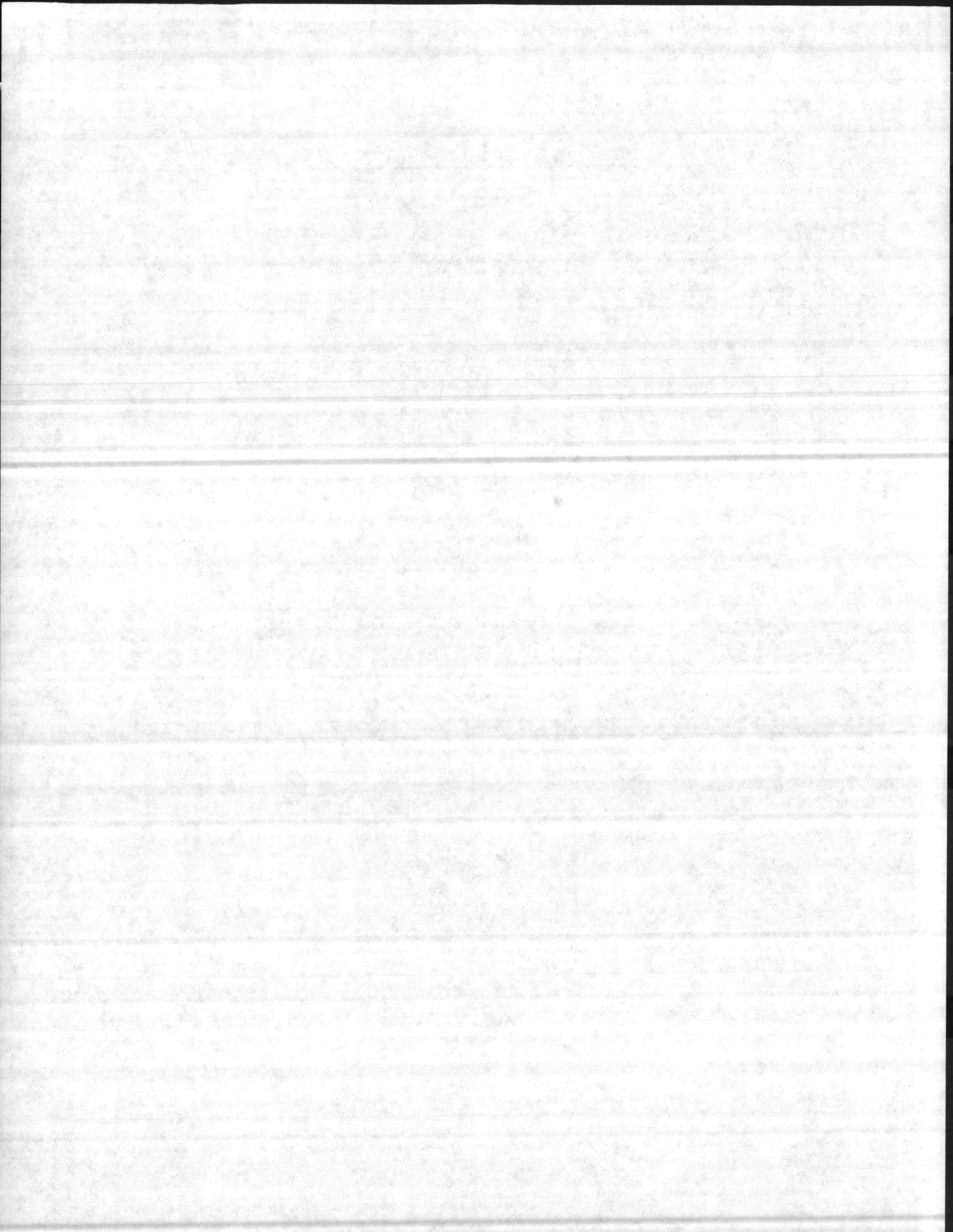
Total acreage..... 7,007
Acreage reserved for other uses 279
Non timber producing acreage 1,724
Acreage producing timber 5,004

PRESENT VOLUME NOW STANDING (1954) ON 5,004 ACRES

Pine 8,050,600 bd. ft.
Gum 395,000 bd. ft.
Oak 52,800 bd. ft.
Total timber..... 8,498,400 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine 1,074,100 bd. ft.
Hardwood 119,200 bd. ft.
Total timber cut..... 1,193,300 bd. ft.
Pulpwood cut..... 2,241.77 cords



NORTH INTRACOSTAL WATERWAY UNIT

ACREAGES

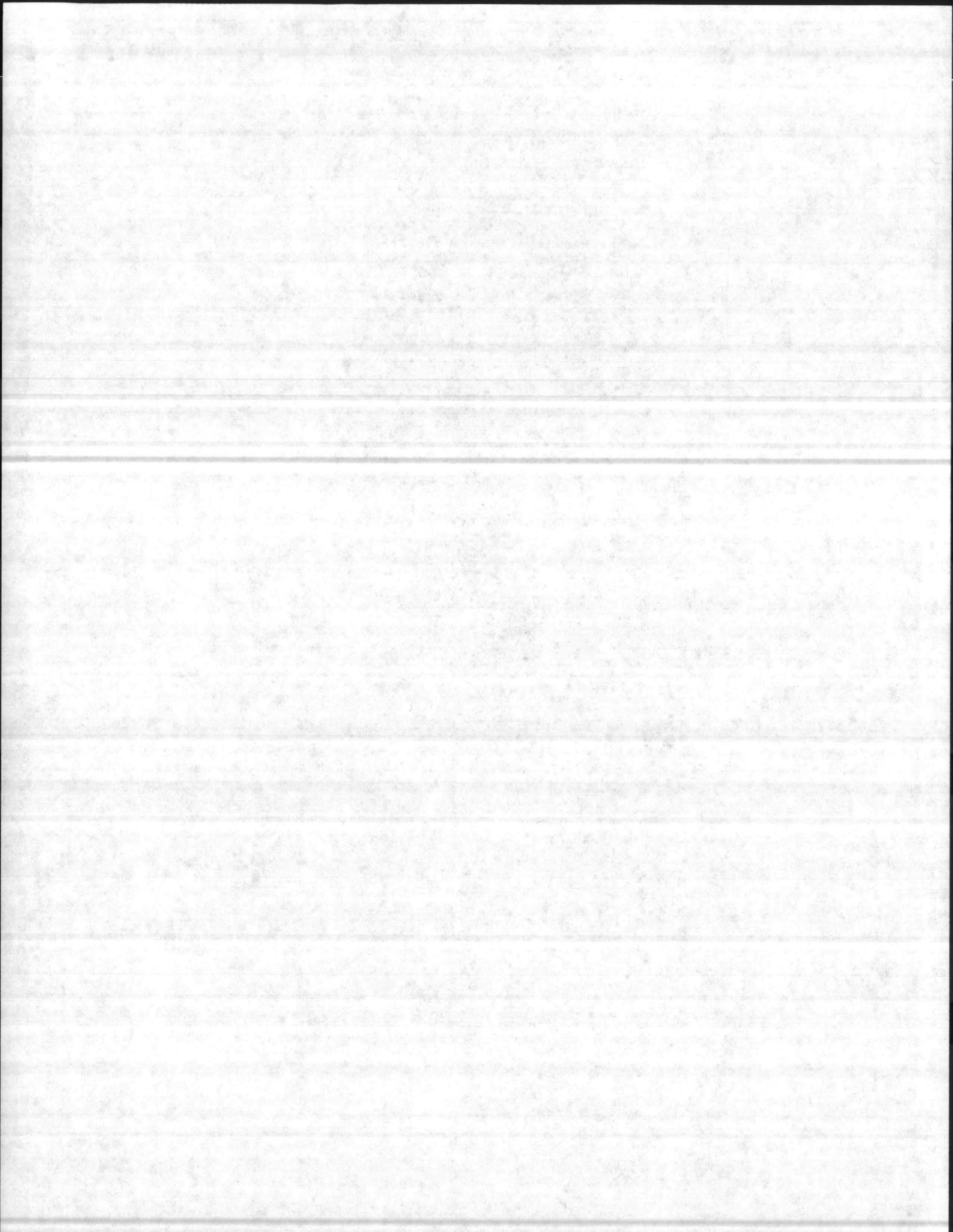
Total Acreage.....	7,325
Acreage reserved for other uses.....	509
Non timber producing acreage.....	5,231
Acreage producing timber.....	5,485

PRESENT VOLUME NOW STANDING (1954) ON 5,485 ACRES

Pine.....	5,455,200 bd. ft.
Gum.....	259,400 bd. ft.
Oak.....	24,200 bd. ft.
Total timber.....	5,701,800 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine.....	550,400 bd. ft.
Hardwood.....	249,700 bd. ft.
Total timber cut.....	599,100 bd. ft.
Pulpwood cut.....	346.23 cords



MONTFORD, POINT, CAMP KNOX UNIT

ACREAGES

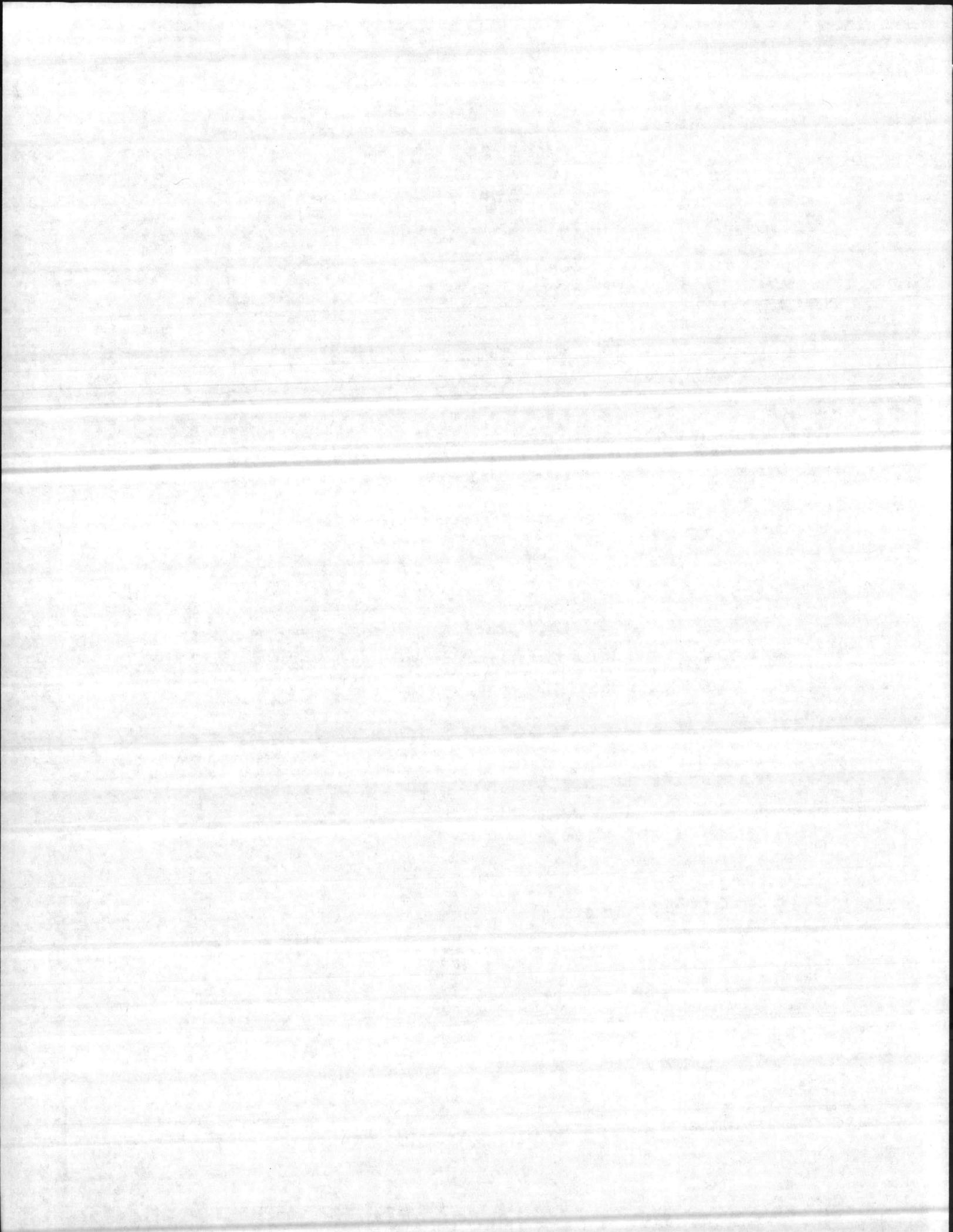
Total acreage.....	2,910
Acreage reserved for other uses	1,120
Non timber producing acreage	0
Acreage producing timber	1,790

PRESENT VOLUME NOW STANDING (1954) ON 1790 ACRES

Pine	2,459,800	bd. ft.
Gum	259,800	bd. ft.
Oak	127,000	bd. ft.
Total timber.....	2,826,600	bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine	850,100	bd. ft.
Hardwood	252,300	bd. ft.
Total timber cut.....	1,102,400	bd. ft.
Pulpwood cut.....	3392.90	cords



AIRFIELD UNIT

ACREAGES

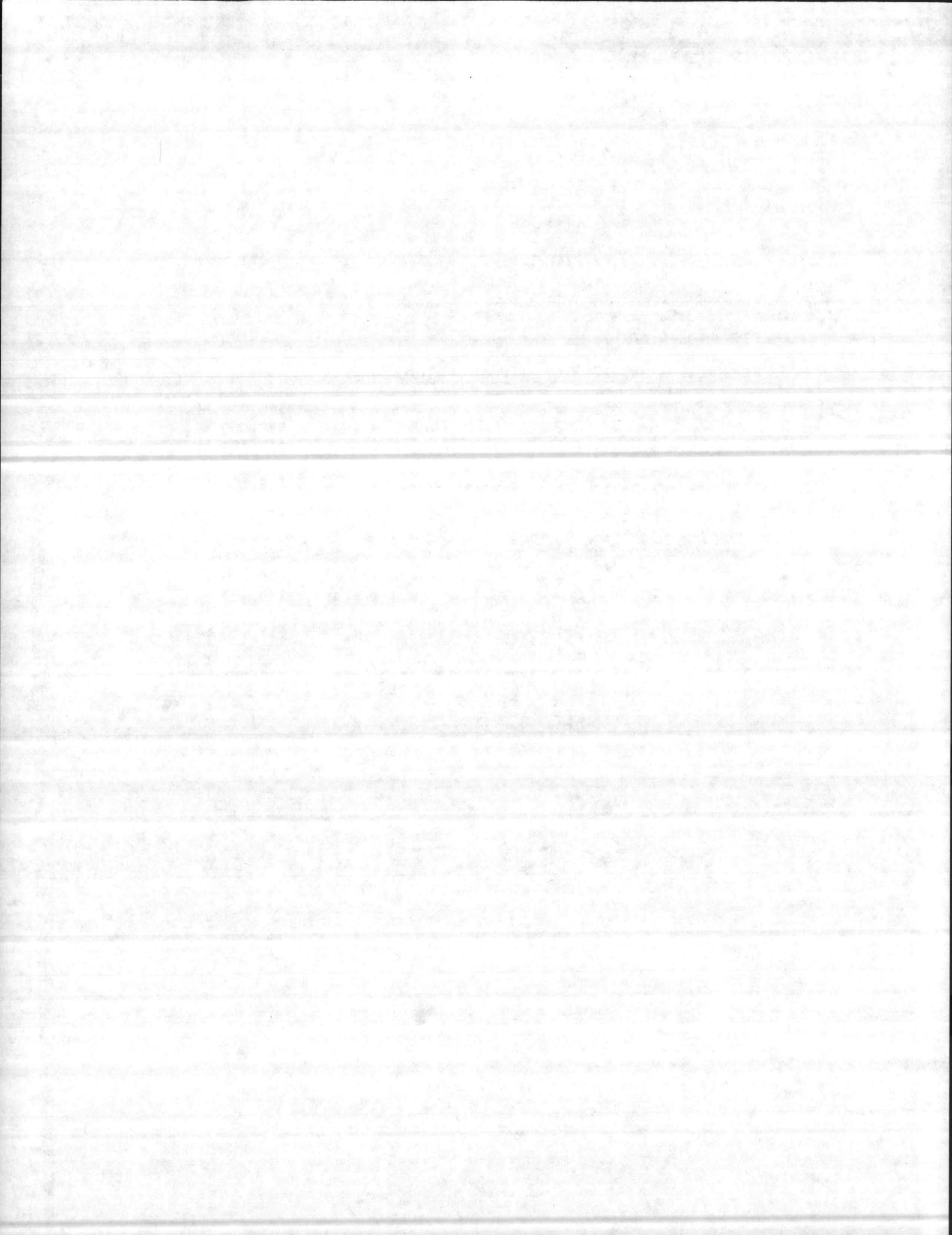
Total acreage..... 5,078
Acreage reserved for other uses - - - - - 4,014
Non timber producing acreage - - - - - 49
Acreage producing timber - - - - - 1,010

PRESENT VOLUME NOW STANDING (1954) ON 1010 ACRES

Pine - - - - - 3,190,000 bd. ft.
Gum - - - - - 979,600 bd. ft.
Oak - - - - - 211,400 bd. ft.
Total timber..... 4,381,000 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine - - - - - 400,800 bd. ft.
Hardwood - - - - - 110,900 bd. ft.
Total timber cut..... 511,700 bd. ft.
Pulpwood cut..... 4723.44 Cords



DIXON UNIT

ACREAGES

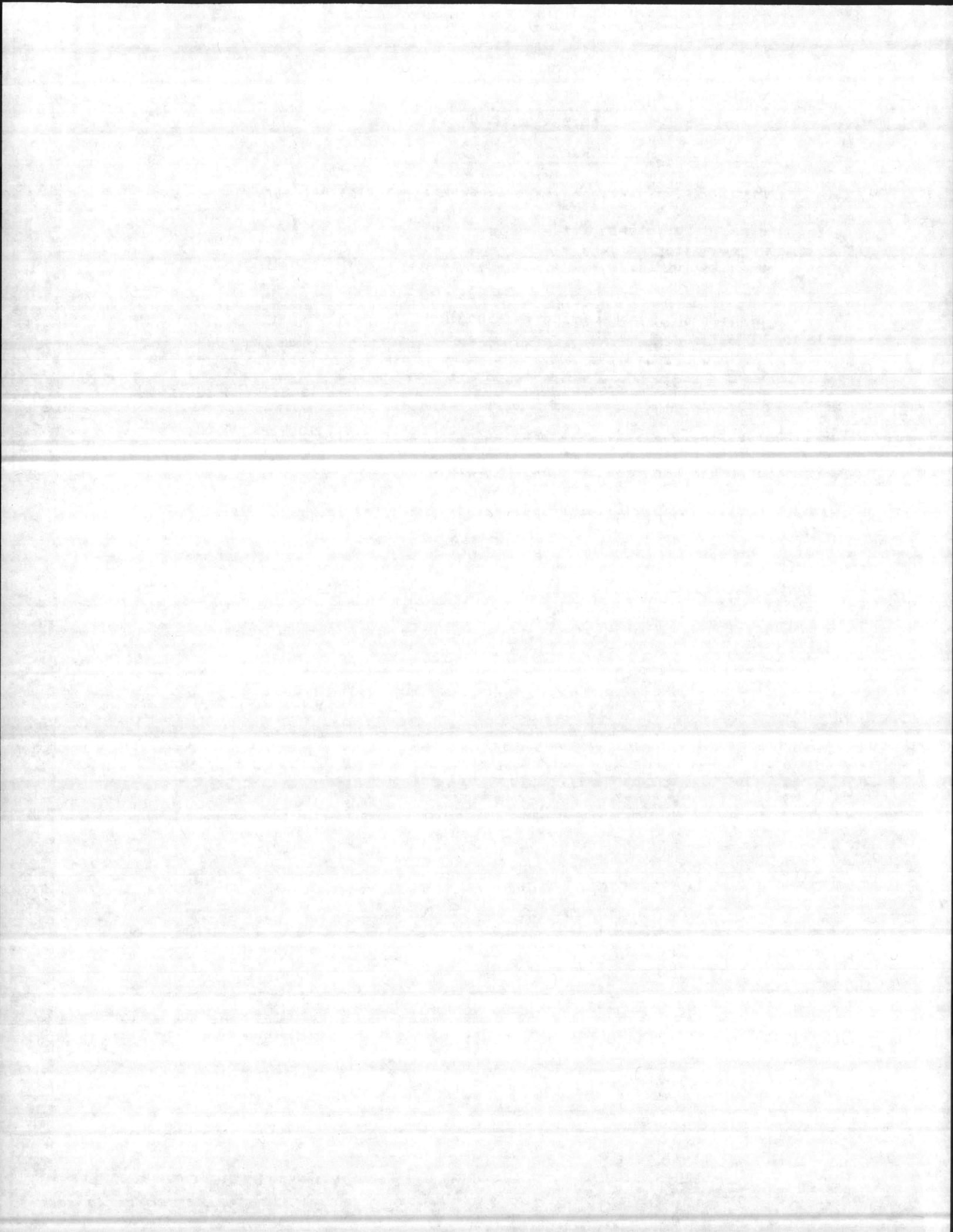
Total acreage..... 7,308
Acreage reserved for other uses - - - - - 1,000
Non timber producing acreage - - - - - 0
Acreage producing timber - - - - - 6,308

PRESENT VOLUME NOW STANDING (1954)

Pine - - - - - 14,484,000 bd. ft.
Gum - - - - - 3,485,800 bd. ft.
Oak - - - - - 1,243,800 bd. ft.
Total timber.....19,213,600 bd. ft.

No saw timber has been out in this unit since 1946.

Pulpwood cut..... 3,660.60 Cords



TOTALS FOR THE CAMP

ACREAGES

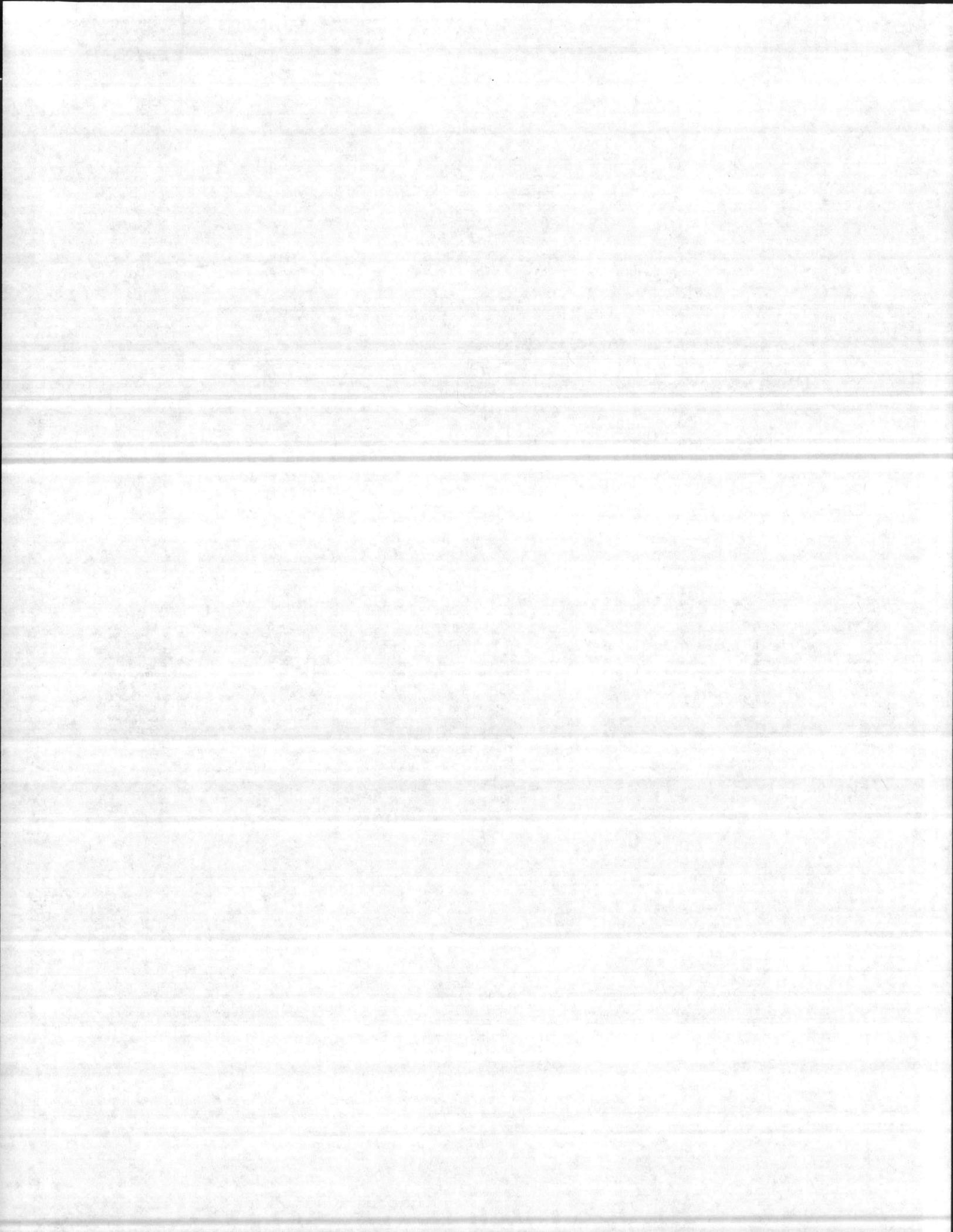
Total acreage (including water)	111,154
Acreage under water.....	26,000
Land acreage.....	85,154
Land acreage exclusive of Midway Park.....	84,629
Acreage reserved for other uses.....	24,190
Acreage not suited to timber production.....	6,557
Acreage suited to timber production.....	55,902

PRESENT VOLUME NOW STANDING (1954)

Pine - - - - -	91,775,800 bd. ft.
Gum - - - - -	14,998,600 bd. ft.
Oak - - - - -	5,020,200 bd. ft.
Total timber.....	111,794,600 bd. ft.

VOLUME CUT FROM 1946 to 1954

Pine - - - - -	8,252,800 bd. ft.
Hardwood - - - - -	2,041,500 bd. ft.
Total timber cut.....	10,294,300 bd. ft.



PULPWOOD CUT (1946-1954)

Clear cut

Area K..... 42,499.22 Cords
Other areas..... 15,792.45 Cords

Thinning..... 25,243.98 Cords

Total pulpwood cut..... 83,535.65 Cords

There has been a considerable amount of timber cut by the Camp sawmill from various areas on the camp not already shown in this report. From area K, artillery impact area there ^{were} 1,294,700 board feet cut. From areas set aside for other purposes there ^{were} 1,240,700 board feet cut. This makes a total of 2,495,400 board feet of lumber that was actually salvaged from areas that had to be cleared. Had it not been cut it would have been a total loss.

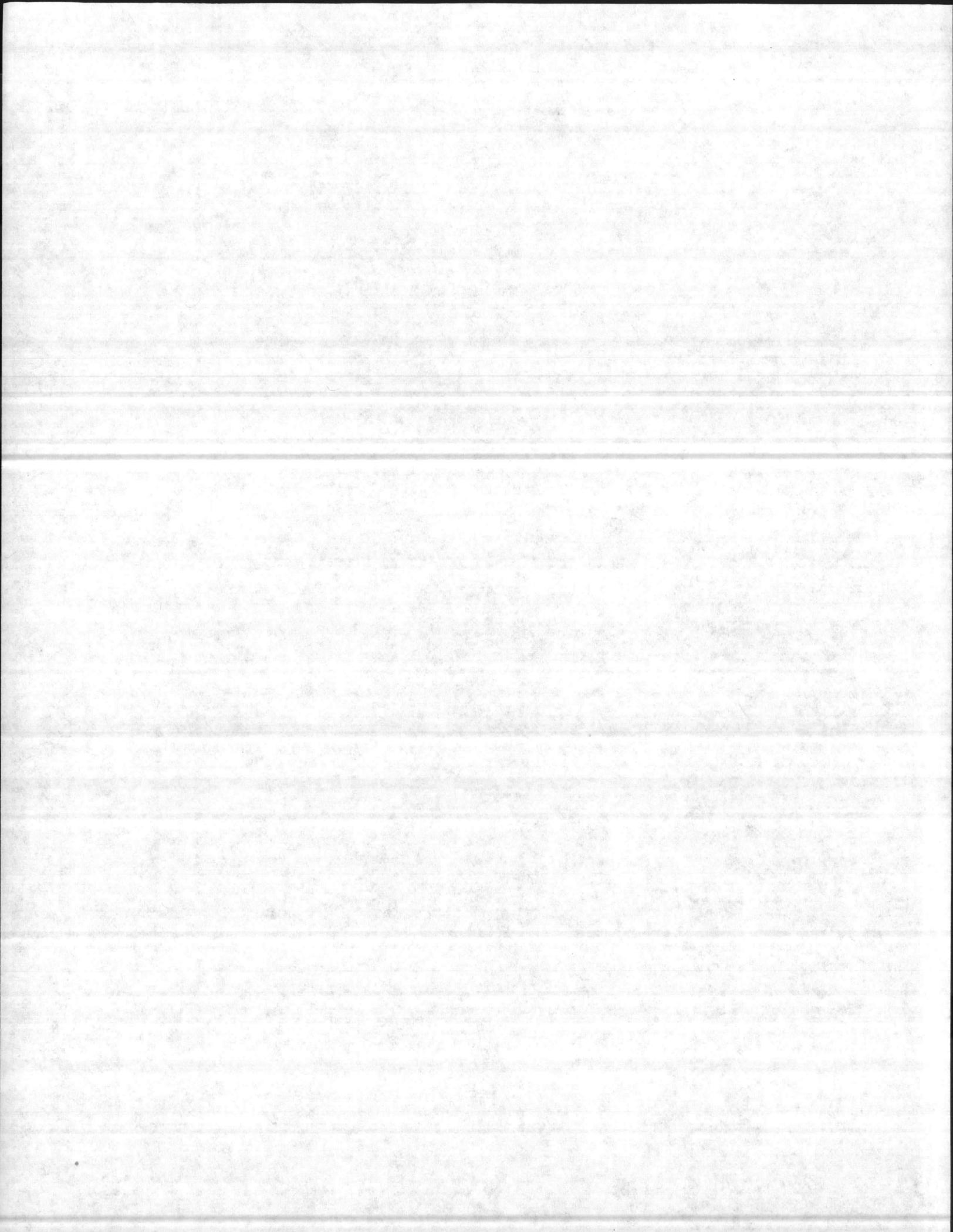
It should be remembered that the total board feet volume now standing on the base was arrived at by the Scribner Decival G Log Rule, the same log rule that was used in the 1946 cruise. It has been shown that the actual amount of lumber that can be sawed from a tree gives an overrun of 17% on the Scribner Decival G Rule. So the cruised volume of 111,794,600 board feet would actually saw out 130,799,700 board feet if every ~~three~~ tree 10 inches and up were cut.

As was pointed out in the 1946 Plan and should be stressed again here, one of the main difficulties is caused by the unusual proportion of hardwood that is mature and ready for harvesting. Of the approximate 10,000,00 board feet that has been cut since 1946, only 2,000,000 board feet was hardwood. The proportion of hardwood should have been much higher. If there is no way the Marine Corps can use this excess amount of hardwood it is suggested that it might be sold by contract similar to the way pulpwood is now sold.

SILVICULTURE NEEDED

As has been stated before, protection is still of prime importance. Keep fire down to a minimum and nature will take care of the rest. This has been very well done during the past eight years. Considering the tremendous fire hazard encountered on a military reservation the acreage burned over has been relatively small. Many fires have been set but they have been restricted to small areas. It is hoped that fire protection and suppression will remain at its high degree of efficiency in the future years.

The 1946 Plan stated that thinning was the main silvicultural operation needed. This has been carried out in the form of pulpwood cutting. About 85% of the stands needing thinning has been thinned. However, each year there are younger stands of timber reaching the size and age that they should be thinned. Therefore, the pulpwood operation should be continued on a modified scale for at least the next ten years.



GROWTH

At the present time it is felt there is little need for revision on the subject of growth. So far as is known those figures set forth in the 1946 plan still holds true for growth and future volume. It is yet too early to make any growth studies on stands released by pulpwood thinning.

RECOMMENDATION FOR HARVESTING

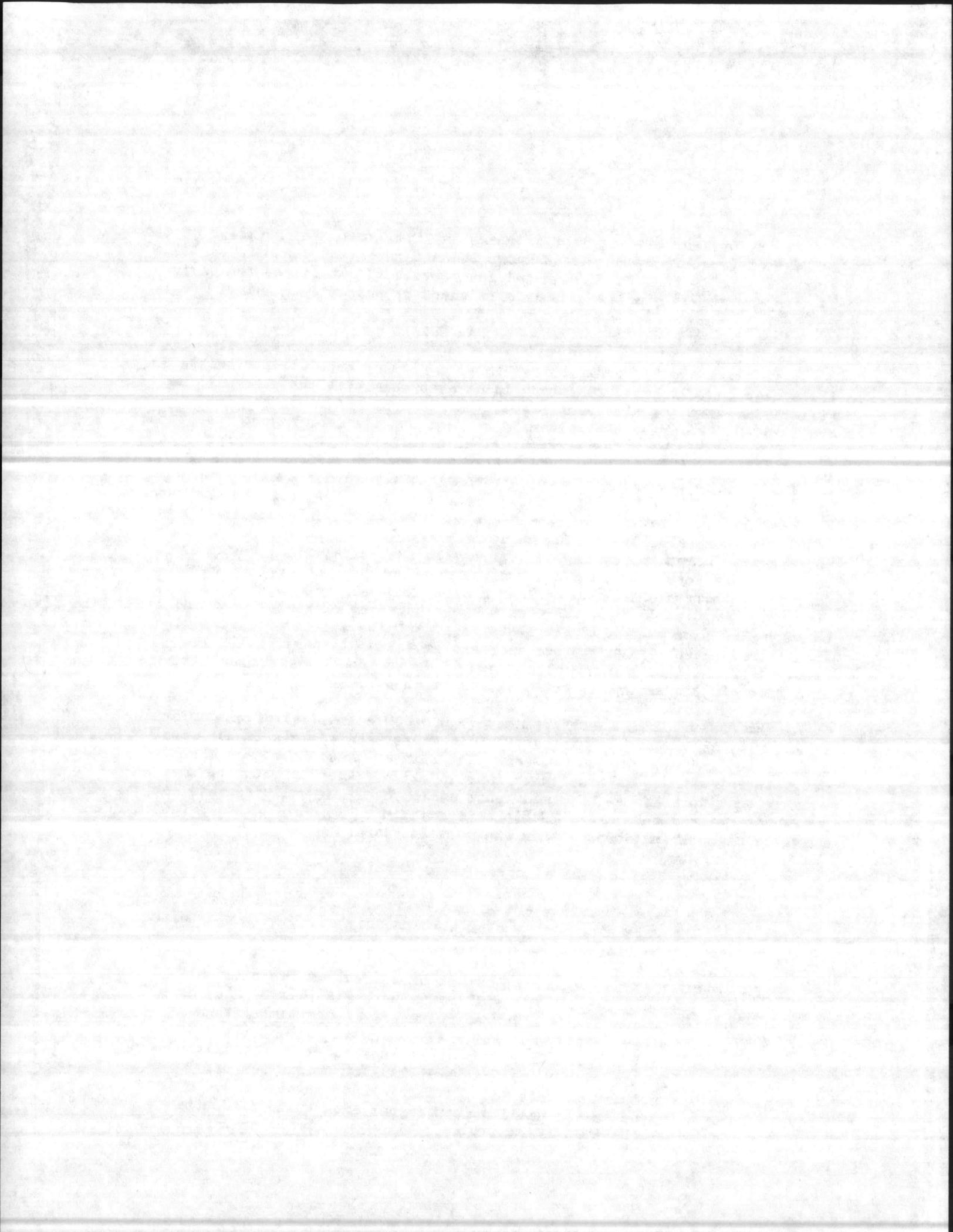
It is extremely difficult to set forth a plan or schedule for harvesting the timber on this base when there is no assurance that the plan will be strictly adhered to. The camp sawmill has been closed since May 1953 and it is not known by the writer if or when it will ever resume operation; or that any other plan for harvesting the timber will be made. When thinking in terms of forestry and timber management, one must consider the forest crop (standing timber) the same as, the farmer considers his field crops. The forest strives to obtain the same objectives as the farmer. In general terms, that is, to obtain the maximum output in quantity and quality from a given area of land. The main difference being the time element. Whereas the farmer thinks in terms of one to two years, the forester must think in terms of fifty to a hundred years. When the proper time comes the farmer must harvest his crop or lose money. The same idea applies as well to forestry. On Camp Lejeune there is a certain amount of timber that should be harvested each year. If not there is a definite monetary value lost. When a tree reaches maturity the increase in volume is very small, it loses vigor and then becomes more susceptible to insect and fungus attack. If a tree of this nature is not utilized it soon becomes a total loss.

At the present time there are about 1,500,000 board feet of timber coming to maturity each year on this base. A large portion of this is hardwood such as tupelo gum, red gum and oak. This timber needs to be and should be cut, otherwise there is a definite loss in value. Another point to keep in mind is that this amount of timber that needs to be cut will increase each year. As pointed out in the 1946 plan a maximum of 13,000,000 board feet annually might be produced within the next 15 years.

The following is a suggested schedule of cutting:

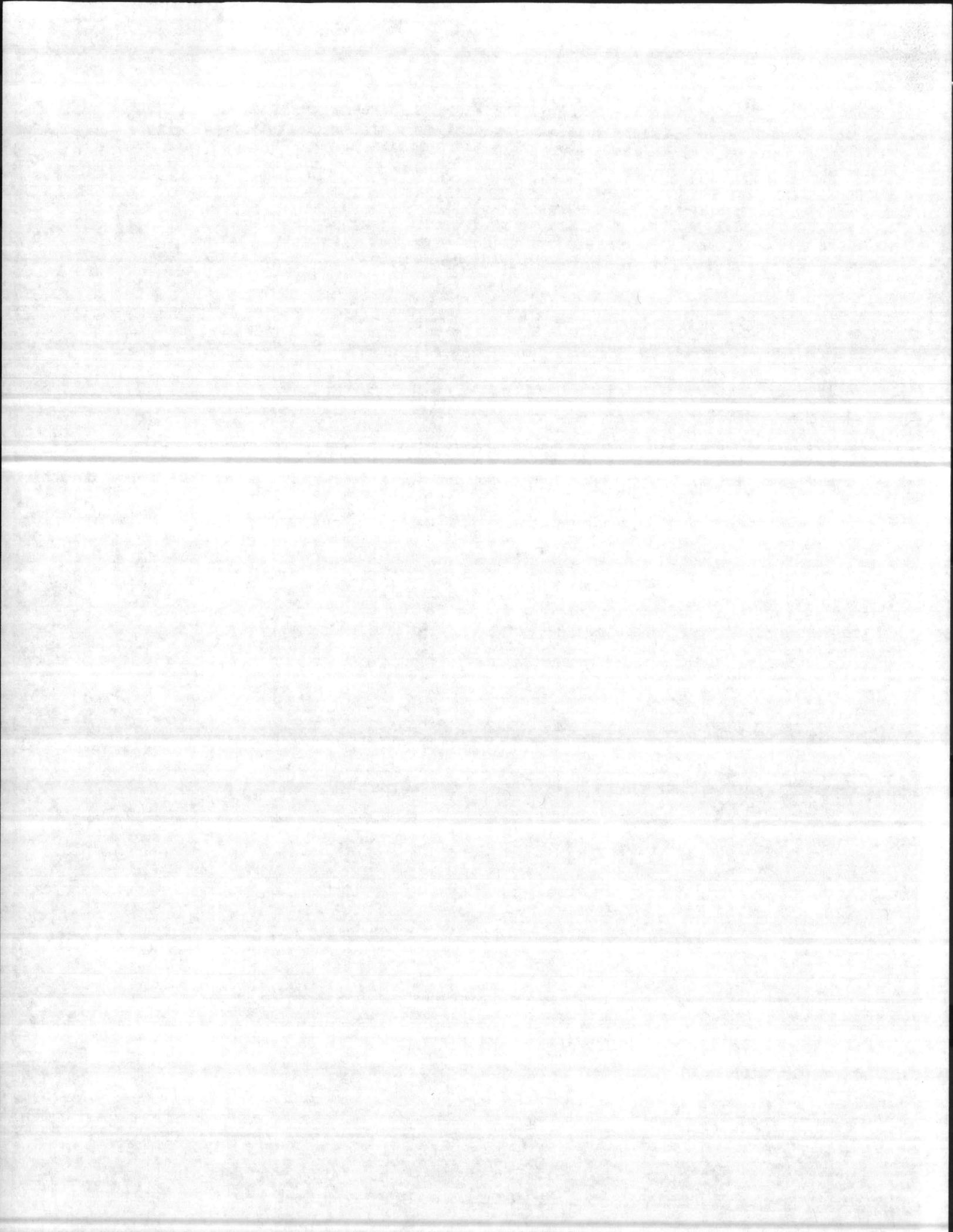
1954 - 1956 Make a maximum cut of not over 1,500,00 board feet a year, continuing the type of cutting that has been taking place for the past eight years.

1957 - 1966 1957 and 1958 should each have a cut of two million board feet. This will be in unit #15 (Dixen Unit) as that unit has a larger volume of mature timber than any other. 1959 and 1960 will be cut in unit #2 (Duck Creek) with a production from two to two and a half million board feet a year. In 1961 three million board feet can be produced in unit #1. In 1962 - 1965 cutting will be from three to six million feet a year from Unit #5 (Southwest Creek) and Unit #8 (Verona Loop). 1966 will be taken care of by



the 9th and 10th Units, from which six to ten million board feet may be cut. The cutting for this ten year period will be selective release cutting. By that is meant only those trees over 14 inches DBH will be cut.

From 1966 on the actual plan for cutting should take place with about 2,000 acres of loblolly and 1,000 acres of longleaf cut yearly. The area to be cut must be determined by the forester in charge, but unless some factor changes, thirteen million board feet can be cut every year.



Revision No 1 to Forest Management Plan
~~dated~~ 27 July, 1946

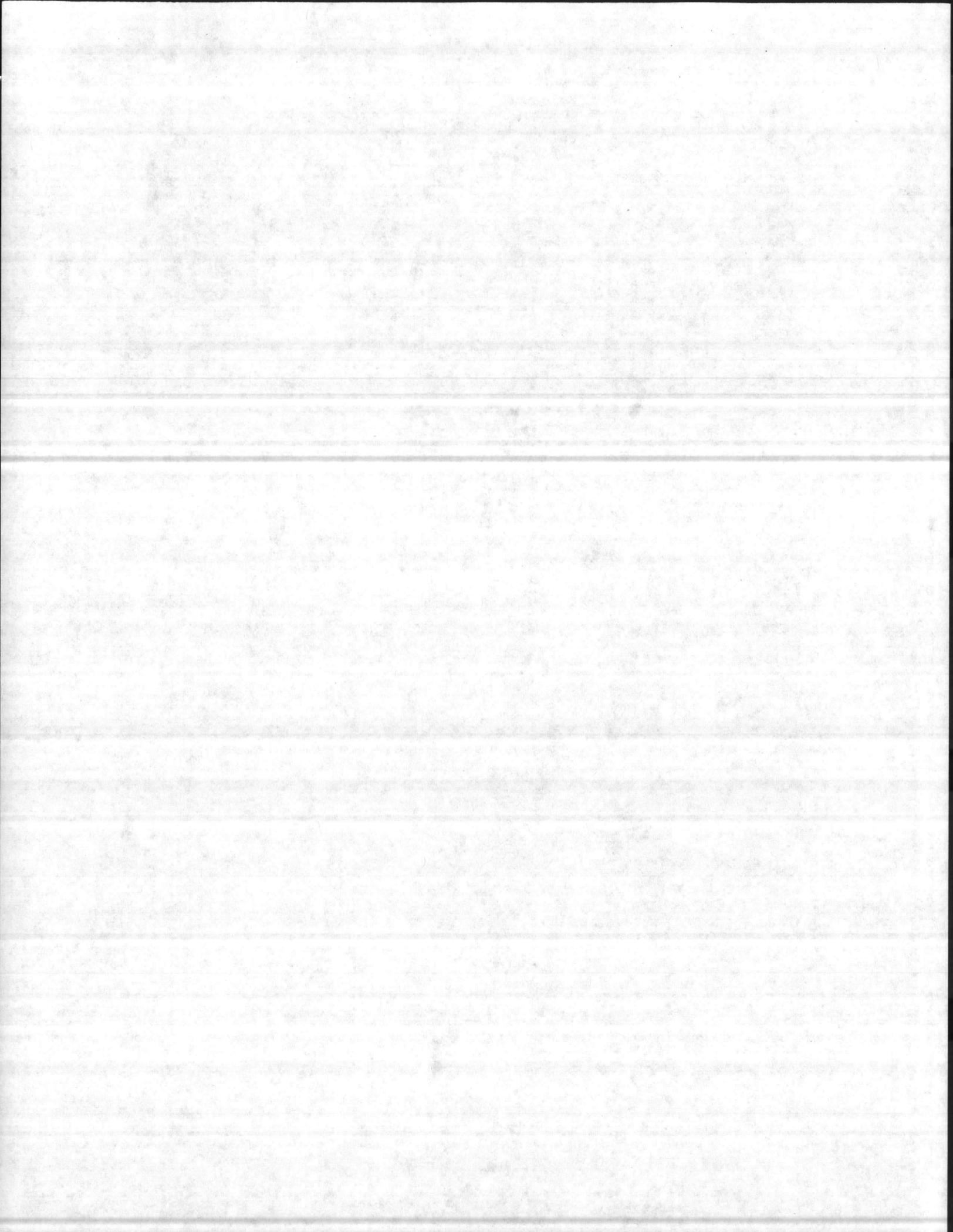
FOREST MANAGEMENT PLAN: REVISION OF

March 1957

In 1946 a timber survey of the entire reservation of Camp Lejeune was made. From the data obtained a Forest Management Plan was drawn up and put into effect. Since that time a considerable amount of timber has been cut and a lot of acreage has been taken up for other purposes such as firing ranges, housing projects, etc. Therefore, it is felt that the Management Plan should be revised and brought up to date. To make this revision more real and accurate another timber cruise has recently been made and completed.

It is not intended that this report should supersede or replace the 1946 Management Plan. It is intended only to bring up to date the figures on acreage in growing timber, board foot volumes now on hand (1954) and various recommendations for future cutting.

The acreage as of 1954 will be shown. On some units the acreage will be the same as in 1946, and others will show a less in acreage. The 1954 volume will be shown, also the amount of timber cut since 1946. Then a gross and net increase in volume can be calculated.



Revision 2 to Forest Management Plan
of 27 July, 1946

FORESTRY REPORT FOR PERIOD 1954 TO PRESENT

30 April 1957

The Forestry Management Plan for Camp Lejeune was revised and brought up to date in 1954. The object of this report is to bring up to date forestry conditions as they now exist on the Camp Lejeune reservation.

The harvesting of timber has been practically at a stand still since the closing of the camp sawmill in May of 1953. The only timber cutting of any importance has been done under the pulpwood contract. For the period of 1 January 1954, to 1 April 1957, 16,190 cords of pulpwood have been cut. As a whole, this has had little effect on the volume of merchantable saw timber, as the cutting of pulpwood has mostly been from thinnings, that is, taking out trees that are small, undeveloped, crooked and showing signs of rot.

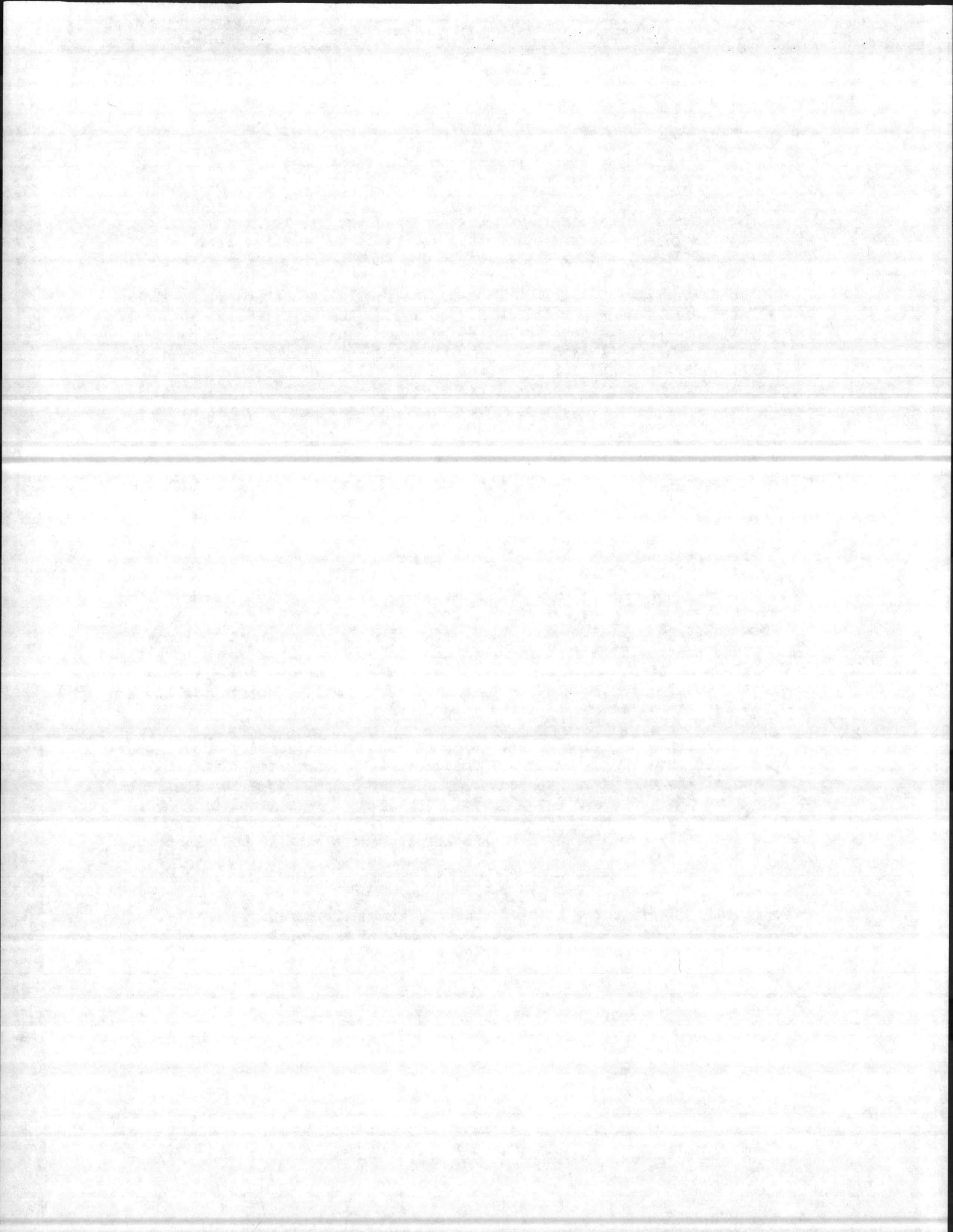
Based upon the rate of growth in 1954, it is estimated that the total volume of merchantable timber on the camp has increased from 111,794,600 board feet to 119,685,100 board feet, or an increase of 2,963,500 board feet per year.

Fire protection is still of prime importance, and is being kept to a high degree of efficiency. Fire breaks around firing ranges and certain maneuver areas are maintained, and these areas are controlled burned during the winter months. Three forest fire lookout towers are in operation and they are equipped with two-way radios, also tied in with one state tower on west. This enables fire fighting equipment to arrive at the scene of a fire in a minimum of time. Although many fires break out during the dry seasons, so far the total areas burned has been kept very small. Cooperation between the Fire Department and Base Maintenance is very good.

The wildlife and game situation on the base is still very good. Deer is especially plentiful. Cover and food seem to be adequate. With the exception of the firing ranges and some maneuver areas, cover is plentiful and numerous den trees are found around the edges of swamps and branches. Yearly plantings of bird and game food are made. At the present time there are now about 125 acres planted in bicolor lespedeza with 10,000 plants per acre.

Over all, the forestry situation seems to be good on the base. Approximately 80% of the volume of standing timber is a young, thrifty, growing stand. The other 20% would be considered mature, but most of that is still growing, even though at a slower rate.

Emile (3)



NORTHEAST CREEK - WALLACE CREEK UNIT

ACREAGES

Total Acreage..... 4425
Acreage not suited to timber growth 95
Acreage reserved for other uses 1400
Acreage producing timber 2930

PRESENT VOLUME NOW STANDING (1954)
ON 2930 ACRES

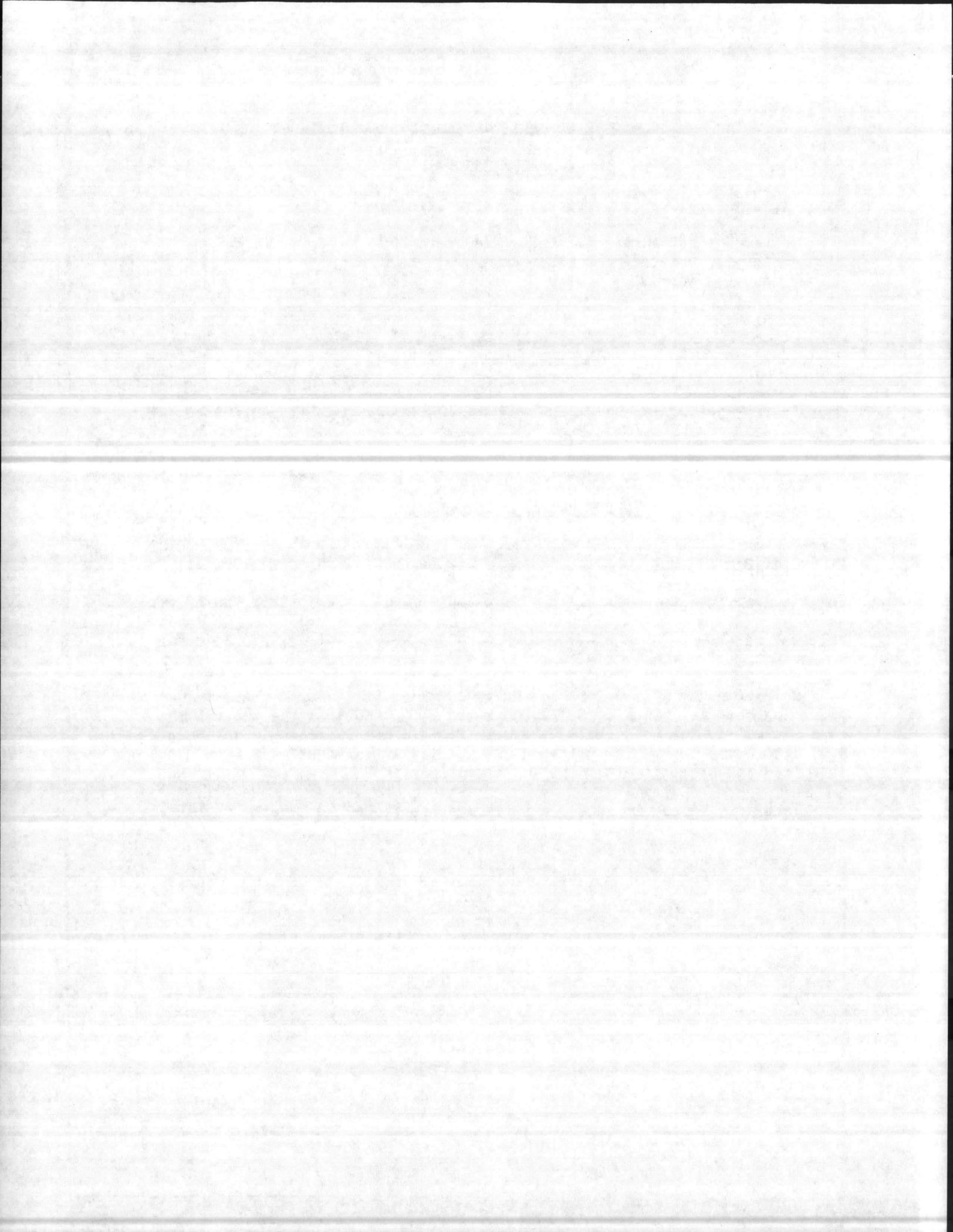
Pine timber..... 11,083,600 bd. ft.
Gum and Poplar..... 1,600,400 bd. ft.
Oak..... 864,400 bd. ft.
Total Timber..... 13,548,400 bd. ft.

VOLUME CUT FROM 1946-1954

Pine..... 954,100 bd. ft.
Hardwood (Oak and Gum)..... 279,000 bd. ft.
Total timber cut..... 1,233,100 bd. ft.
Pulpwood cut..... 7,838,02 cords

Comparing the 1946 volume to the 1954 volume it is found there was a gross increase in volume of 5,312,200 board feet. Subtracting the volume that was cut during this period there is found a net increase in volume of 4,079,100 board feet. The pulpwood cut was mostly salvaged wood from thinnings and clean up after saw log operations.

This unit is now in good condition and the timber is growing rapidly.



DUCK CREEK UNIT

ACREAGES

Total acreage..... 4,542
Acreage reserved for other uses.....
Acreage producing timber..... 4,542

PRESENT VOLUME NOW STANDING (1954) ON 4542 ACRES

Pine timber..... 12,620,800 bd.ft.
Gum and Poplar..... 1,703,000 bd.ft.
Oak..... 716,000 bd.ft.
Total timber..... 15,039,800 bd.ft.

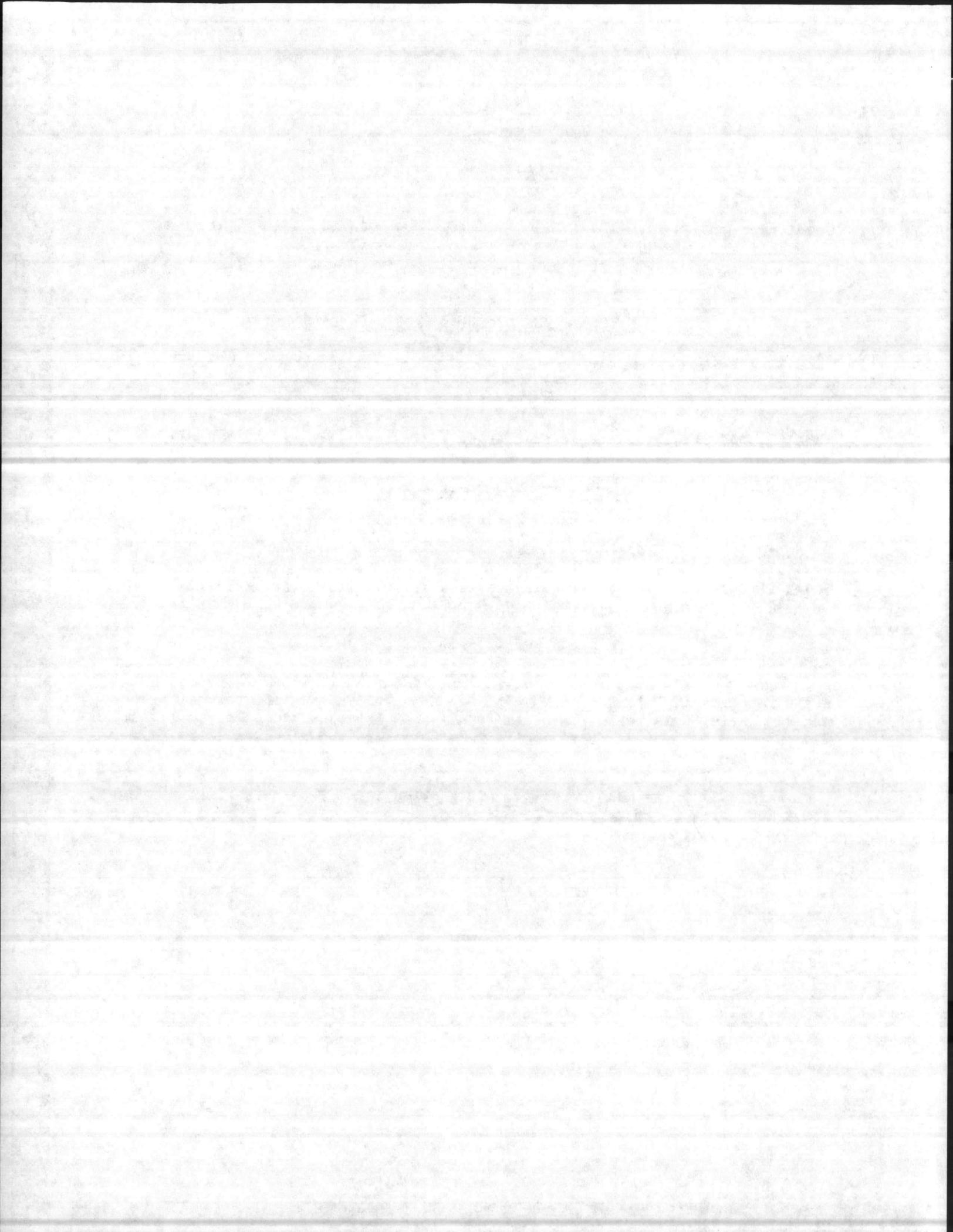
VOLUME CUT FROM 1946 to 1954

Pine..... 321,800 bd.ft.
Hardwood (Gum and Oak)..... 42,700 bd.ft.
Total timber cut..... 364,500 bd.ft.

PULPWOOD CUT 5674.63 CORDS

Comparing the 1946 volume to the 1954 volume it is found there was a gross increase in volume of 4,893,350 bd. ft. Subtracting the volume that was cut during this period there is found a net increase of 4,528,750 bd. ft. The pulpwood cut was salvaged mostly from thinnings and clean up after saw-log operations.

This unit is in good condition and growing rapidly. There still remains about 200 acres to be thinned for pulpwood.



STREADS FERRY ROAD UNIT

ACREAGES

Total Acreage..... 5,675
Acreage not suited to timber production..... 946
Acreage reserved for other uses..... 0
Acreage suited to timber production..... 4,729

PRESENT VOLUME NOW STANDING (1954) ON 4,729 ACRES

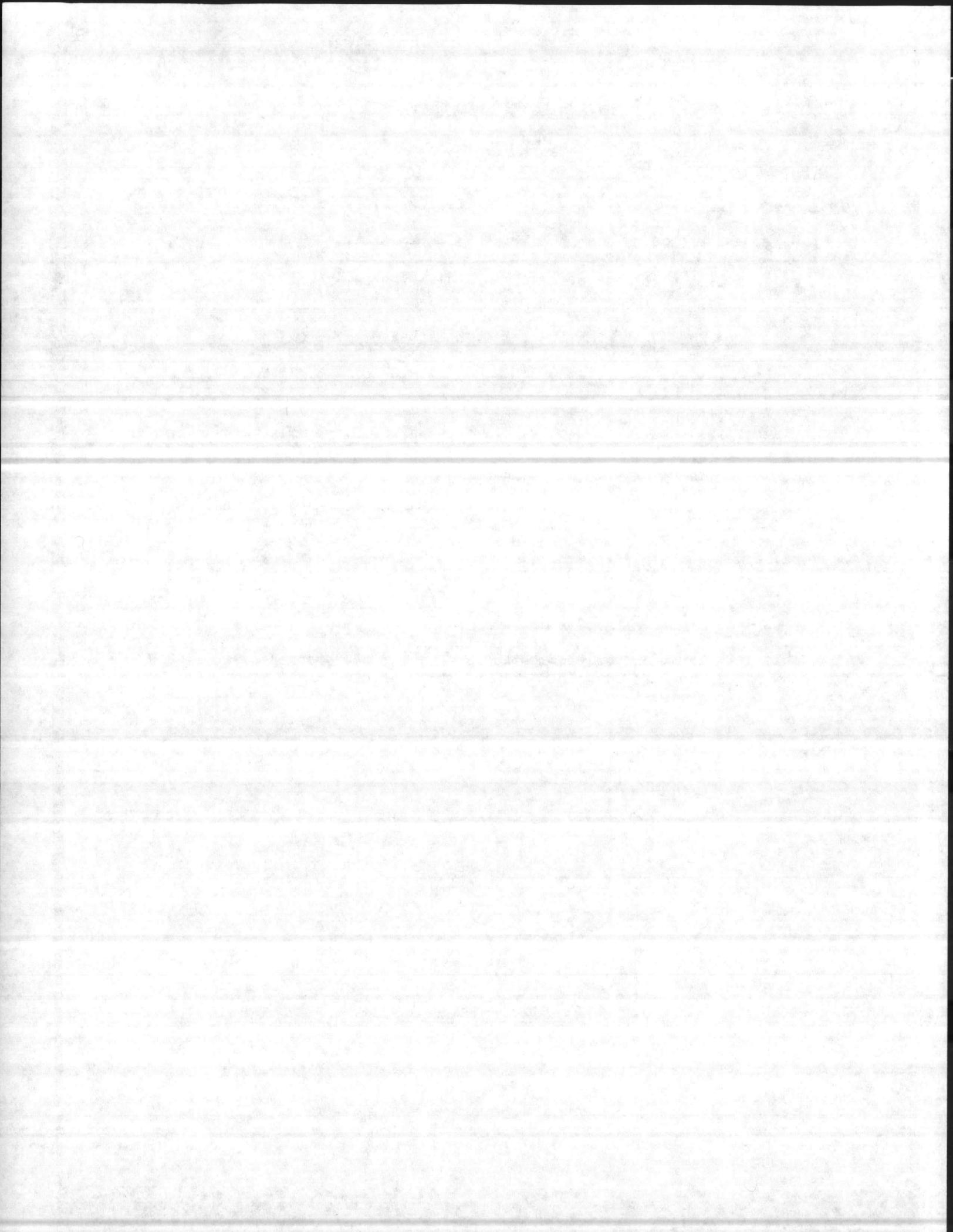
Pine timber..... 3,301,000 bd. ft.
Hardwood..... 530,200 bd. ft.
Total Timber..... 3,831,200 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine..... 95,700 bd. ft.
Hardwood..... 900 bd. ft.
Total timber cut..... 96,600 bd. ft.

PULPWOOD CUT 451.42 CORDS

This unit is made up almost entirely of white and pocosin area. There has been a very negligible gain in volume over the past eight years.



WALLAGE CREEK - FRENCH CREEK UNIT

ACREAGES

Total acreage.....	4,809
Acreage not suited to timber production.....	0
Acreage reserved for other uses.....	2,405
Acreage producing timber.....	2,404

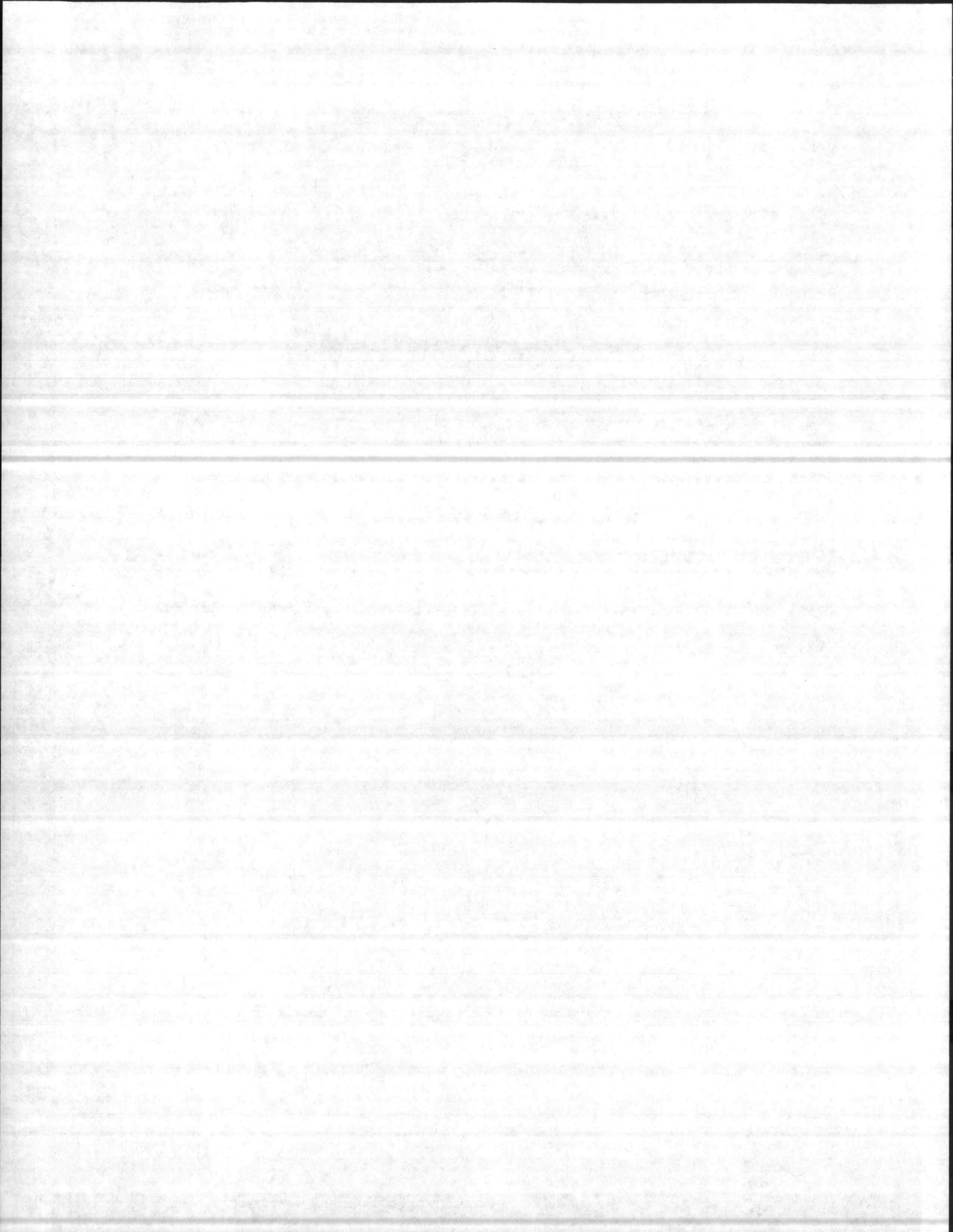
PRESENT VOLUME NOW STANDING (1954)

on 2504 Acres

Pine.....	3,911,800 bd. ft.
Gum and Poplar.....	505,400 bd. ft.
Oak.....	495,200 bd. ft.
Total timber.....	4,912,400 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine.....	842,800 bd. ft.
Hardwood.....	481,500 bd. ft.
Total timber cut.....	1,324,300 bd. ft.



SOUTHWEST CREEK UNIT

ACREAGES

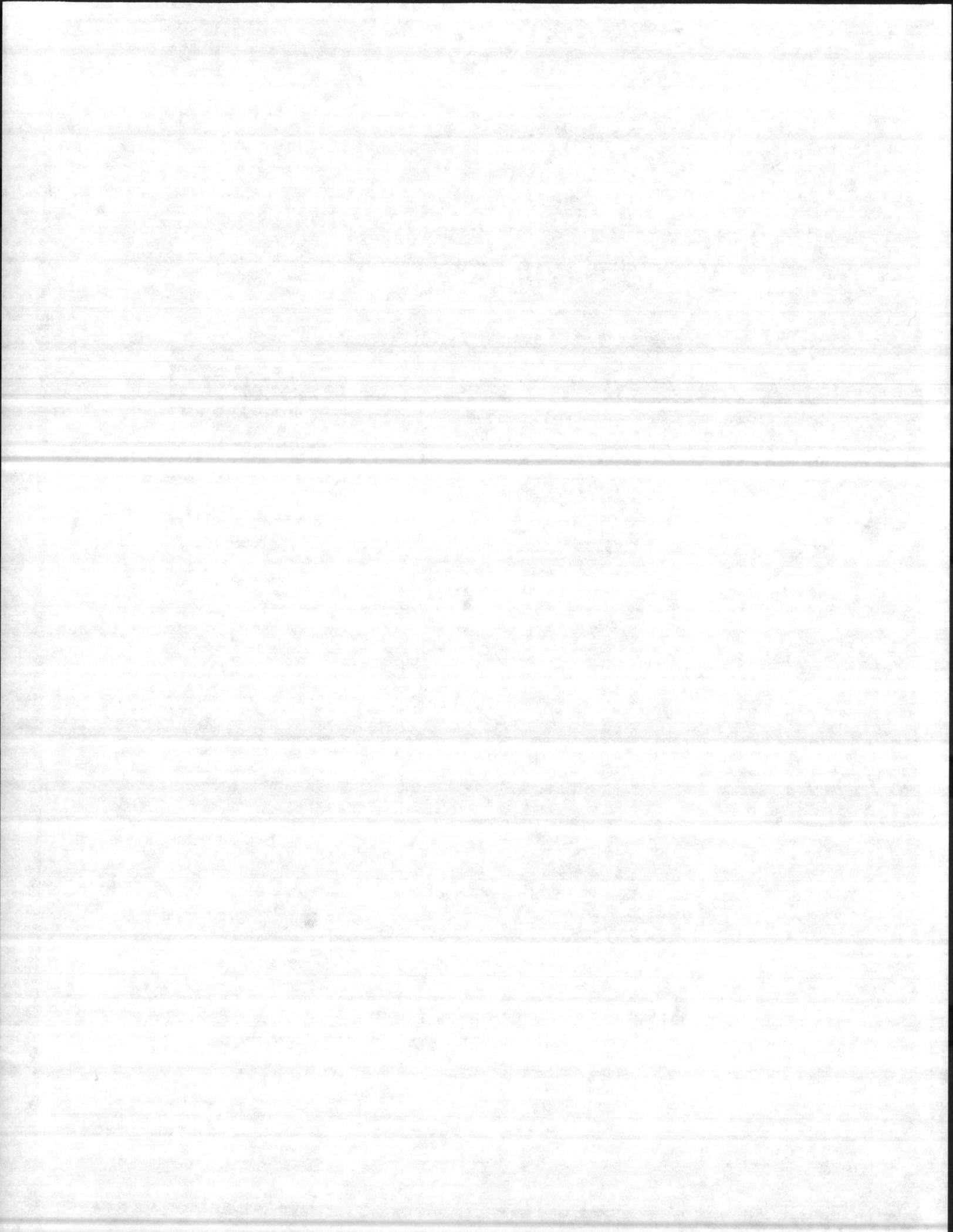
Total acreage..... 4,727
Acreage reserved for other purposes..... 120
Acreage suited for timber production..... 4,607

PRESENT VOLUME NOW STANDING (1954) ON 4607 ACRES

Pine..... 10,329,600 bd. ft.
Gum and Poplar..... 2,692,800 bd. ft.
Oak..... 815,000 bd. ft.
Total timber..... 13,837,400 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine..... 511,700 bd. ft.
Hardwood..... 114,900 bd. ft.
Total timber cut..... 726,600 bd. ft.



VERONA ROAD UNIT

ACREAGES

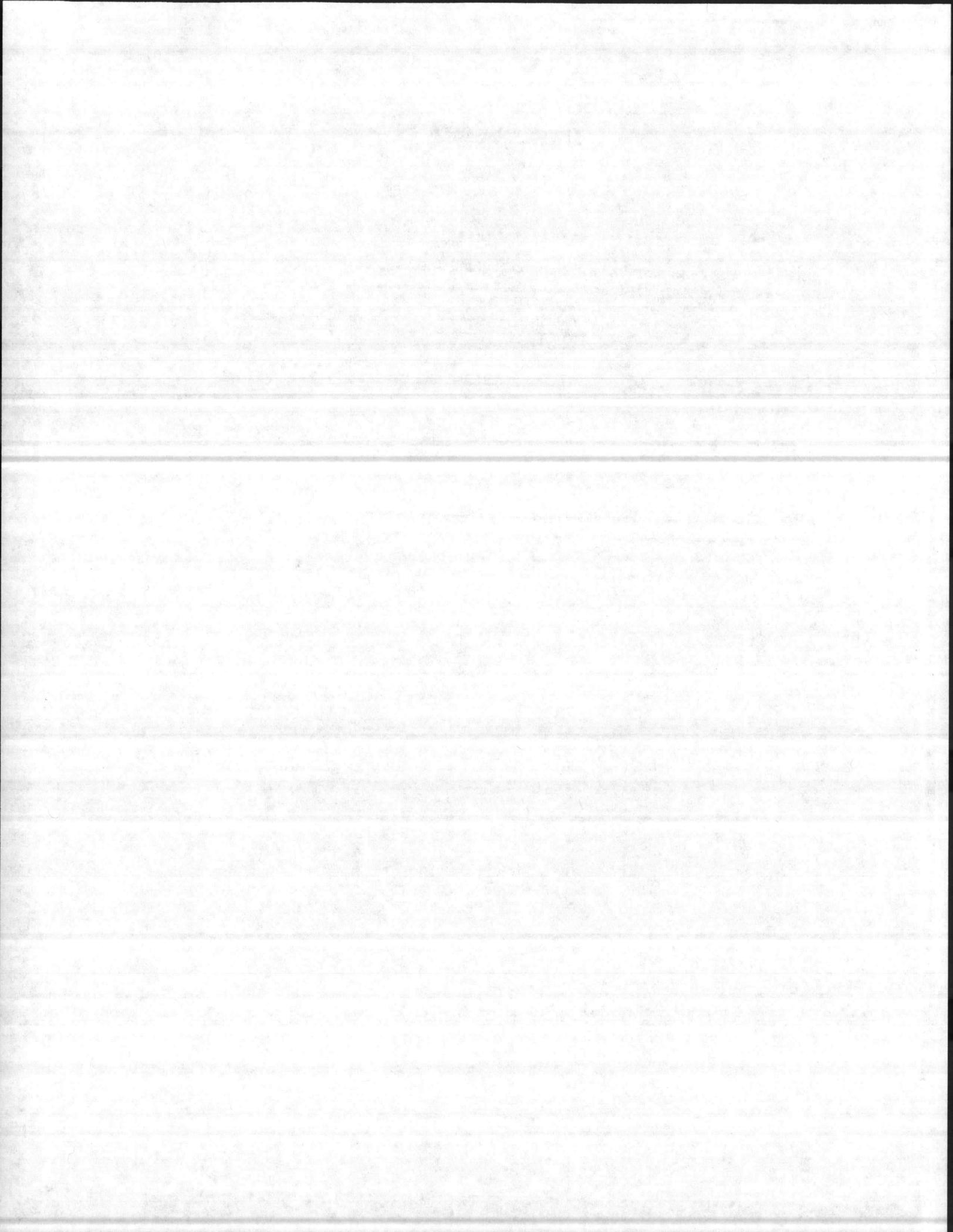
Total acreage..... 4,463
Acreage reserved for other uses..... 0
Acreage producing timber..... 4,463

PRESENT VOLUME NOW STANDING (1954) ON 4,463 ACRES

Pine..... 7,051,400 bd. ft.
Gum and Poplar..... 1,144,600 bd. ft.
Oak..... 306,200 bd. ft.
Total timber..... 8,502,200 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine..... 297,800 bd. ft.
Hardwood..... 128,400 bd. ft.
Total timber cut..... 426,200 bd. ft.



CONHEAD CREEK UNIT

ACREAGES

Total Acreage..... 4,099
Acreage reserved for other uses..... 1,487
Acreage suitable to timber production..... 2,938

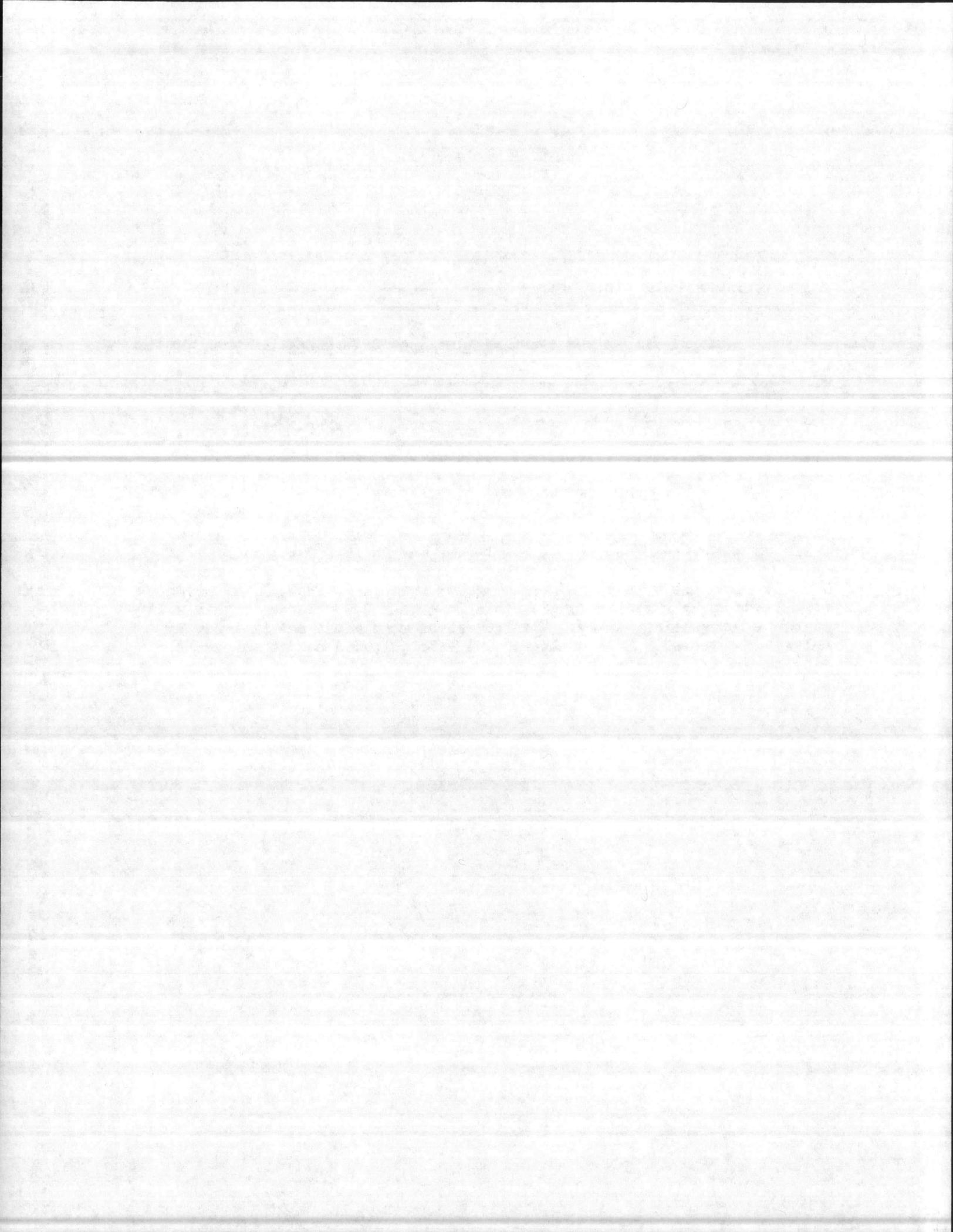
PRESENT VOLUME NOW STANDING (1954) ON 2938 ACRES

Pine..... 1,749,000 bd. ft.
Gum and Poplar..... 82,400 bd. ft.
Oak..... 8,600 bd. ft.
Total timber..... 1,840,000 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine..... 819,900 bd. ft.
Hardwood..... 9,800 bd. ft.

In 1946 this unit had a area of 4,099 acres. In 1950, 1,487 acres were taken up by a firing range. This left only 2,938 acres in this unit suitable for growing timber. The 1487 acres were clear cut in order to salvage the timber. Most of it was put into pulpwood due to the small size of the trees.



EAST WALLACE CREEK UNIT

ACREAGES

Total acreage..... 6,882

Acreage reserved for other uses..... 2,535

Acreage suitable for timber production..... 4,347

PRESENT VOLUME NOW STANDING (1954) ON 4,347 ACRES

Pine..... 4,781,200 bd. ft.

Gum..... 902,200 bd. ft.

Oak..... 155,600 bd. ft.

Total timber..... 5,839,000 bd. ft.

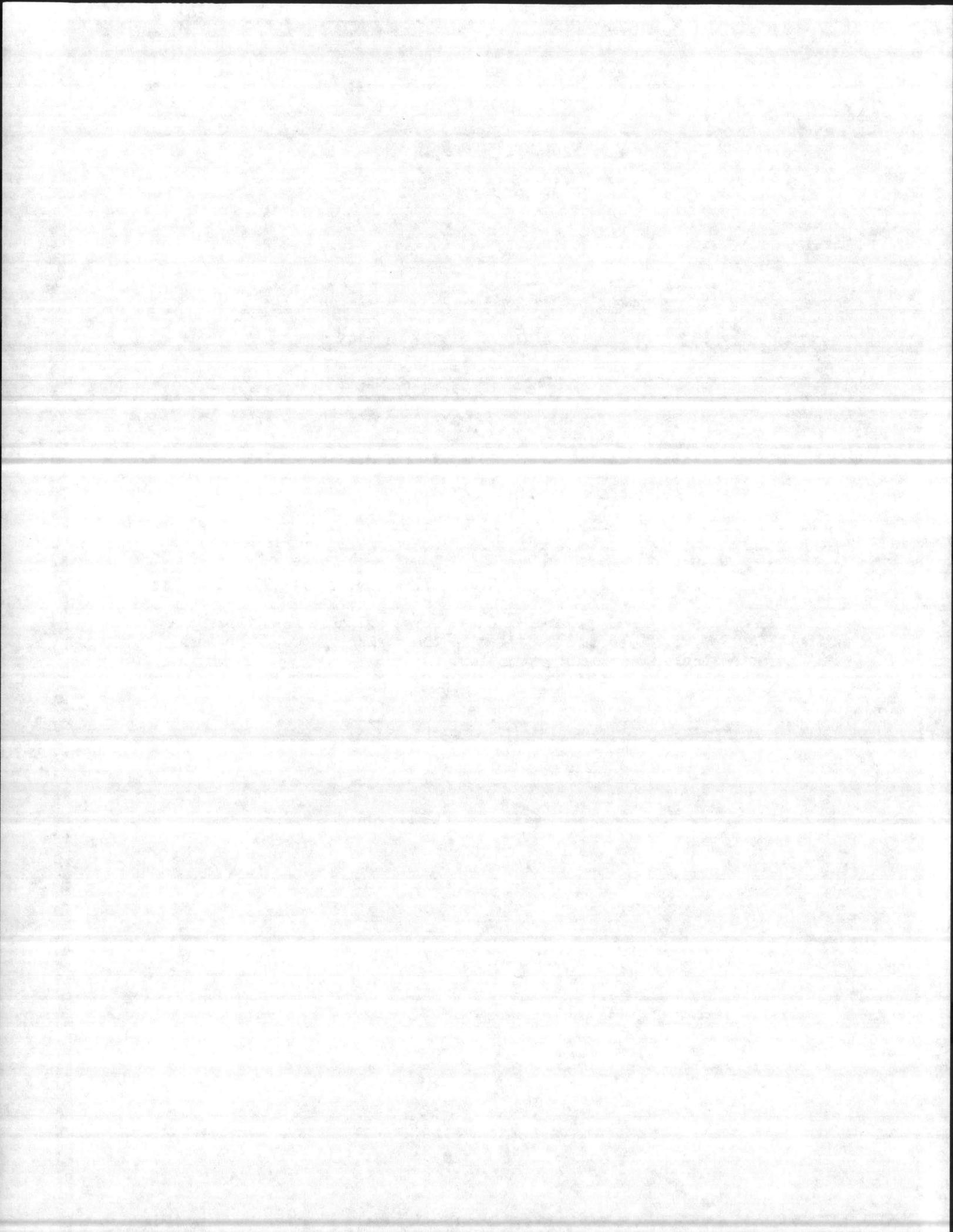
VOLUME CUT FROM 1946 TO 1954

Pine..... 989,900 bd. ft.

Hardwood..... 119,800 bd. ft.

Total timber cut..... 1, 109,700 bd. ft.

In 1946 this unit had an area of 6,297 acres suitable for timber production. In 1950, 1,620 acres were taken in the firing range. This left 4,347 acres suitable for timber production.



STARLING UNIT

ACREAGES

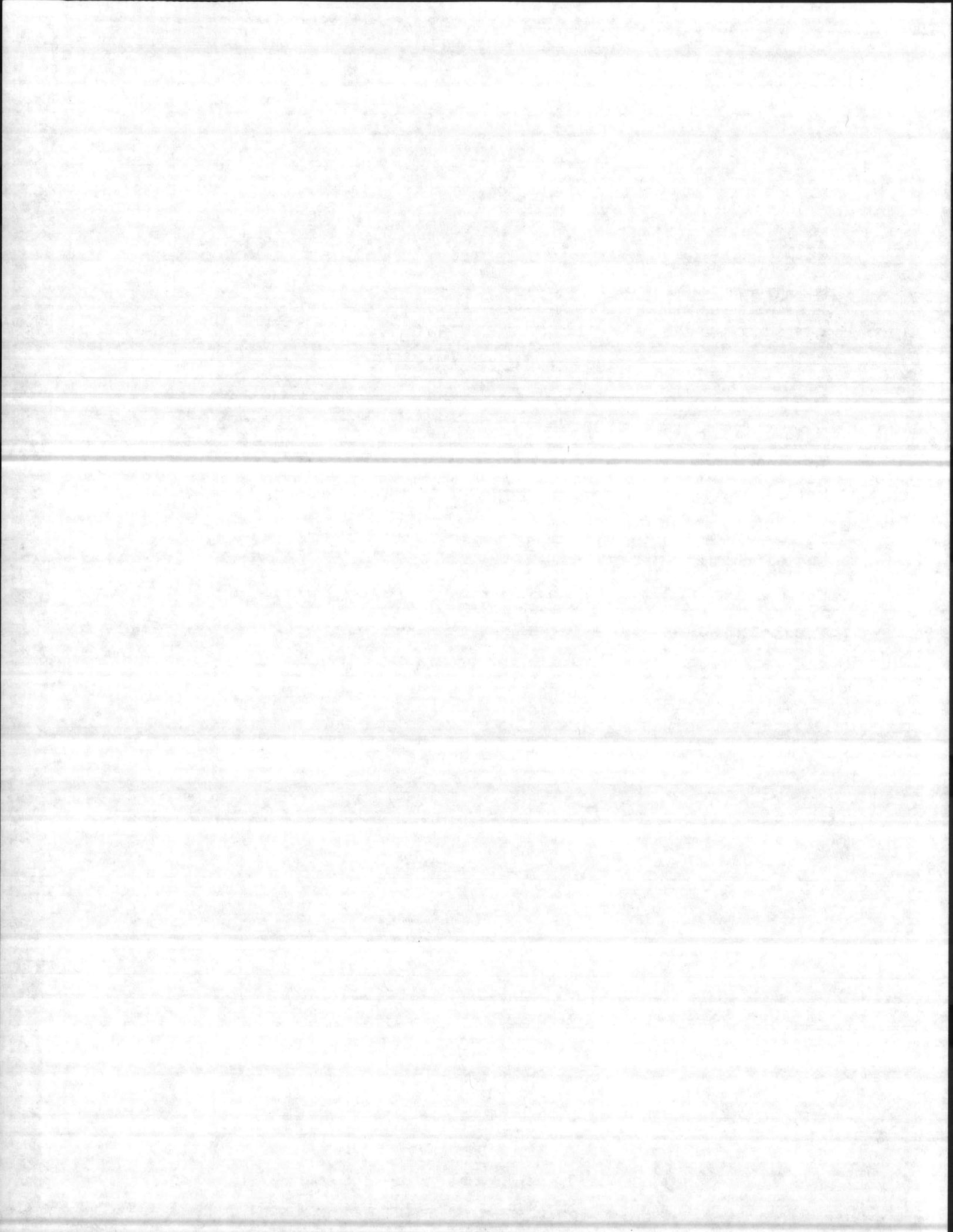
Total Acreage.....	5,103
Acreage reserved for other uses.....	806
Now timber producing acreage.....	492
Acreage producing timber.....	3,805

PRESENT VOLUME NOW STANDING (1954) ON 3805 ACRES

Pine.....	3,982,000 bd. ft.
Gum.....	453,800 bd. ft.
Total timber.....	4,435,800 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine.....	453,500 bd. ft.
Hardwood.....	28,100 bd. ft.
Total timber cut.....	481,600 bd. ft.
Pulpwood cut.....	1206,03 cords



SWEADS POINT - ONSLOW BEACH UNIT

ACREAGES

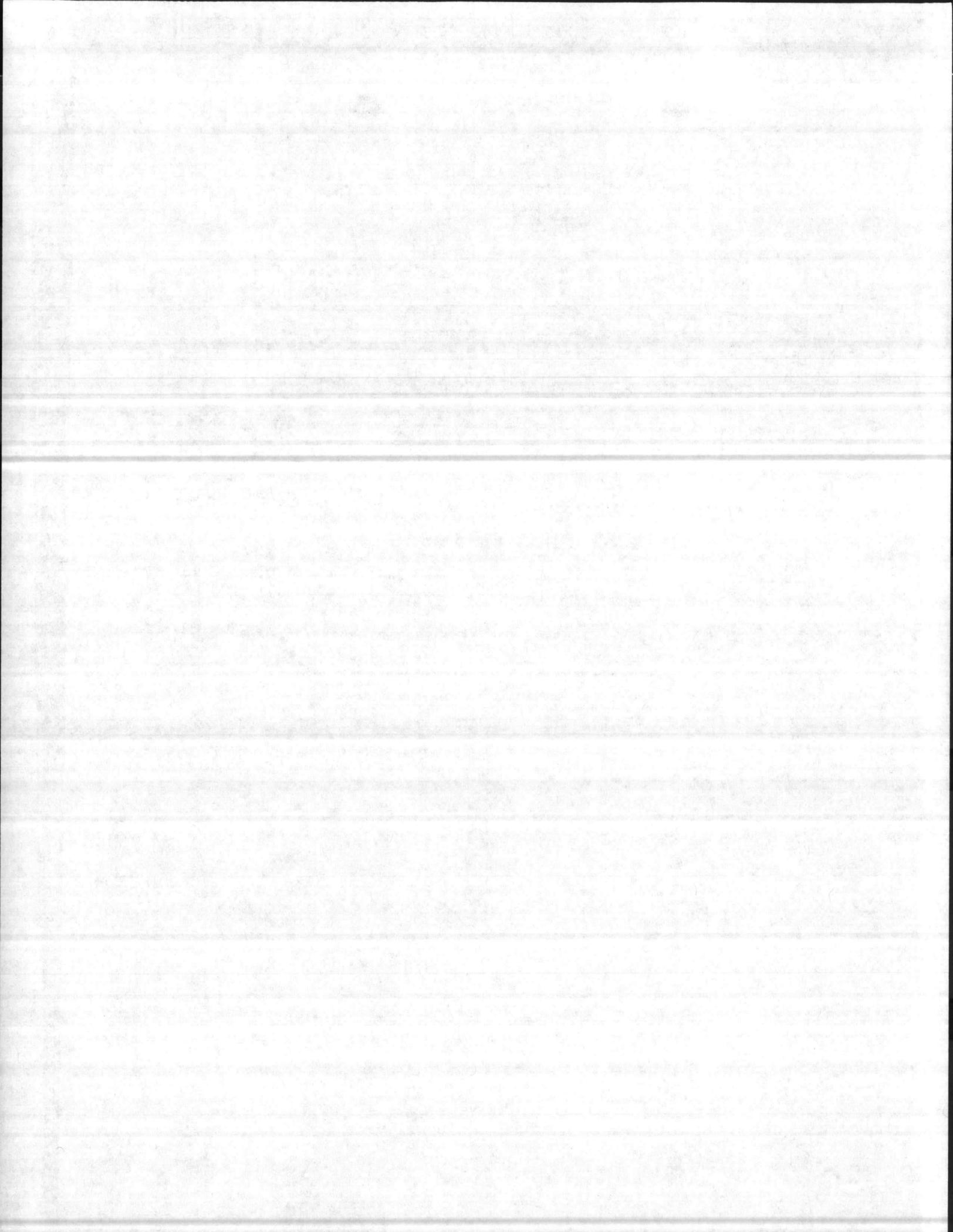
Total acreage7,007
Acreage reserved for other uses..... 279
Non timber producing acreage.....1,724
Acreage producing timber.....5,004

PRESENT VOLUME NOW STANDING (1954) ON 5,004 ACRES

Pine.....8,050,600 bd. ft.
Gum..... 395,000 bd. ft.
Oak..... 52,800 bd. ft.
Total timber.....8,498,400 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine.....1,074,100 bd. ft.
Hardwood..... 119,200 bd. ft.
Total timber cut.....1,193,300 bd. ft.
Pulpwood cut..... 2,241,77 cords



NORTH INTERCOASTAL WATERWAY UNIT

ACREAGES

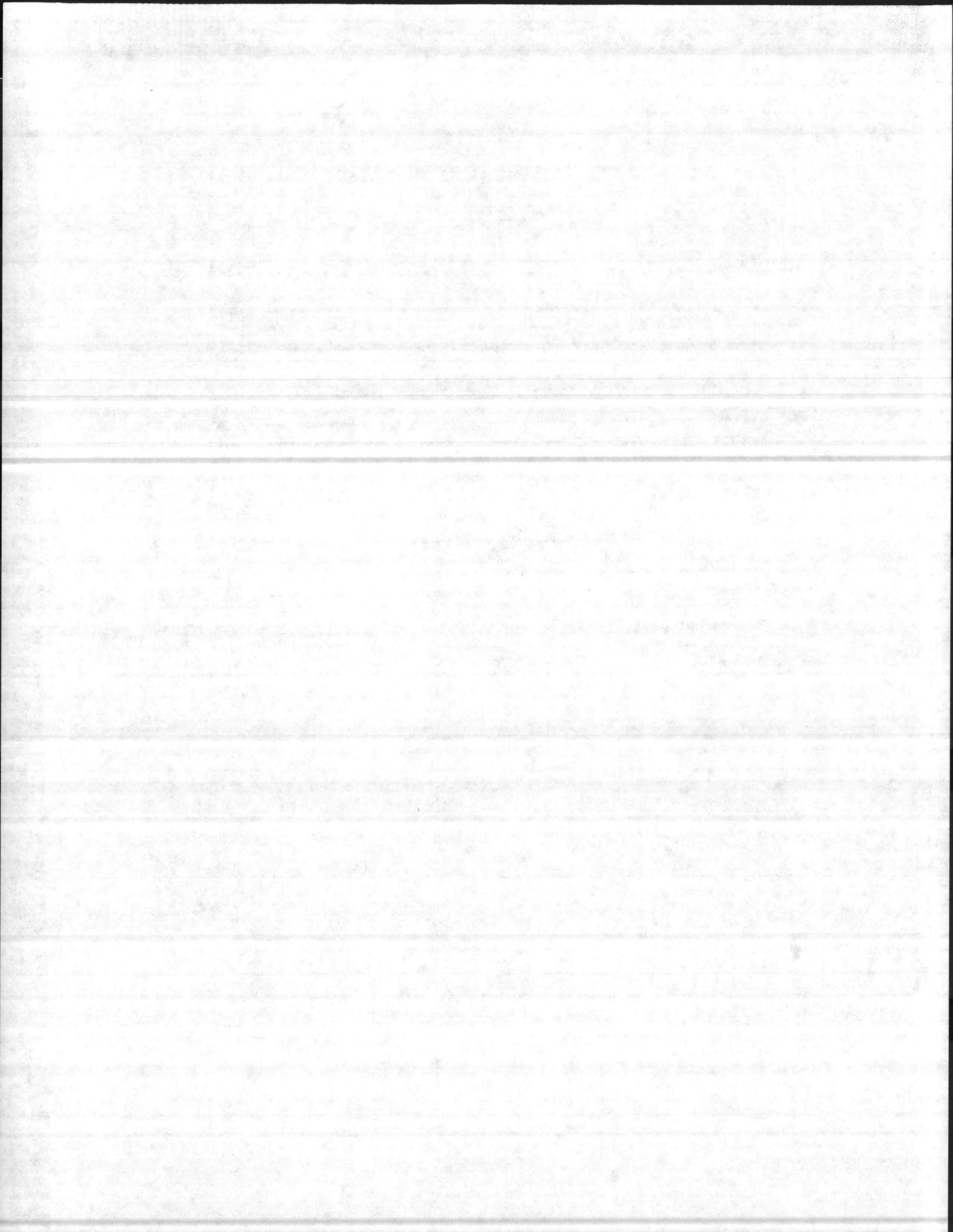
Total Acreage.....1. 7,225
Acreage reserved for other uses..... 509
Non timber producing acreage..... 3,231
Acreage producing timber..... 3,485

PRESENT VOLUME NON STANDING 1954 ON 3,485 ACRES

Pine..... 3,436,200 bd. ft.
Cum..... 239,400 bd. ft.
Oak..... 24,200 bd. ft.
Total timber..... 3,701,800 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine..... 350,400 bd. ft.
Hardwood..... 248,700 bd. ft.
Total timber cut..... 599,100 bd. ft.
Pulpwood cut..... 346,23 cords



MONTFORD POINT - CAMP KNOX UNIT

ACREAGES

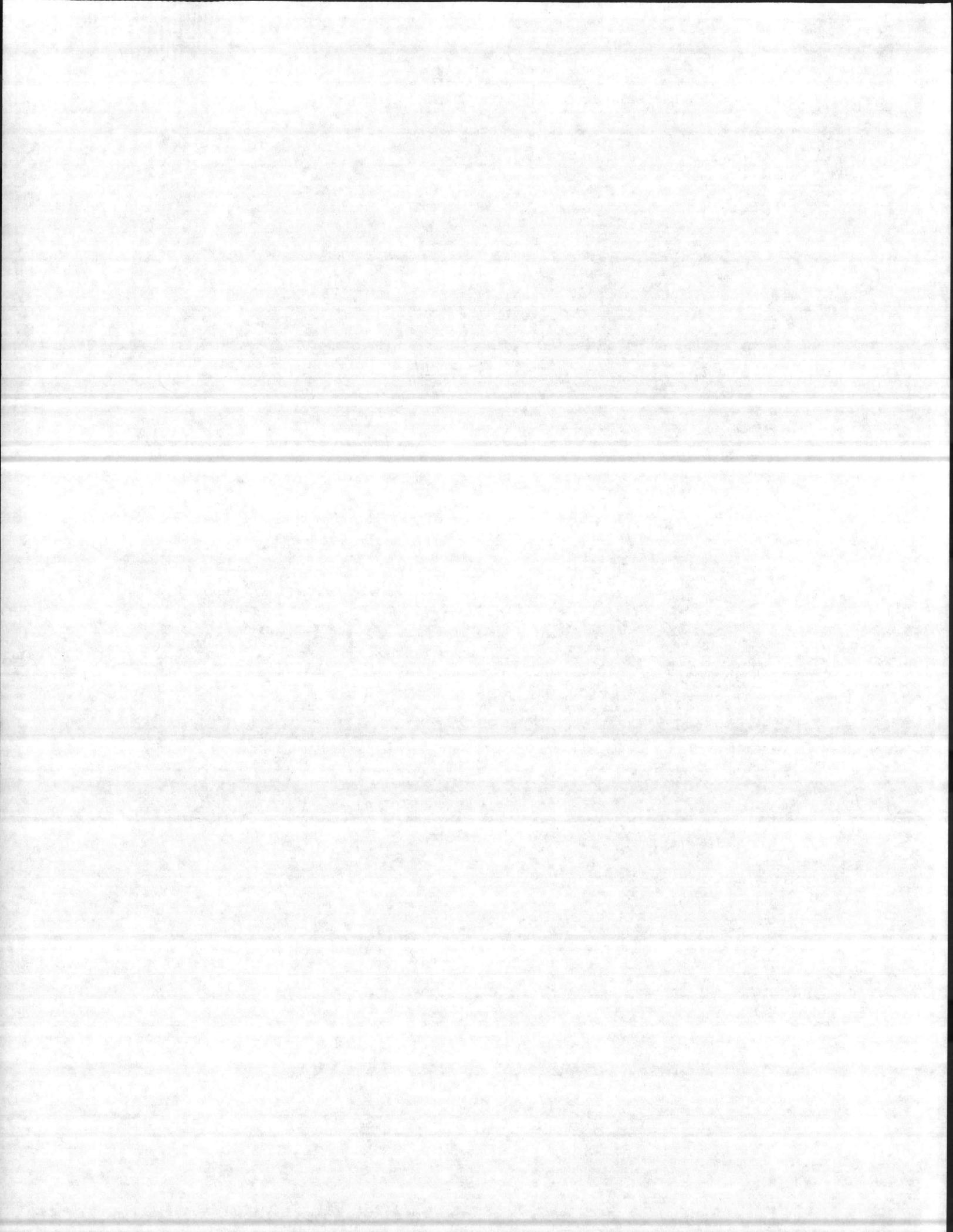
Total acreage.....	2,910
Acreage reserved for other uses.....	1,120
Non timber producing acreage.....	8
Acreage producing timber.....	1,790

PRESIENT VOLUME NOW STANDING (1954) ON 1790 ACRES

Pine.....	2,439,800 bd. ft.
Gum.....	259,800 bd. ft.
Oak.....	127,000 bd. ft.
Total timber.....	2,826,600 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine.....	850,100 bd. ft.
Hardwood.....	252,300 bd. ft.
Total timber cut.....	1,102,400 bd. ft.
Palpwood cut.....	3392,90 cords



AIRFIELD UNIT

ACREAGES

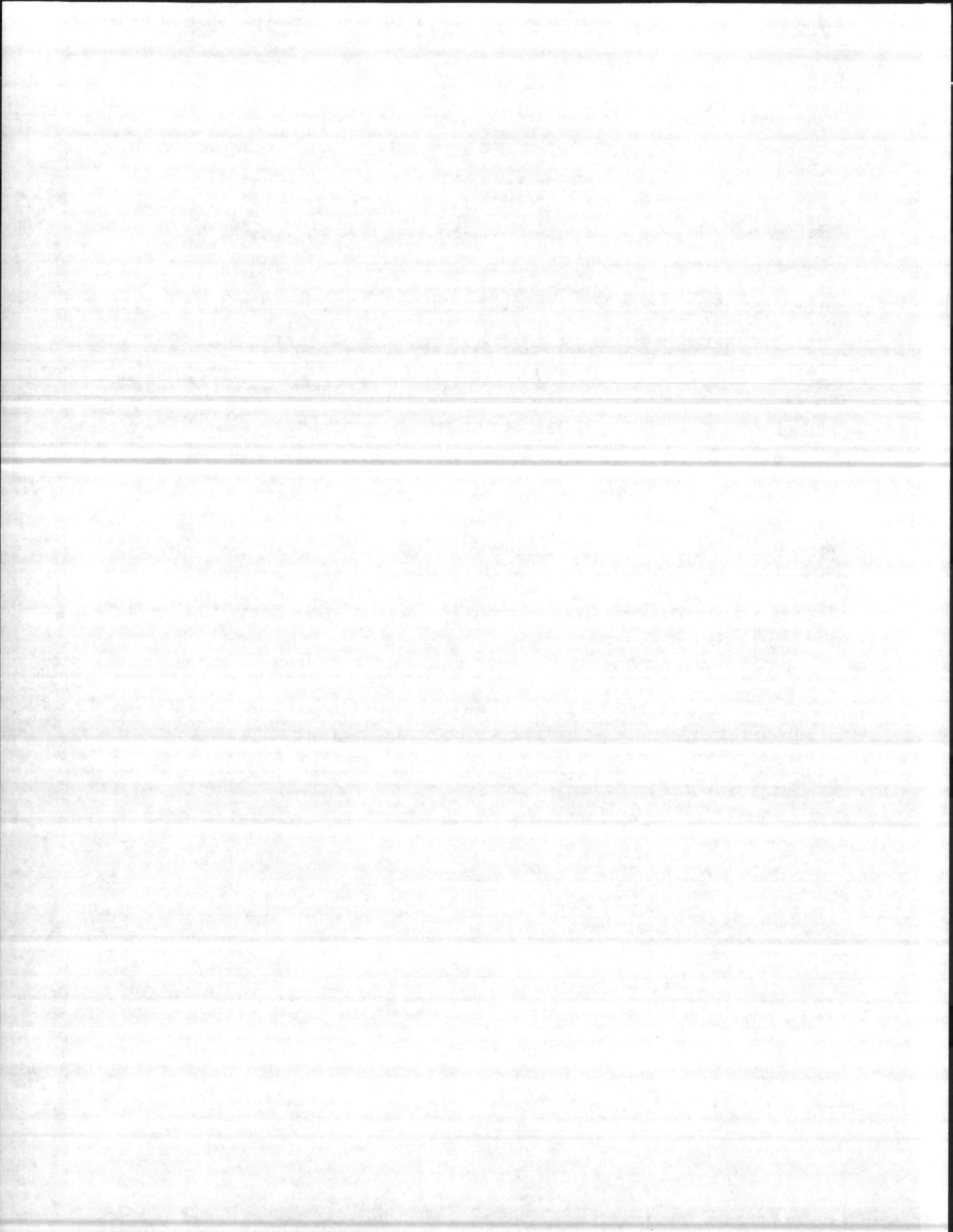
Total acreage..... 5,073
Acreage reserved for other uses..... 4,014
Non timber producing acreage..... 49
Acreage producing timber..... 1,010

PRESSENT VOLUME NOW STANDING (1954) on 1010 ACRES

Pine..... 3,190,000 bd. ft.
Gum..... 979,600 bd. ft.
Oak..... 211,400 bd. ft.
Total timber..... 4,381,000 bd. ft.

VOLUME CUT FROM 1946 TO 1954

Pine..... 400,800 bd. ft.
Hardwood..... 110,900 bd. ft.
Total timber cut..... 511,700 bd. ft.
Pulpwood cut..... 4723.44 cords



DIXON UNIT

ACREAGES

Total acreage..... 7,308
Acreage reserved for other uses..... 1,000
Non timber producing acreage..... 0
Acreage producing timber..... 6,308

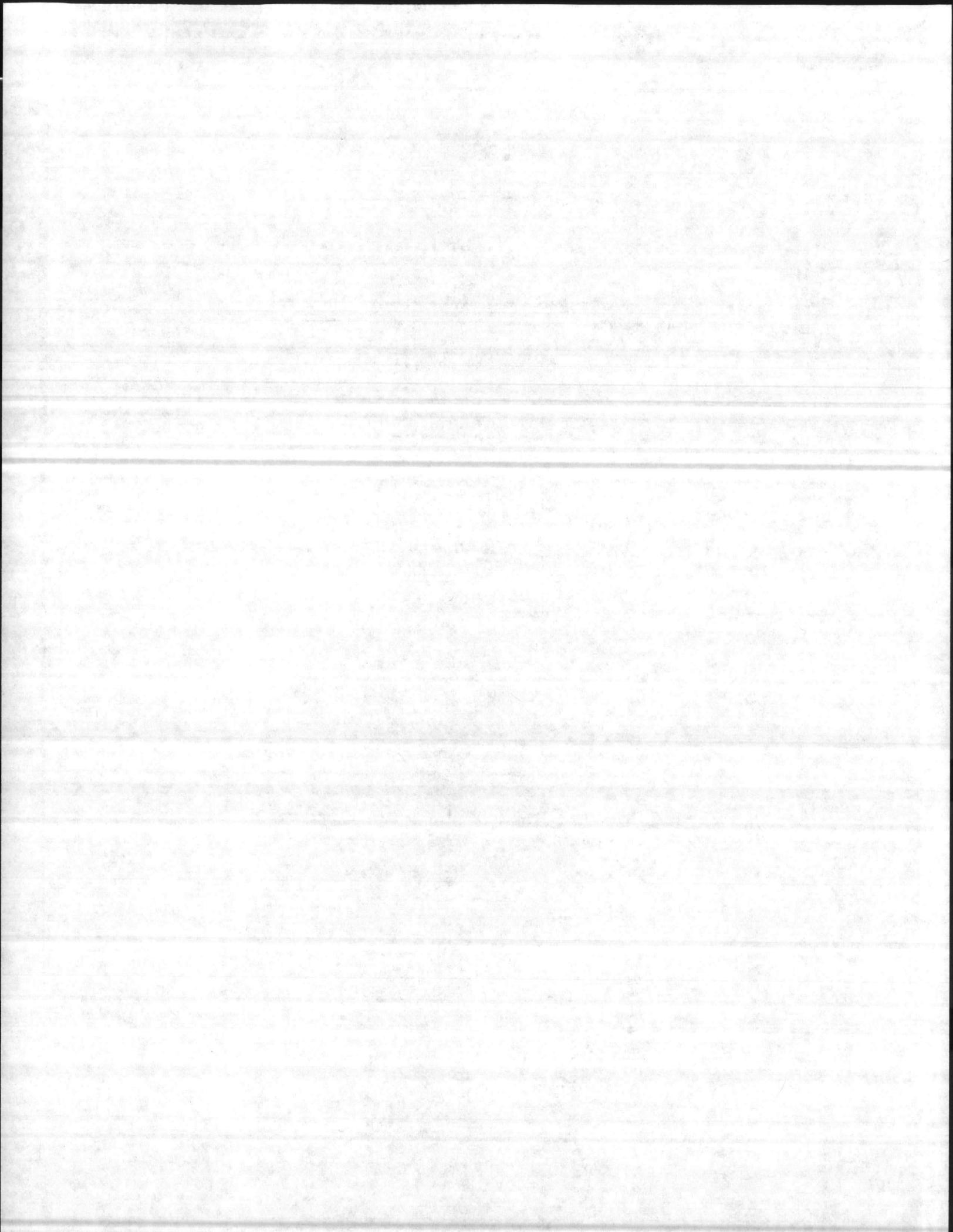
PRESENT VOLUME NOW STANDING (1954)

Pine.....14,484,000 bd. ft.
Gum..... 3,485,800 bd. ft.
Oak..... 1,243,800 bd. ft.

Total timber.....19,213,600 bd. ft.

No saw timber has been cut in this unit since 1946.

Pulpwood cut..... 3,660.60 Cords



TOTALS FOR THE CAMP

ACREAGES

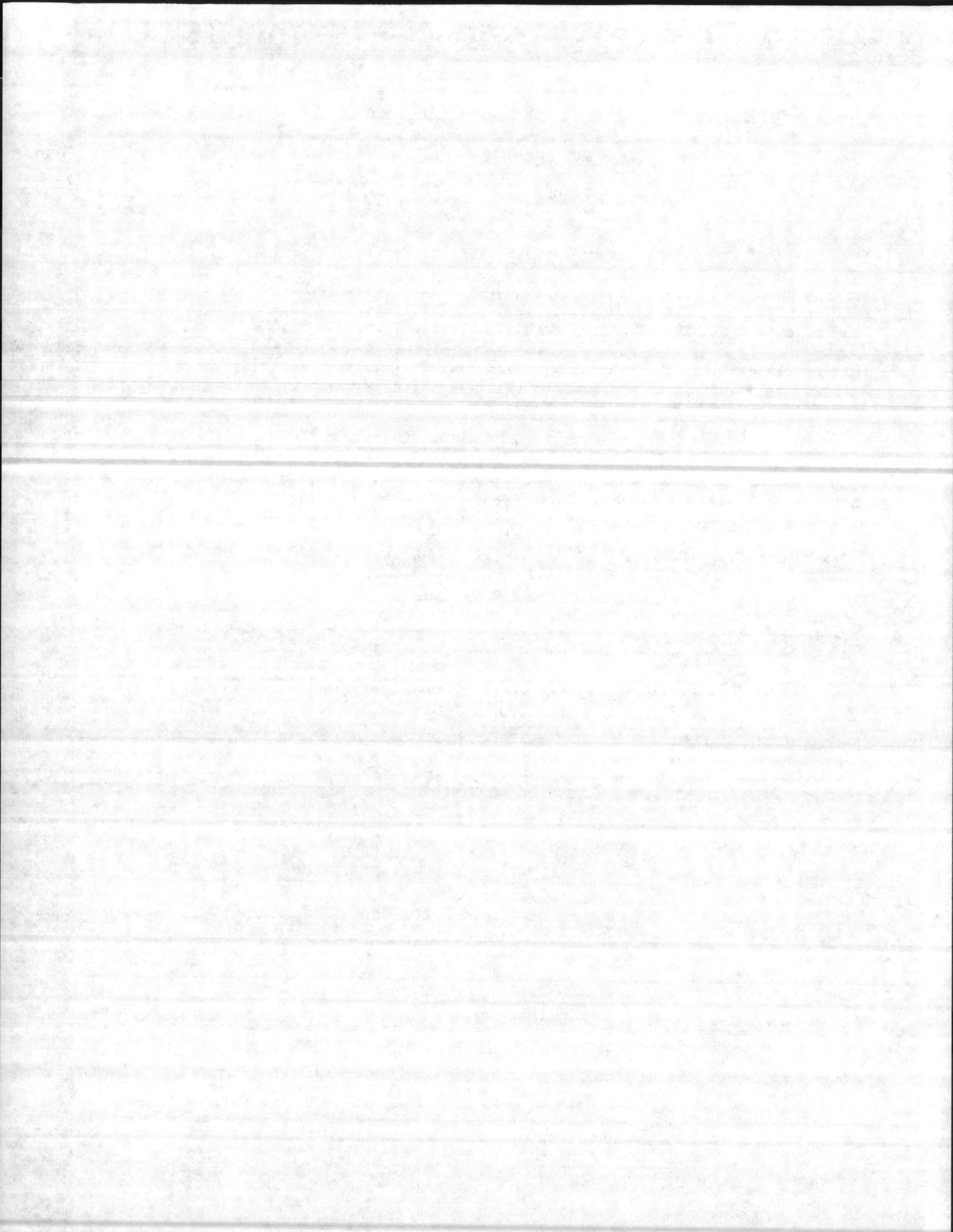
Total acreage (including water).....111,154
Acreage under water..... 26,000
Land acreage..... 85,154
Land acreage exclusive of Midway Park..... 84,629
Acreage reserved for other uses..... 24,190
Acreage not suited to timber production..... 6,537
Acreage suited to timber production..... 53,902

PRESENT VOLUME NOW STANDING (1954)

Pine.....91,775,800 bd. ft.
Cun.....14,998,600 bd. ft.
Oak..... 5,020,200 bd. ft.
Total timber.....111,794,600 bd. ft.

VOLUME CUT FROM 1946 to 1954

Pine.....8,252,800 bd. ft.
Hardwood.....2,041,500 bd. ft.
Total timber cut.....10,294,300 bd. ft.



PULPWOOD CUT (1946-1954)

Clear cut	
Area K.....	42,499.22 Cords
Other areas.....	15,792.45 Cords
Thinning.....	25,243.98 Cords
Total pulpwood cut.....	83,535.65 Cords

There has been a considerable amount of timber cut by the Camp sawmill from various areas on the camp not already shown in this report. From area K, artillery impact area there was 1,294,700 board feet cut. From areas set aside for other purposes there was 1,240,700 board feet cut. This makes a total of 2,495,400 board feet of lumber that was actually salvaged from areas that had to be cleared. Had it not been cut it would have been a total loss.

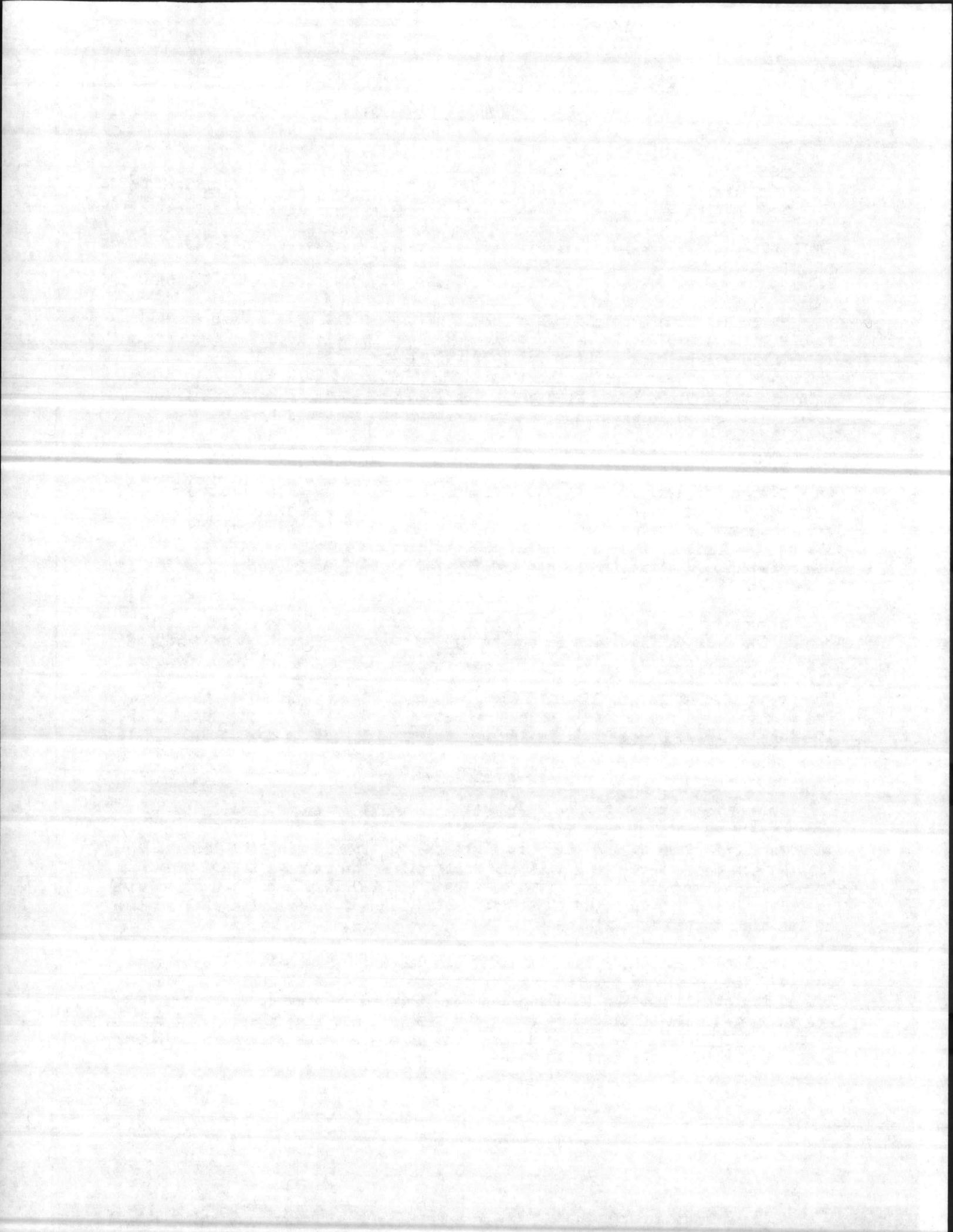
It should be remembered that the total board feet volume now standing on the base was arrived at by the Scribner Decimal C Log Rule, the same log rule that was used in the 1946 cruise. It has been shown that the actual amount of lumber that can be saved from a tree gives an overrun of 17% on the Scribner Decimal C Rule. So the cruised volume of 111,794,600 board feet would actually saw out 130,799,700 board feet if every tree 10 inches and up were cut.

As was pointed out in the 1946 Plan and should be stressed again here, one of the main difficulties is caused by the unusual proportion of hardwood that is mature and ready for harvesting. Of the approximate 10,000,000 board feet that has been cut since 1946, only 2,000,000 board feet was hardwood. The proportion of hardwood should have been much higher. If there is no way the Marine Corps can use this excess amount of hardwood it is suggested that it might be sold by contract similar to the way pulpwood is now sold.

SILVICULTURE NEEDED

As has been stated before, protection is still of prime importance. Keep fire down to a minimum and nature will take care of the rest. This has been very well done during the past eight years. Considering the tremendous fire hazard encountered on a military reservation the acreage burned over has been relatively small. Many fires have been set but they have been restricted to small areas. It is hoped that fire protection and suppression will remain at its high degree of efficiency in the future years.

The 1946 Plan stated that thinning was the main silvicultural operation needed. This has been carried out in the form of pulpwood cutting. About 85% of the stands needing thinning has been thinned. However, each year there are younger stands of timber reaching the size and age that they should be thinned. Therefore, the pulpwood operation should be continued on a modified scale for at least the next ten years.



GROWTH

At the present time it is felt there is little need for revision on the subject of growth. So far as is known these figures set forth in the 1946 plan still holds true for growth and future volume. It is yet too early to make any growth studies on stands released by pulpwood thinning.

RECOMMENDATION FOR HARVESTING

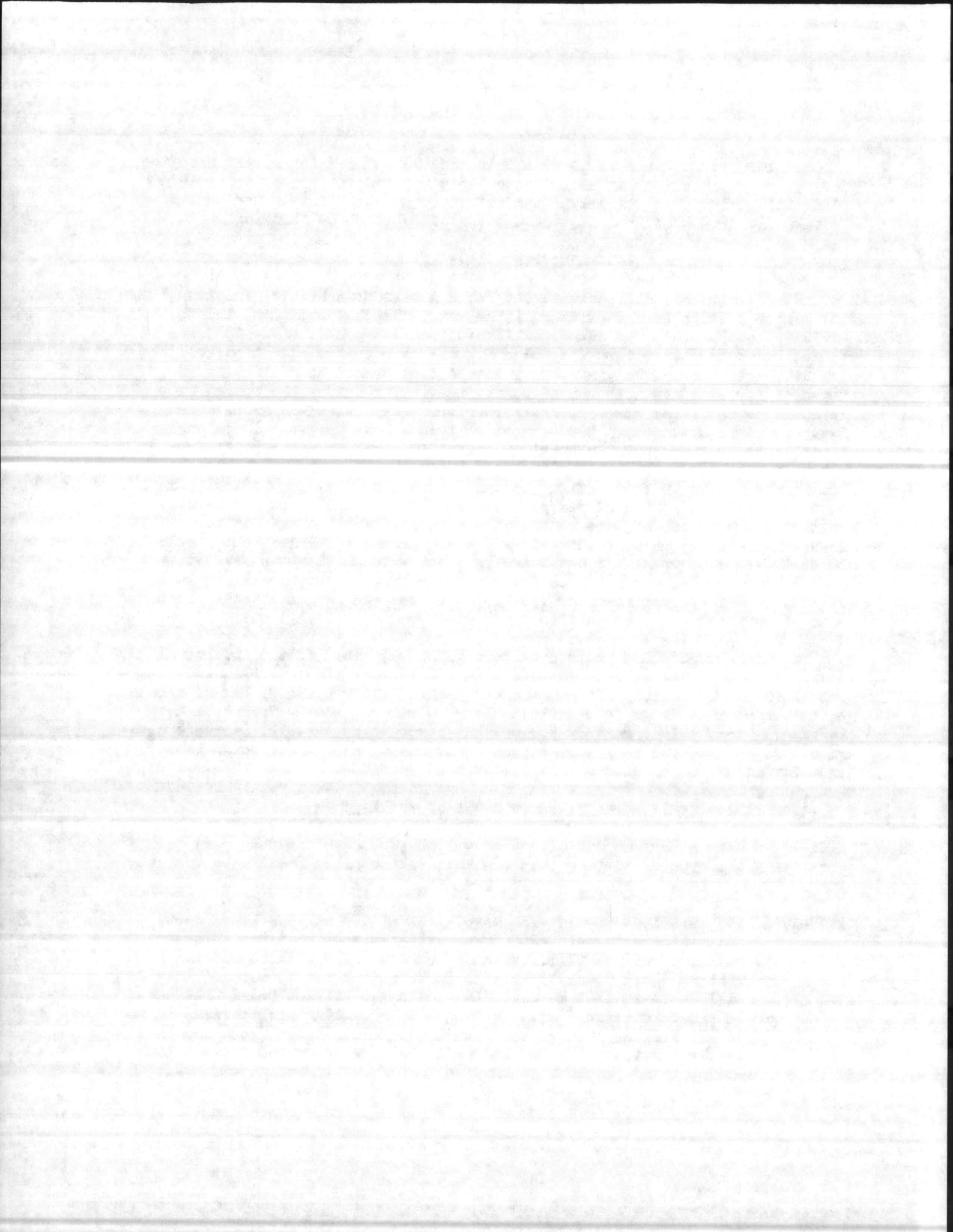
It is extremely difficult to set forth a plan or schedule for harvesting the timber on this base when there is no assurance that the plan will be strictly adhered to. The camp sawmill has been closed since May 1953 and it is not known by the writer if or when it will ever resume operation; or that any other plan for harvesting the timber will be made. When thinking in terms of forestry and timber management, one must consider the forest crop (standing timber) the same as, the farmer considers his field crops. The forester strives to obtain the same objectives as the farmer. In general terms, that is, to obtain the maximum output in quantity and quality from a given area of land. The main difference being the time element. Whereas the farmer thinks in terms of one to two years, the forester must think in terms of fifty to a hundred years. When the proper time comes the farmer must harvest his crop or lose money. The same idea applies as well to forestry. On Camp Lejeune there is a certain amount of timber that should be harvested each year. If not there is a definite monetary value lost. When a tree reaches maturity the increase in volume is very small, it loses vigor and then becomes more susceptible to insect and fungus attack. If a tree of this nature is not utilized it soon becomes a total loss.

At the present time there are about 1,500,000 board feet of timber coming to maturity each year on this base. A large portion of this is hardwood such as tupelo gum, red gum and oak. This timber needs to be and should be cut, otherwise there is a definite loss in value. Another point to keep in mind is that this amount of timber that needs to be cut will increase each year. As pointed out in the 1946 plan a maximum of 13,000,000 board feet annually might be produced within the next 15 years.

The following is a suggested schedule of cutting;

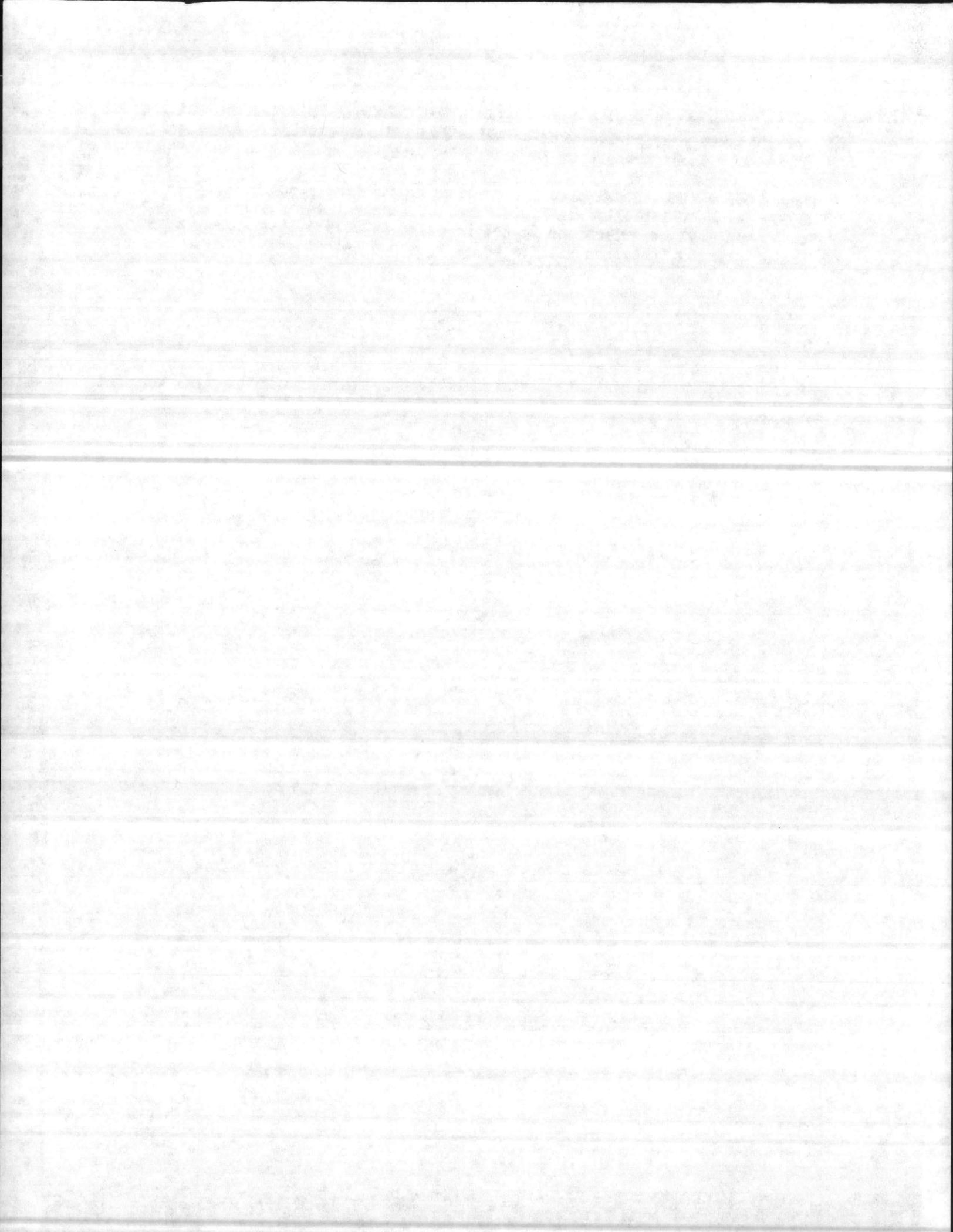
1954-1956 Make a maximum cut of not over 1,500,000 board feet a year, continuing the type of cutting that has been taking place for the past eight years.

1957-1966 1957 and 1958 should each have a cut of two million board feet. This will be in unit #15 (Dixon Unit) as that unit has a larger volume of mature timber than any other. 1959 will be cut in unit #2 (Duck Creek) with a production from two to two and a half million board feet a year. In 1961 three million board feet can be produced in unit #1. In 1962 - 1965 cutting will be from three to six million feet a year from Unit #3 (Southwest Creek) and Unit #6 (Verona Loop). 1966 will be taken care of by the 9th and 10th



Units, from which six to ten million board feet may be cut. The cutting for this ten year period will be selective release cutting. By that is meant only those trees over 14 inches DBH will be cut.

From 1966 on the actual plan for cutting should take place with about 2,000 acres of loblolly and 1,000 acres of longleaf cut yearly. The area to be cut must be determined by the forester in charge, but unless some factor changes, thirteen million board feet can be cut every year.



Memorandum

FOR: Assistant Chief of Staff, G-4

DATE: 3 Aug 1961

FROM: Assistant G-4

SUBJECT: Base Forest Management Program; report of

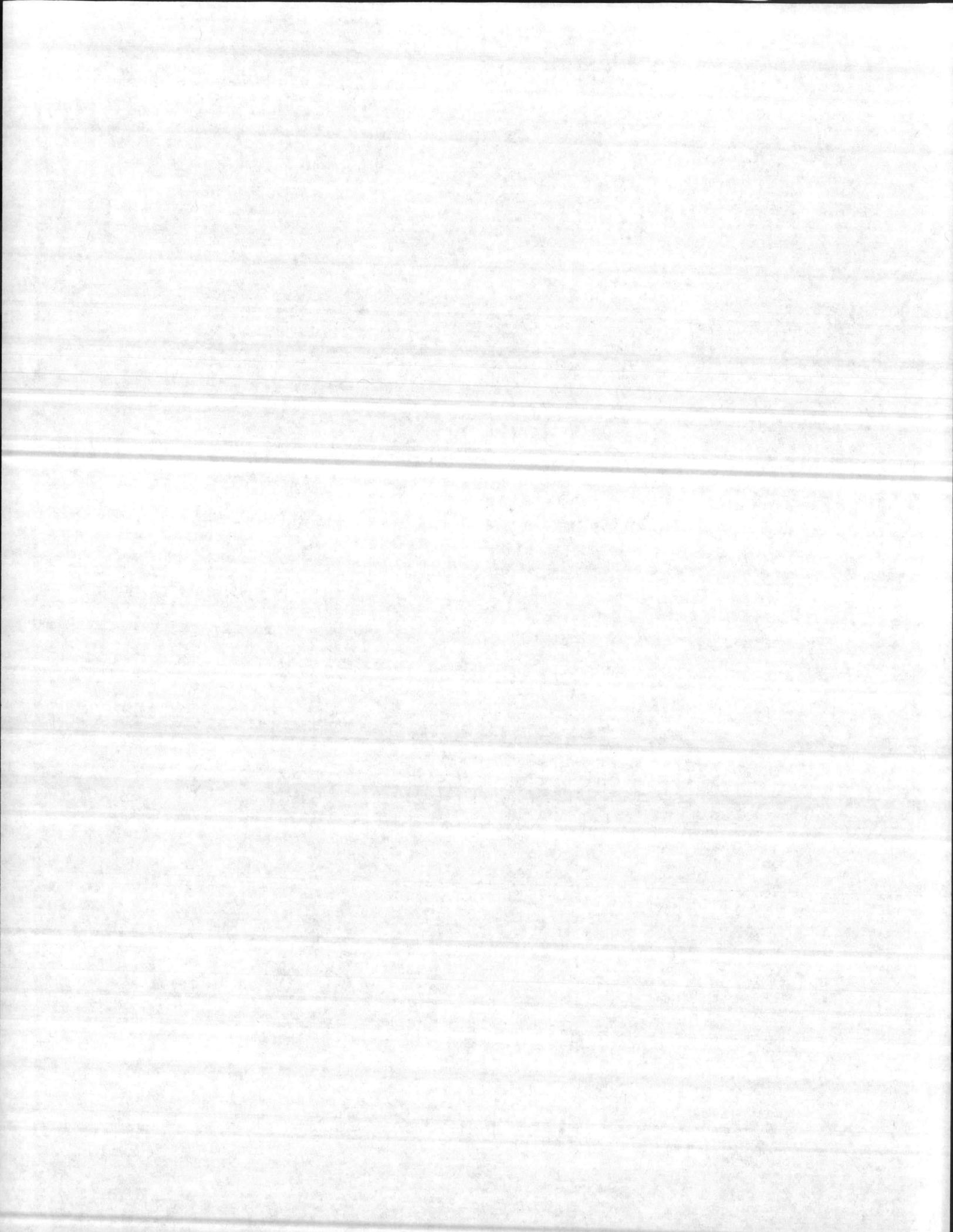
1. **BACKGROUND.** In the spring of 1946 an extensive survey was made of the forest resources on Camp Lejeune in order to develop a long range Forest Management Plan. This survey was made to determine the following essential factors with which to formulate a management plan:

- a. What timber is on hand at the present time?
- b. What timber might be expected in the future?
- c. How to use the area, both now and in the future?
- d. Where and what type products can be marketed profitably?

2. The initial Forest Management Plan was projected for 20 years (FY 1947 - 66). In view of the fact that, since the initial plan was formulated in 1946, over 10,000,000 board feet of timber had been cut and an additional 8,000 acres had been taken for firing ranges, housing projects, and other purposes, a new timber survey was conducted in the Spring of 1954 in order to re-evaluate and update the initial plan. Still another report was prepared in April 1957 to reflect the forestry conditions as they then existed on the Base.

3. In 1946 the total acreage of the Base was categorized for the timber survey, as follows:

Water acreage	26,000
Land acreage	85,154
Total acreage (approximately)	111,154
Reserved for other uses	14,158
Not suited for timber	7,908
Suited for timber	62,211
Badly burned, but capable of timber production	877
Total land acreage	85,154



Acres of pine (all types)	56,883
Longleaf & Loblolly	15,326
Pure Longleaf	12,004
Pure Loblolly	29,553
Acres of hardwood (all types)	4,451
Total acres of timber	62,211

In order to facilitate the efficient operation of the Forest Management plan, the Base was divided into 15 units of about 5,000 acres each.

4. The percentage of forest types was determined in the 1946 survey to be as follows:

Pine

Longleaf & Loblolly	27%
Pure Longleaf	21%
Pure Loblolly	52%

Hardwood

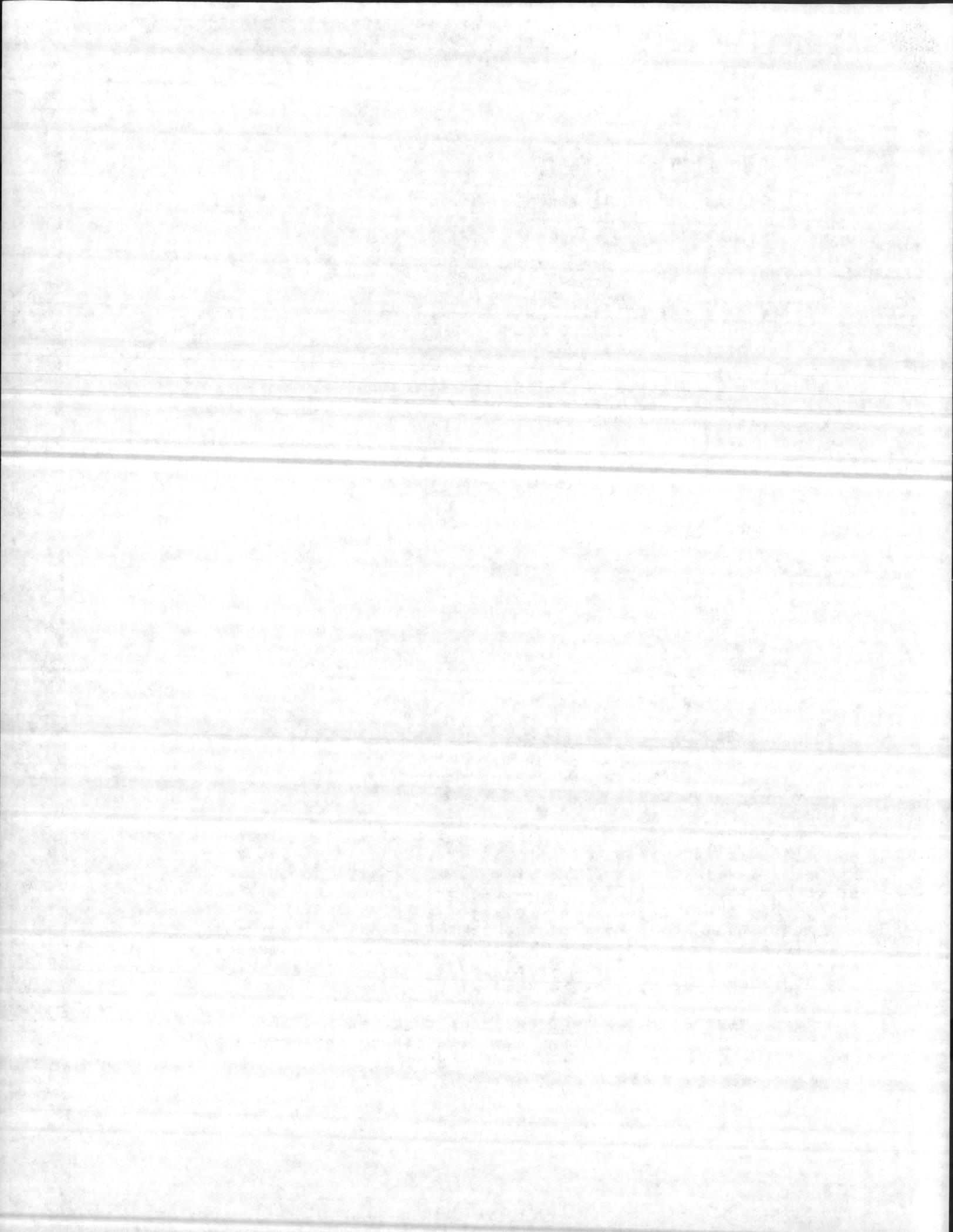
Black and Red Gum	50%
Red and White Oak	40%

Mixture (Ash, Yellow Poplar, Hickory, Maple, Elm) 10%

??

5. The survey produced definite statistics of the timber on hand and provided data from which to accurately predict future yields. It was determined that there were about 115,104,800 board feet of timber standing (10" - 14" diameter). However, only about 23,020,960 board feet of this was ready for harvest (14" diameter and above) and about half of the latter amount was hardwood. For this reason, it was planned to cut at a slow pace (about 1,500,000 board feet per year) for several years to give these trees under 14" diameter time to grow to this size.

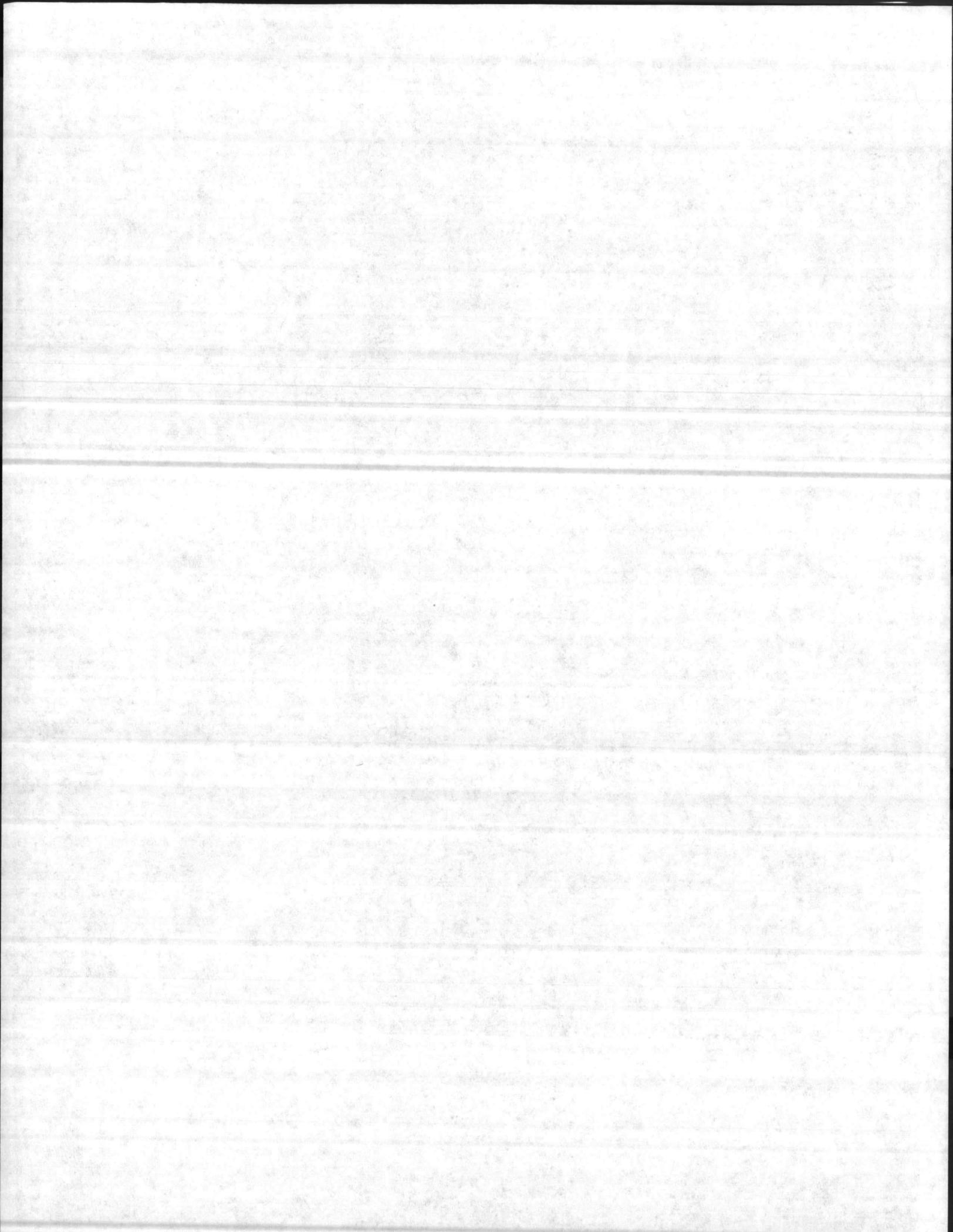
6. In predicting future yields, consideration must be given to the rotation age (the felling age of a stand, determined by the size of the tree to be logged) and the cutting cycle (the number of years between cutting over an area). There may be one or



several cutting cycles within a rotation age, depending on whether the cutting operation is a "clear cut" or "selective logging". In this area, for the type of timber present, the rotation age is determined as 14 inches diameter, the size up to which growth is the greatest. After this time, growth falls off gradually and the tree loses some of its vigor, thereby becoming more susceptible to disease and rot. Camp Lejeune timber has two rotation ages; the Loblolly Pine will grow to 14" in diameter in 15 years; the Longleaf Pine and the Loblolly - Longleaf Pines take 25 years to grow to 14" in diameter. This permits three cutting cycles per rotation for each type of pine; the Loblolly Pine is cut every 15 years and the Loblolly - Longleaf and pure Longleaf Pines are cut every 25 years. Moreover, since this is a military reservation the use of areas must be compatible with the needs of the Marine Corps for maneuver and impact areas and for other purposes, some of which preclude the growing of any timber for harvest.

7. The growth rate of timber on the Base is as good as that of surrounding areas and in some places it is better. In 1945 the average age of the Loblolly Pines on the Base was 20 years, and that of the Longleaf was 10 years. Of course, trees of all ages were found, but the majority of the areas were stocked with young trees. At that time there were 29,553 acres of growing Loblolly Pine capable of yielding 350 board feet per acre per year and 27,330 acres of growing Longleaf Pine which would yield 200 board feet per acre per year. It was contemplated that, if these areas were managed properly, by the end of a 20 year period (FY 47 - 66) the Loblolly Pine area (29,553 acres) would be covered every 15 years, resulting in the annual selective cutting of 1,970 acres, while the Longleaf Pine area (27,330 acres) would be covered every 25 years, resulting in the annual selective cutting of 1,090 acres, resulting in a total yield for both types of pine of about 13,000,000 board feet per year. This could be accomplished without depleting the growing stock. No study of the hardwood growth was made because of the relatively small quantity and the variety of hardwoods found on the Base, and since a great deal of the merchantable stand in 1946 was ready for harvest then. The plan was to harvest the merchantable hardwood as fast as possible and while conducting thinning operations for pulp, to remove as much as possible of the poor grade hardwood, such as gum.

8. In 1945 the timber on the Base was not a mature forest, with a normal age distribution of trees such as are found in a forest that has been under management, but was largely a young, vigorous growth of poles and reproduction whose products were for future harvest. This condition resulted from the wave of cutting of merchantable pine prior to the acquisition of the Base and the extensive non-selective cutting of pine by portable Navy mills just



after the acquisition of the Base. In view of this, the regular cutting cycle could not be inaugurated until sufficient trees reached maturity. Harvesting for a period of about ten years (FY 47 - 56) was to be limited to thinning and scattered spots of merchantable timber, yielding about 1,500,000 board feet per year. Cutting was then to be gradually accelerated until the maximum annual yield of which the Base forest is capable of producing (13,000,000 board feet) was reached in FY 67. Accordingly, the following schedule for annual cuttings was set forth in the management plan:

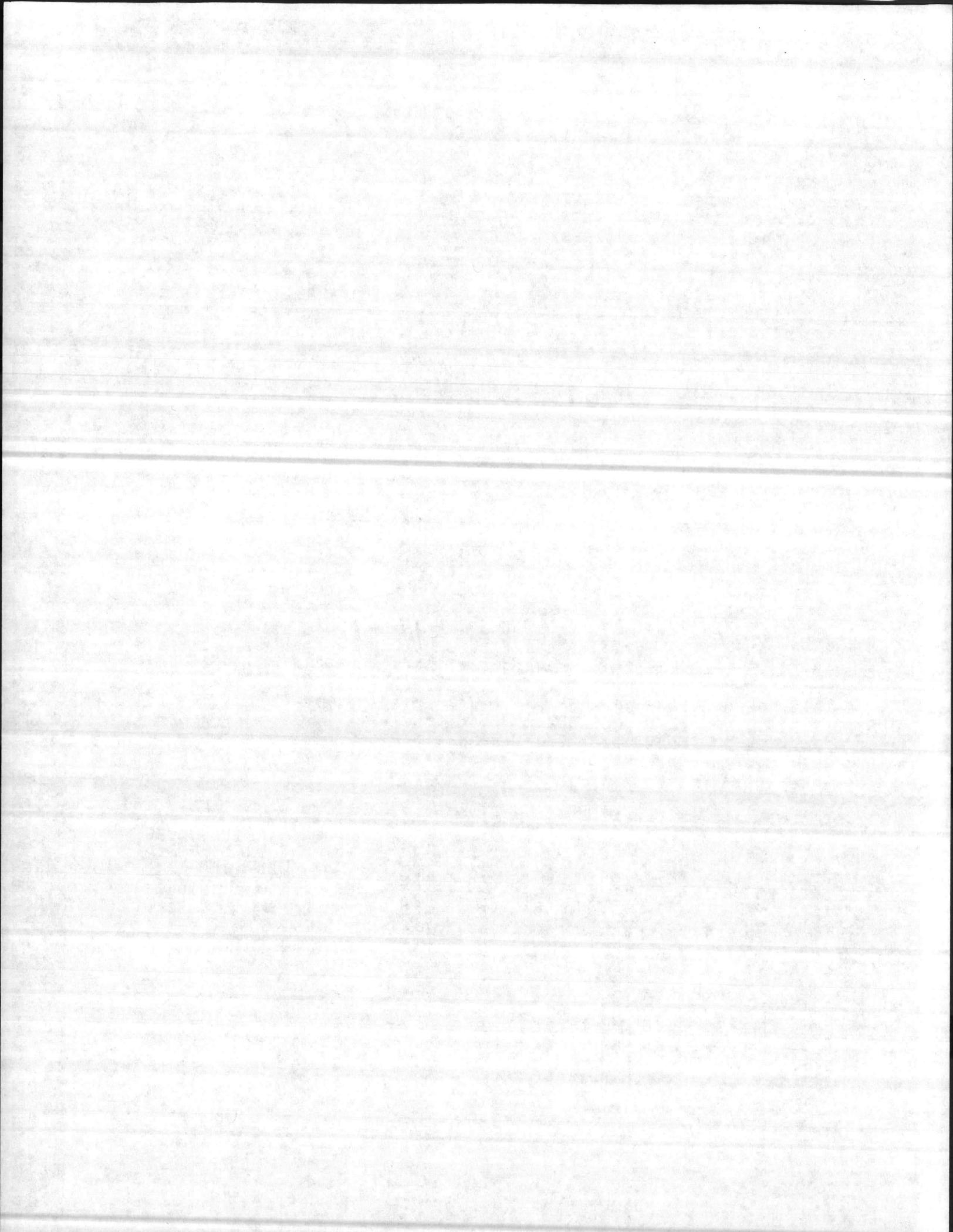
FY 47 - 56	1,500,000 bd ft per yr
FY 57 - 58	2,000,000 bd ft per yr
FY 59 - 60	2,500,000 bd ft per yr
FY 61 - 65	3,000,000 bd ft
FY 62 - 65	3 - 6,000,000 bd ft per yr
FY 66	6 - 10,000,000 bd ft
FY 67 - , subsequent yrs	13,000,000 bd ft per yr

9. The 1946 survey made no mention of lumber being sold. It appears that it envisioned the cutting would be done on a limited basis during the first few years and the logs would be processed through the Base sawmill for use by Base activities. It was determined that the sawmill which was in operation in 1946 could adequately handle the cuttings during the preliminary years of adjustment and the annual increase until FY 62 when the daily cutting would reach such a volume that a larger mill or an additional mill or mills would be required.

10. Operation of Forest Management Plan (1946 - 1954)

In the Spring of 1954 another timber survey was conducted in order to reevaluate and up-date the Forest Management Plan of 1946. It was not intended that the 1954 report should supersede or replace the 1946 plan, but that it should serve to more accurately reflect the acreage still remaining for timber harvesting, the volume of timber then on hand, and to review recommendations for future cutting. This survey revealed the following data:

Water acreage	26,000
Land acreage	85,154
Total acreage (approximate)	111,154



Harvested 1st other areas	24,747
Not available for timber	14,587
Left for timber	28,742
Total land acreage	88,134

Cuttings FY 47 - 53

Saw Timbers:

Pine	8,252,800 bd ft
Hardwood	2,041,500 bd ft
Total	10,294,300 bd ft
Average annual cutting	1,470,574 bd ft

2,096,400 bd ft were salvaged from Area A and other areas that had to be cleared.

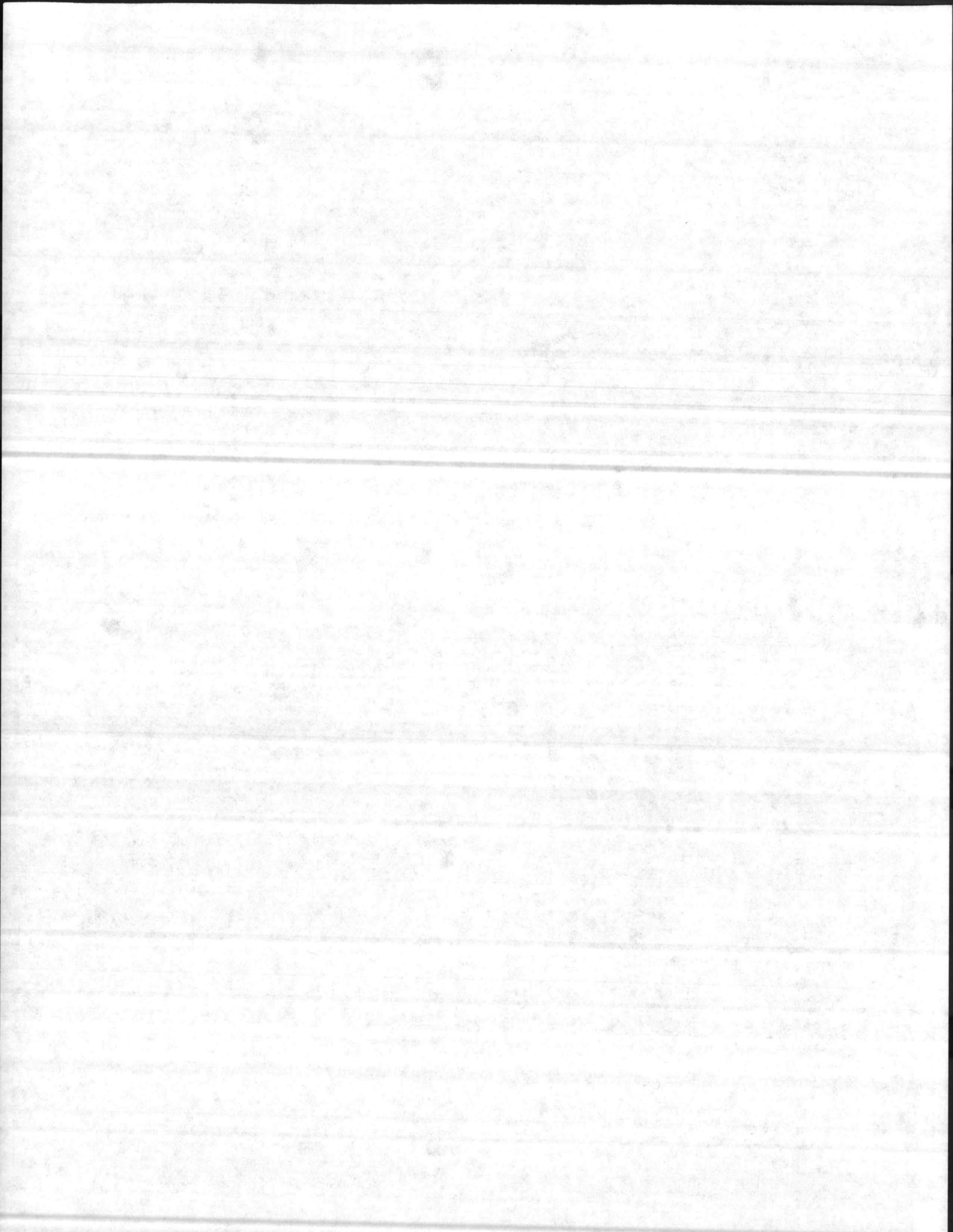
Pulpwood:

Thinnings	25,543.93 cords
Area X (Clear cut)	42,199.22 cords
Other areas (Clear cuts)	15,792.45 cords
Total	83,535.65 cords

*Amount received from sale - \$221,726.74 (FY 47 - 52 @ \$2.62 per cord; FY 53 @ \$3.84 per cord)

11. In March 1954 there were 130,799,700 bd ft of all types of timber standing on the Base (10" diameter and up). As was pointed out in the 1946 plan and re-emphasized in the 1954 report, one of the main problems in the operation of the Forest Management Plan was the unusually high proportion of hardwood that was mature and ready for harvesting. Of approximately 13,000,000 board feet of timber cut during FY 47 - 53, only about 2,000,000 board feet was hardwood. The proportion of hardwood cut should have been much higher. It was recommended then that if the Marine Corps could not use this excess hardwood, that it be sold on contract in the same manner as pulpwood.

12. The 1946 plan stated that thinning was the main silviculture operation needed. This was carried out in the nature of pulpwood



cutting of mills. By 1954 about 80% of these areas in need of thinning had been thinned. With this exception, since each year there are younger stands of timber reaching the size and age at which they should be thinned, it was recommended that the pulpwood operation should continue on a modified scale for at least another ten years.

13. Considerable concern was indicated in the 1954 report relative to the operation of the planned cutting schedule. The plan was closed in May 1953 when the cutting of timber, except for pulpwood operations, virtually ceased. At that time (1954) there were about 1,500,000 board feet of timber reaching maturity each year, a large portion of which was hardwoods. It was pointed out that when a tree reaches maturity, it should be cut, as there after the increase in volume is negligible, and it loses its value because it is more susceptible to insect and fungus attack. If a mature tree is not soon utilized it often becomes a loss. Not only was there mature timber on the Base that was not being cut, but the volume of timber which was reaching maturity annually would increase each year. No change was recommended in the cutting schedule which was outlined in the 1946 plan.

14. Operation of Forest Management Plan (1955 - 1957)

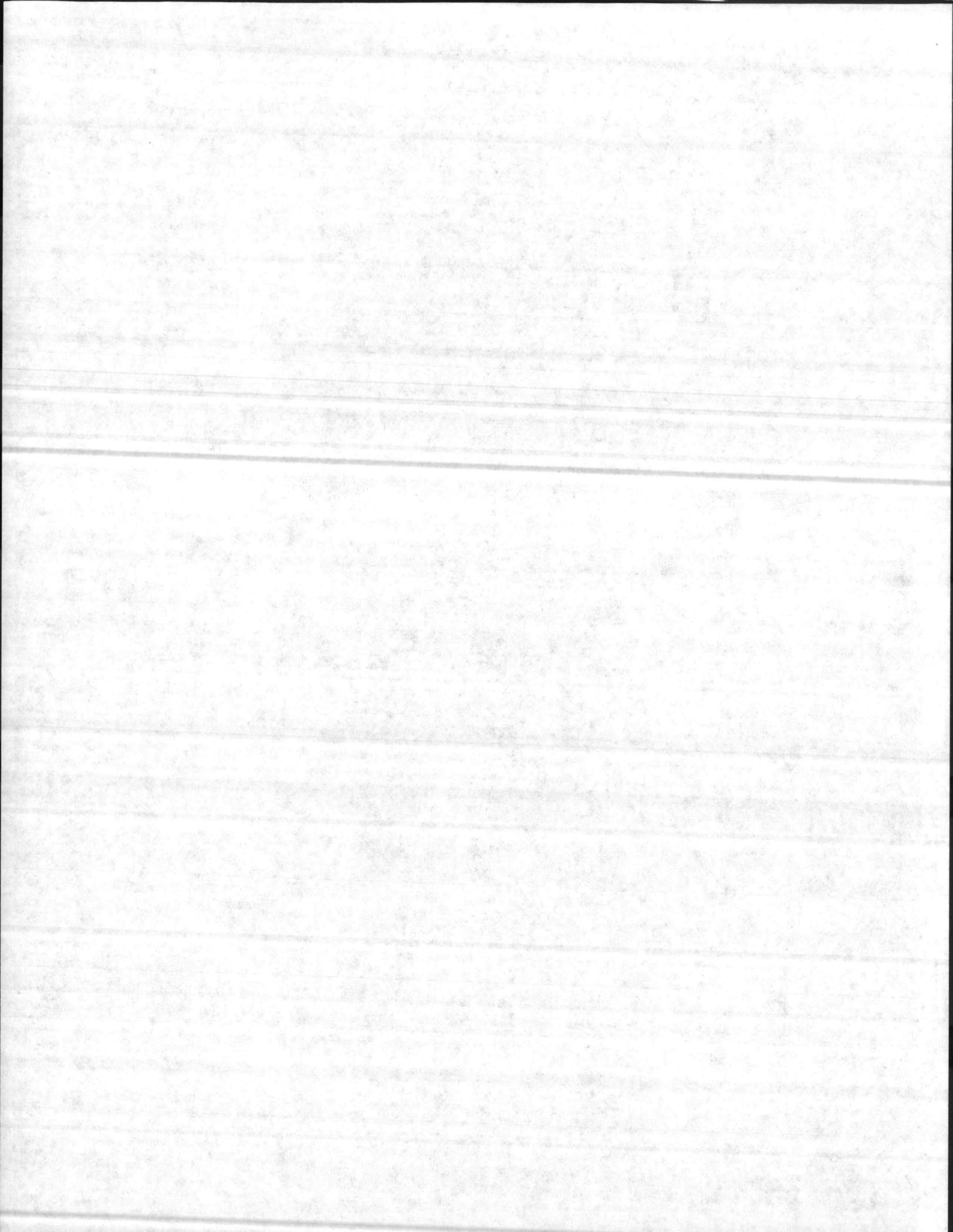
In April 1957 another report was made which briefly described the forest conditions as they then existed on the Base. It was estimated that there was at that time 149,031,507 board feet of timber (10" diameter and up) on the Base, which is an increase of about 3,000,000 board feet per year from March 1954.

15. Once again it was pointed out that since the Base sawmill closed in May 1953 that the harvesting of timber had practically ceased. The pulpwood operation was still being continued under contract, but this had little effect on the volume of merchantable saw timber as the cutting of pulpwood was mostly from thinning of small, undeveloped or crooked trees and those showing signs of rot. Approximately 60% of the standing timber at that time was young, growing trees. The remaining 40% was considered mature but most of that was still growing, even though at a slower rate. No change was recommended in the annual cutting schedule outlined in the 1946 plan.

16. During the period FY 54 - 57, 18,840 cords of pulpwood were cut and sold @ \$2.52 per cord, resulting in total sales for the period of \$47,577.60.

17. Operation of Forest Management Plan (1958 - FY 61)

During this period the pulpwood operation continued with annual harvests as follows:



<u>YEAR</u>	<u>NO. OF CORDS</u>	<u>PRICE PER CORD</u>	<u>TOTAL VALUE</u>
1958	6,560.32	\$ 3.83	\$25,126.03
1959	9,088.36	\$ 4.32	\$39,261.72
*1959	1,046.38	\$10.33	\$10,809.11
1960	8,178.54	\$ 5.07	\$41,444.92
*1960	1,849.11	\$10.33	\$19,101.31
1961	8,346.97	\$ 6.35	\$53,003.26

*Harvested from area which was "clear-cut" for Capehart Housing Project. Higher price per cord is due to fact that builder cut and stacked wood for sale by the Marine Corps to lumber company.

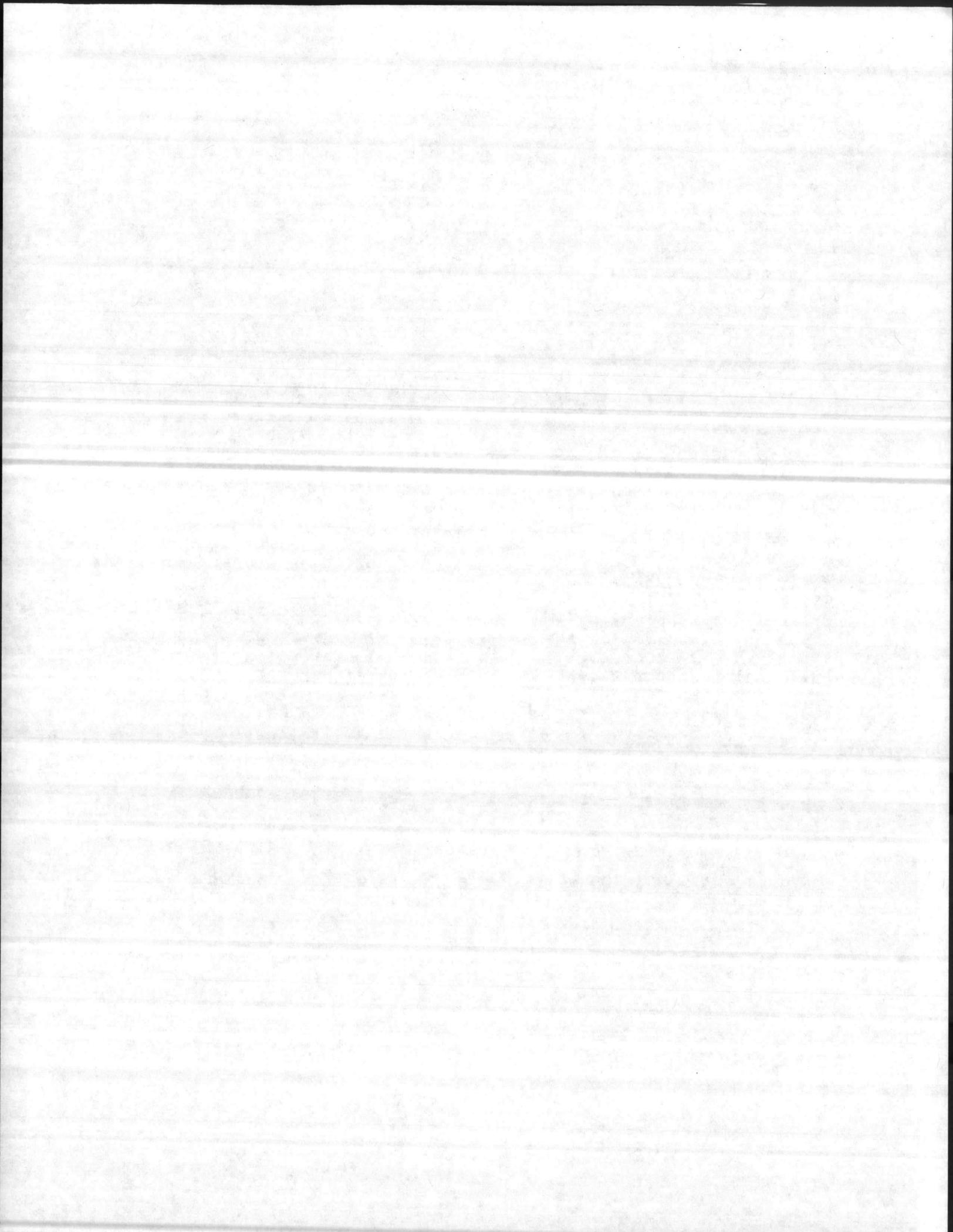
18. The harvesting of saw timber during the period FY 53 - 61 was nil due to the closing of the sawmill in May 1953. The sawmill was closed temporarily after cutting the ties for the Capehart - Cherry Point railroad. It was reopened for a short period in 1954, but, as a result of the Department of Defense Industrial-type Facilities Review Program of 1954, the sawmill was ordered to be closed permanently. A concerted effort was made by the Base Commander and CMC in the Fall of 1958 and Spring of 1959 to reopen the mill, to no avail. On 27 July 1961, it was declared excess property and is now listed for sale by Redistribution and Disposal. With the exception of about two or three days of sawmill operation in 1954 and the lumber which was salvaged from the "clear-cut" areas for Capehart Housing, there was no saw timber harvested on the Base between May 1953 and 1960. (521,519 bd ft of lumber was salvaged from Capehart Housing areas and sold during FY 60 @ \$43.52 per M bd ft; total sales \$22,695.68).

19. For the first time a contract was let for the sale of saw timber for FY 61, resulting in sales as follows:

Pine	1,508,141 bd ft @ \$37.26 per M	\$56,007.04
Hardwood	2,804,788 bd ft @ \$25.33 per M	\$71,045.21
Total	4,307,929 bd ft	\$127,052.31

(By adding \$53,003.26 to this for the sale of pulpwood, the total sales of forest products for FY 61 is raised to \$180,055.57)

20. Total sales FY 47 - 61:



Saw timber (FY 60 - 61 only)	4,329,448 bd ft	\$149,747.99
Pulpwood	137,485.33 cords	\$458,050.69
Total sales		\$607,798.68

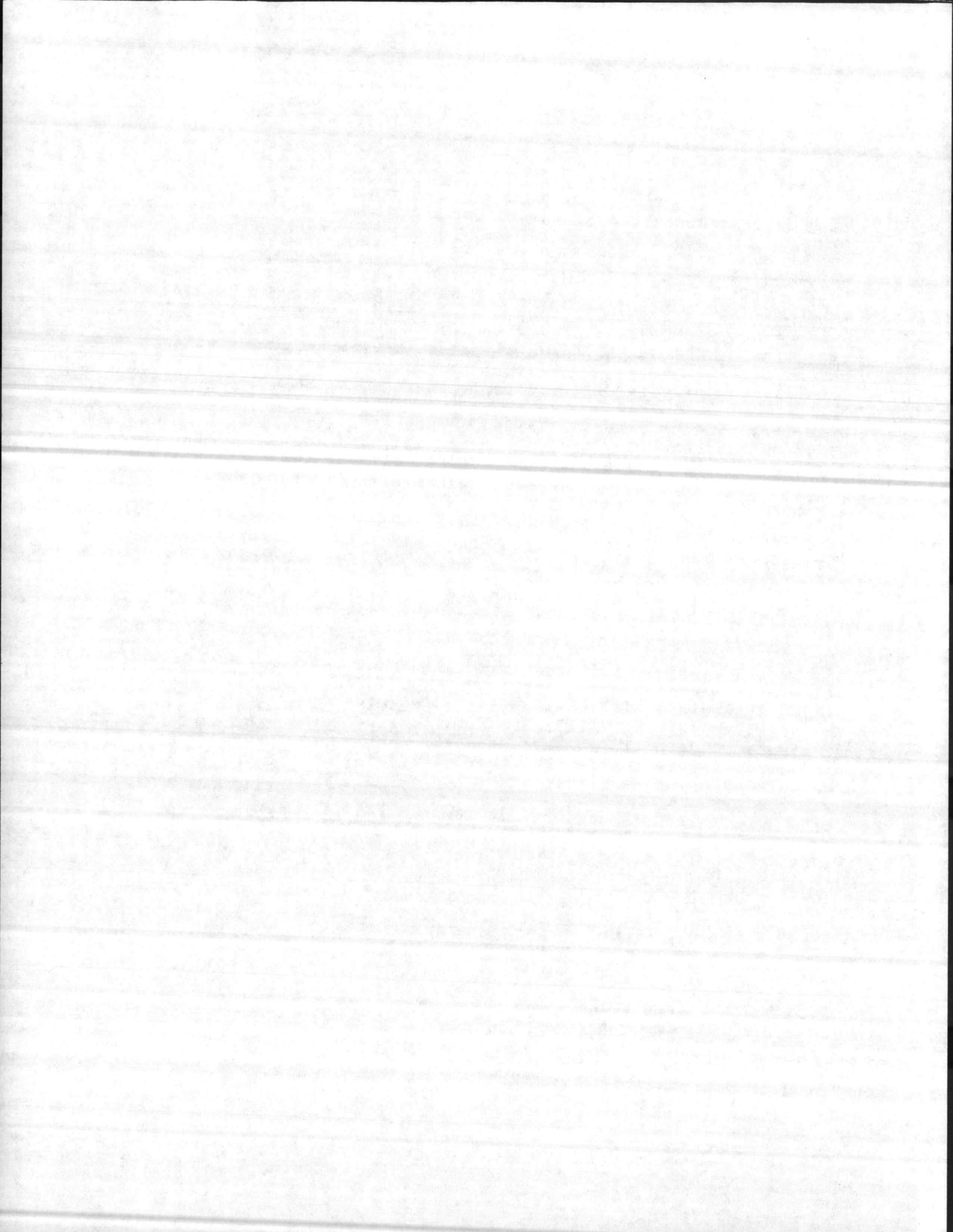
21. Current Operation of Forest Management Plan

A contract has been let for the sale of saw timber and pulpwood for FY 62. It is estimated that 1,500,000 board feet of pine will be sold @ \$32.05 per M bd ft and 1,500,000 of hardwood will be sold @ \$20.15 per M bd ft. This will result in a sale of 3,000,000 bd ft of saw timber of a value of \$78,300. It is estimated that 8,000 cords of pulpwood will be sold @ \$7.18 per cord; total sales - \$57,440. The total sales of forest products for the Base for FY 62 will, therefore, be about \$135,740.

22. There are no recent studies or reports available from which to glean the current volume of timber now standing on the Base. However, the Forest Manager (Mr. Russell) is of the opinion that the earlier surveys of 1946 and 1954 were a bit too liberal in their calculations and predictions. He also feels that the current annual yield has been retarded by the long period of inactivity (May 1953 - June 1960) during which time we have suffered the loss of many trees that would have matured for harvest under proper management. Moreover, since 1954, additional acreage has been assigned for other purposes. Whereas in 1954 there were 53,900 acres suited for timber, this acreage has now dropped to perhaps 48 - 50,000 acres.

23. Mr. Russell anticipated that in another three or four years all of the hardwood areas will have been cut-over and the annual yield of hardwood will then fall off sharply. During this period the total annual cut will increase slightly, but the proportion of pine cutting will increase each year while the hardwood cut will gradually fall off. In other words, he anticipates a cut schedule over the next five years approximately as follows:

<u>FY</u>	<u>PINE (Bd Ft)</u>	<u>HARDWOOD (Bd Ft)</u>	<u>TOTAL (Bd Ft)</u>
1962	1,500,000	1,500,000	3,000,000
1963	2,000,000	1,000,000	3,000,000
1964	3,000,000	500,000	3,500,000
1965	4,000,000	100,000	4,100,000
1966	5,000,000	?	5,000,000



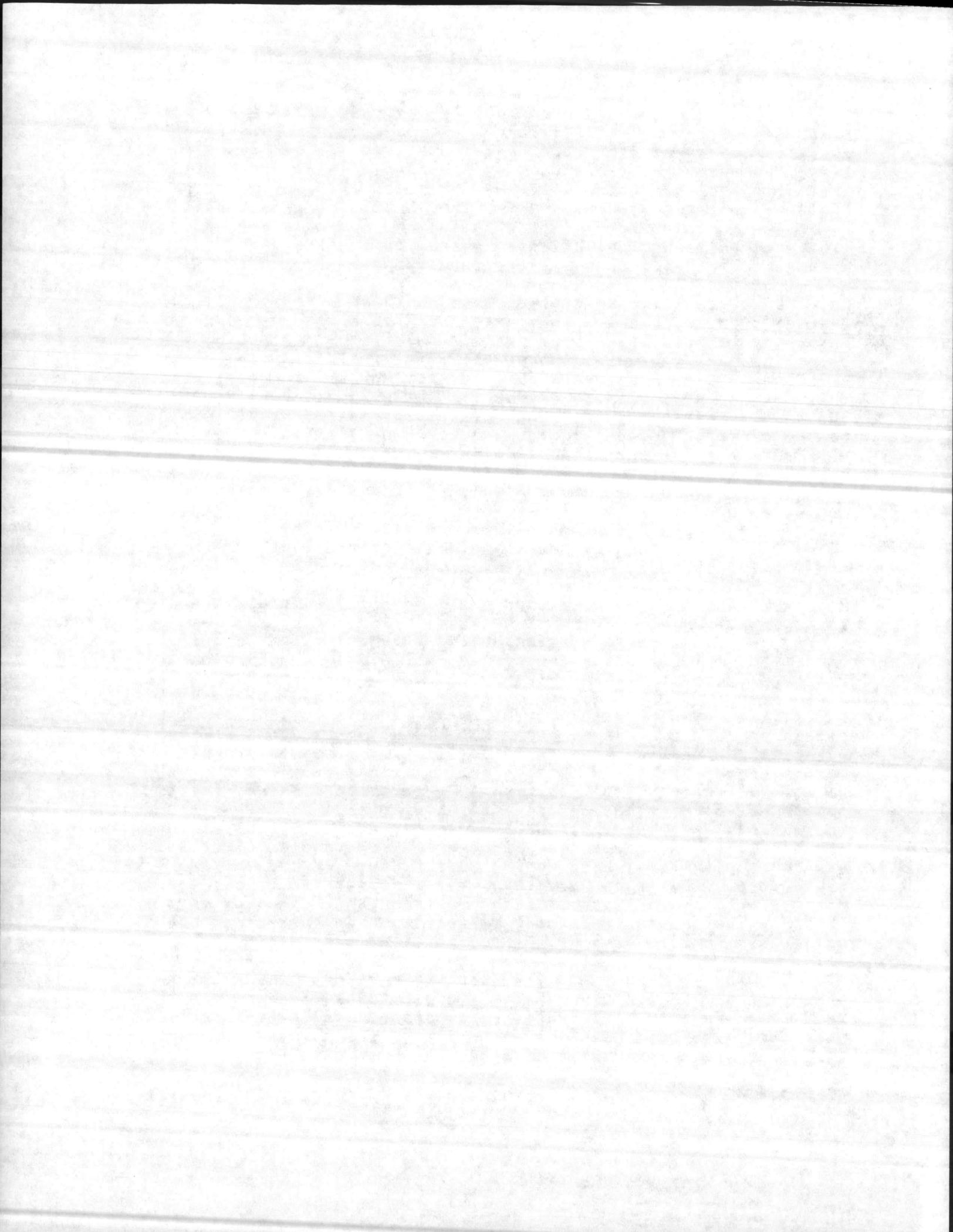
24. Beyond this point Mr. Russell is hesitant to make any predictions until a new timber survey is conducted. (This is usually done about every ten years; the last one was made in 1954). However, he feels that by FY 66 the annual yield will probably level off at about 5,000,000 board feet per year for three or four years, nearly all of which will be pine. Since there is a second stand of pine coming on in many areas which will need thinning, the pulpwood operation is likely to continue without appreciable change for several years.

25. There are a few scattered spots which were thoroughly cut over or burned years ago that have grown up with brush and soft hardwoods. These areas would require artificial restocking to become productive again. Some artificial restocking was conducted on a test basis in February 1946 in the Duck Creek Area (Unit 1). This project proved quite successful inasmuch as about 85% of the young pines survived. However, artificial restocking on an annual basis is not considered practical on a military reservation because of the long-range nature of such a project and inability to accurately predict the needs of the Marine Corps training areas so far into the future. The above cutting schedule can be maintained indefinitely without artificial restocking, since in nearly all the areas that are capable of timber production there is a good stand of healthy timber, adequate natural restocking should continue.

26. Now that a regular cutting schedule will be maintained through the annual letting of a contract for harvesting saw timber, in addition to continuing the pulpwood operation, the condition of the forestry resources on the Base should steadily improve. This contract is let by the Navy Contracts Office, Fifth Naval District, Norfolk, Va., and is managed by the Base R&D Officer (Capt. Baxter). The money received from sales is picked up on his books and then deposited to the U. S. Treasury. Although the contract does not specifically provide for such things, there are a number of benefits which accrue to the Base as a result of the timber cutting. For example, in many instances the lumber company has cut access roads to isolated areas and these roads are then subsequently used by operating units; road right-of-ways and power line right-of-ways have been cleared; and underbrush is cleared during operations. Of course, the contract provides that only those trees designated by the Forest Manager will be cut, and it also describes the method of marking. It also places other pertinent restrictions on operations such as pertain to fire hazards, damage to other trees, etc.

27. The Forest Management Plan has taken under consideration preservation of wildlife. Extensive plantings of game food have been made annually. Thousands of pounds of specially prepared quail mix have been planted. On a few choice points which jut into the river, food for ducks and geese has been planted.

28. One of the paramount factors in the success of the Forest

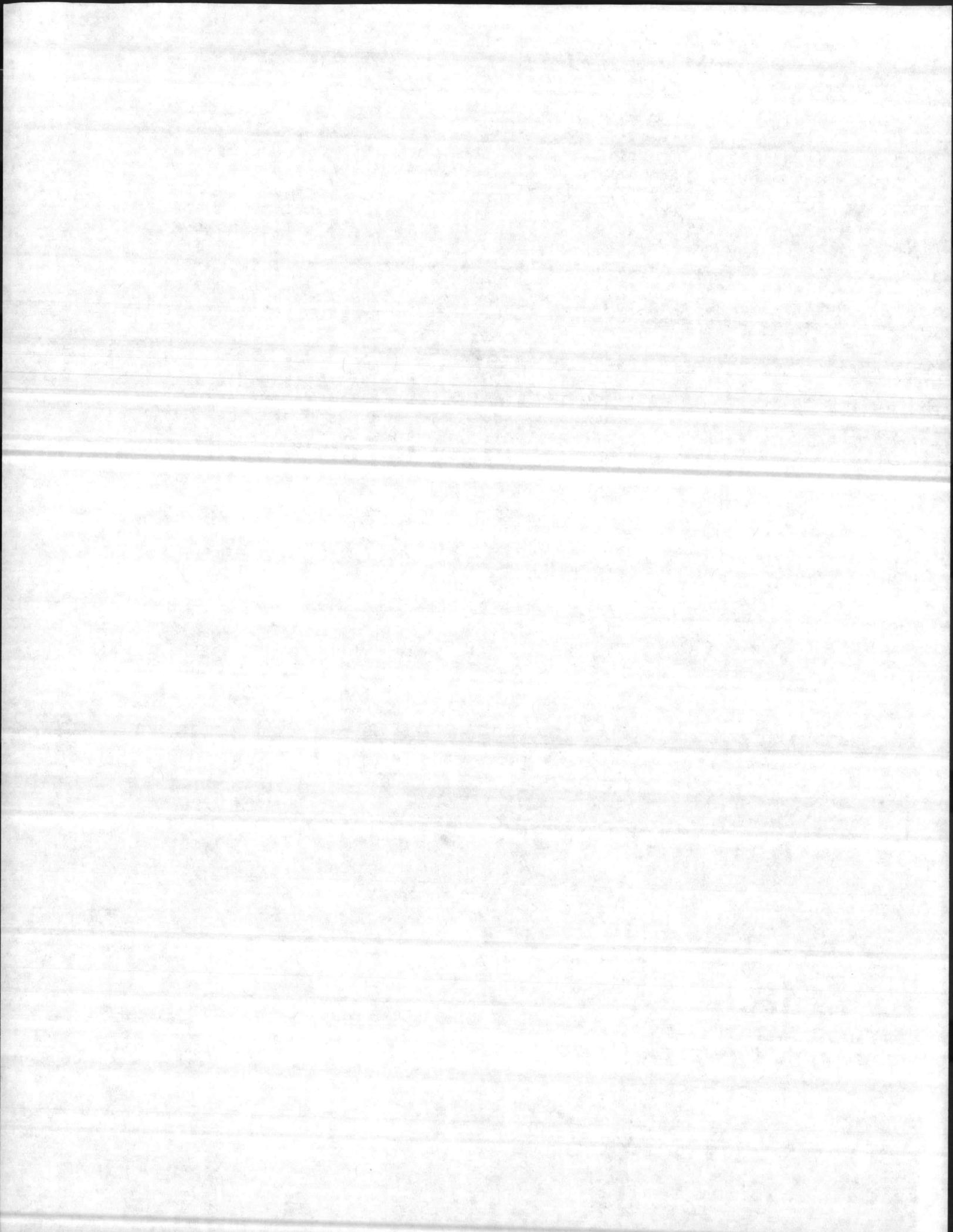


Management Program is, of course, fire protection. Although there have been some costly fires on the Base over the years, fire control is receiving much attention. Fire breaks around impact and maneuver areas are maintained, and controlled burning is conducted during the winter months when conditions are best for it. There are three forest fire lookout towers which are equipped with radios and tied in with a state lookout tower west of the reservation. Despite the many fires which occur during each dry season, the total area burned over the years has been comparatively small. However, it appears that perhaps more controlled burning could be conducted which should further reduce the annual loss.

29. Mr. Russell appears to be a well qualified Forest Manager and has spent years in this business. He evidences a sincere interest in his work and the problems of Forest Management on the Base. It seems, however, that with the vast area he must cover, and the many facets of his job, that he should be provided with some full-time, qualified help. This is a matter that should be given some serious and thorough consideration.

Respectfully submitted,

L. W. Bullard
L. W. BULLARD
Major USMC
Asst. G-4





UNITED STATES MARINE CORPS
MARINE CORPS BASE
CAMP LEJEUNE, NORTH CAROLINA

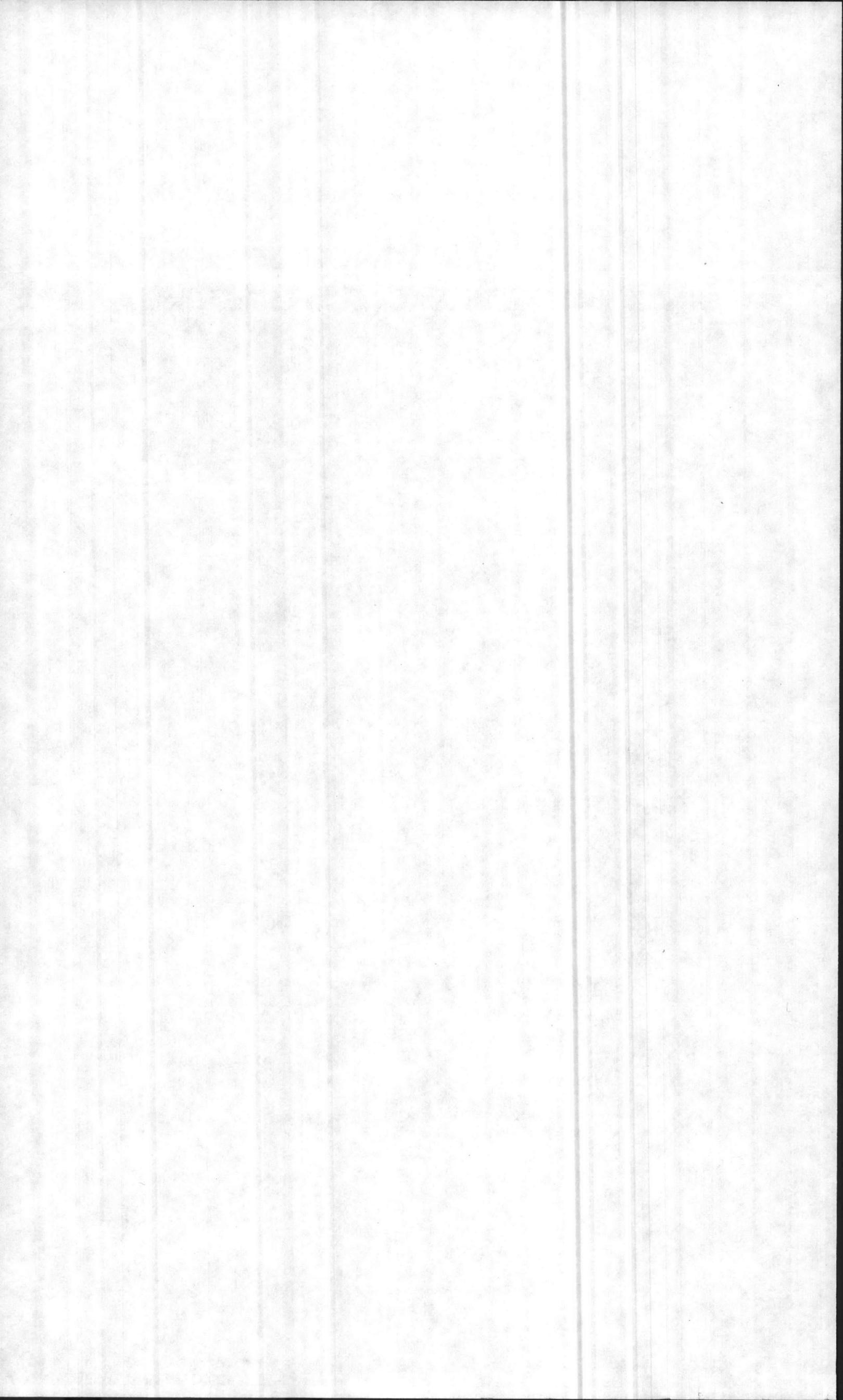
IN REPLY REFER TO

4B/LWB/jdh
11017

AUG 29 1961

From: Commanding General
To: District Public Works Officer, Fifth Naval District
Subj: Forest land under cognizance of Marine Corps Base, Camp Lejeune and the Marine Corps Air Facility, New River; report of
Ref: (a) DPWO FIVE ltr R-330;JPD;hw 11011 (CAMLEJ) of 18 Jul 1961 to CG MCB CLNC, Subj: Forest lands under the cognizance of the Navy and Marine Corps in the State of N. C.; request for information concerning
Encl: (1) Map of subj area w/Appendix A
1. In accordance with reference (a), enclosure (1) is forwarded herewith.

K. A. JORGENSEN
By direction



RECAPITULATION OF TIMBER RESOURCES

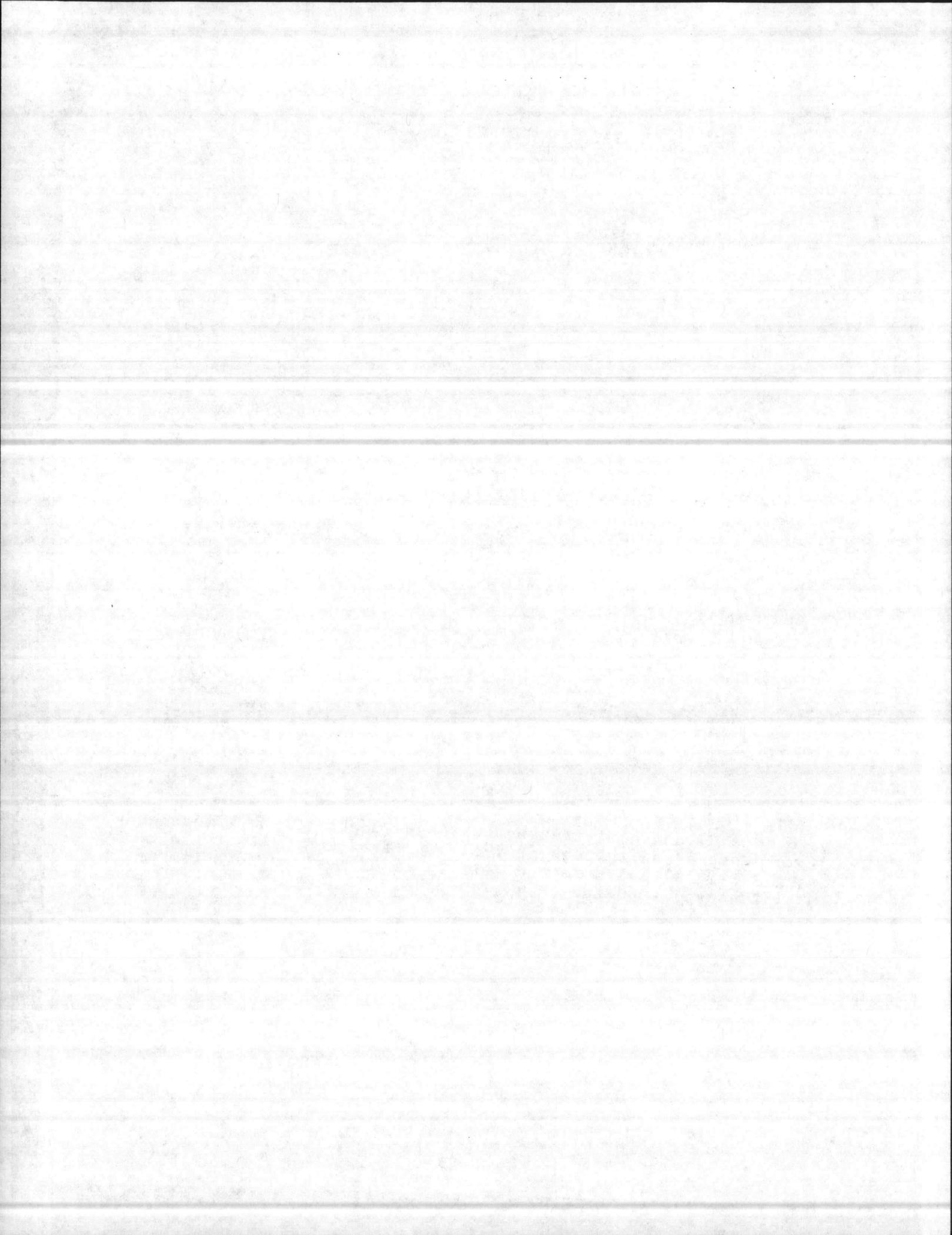
Total Volume Standing in 1954
(10" and above)

	<u>Board feet</u>
Pine	91,775,800
Gum and Poplar	14,998,600
Oak	5,020,200
TOTAL	111,794,600

Volume Cut Since 1954 Timber Cruise

	<u>Board feet</u>
Pine	2,107,730
Gum and Poplar	1,947,352
Oak	722,885
TOTAL	4,777,967
Pulpwood	51,414.89 Cords

Based on a 5% annual increase, less the amount of saw timber and pulpwood harvested through FY 1961, it is estimated that there were 152,511,121 board feet of all types of merchantable timber (10" and above) standing on 30 June 1961.



TIMBER RESOURCES BY AREAS SHOWN ON ENCLOSURE (1)

NORTHEAST CREEK - WALLACE CREEK UNIT (UNIT # 1)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	11,083,600
Gum and Poplar	1,600,400
Oak	864,400
TOTAL	13,548,400

Volume Cut Since 1954 Timber Cruise

Pine	521,519
Pulpwood	*4,915.49 Cords

*Includes clear cut area in 1959 - 60 for Capehart Housing

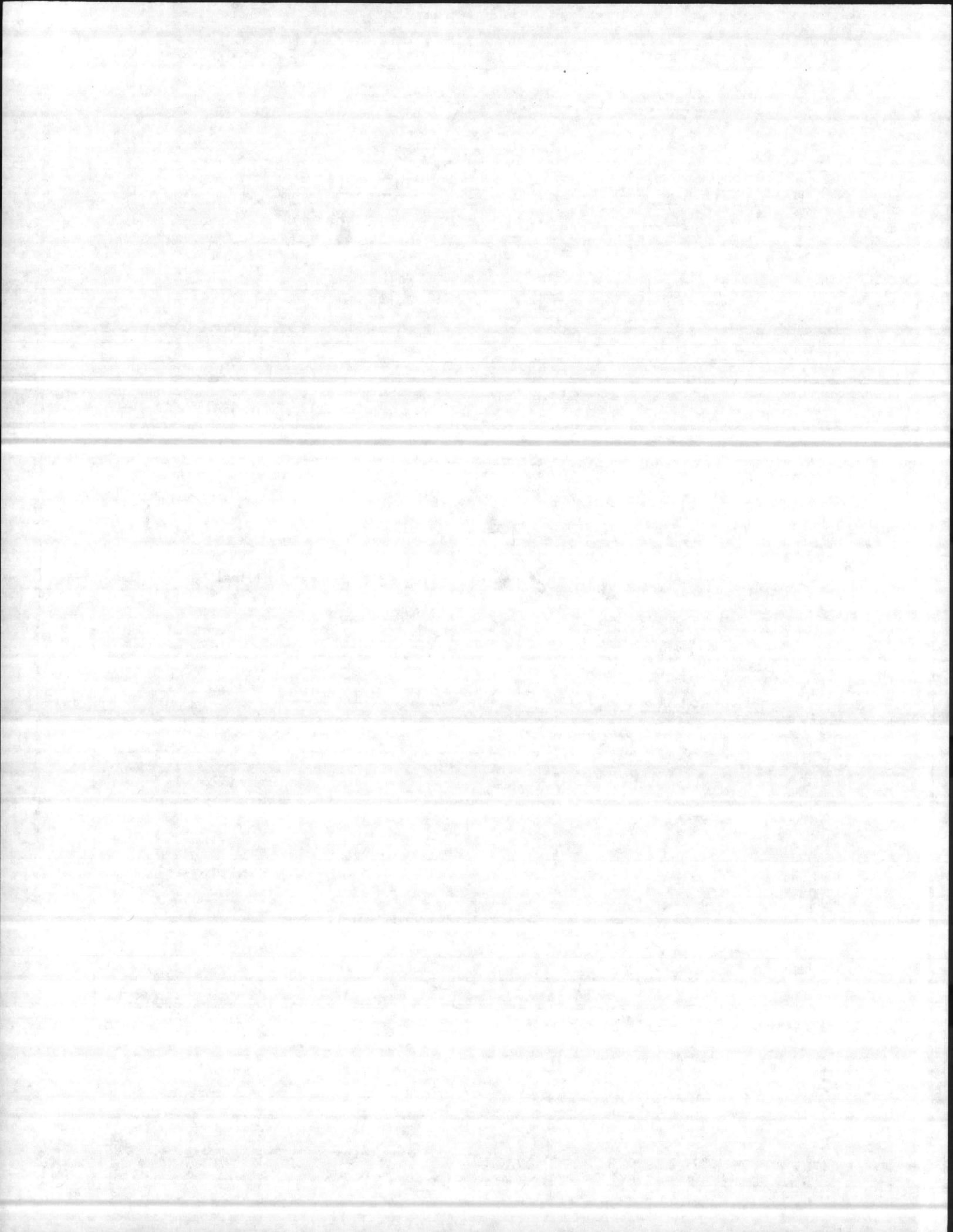
DUCK CREEK UNIT (UNIT # 2)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	12,620,800
Gum and Poplar	1,703,000
Oak	716,000
TOTAL	15,039,800

Volume Cut Since 1954 Timber Cruise

Pine	35,524
Pulpwood	6,451.77 Cords



SNEADS FERRY ROAD UNIT (UNIT # 3)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	3,301,000
Hardwood	530,200
TOTAL	3,831,200

Volume Cut Since 1954 Timber Cruise

Pine	37,546
Pulpwood	5,230.13 Cords

WALLACE CREEK - FRENCH CREEK UNIT (UNIT # 4)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	3,911,800
Gum and Poplar	505,400
Oak	495,200
TOTAL	4,912,400

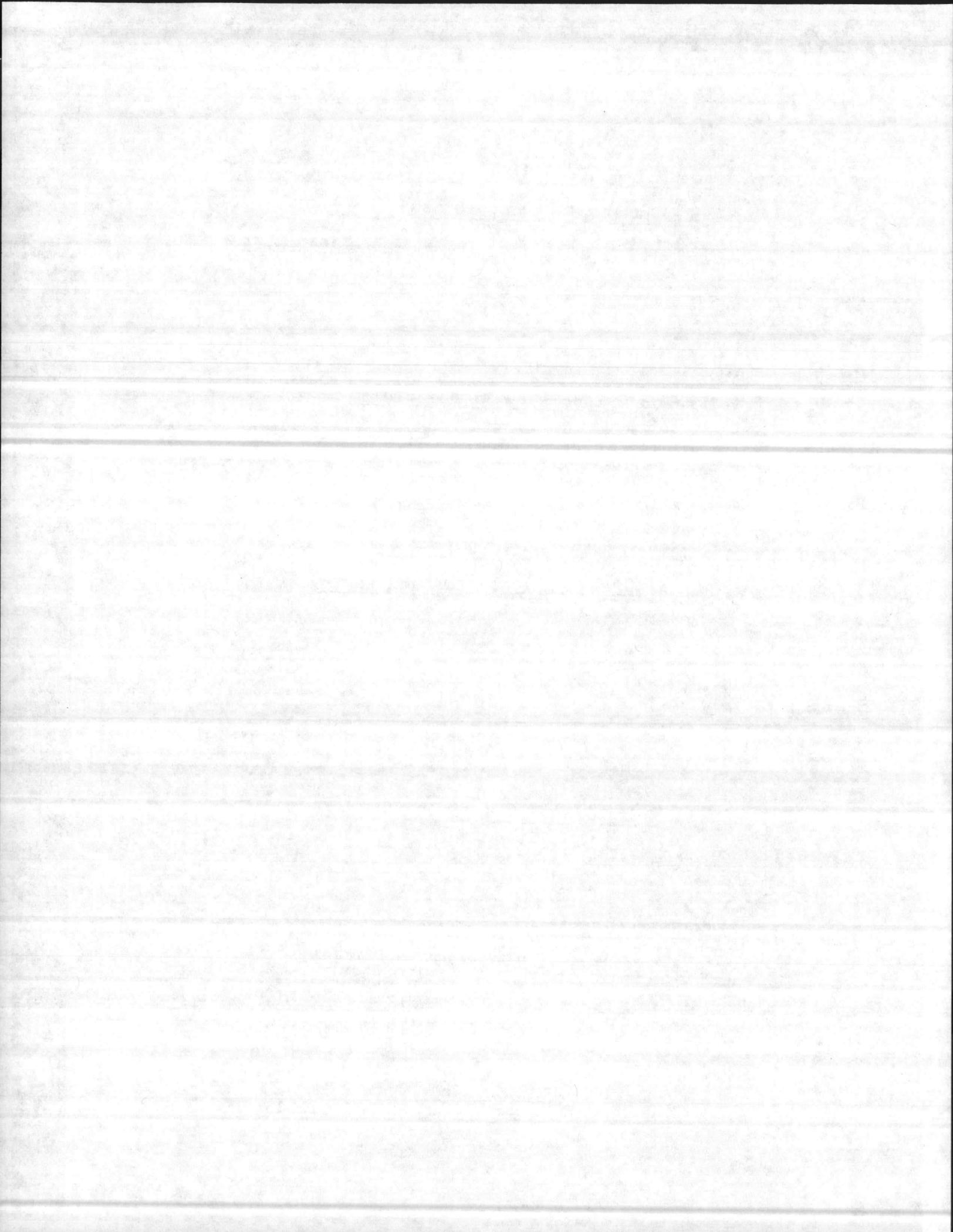
Volume Cut Since 1954 Timber Cruise

Pulpwood	2,239.02 Cords
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SOUTHWEST CREEK UNIT (UNIT # 5)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	10,329,600
Gum and Poplar	2,692,800
Oak	815,000
TOTAL	13,837,400



Volume Cut Since 1954 Timber Cruise

	<u>Board feet</u>
Gum and Poplar	784,571
Oak	325,624
TOTAL	1,110,195
Pulpwood	835.67 Cords

VERONA ROAD UNIT (UNIT # 6)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	7,051,400
Gum and Poplar	1,144,600
Oak	306,200
TOTAL	8,502,200

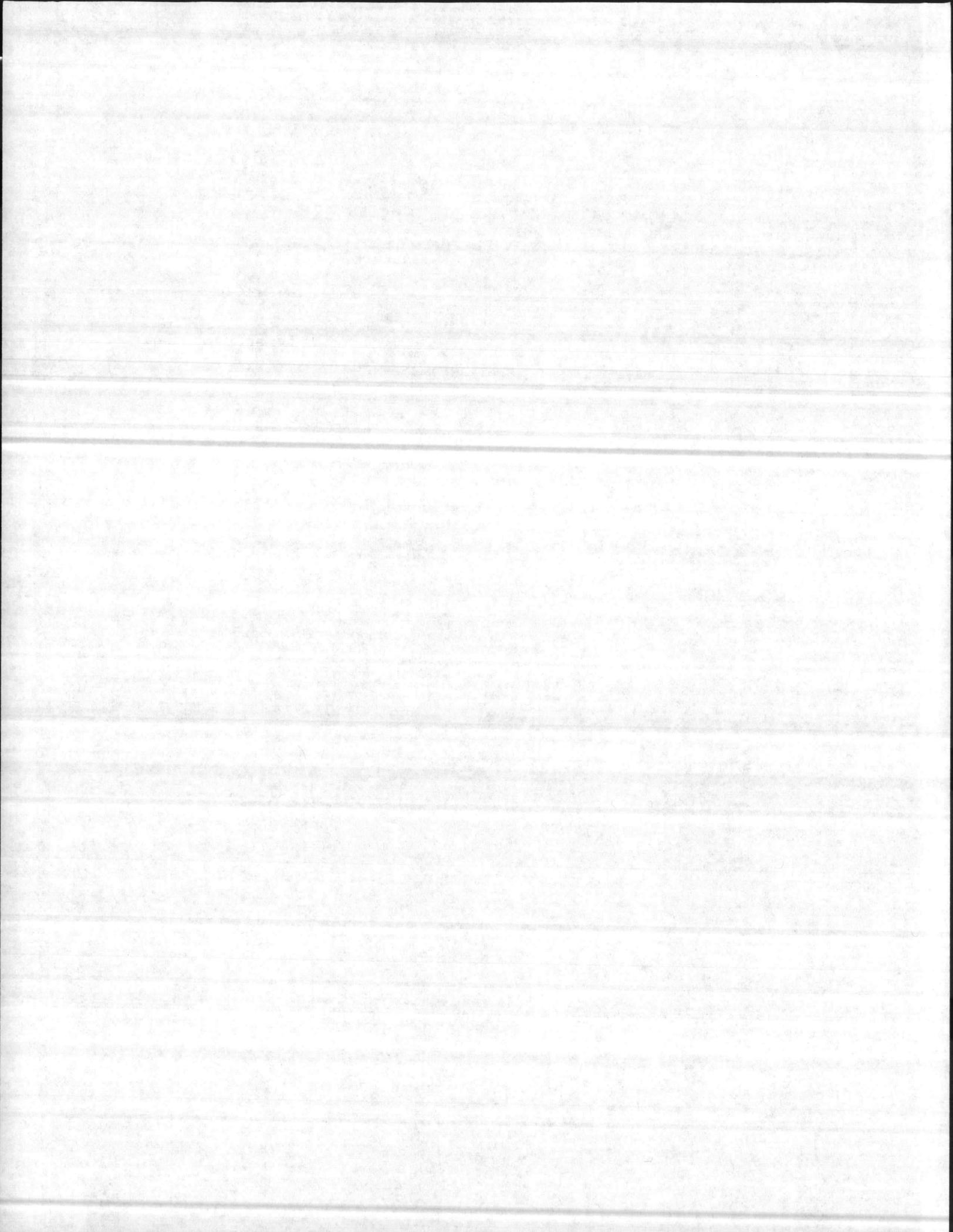
Volume Cut Since 1954 Timber Cruise

Gum and Poplar	228,223
Oak	107,824
TOTAL	396,047
Pulpwood	217.85 Cords

COWHEAD CREEK UNIT (UNIT # 7)

Volume Standing in 1954 (10" and above)

Pine	1,749,000
Gum and Poplar	82,400
Oak	8,600
TOTAL	1,840,000



Volume Cut Since 1954 Timber Cruise

Pulpwood 2,600.15 Cords

BEAR CREEK UNIT (UNIT # 8)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	1,362,800
Gum and Poplar	24,200
TOTAL	1,387,000

Volume Cut Since 1954 Timber Cruise

Pulpwood 5,782.77 Cords

EAST WALLACE CREEK UNIT (UNIT # 9)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	4,781,200
Gum and Poplar	902,200
Oak	155,600
TOTAL	5,839,000

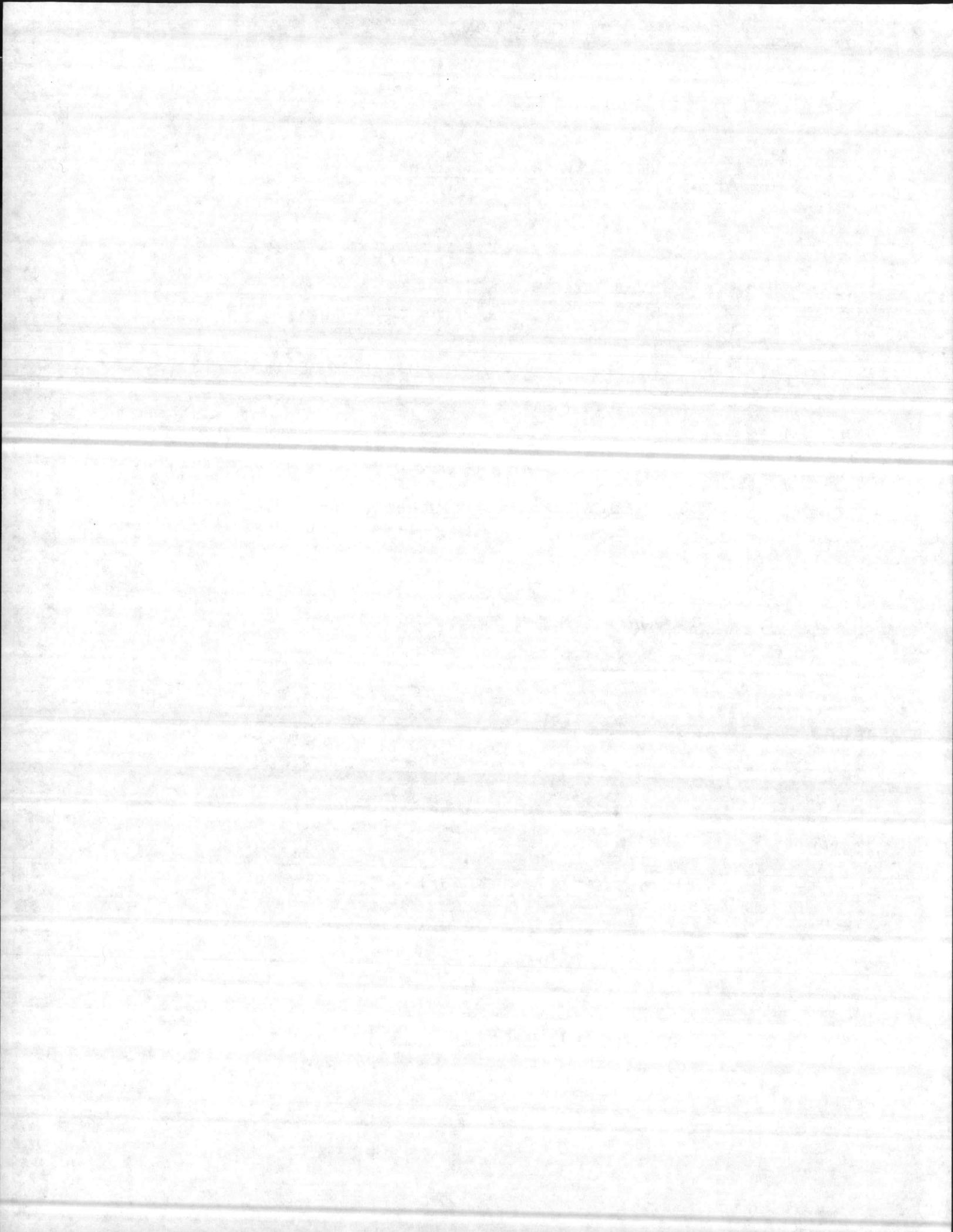
Volume Cut Since 1954 Timber Cruise

Pulpwood 1,180.91 Cords

STARLING UNIT (UNIT # 10)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	3,982,000



	<u>Board feet</u>
Gum and Poplar	453,800
TOTAL	4,435,800

Volume Standing Since 1954 Timber Cruise

Pulpwood	3,345.02 Cords
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SNEADS POINT - ONSLOW BEACH UNIT (UNIT # 11)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	8,050,600
Gum and Poplar	395,000
Oak	52,800
TOTAL	8,498,400

Volume Cut Since 1954 Timber Cruise

Pulpwood	6,617.52 Cords
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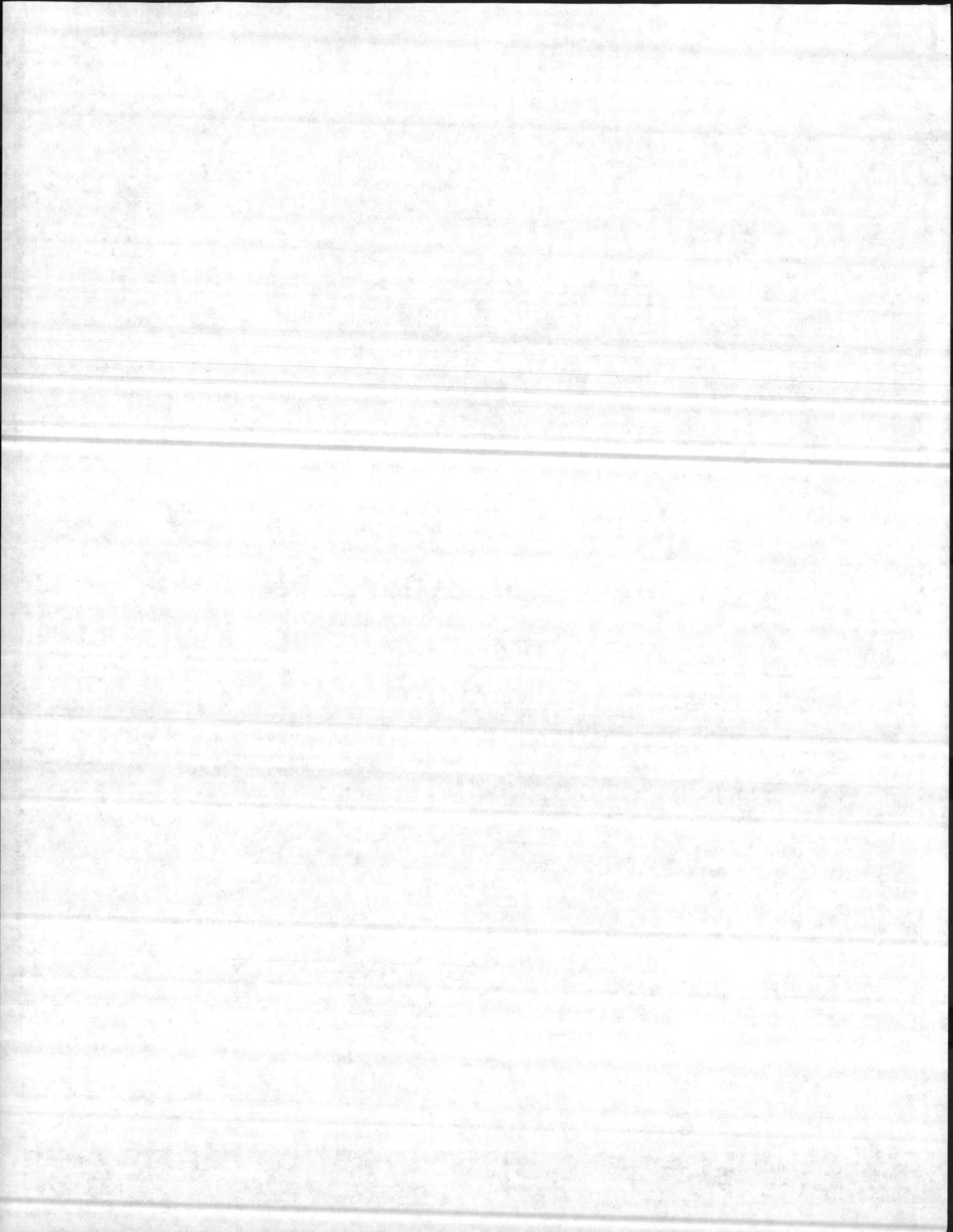
NORTH INTERCOASTAL WATERWAY UNIT (UNIT # 12)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	3,438,200
Gum and Poplar	239,400
Oak	24,200
TOTAL	3,701,800

Volume Cut Since 1954 Timber Cruise

Pulpwood	6,271.89 Cords
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MONTEFORD POINT - CAMP KNOX UNIT (UNIT # 13)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	2,439,800
Gum and Poplar	259,800
Oak	127,000
TOTAL	2,826,600

Volume Cut Since 1954 Timber Cruise

Pulpwood	651.60 Cords
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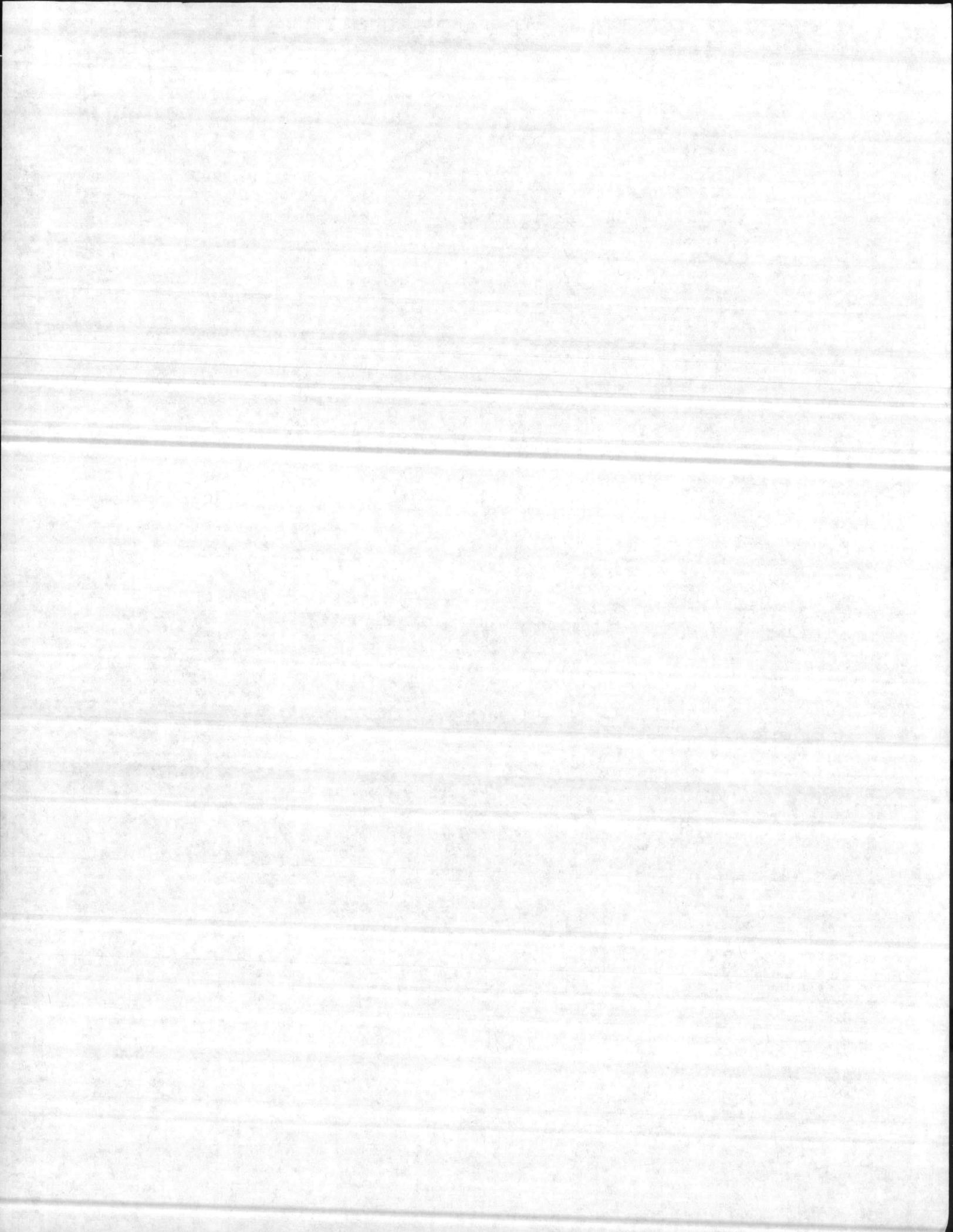
AIRFIELD UNIT (UNIT # 14)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	3,190,000
Gum and Poplar	979,600
Oak	211,400
TOTAL	4,381,000

Volume Cut Since 1954 Timber Cruise

Gum and Poplar	133,106
Oak	30,270
TOTAL	163,376
Pulpwood	643.29 Cords



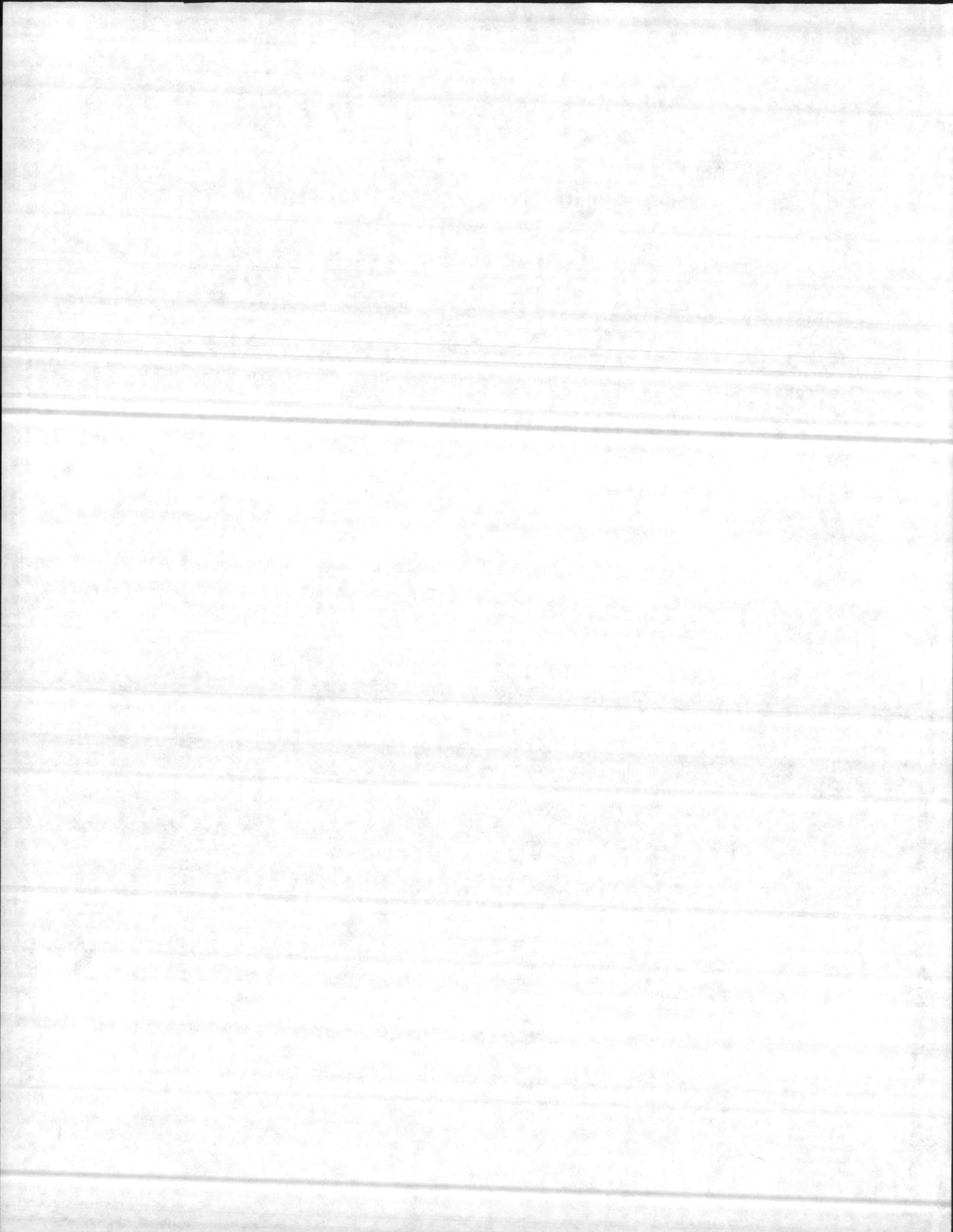
DIXON UNIT (UNIT # 15)

Volume Standing in 1954 (10" and above)

	<u>Board feet</u>
Pine	14,484 000
Gum and Poplar	3 485 800
Oak	1,243 800
TOTAL	19 213 600

Volume Cut Since 1954 Timber Cruise

Pine	1,513,141
Gum and Poplar	801,452
Oak	259 167
TOTAL	2,573 760
Pulpwood	4,431.81





MARINE CORPS BASE	
ACRES	USE
72,422	FOREST, INCLUDING FIRING RANGES, IMPACT AREAS, MANEUVER AREAS AND SWAMP.
10,000	CLEARED, BUILT-UP AND OPEN AREAS.
26,000	WATER

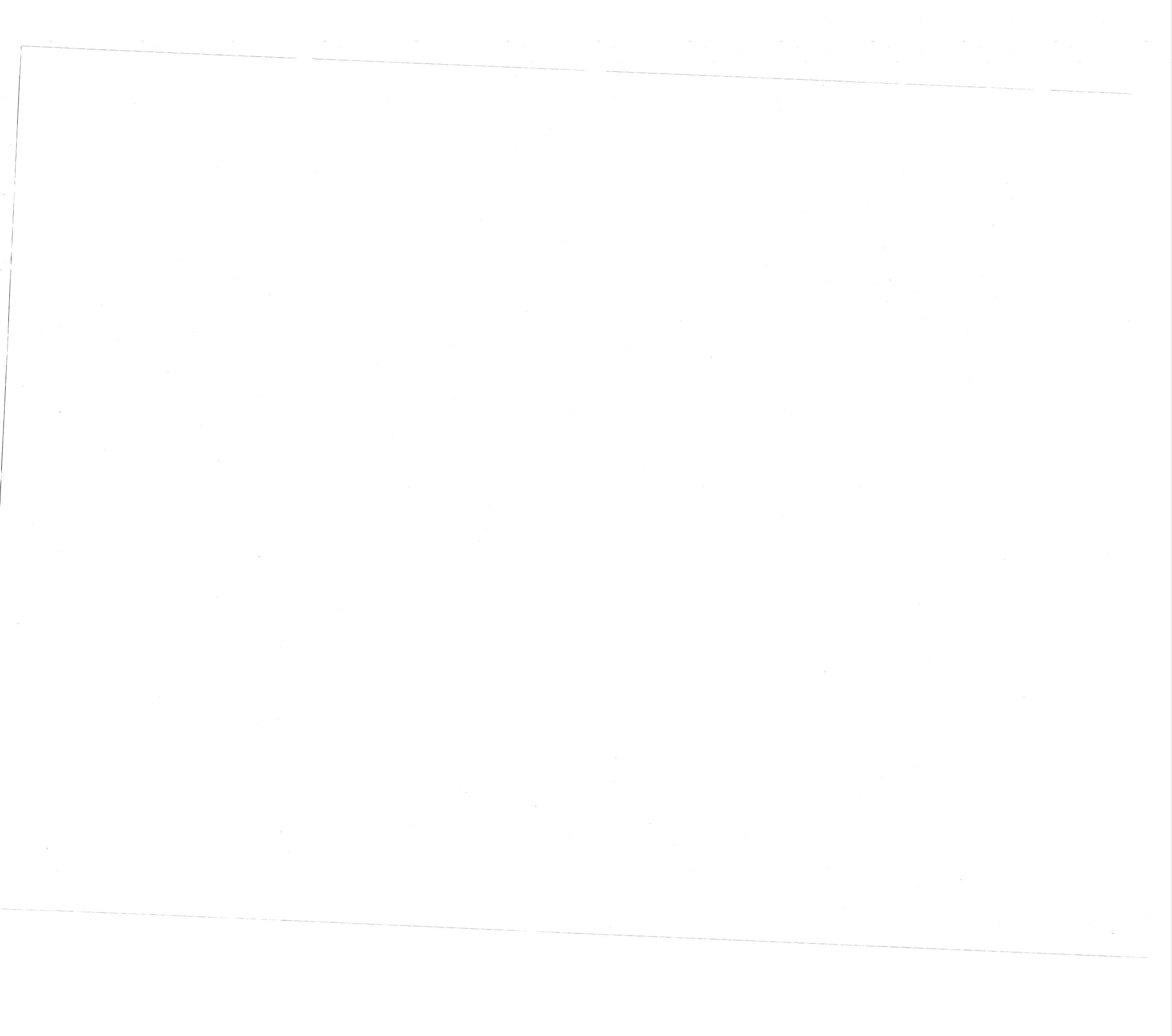
MARINE CORPS AIR FACILITY	
ACRES	USE
1,472	FOREST
1,200	CLEARED

NOTE: ACREAGE SHOWN IS FOR PURPOSE OF THIS MAP ONLY.

- LEGEND**
- CLEARED AREAS
 - FOREST
 - CITY OF JACKSONVILLE, N. C.
 - SHORE LINE
 - RESERVATION BOUNDARY
 - RAILROAD
 - NUMBERED AREA BOUNDARIES
 - NUMBERED AREAS DEFINED IN APPENDIX A

REVISION	DATE	APPD.	DESCRIPTION	BY
			MARINE CORPS BASE CAMP LEJEUNE, N. C.	
P W DRAWING NO. 6480				
DES DRWN <i>V. L. Taylor</i>			GENERAL FOREST AREA WITHIN RESERVATION BOUNDARY	
TR				
CHK				
DIR DESG <i>J. H. ...</i>				
APPROVED <i>[Signature]</i>			DATE	8-17-61
SATSFACTORY TO THE QUARTERMASTER GENERAL OF THE MARINE CORPS			APPROVED FOR BUREAU OF YARDS & DOCKS SCALE GRAPHIC SHEET OF Nby	SPEC.
DATE			DPWO FOR CHIEF OF BUREAU	Y & D DRAWING NO.





INTRODUCTION TO LONG RANGE FORESTRY MANAGEMENT PLAN
 Marine Corps Base
 Camp Lejeune, North Carolina

1. SUMMARY

a. Name and Location:
 Marine Corps Base, Camp Lejeune, North Carolina

b. Area:
 Acreage suited to timber production 60,877
 All other areas (including MCAF, built-up areas, firing ranges, beaches and tidal flats) 23,752
 Total acreage (not including water) 84,629

c. Volume: 1964

Sawtimber	180,064,000	bd. ft.
Pine	48,180,000	bd. ft.
Hardwood		
Poletimber	207,310	cords
Pine	188,983	cords
Hardwood		

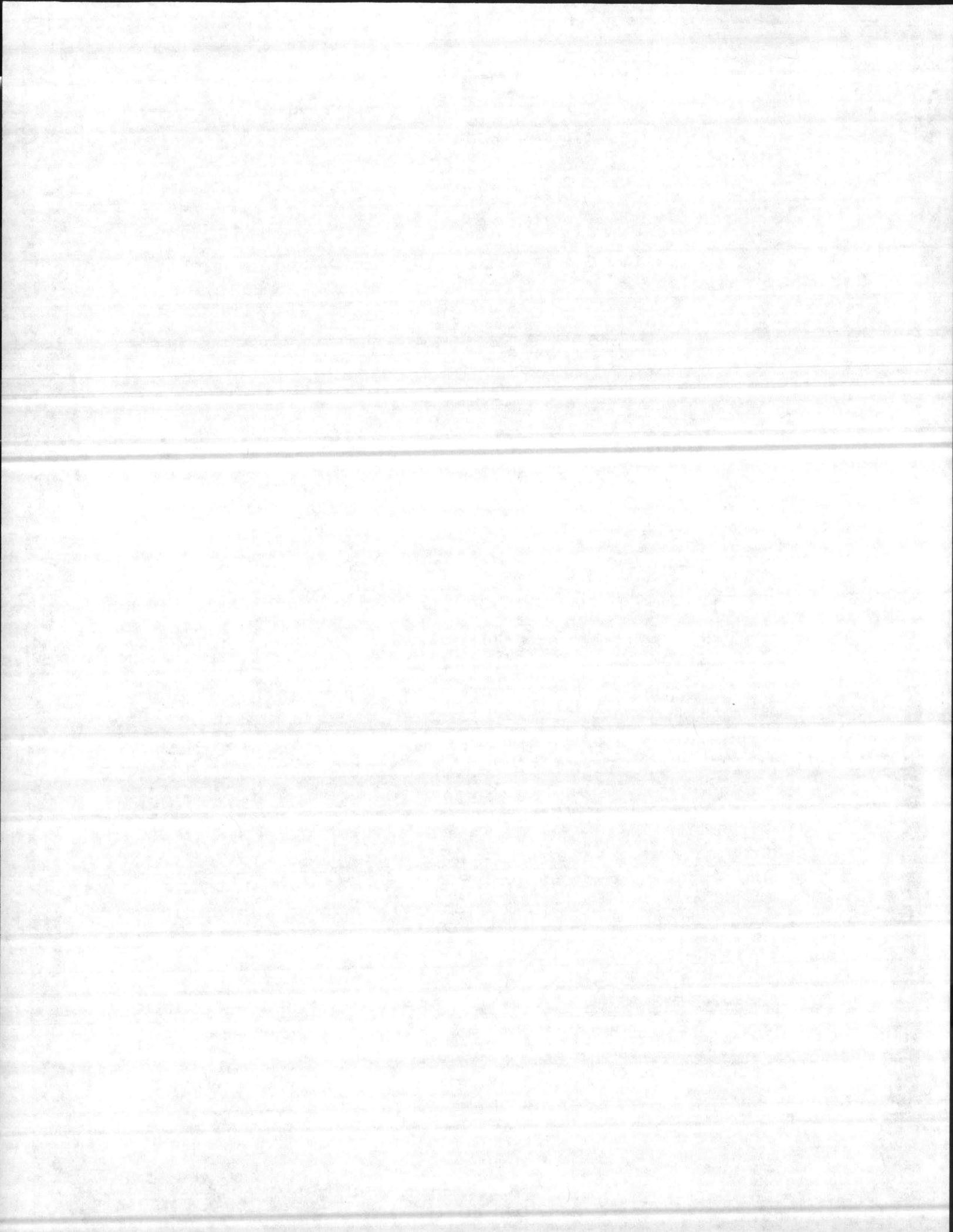
d. Products to be grown:
 Sawtimber and pulpwood

e. Rotation:
 80 years

f. Cutting schedule, ten years:	<u>Pulpwood (cords)</u>	<u>Sawtimber (bd.ft.)</u>
FY	10,800	2,200,000
1965	9,500	2,900,000
1966	9,100	3,100,000
1967	13,900	4,400,000
1968	11,500	4,100,000
1969	11,300	3,700,000
1970	27,200	6,000,000
1971	27,100	4,900,000
1972	27,000	6,200,000
1973	22,000	4,800,000
1974		

2. INTRODUCTION

Merchantable timber is a long-time crop. To grow a crop of trees from seedlings to merchantable size takes from 20 to 80 years or more, according to the type of product grown. To grow a single crop then may require the services of several forest managers in succession. It would be futile for a man to attempt to grow a crop that may outlive him by many years if



the progress of the enterprise were left to the expediency of the moment, or to the whims of the successive individuals in authority. While individual managers, each in his turn, must accept full responsibility for the details of application, the project cannot be a success in the end unless all hold in common the same vision and carry forward through each successive manager the same purposes and policies.

The general purpose of this management plan is to bring together in one document the guiding principles and measures for development and control of timber production and yield on this Marine Corps Base at Camp Lejeune, North Carolina. The objectives of the plan are to bring about sustained yield, or stability of output, and to assure its continuance during the years to come.

3. FACTORS AFFECTING THE FORESTRY PLAN

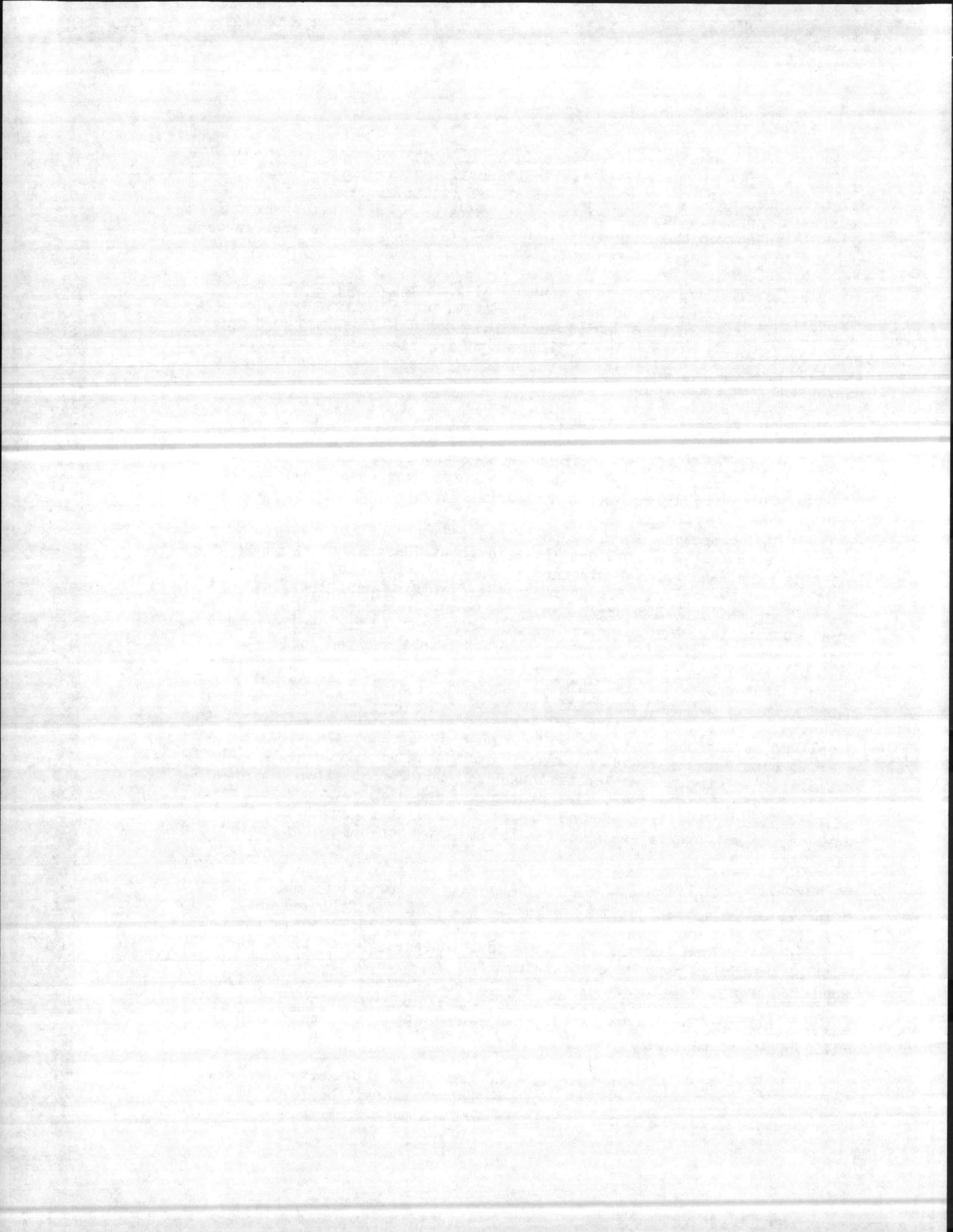
a. Forest description. This plan encompasses all the forest land within the geographical limits of Marine Corps Base, Camp Lejeune, North Carolina, with the exception of the Marine Corps Air Facility, New River.

The topography of the land is typical of the Southeastern Coastal Plain. Elevations are from sea level to about 70 feet above. Soil types run from fine sand (almost sterile) to muck. Many swampy or pocosin areas are found which support very poor growth. The fine sand areas support mostly longleaf pine and scrub oak. The sandy loam areas (the more fertile type) support the more luxuriant growth of loblolly pine, tulip poplar and oak. The wet creek bottoms support mostly tupelo and red gum.

b. History. Prior to 1941-42, the land on this Base was privately owned. It was cut up into small tracts of from a few acres to several thousand. There were about 6,000 acres of cleared land with much of the woodlands having been cut over and denuded of merchantable timber. However, a considerable amount of second growth timber was on hand. There was almost no fire protection in those days and forest fires had caused untold damage. Since 1942, fire protection has been very much improved as evidenced by the tremendous increase in natural reproduction of pine. Most of the cut-over areas and old fields have been naturally restored with pine.

In 1946 a timber survey was made and an initial Forest Management Plan was drawn up and put into effect. The plan was followed until 1953 when the Camp Sawmill was closed. From then until 1960 no cutting schedule was maintained, except for pulpwood thinnings. Since 1960, contract cutting schedules have been maintained for the sale of sawtimber. Pulpwood has been cut and sold by contract annually since 1946. The 1946 timber survey indicated there were 98,380,150 board feet of timber on the Reservation (10" DBH and up.) A re-survey in 1954 indicated there were 111,794,600 board feet (10" DBH and up.)

c. Land Usage. The primary use of land on this Reservation is for Military training purposes. Any other use, whether it be forestry, game or recreation, is secondary. This is an important fact that the Forest



Manager must always bear in mind. Although provoking circumstances may occasionally arise, in most instances land areas can be used for timber and game production as well as for Military training.

d. Economic Situation. The economic situation in relation to forest products in the Camp Lejeune area is healthy. There is always a ready market for sawtimber and pulpwood. There are seven sawmills within a 50-mile radius of Camp Lejeune that have shown interest in buying stumpage. Three pulpwood companies with yards within a 20-mile radius of Camp Lejeune are interested in buying pulpwood.

e. Destructive Agents.

(1) Fire is always a potential threat any time it is dry enough for the woods to burn. The season of greatest danger is from March through June. This season is usually dry and windy, and is the time most crown fires occur. A crown fire is the most destructive, usually killing most of the trees in its path. Surface fires which may occur at any season of the year are less destructive, but will kill trees from seedlings up to 8-foot in height.

(2) Insect damage is usually of little consequence. Past history indicates the insect that has caused concern is the Southern Pine Bark Beetle. Infestations of this insect usually follow a severe forest fire. The only practical control measure is to harvest the infested trees as quickly as possible.

(3) Disease is the least destructive of any agent. Several varieties of heart rot attack old-age trees. Proper harvesting is the control measure best suited.

h. WILDLIFE RESOURCES

a. Wildlife is one of our natural resources and happens to be one of those which can be restored when it reaches a state of depletion. The objectives of wildlife management are to bring about a maximum population of each species of game animal, to secure a balance of nature, and assure its continuance during the years to come.

b. Species of game animals.

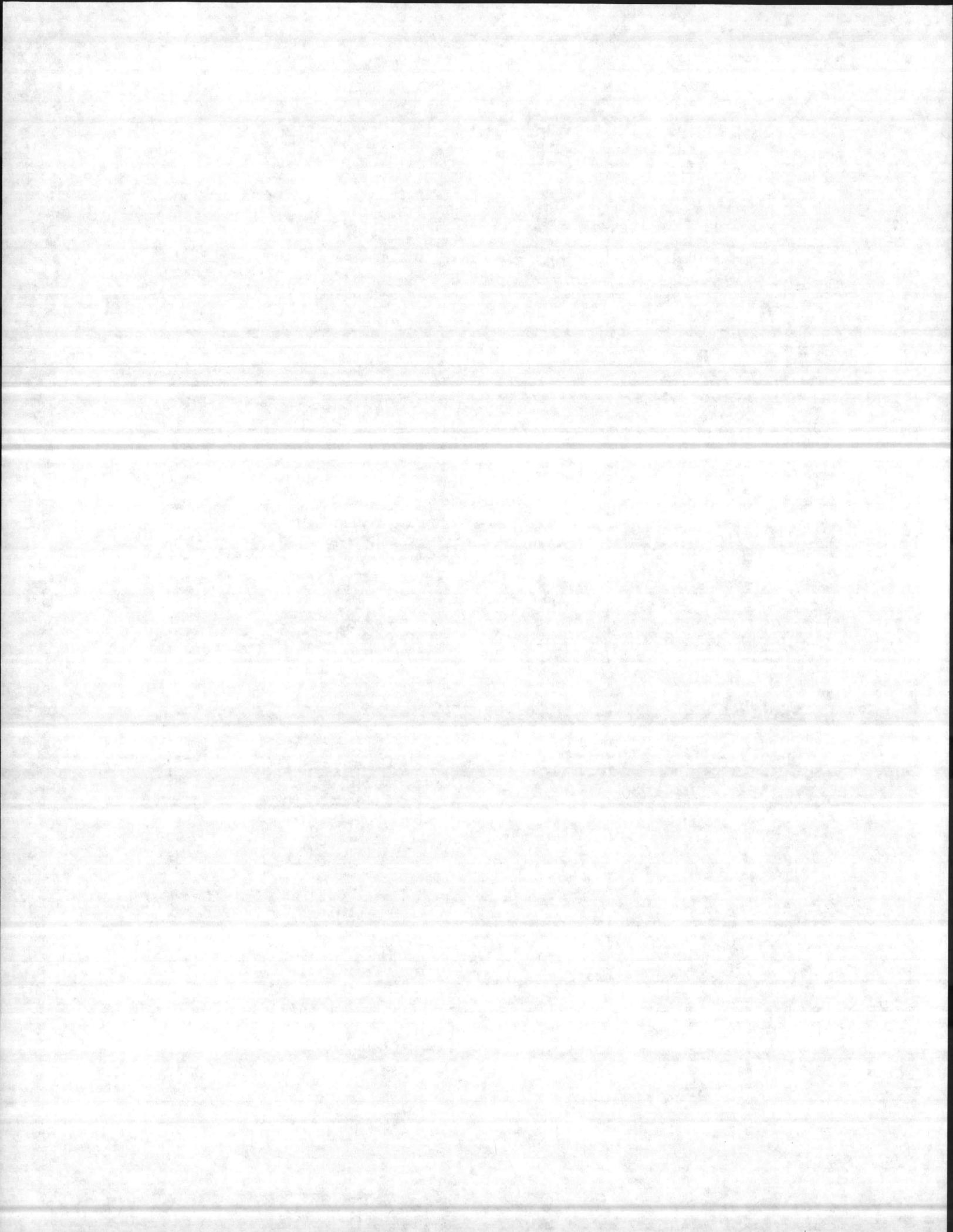
(1) Virginia Deer - this is by far the most outstanding game animal of the area. It is the most plentiful and most sought after by hunters of any other species of game animal.

(2) Squirrel - two kinds, grey and fox, fairly plentiful.

(3) Rabbit - fairly scarce, plenty of room for population increase.

(4) Raccoon - plentiful, many areas over-stocked.

(5) Quail - moderately plentiful.



(6) Migratory water fowl - fairly plentiful, varies with the season.

(7) Dove - fairly plentiful, varies with the season.

(8) Turkey - scarce, much room for population increase.

c. History. The habitat of wildlife has changed considerable over the years. Prior to 1941, the land was privately owned. Many open fields ranging in size from an acre up to 100 acres existed. The woods were more open due to heavy timbering and forest fires. Since 1941, most of the area in open fields has reverted back to forested area. With protection from fire, the forests have become more dense with timber and underbrush. This change has in turn had its effect on wildlife population. Deer for instance was fairly scarce in 1941. At the present time deer is plentiful throughout the Base and some areas are considered overstocked. On the other extreme, quail and rabbit are not as plentiful at the present due to the reduction of the open field areas.

(1) Wildlife food plantings have been made almost yearly since 1945. The types of plantings have been mainly for deer, quail, turkey, and dove. An average of about 125 acres has been planted annually. This has proved a wonderful supplement to the natural food supply even though it has been on a limited basis.

(2) Two methods of hunting have been in common use; the organized hunt and individual hunting. The organized hunt with dogs is employed for deer only, and individual hunting for all other types of game. Hunting is allowed for both military and civilian personnel. A fee is collected for hunting permits and all revenue collected is turned over to the Base Comptroller, and the money is expended for improvement of the wildlife habitat.

(3) All State and Federal game laws apply. Protection and law enforcement is the responsibility of the Base Provost Marshal's office. Two (one civilian, one military) full-time game protectors are employed. During the regular hunting seasons, 25 deputy game protectors are employed.

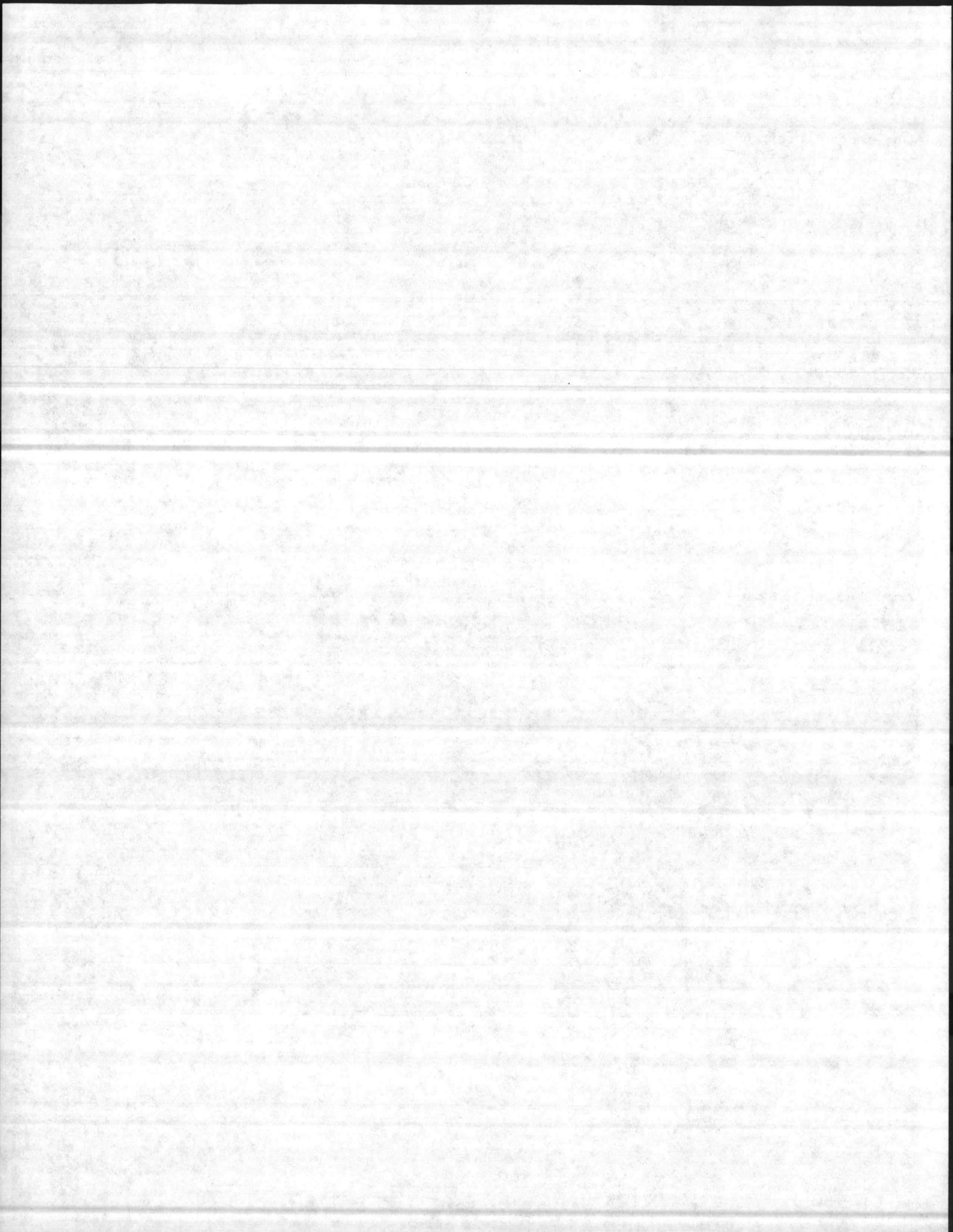
5. MANAGEMENT POLICY. The objectives of the Camp Lejeune Forest Management Plan are:

a. Military use - to maintain a forest cover throughout the Reservation for troop training areas.

b. Conservation - to conserve the land and its natural resources.

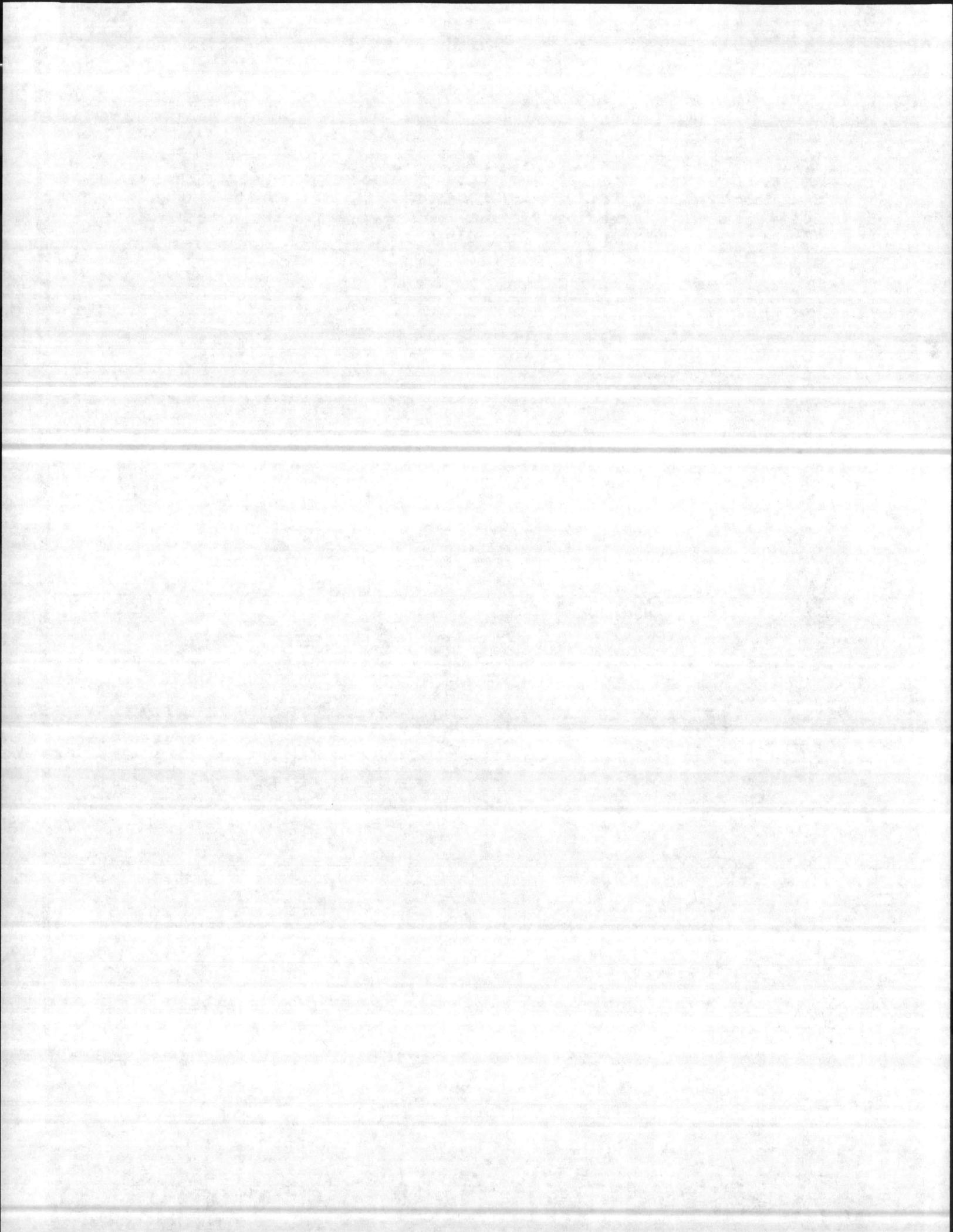
c. Revenue - to realize the maximum return to the Government from the sale or use of forest products.

d. Wildlife - to conserve wildlife resources.



6. PREPARATION AND ACCEPTABILITY

The Long Range Forestry Management Plan was prepared by a team of foresters from the Timber Management Staff, North Carolina National Forest, U. S. Forest Service. A complete inventory of the forest resources at Marine Corps Base, Camp Lejeune, was made by this team and the data obtained was used for preparing this plan. The plan is complete and acceptable by the Forestry Section of Base Maintenance.



REVISIONS AND MODIFICATIONS
TO THE LONG RANGE FOREST MANAGEMENT PLAN AT
CAMP LEJEUNE, NORTH CAROLINA 1964 - 1967

Page 15, FY 1965

Change prescribe burn areas to read:

5, 7, 11, 16, 21, 23, 24, 26, 34, 35, 40, 49, 57

Under Timber Harvest, Page 15

<u>Comp.</u>	<u>Stand</u>	<u>Acres</u>
6	2, 4, 5, 11, 17, 18, 23, 24, 26, 27	106
12	2, 3, 6, 8, 9	507
13	5, 7, 8, 10	414
30	1, 2, 4, 5, 9, 11	523
48	1, 3, 4, 9, 10, 11, 12, 13, 14, 15, 16	823
59	2, 7, 9, 11, 13	640
		<u>3,322</u>

Site Preparation

34	4	<u>193</u>
TOTAL ACRES		193

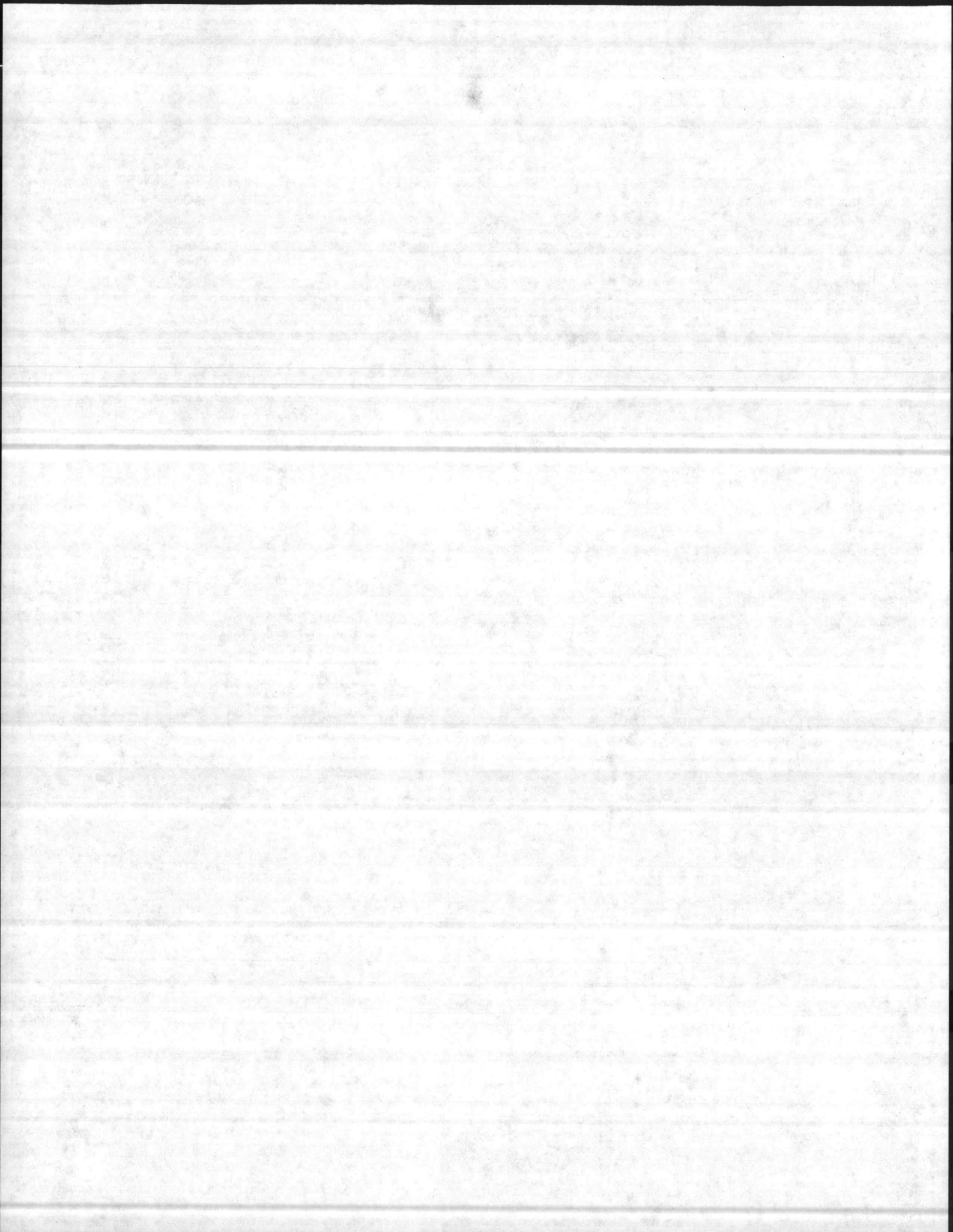
Page 49, Compartment 6, Stand Prescriptions

Stand 2 Est. Cut: 3.91 Cords/Acre
Total: 90 Cords

Stand 4 Est. Cut: 4.82 Cords/Acre (No Saw timber)
Total: 496 Cords

Page 50, Compartment 6, Stand Prescriptions

Stand 5 Est. Cut: 5.68 Cords/Acre
Total: 125 Cords



Intermed Cut: All Salvage, sanitation & thinners to A 130 BA.

Page 51, Compartment 6, Stand Prescriptions

Stand 11 Est. Cut: 3.20 Cords/Acre

Total: 15 Cords

Intermed Cut: 3.20 Acres alongside range to A 70 BA.

Page 52, Compartment 6, Stand Prescriptions

Stand 17 Est. Cut: 1.42 Cords/Acre

Total: 20 Cords

Seed Tree Cut: Leave 8-10 Longleaf Pine Seed Trees per acre.

Range has been abandoned, regenerate stand to Longleaf and remove bullet damaged trees.

Stand 18 Est. Cut: 3.18 Cords/Acre

Total: 70 Cords

Page 53, Compartment 6, Stand Prescriptions

Stand 23 Est. Cut: 3.03 Cord/Acre

Total: 40 Cords

Intermed Cut: 13.2 Acres of Islands within Bay to 90 BA.

Stand 24 Est. Cut: 1.67 Cords/Acre

Total: 30 Cords

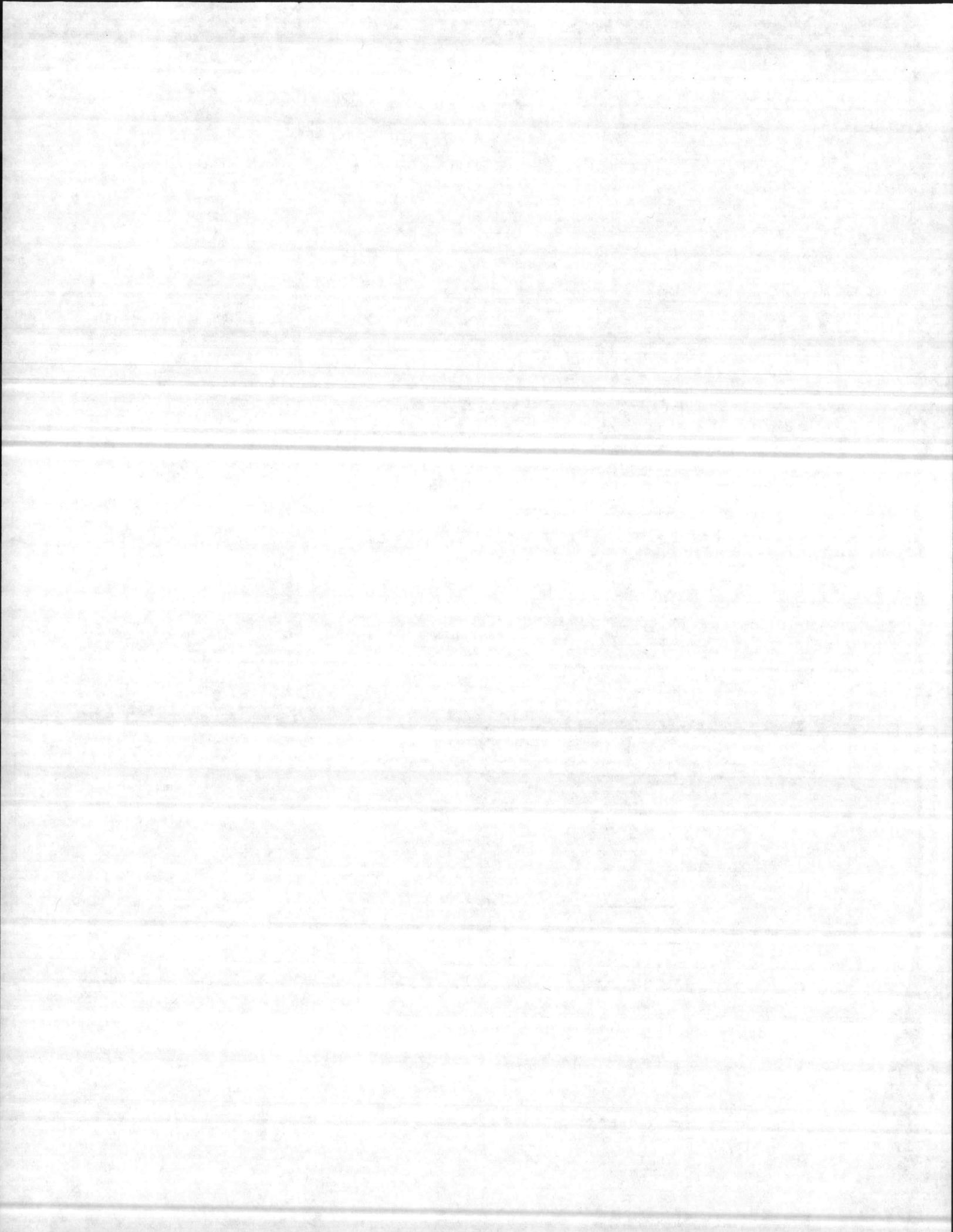
Intermed Cut: All sanitation, salvage and thinners to A 70 BA.

Stand 26 Est. Cut: 1.75 Cords/Acre

Total: 105 Cords

Stand 27 Est. Cut: 2.57 Cords/Acre

Total: 180 Cords



Stand 28 Inoperable

Page 75, Compartment 12, Stand Prescriptions

Stand 1 Inoperable

Stand 2 Est. Cut: 1.29 Cords/Acre

Total: 75 Cords

Stand 3 Est. Cut: 0.91 MBF/Acre

Total: 86 MBF

Page 76, Compartment 12, Stand Prescriptions

Stand 6 Est. Cut: 0.27 MBF and 1.27 Cords/Acre

Total: 42 MBF and 200 Cords

Stand 8 Est. Cut: 2.38 Cords/Acre

Total: 180 Cords

Stand 9 Est. Cut: 7.02 Cords/Acre

Total: 850 Cords

Page 78, Compartment 13, Stand Prescriptions

Stand 2 Inoperable

Stand 3 Inoperable

Stand 5 Est. Cut: 3.03 Cords/Acre

Total: 50 Cords

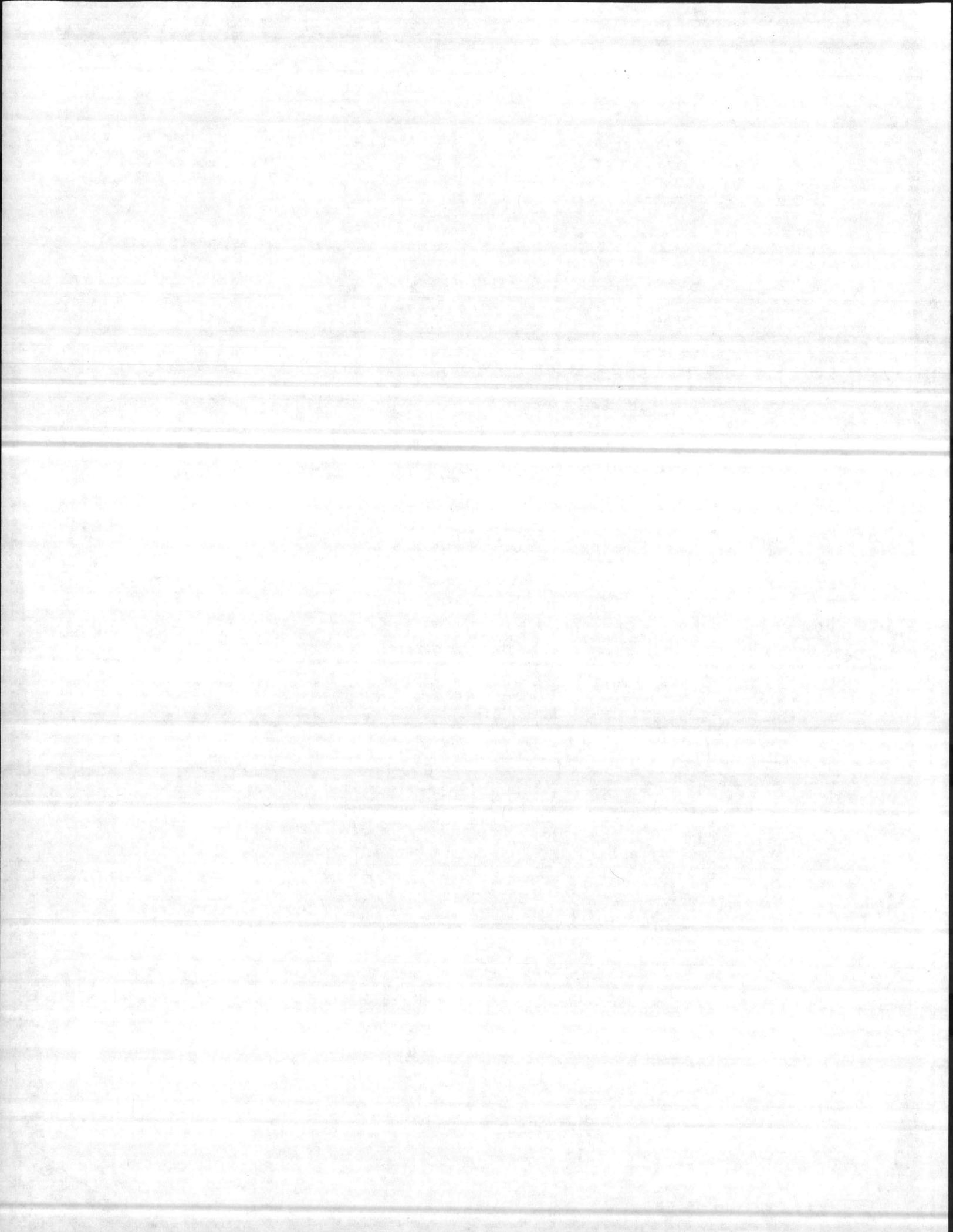
Intermed Cut: 16.5 Acres of old field near east end of stand
to NO BA.

Stand 6 Inoperable

Page 79, Compartment 13, Stand Prescriptions

Stand 7 Est. Cut: 1.79 Cords/Acre

Total: 25 Cords



Intermed Cut: to 80 BA.

Stand 8

Est. Cut: 1.23 MBF and 1.20 Cords/Acre

Total: 231 MBF and 225 Cords

Seed tree cut, leave 8-10 Loblolly Seed Trees/Acre.

Site preparation done with dozer and blade in Summers of 1966 - 67, check regeneration in 1968 - 69.

Stand 10

Est. Cut: 3.30 MBF and 3.31 Cords/Acre

Total: 700 MBF and 702 Cords

Seed Tree Cut: Leave 8-10 Loblolly Pine Seed Trees per acre.

Check for regeneration two years after cut. Inject and mistblow unmerchantable hardwood 1 year after cut.

Page 134, Compartment 30, Stand Prescriptions

Stand 1

Est. Cut: 3.57 Cords/Acre

Total: 350 Cords

Removal Cut: Remove all overtopping trees except thrifty Pine and Yellow Poplar, leave young Sweetgum, Blackgum and Yellow Poplar to restock the area.

Stand 2

Est. Cut: 4.08 Cords/Acre

Total: 400 Cords

Stand 4

Est. Cut: 1.95 Cords/Acre

Total: 220 Cords

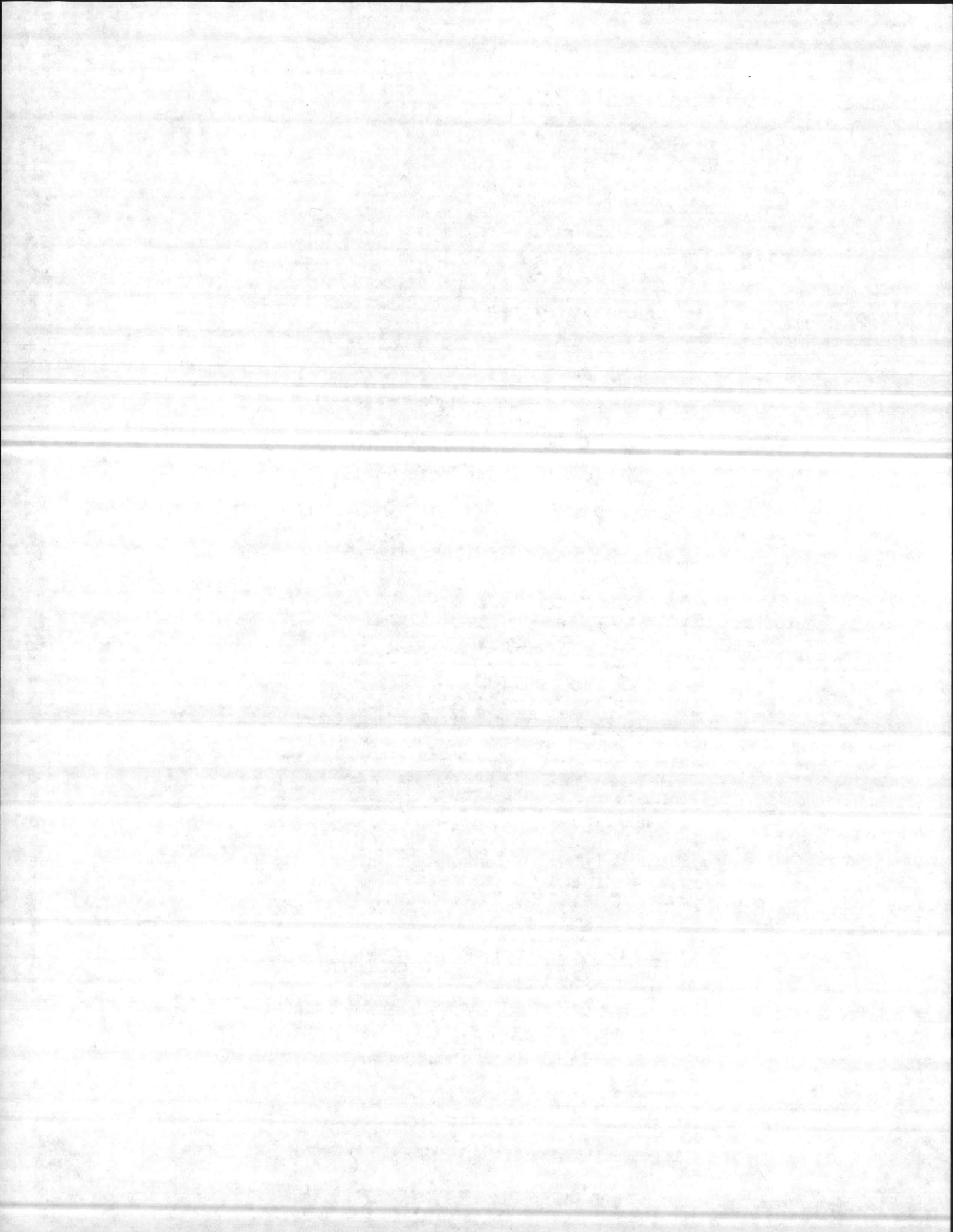
Page 135, Compartment 30, Stand Prescriptions

Stand 5

Est. Cut: 4.96 Cords/Acre

Total: 268 Cords

Clearcut: Remove all merchantable stems on the area. Kill



the remaining stems on $\frac{1}{2}$ of the area with Fernuron Pellets,
the other half site prepare with a dozer and blade. Seed area
to Loblolly.

Stand 9 Est. Cut: 2.07 Cords/Acre
Total: 300 Cords

Stand 10 Inoperable

Page 136, Compartment 30, Stand Prescriptions

Stand 11 Est. Cut: 10.0 Cords/Acre
Total: 150 Cords
Removal Cut: Remove all merchantable wood on the area
releasing pine seedlings and saplings to restock the area.

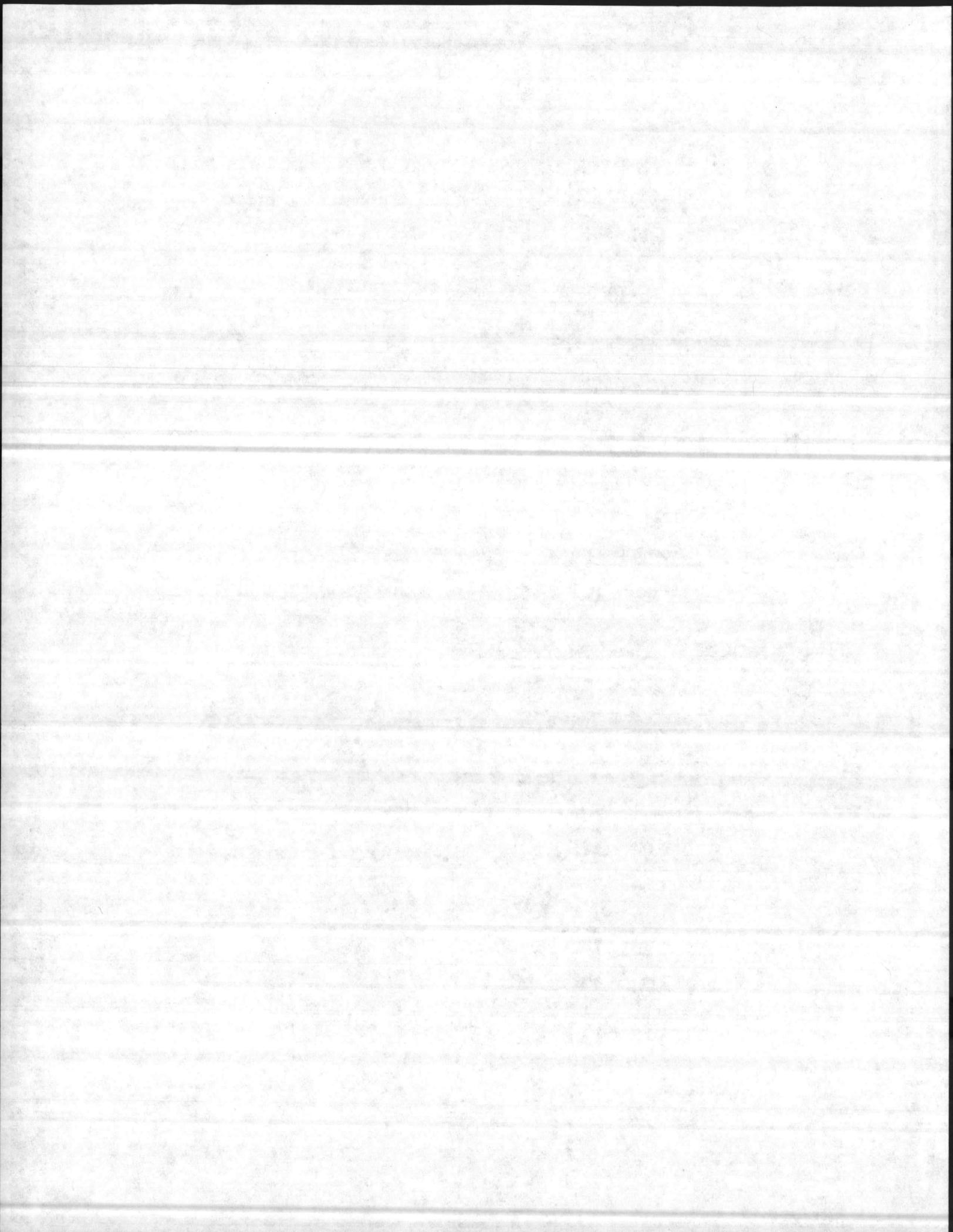
Page 184, Compartment 48, Stand Prescriptions

Stand 1 Est. Cut: 0.74 MBF and 3.10 Cords/Acre
Total: 262 MBF and 1100 Cords

Stand 3 Est. Cut: 2.78 Cords/Acre
Total: 50 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 75 BA.

Stand 4 Est. Cut: 2.73 Cords/Acre
Total: 300 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 80 BA.

Stand 5 Inoperable



Page 185, Compartment 48, Stand Prescriptions

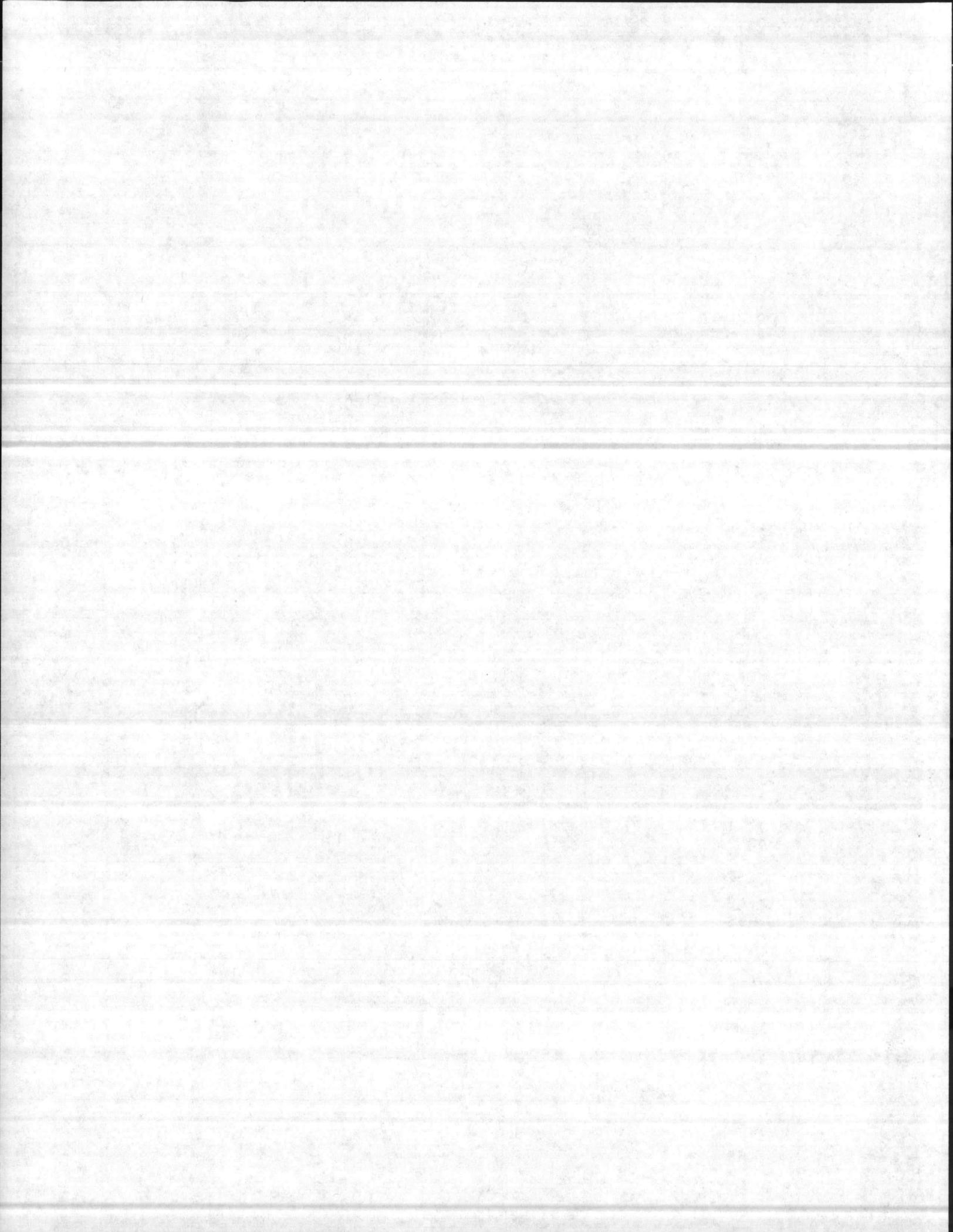
Stand 6 Inoperable
Stand 7 Inoperable
Stand 8 Inoperable
Stand 9 Est. Cut: 6.15 Cords/Acre
 Total: 80 Cords

Page 186, Compartment 48, Stand Prescriptions

Stand 10 Est. Cut: 1.45 Cords/Acre
 Total: 200 Cords
Stand 11 Est. Cut: 3.70 Cords/Acre
 Total: 100 Cords
Stand 12 Est. Cut: 1.54 Cords/Acre
 Total: 80 Cords

Page 187, Compartment 48, Stand Prescriptions

Stand 13 Est. Cut: 5.65 Cords/Acre
 Total: 260 Cords
 Intermed Cut: Remove all sanitation, salvage, and thinners
 to a 70 BA.
Stand 14 Est. Cut: 1.87 Cords/Acre
 Total: 60 Cords
 Intermed Cut: Remove all sanitation, salvage and thinners
 to a 65 BA.
Stand 15 Est. Cut: 5.45 Cords/Acre
 Total: 120 Cords



Stand 16

Est. Cut: 7.89 MBF and 4.21 Cords/Acre

Total: 150 MBF and 80 Cords

Seed Tree Cut: Leave 8-10 Loblolly Pine Seed Trees per acre.

Burn in early Fall for site preparation. Check two years after cutting for regeneration.

Page 188, Compartment 48, Stand Prescriptions

Stand 17 Inoperable

Stand 18 Inoperable

Stand 19 Inoperable

Page 224, Compartment 59, Stand Prescriptions

Stand 2 Est. Cut: 2.40 MBF and 2.56 Cords/Acre

Total: 187 MBF and 200 Cords

Seed Tree Cut: Leave 8-10 Loblolly Pine Seed Trees per acre.

Deaden all unmerchantable hardwoods with injector and mist-blower using 2,4-D.

Stand 4 Est. Cut: 5.40 Cords/Acre

Total: 54 Cords

Intermed Cut: Thin 10 acres in SW corner of stand removing all sanitation, salvage and thinners to a 70 BA.

Page 225, Compartment 59, Stand Prescriptions

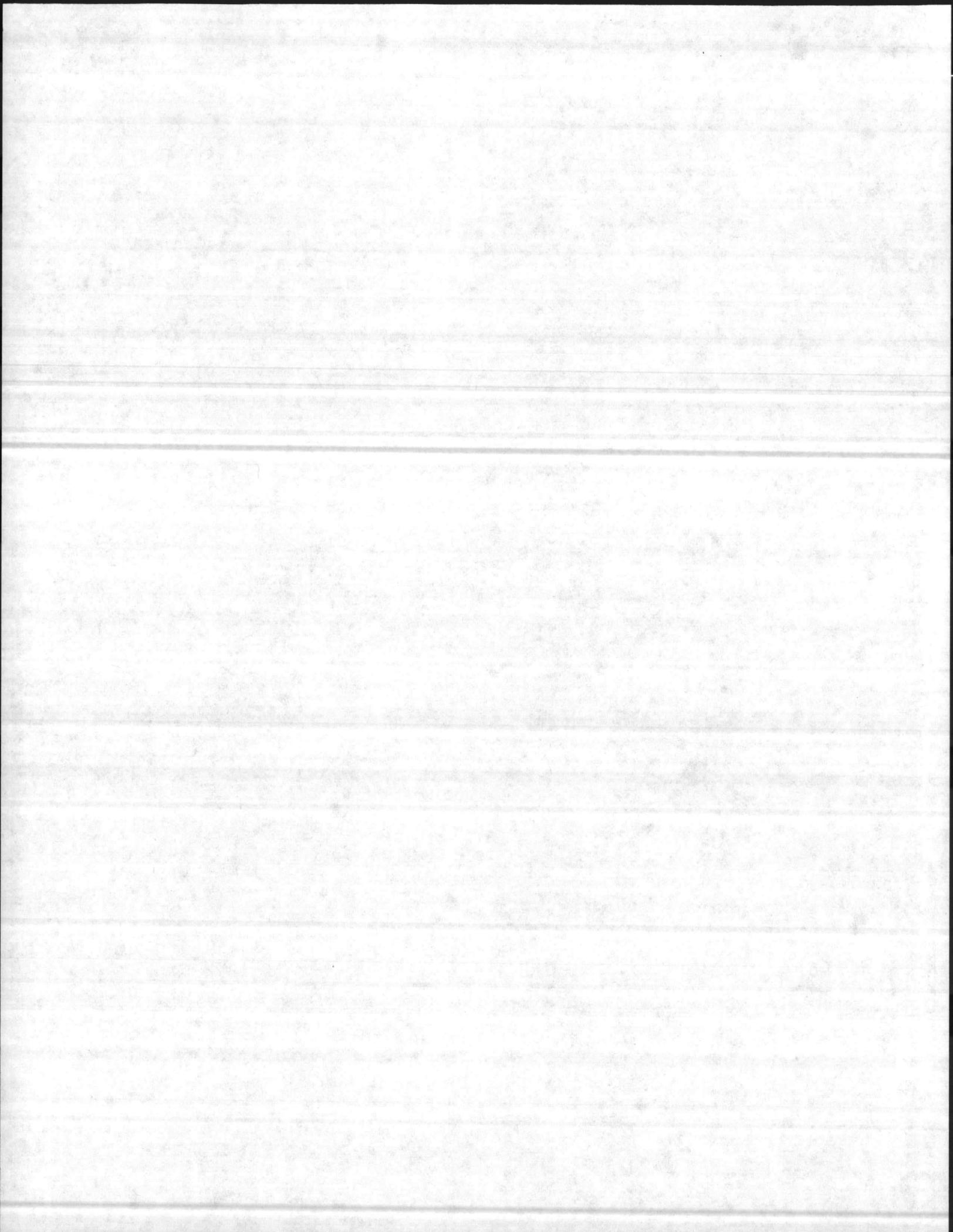
Stand 7 Est. Cut: 0.47 Cord/Acre

Total: 110 Cords

Intermed Cut: Remove all sanitation, salvage and thinners to 70 BA.

Page 226, Compartment 59, Stand Prescriptions

Stand 11 Est. Cut: 1.68 MBF and 3.35 Cords/Acre



Total: 300 MBF and 600 Cords

Stand 12

Site Preparation: Prepare site with ^{bush & boy} bushhog disk, plant with Loblolly Pine Seedlings on an 8 x 8 spacing.

Stand 13

Est. Cut: 4.39 MBF and 1.05 Cords/Acre

Total: 167 MBF and 40 Cords

Page 16, Fiscal Year 1965

<u>COMP.</u>	<u>STANDS</u>	<u>ACRES</u>
5	2, 3, 8, 9, 12, 14, 15, 16, 18, 23	573
16	1, 4, 5, 6, 7, 8, 10, 11	517
21	7, 9, 10	346
23	1, 9, 11, 12, 14, 21	273
26	1, 2, 5, 8, 12, 16	324
49	1, 3, 6, 7, 12	<u>664</u>
	TOTAL CUT	2,697

Prescribe Burning:

⁴
~~1, 2, 8, 9, 10, 17, 18, 25, 31, 37, 32~~
²⁰
²⁹
⁵⁶
47, 52, 55, 58

Page 42, Compartment 5, Stand Prescription

Stand 2

Est. Cut: 2.0 MBF and 2.00 Cords/Acre

Total: 26 MBF and 26 Cords

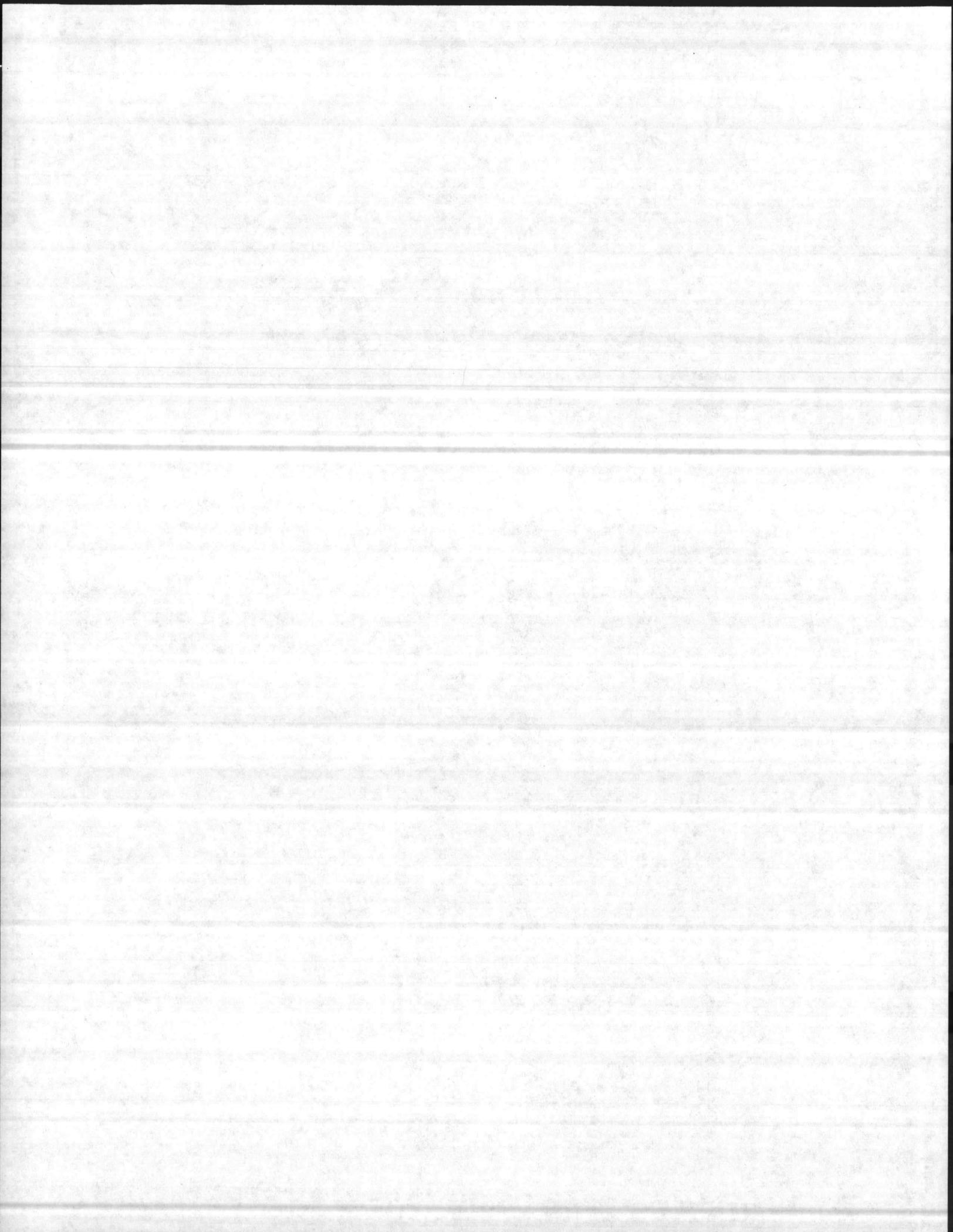
Stand 3

Est. Cut: 1.11 MBF and 1.94 Cords/Acre

Total: 20 MBF and 35 Cords

Stand 5

Est. Cut: 0.46 MBF and 2.19 Cords/Acre



Total: 63 MBF and 300 Cords

Intermed Cut: All sanitation, salvage and thinners to a
65 BA.

Page 13, Compartment 5, Stand Prescription

Stand 8 Est. Cut: 4.78 Cords/Acre

Total: 172 Cords

Stand 9 Est. Cut: 1.20 MBF and 1.86 Cords/Acre

Total: 84 MBF and 130 Cords

Page 14, Compartment 5, Stand Prescription

Stand 12 Est. Cut: 4.00 MBF and 1.75 Cords/Acre

Total: 32 MBF and 14 Cords

Intermed Cut: Approximately 8 acres on east end of stand
to 70 BA.

Page 15, Compartment 5, Stand Prescription

Stand 14 Est. Cut: 2.76 MBF and 2.94 Cords/Acre

Total: 386 MBF and 141 Cords

Seed Tree Cut: Leave 8-10 Longleaf or Loblolly Pine Seed
Trees per acre. Burn in late summer for site preparation.
Check for reproduction two years after cutting.

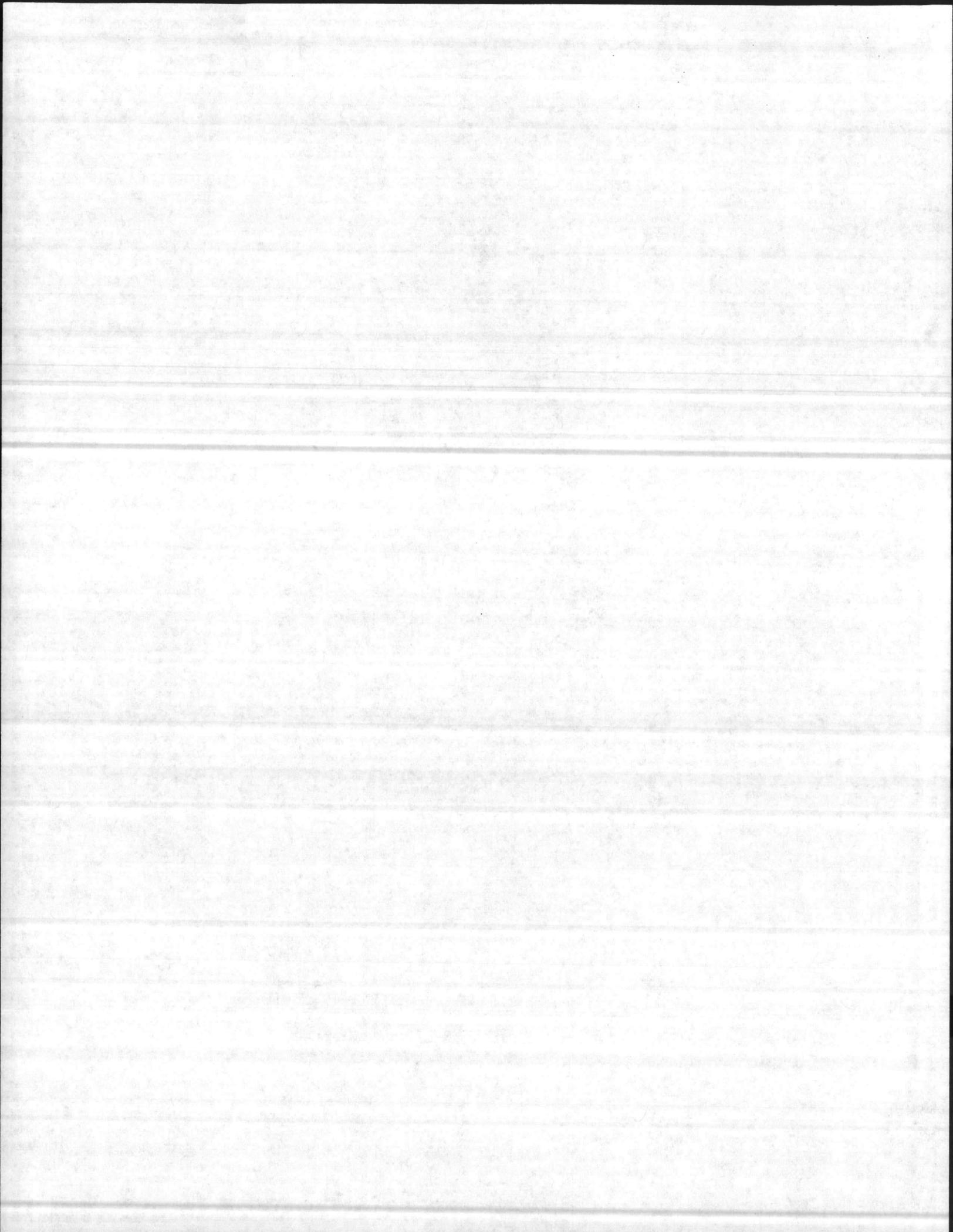
Stand 15 Est. Cut: 1.60 MBF and 2.91 Cords/Acre

Total: 56 MBF and 102 Cords

Stand 16 Est. Cut: 4.84 MBF and 7.69 Cords/Acre

Total: 155 MBF and 246 Cords

Stand 17 Inoperable



Page 46, Compartment 5, Stand Prescription

Stand 18 Est. Cut: 0.86 MBF and 1.64 Cords/Acre

Total: 36 MBF and 69 Cords

Stand 19 Inoperable

Stand 22 Inoperable

Stand 23 Est. Cut: 2.48 Cords/Acre

Total: 57 Cords

Stand 25 Inoperable

Stand 26 Inoperable

Page 85, Compartment 16, Stand Prescription

Stand 1 Est. Cut: 2.98 Cords/Acre

Total: 399 Cords

Stand 2 Inoperable

Stand 4 Est. Cut: 1.66 MBF and 1.17 Cords/Acre

Total: 149 MBF and 105 Cords

Stand 5 Est. Cut: 2.27 MBF and 6.49 Cords/Acre

Total: 202 MBF and 578 Cords

Intermed Cut: Cut all sanitation, salvage and thinner
to 65 BA.

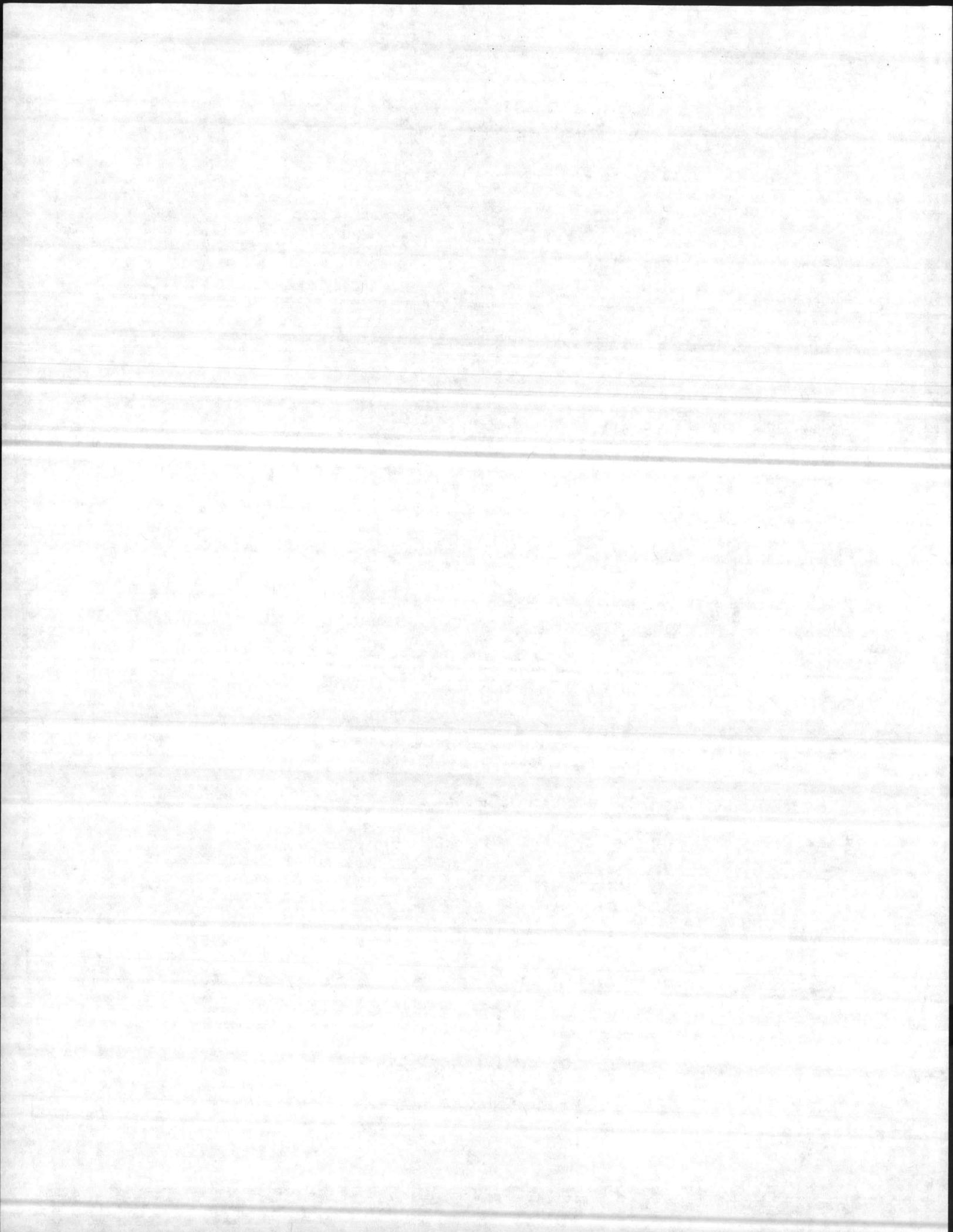
Stand 6 Est. Cut: 3.35 MBF and 2.76 Cords/Acre

Total: 164 MBF and 135 Cords

Page 86, Compartment 16, Stand Prescription

Stand 7 Est. Cut: 3.03 MBF and 2.62 Cords/Acre

Total: 194 MBF and 168 Cords



Page 86, Compartment 16, Stand Prescription

Stand 8 Est. Cut: 8.15 Cords/Acre
 Total: 318 Cords

Stand 9 Inoperable

Stand 10 Est. Cut: 2.97 Cords/Acre
 Total: 86 Cords

Page 87, Compartment 16, Stand Prescription

Stand 11 Est. Cut: 1.78 MBF and 1.04 Cords/Acre
 Total: 41 MBF and 24 Cords

Page 100, Compartment 21, Stand Prescription

Stand 7 Est. Cut: 3.20 Cords/Acre
 Total: 326 Cords

Stand 9 Est. Cut: 2.44 MBF and 0.98 Cords/Acre
 Total: 105 MBF and 42 Cords/Acre

Removal Cut: Remove all mature and over mature pine and
cypress. Leave all young pine to restock area.

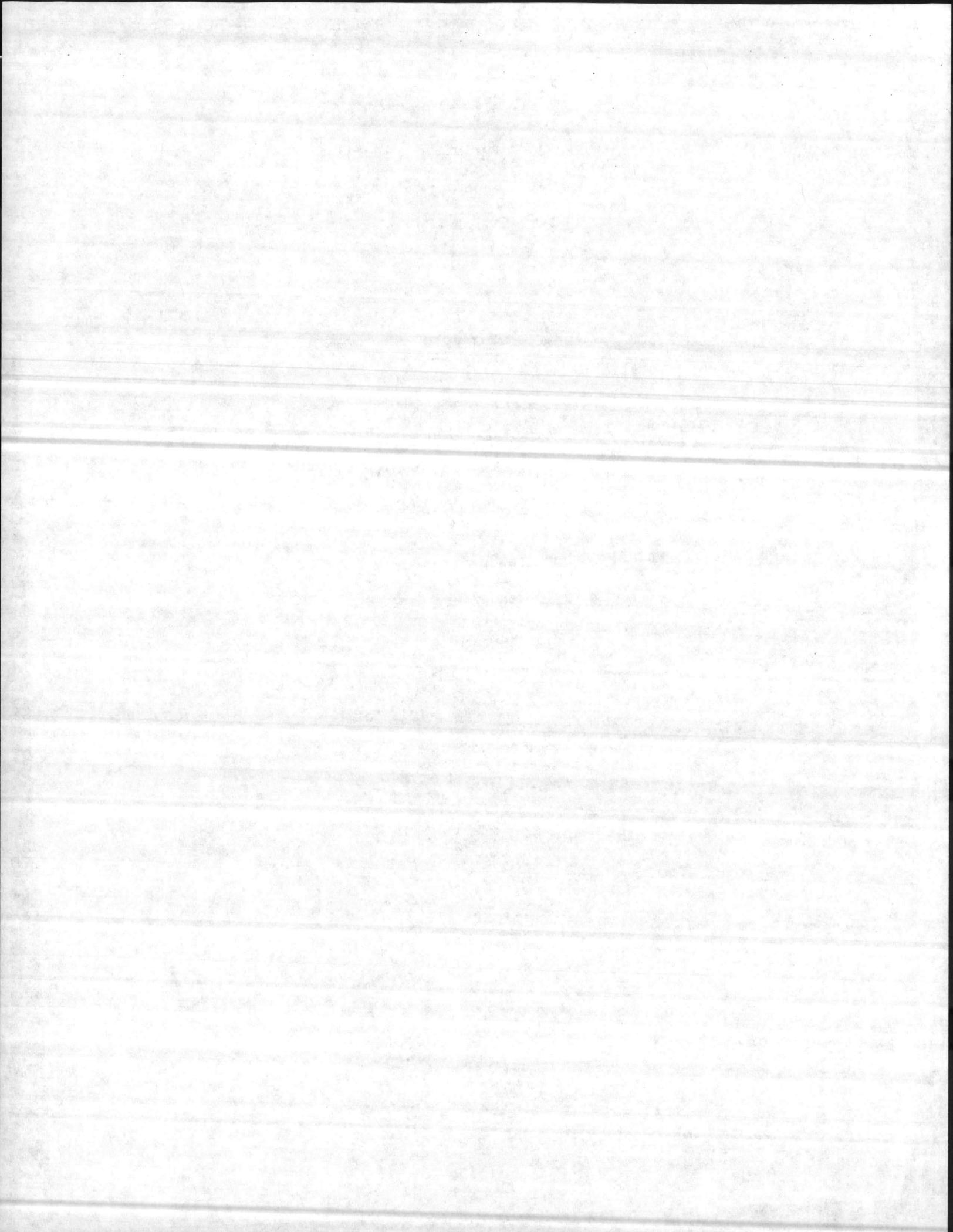
Stand 10 Est. Cut: 2.75 Cords/Acre
 Total: 44 Cords

Page 108, Compartment 23, Stand Prescription

Stand 1 Est. Cut: 1.40 MBF and 1.50 Cords/Acre
 Total: 56 MBF and 60 Cords

Page 109, Compartment 23, Stand Prescription

Stand 9 Est. Cut: 1.84 MBF and 0.84 Cords/Acre
 Total: 94 MBF and 43 Cords



Stand 11 Est. Cut: 1.67 MBF and 1.33 Cords/Acre
Total: 72 MBF and 57 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 90 BA.

Stand 12 Est. Cut: 0.59 MBF and 3.87 Cords/Acre
Total: 32 MBF and 209 Cords

Page 110, Compartment 23, Stand Prescription

Stand 13 Inoperable

Stand 14 Est. Cut: 0.32 MBF and 5.89 Cords/Acre
Total: 18 MBF and 330 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 90 BA.

Stand 15 Inoperable

Page 111, Compartment 23, Stand Prescription

Stand 19 Inoperable

Stand 21 Est. Cut: 0.28 MBF and 1.72 Cords/Acre
Total: 8 MBF and 50 Cords

Page 119, Compartment 26, Stand Prescription

Stand 1 Est. Cut: 0.88 Cords/Acre

Total: 58 Cords

Stand 2 Est. Cut: 1.50 MBF and 5.33 Cords/Acre

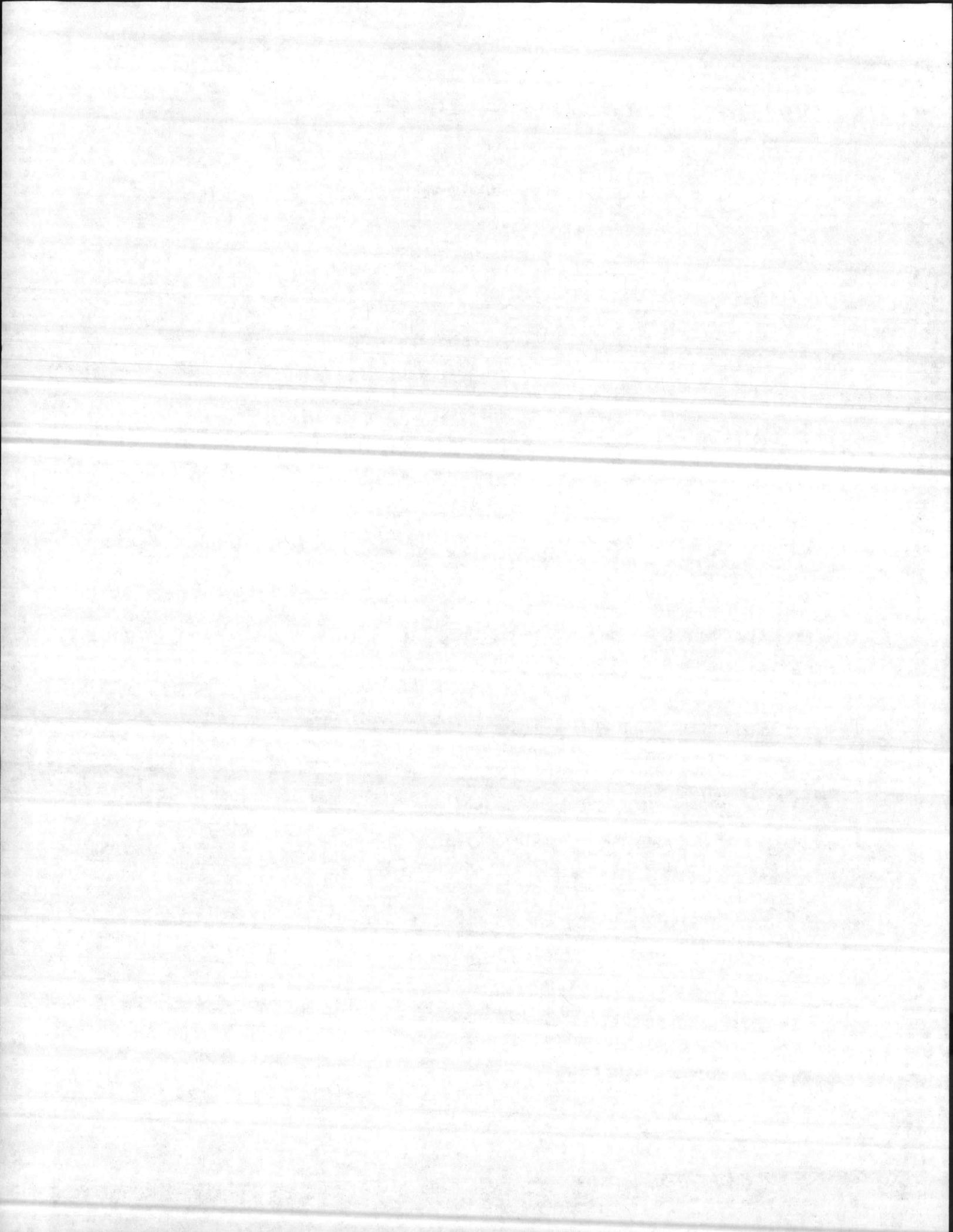
Total: 189 MBF and 672 Cords

Page 120, Compartment 26, Stand Prescription

Stand 4 Inoperable

Stand 5 Est. Cut: 0.81 MBF/Acre

Total: 22 MBF



Page 121, Compartment 26, Stand Prescription

Stand 8 Est. Cut: 2.86 MBF and 4.21 Cords/Acre
 Total: 80 MBF and 118 Cords
Stand 12 Est. Cut: 0.52 MBF and 0.89 Cords/Acre
 Total: 33 MBF and 56 Cords

Page 122, Compartment 26, Stand Prescription

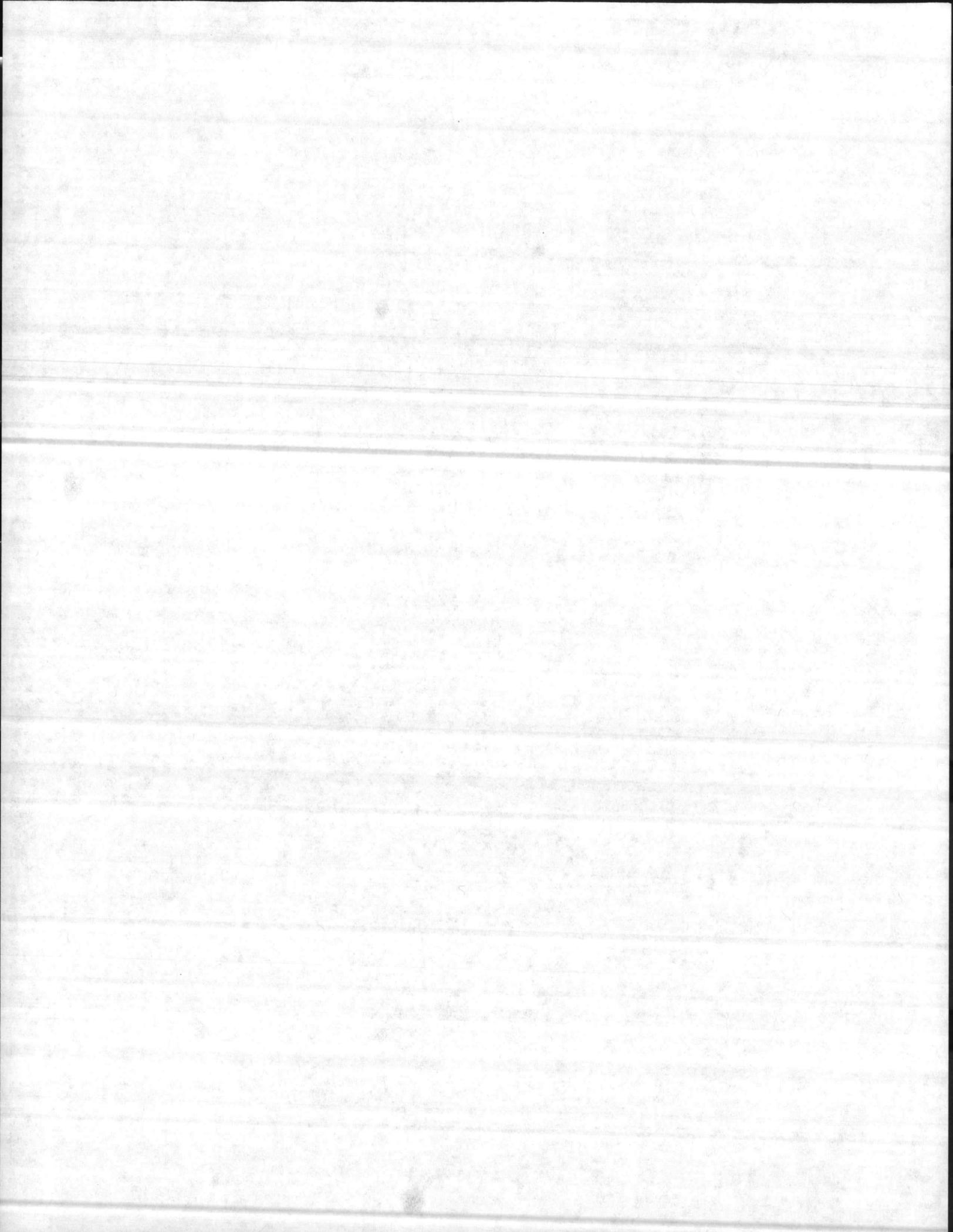
Stand 13 Inoperable
Stand 14 Inoperable
Stand 16 Est. Cut: 2.80 Cords per Acre
 Total: 14 Cords
Intermed Cut: Remove all sanitation, salvage and thinners
to 70 BA in a 5 acre section in Southwest corner of the
stand. The remainder of the stand is inoperable.

Page 189, Compartment 49, Stand Prescription

Stand 1 Est. Cut: 1.53 MBF and 1.50 Cords/Acre
 Total: 198 MBF and 194 Cords
Stand 2 Inoperable
Stand 3 Est. Cut: 5.03 Cords/Acre
 Total: 543 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 70 BA.

Page 190, Compartment 49, Stand Prescription

Stand 5 Inoperable
Stand 6 Est. Cut: 0.82 MBF and 5.85 Cords
 Total: 226 MBF and 1,609 Cords



Stand 7 Est. Cut: 2.00 Cords/Acre
 Total: 278 Cords

Page 191, Compartment 49, Stand Prescription

Stand 12 Est. Cut: 3.23 Cords/Acre
 Total: 42 Cords

Page 17, Fiscal Year 1967

<u>COMP.</u>	<u>STANDS</u>	<u>ACRES</u>
7	2, 3, 4, 5, 7, 18	217
11	1, 2, 3, 4, 5, 6	868
24	3, 5, 6, 7	623
34	1, 2, 3, 5	301
35	1, 2, 3, 4, 9	446
56	5, 8, 10, 13	326
57	2	<u>140</u>
TOTAL CUT		2,921

Prescribe Burn:

¹⁵
~~4~~, 19, ~~20~~, 28, ^{31 33}~~29, 32~~, 36, 41, ^{45, 46, 50, 60}~~46, 47, 54, 56~~

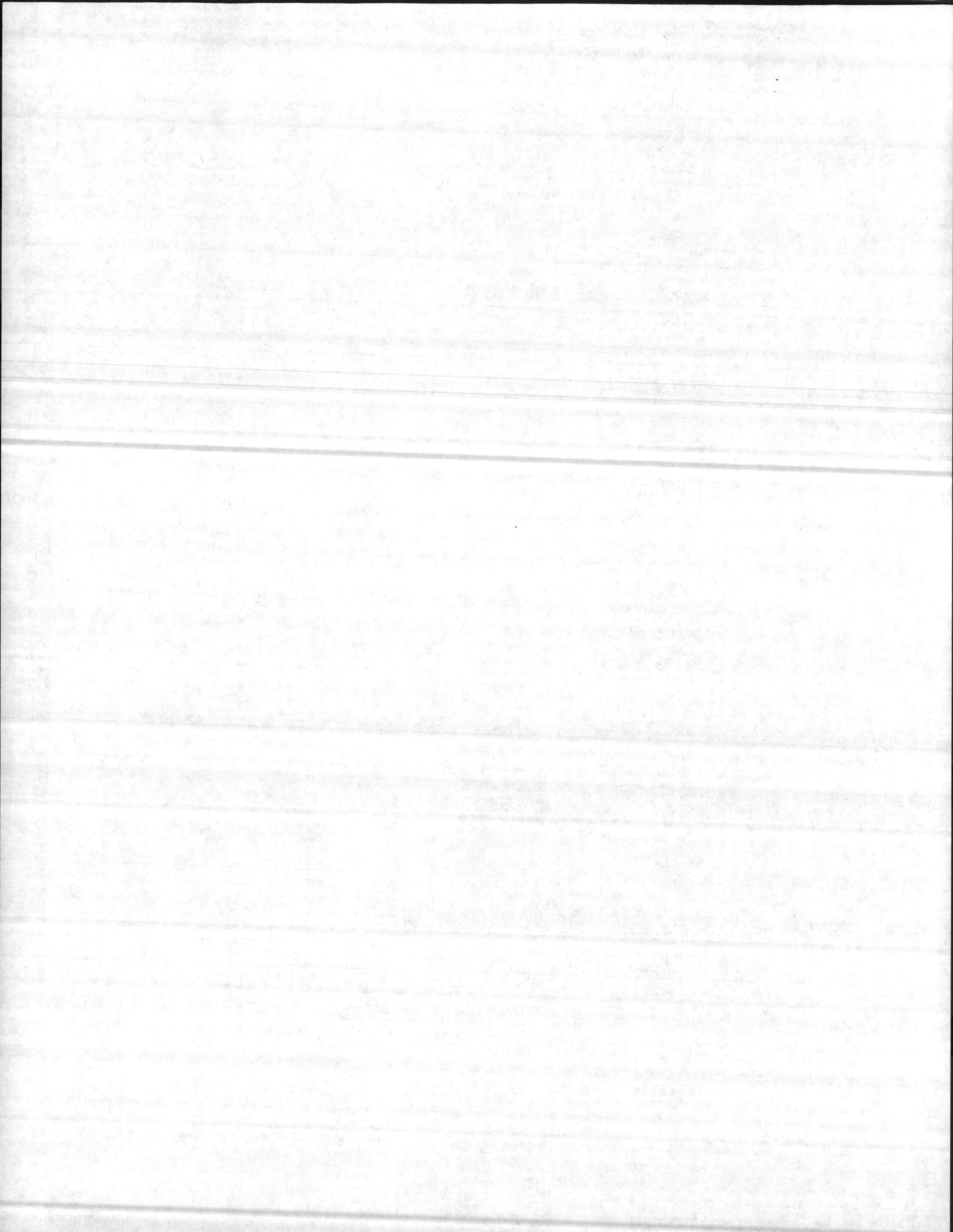
Page 55, Compartment 7, Stand Prescription

Stand 2 Est. Cut: 4.12 MBF and 0.53 Cords/Acre
 Total: 177 MBF and 23 Cords
 Removal Cut: Remove all residual saw timber.

Stand 3 Est. Cut: 2.85 MBF and 6.58 Cords/Acre
 Total: 94 MBF and 217 Cords

Page 56, Compartment 7, Stand Prescription

Stand 4 Est. Cut: 1.30 MBF/Acre



Stand 4 (Cont'd)

Total: 82 MBF and 16 Cords

Removal Cut: Remove all residual saw timber.

Stand 5

Est. Cut: 4 Cords/Acre

Total: 4 Cords

Intermed Cut: Cut all sanitation, salvage and thinners in a lacre old field alongside access road between compartments 8 and 7.

Stand 6

Inoperable

Page 57, Compartment 7, Stand Prescription

Stand 7 (30 Acres)

Est. Cut: 5.40 MBF and 3.60 Cords/Acre

Total: 162 MBF and 114 Cords

Seed Tree: Cut all merchantable except 10-12 loblolly pine seed trees per acre. Parts of Stands 5 and 8 have been added to this stand.

Page 58, Compartment 7, Stand Prescription

Stand 14

Inoperable

Page 59, Compartment 7, Stand Prescription

Stand 16

Inoperable

Stand 18

Est. Cut: 0.89 MBF and 0.25 Cords/Acre

Total: 42 MBF and 12 Cords

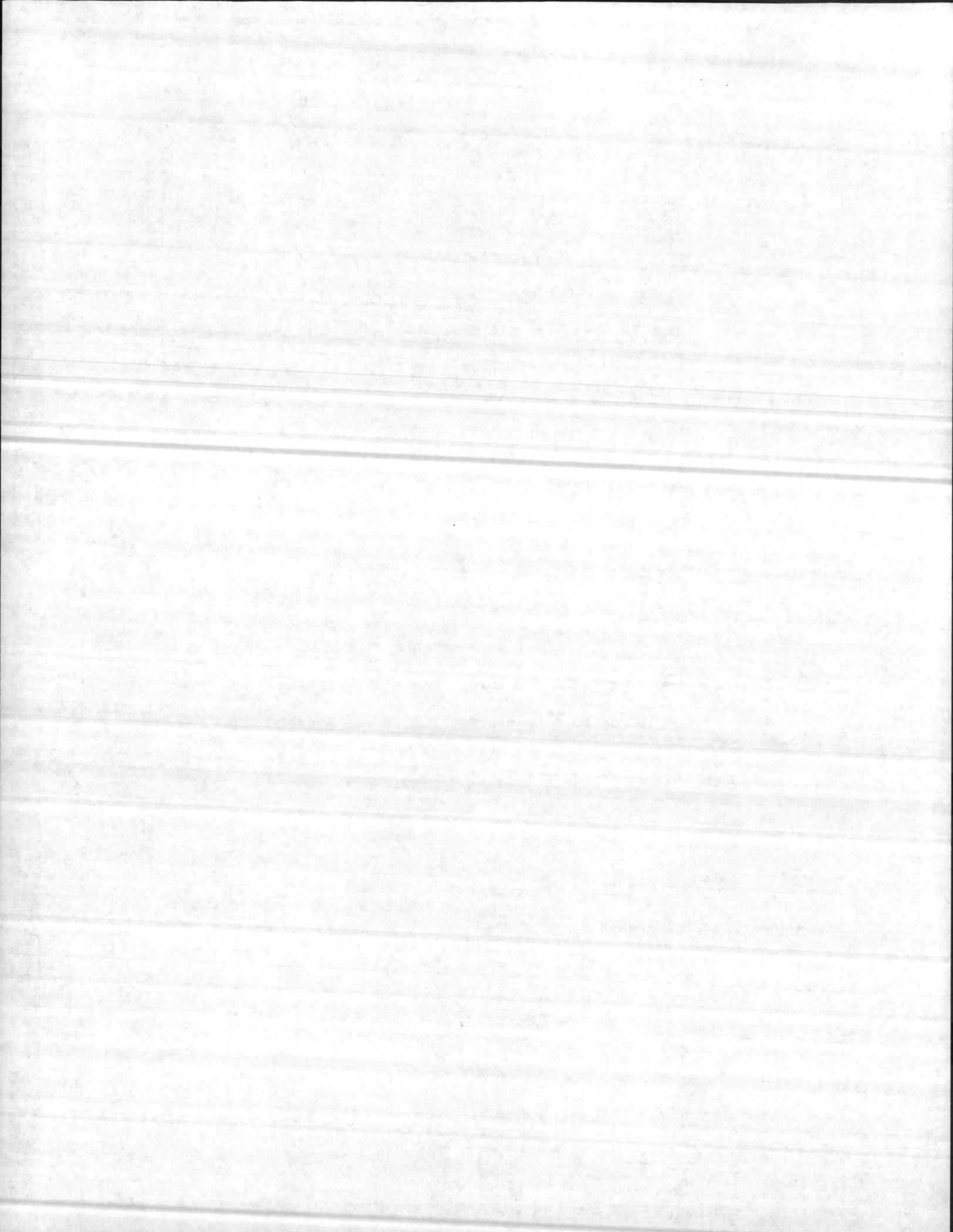
Stand 19

Inoperable

Page 72, Compartment 11, Stand Prescription

Stand 1

Est. Cut: 3.07 MBF and 4.28 Cords/Acre



Stand 1 (Cont'd)

Total: 938 MBF and 1,310 Cords

Stand 2

Est. Cut: 0.66 MBF and 1.16 Cords/Acre

Total: 116 MBF and 197 Cords

Stand 3

Est. Cut: 0.25 MBF and 2.58 Cords/Acre

Total: 26 MBF and 274 Cords

Page 73, Compartment 11, Stand Prescription

Stand 4

Est. Cut: 0.29 MBF and 1.01 Cord/Acre

Total: 23 MBF and 60 Cords

Seed Tree: Cut all merchantable material except 10-12

Loblolly Pine and ^{Yellow Poplar} ~~White Oak~~ per acre. Good quality White & Red

Oak shall also be left.

Stand 5

Est. Cut: 2.02 Cords per acre

Total: 379 Cords

Stand 6

Est. Cut: 0.68 MBF and 5.26 Cords/Acre

Total: 13 MBF and 100 Cords

Page 113, Compartment 2h, Stand Prescription

Stand 3

Est. Cut: 0.86 Cords/Acre

Total: 100 Cords

Stand 5

Est. Cut: 0.81 MBF and 0.39 Cords/Acre

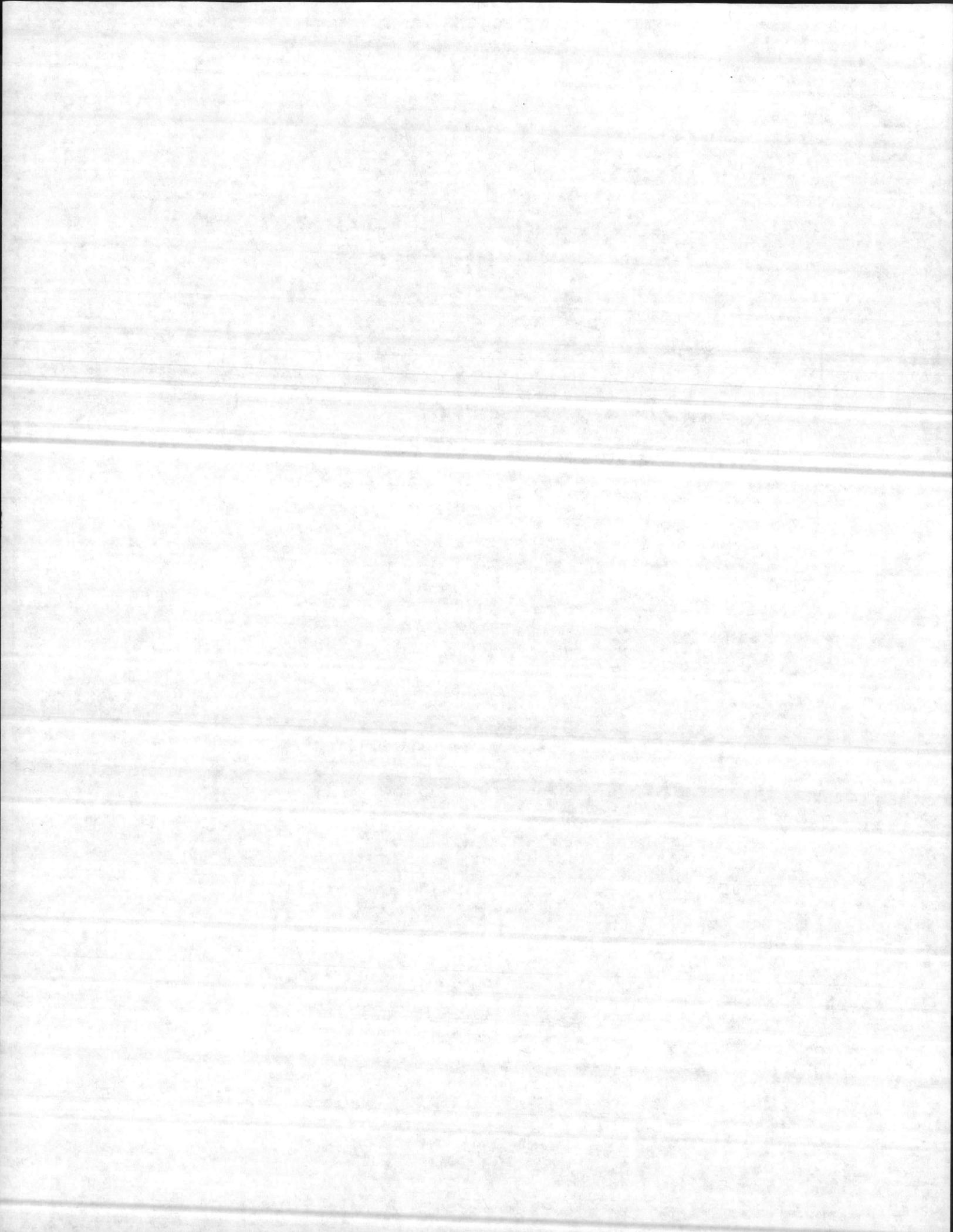
Total: 331 MBF and 161 Cords

Page 11h, Compartment 2h, Stand Prescription

Stand 6

Est. Cut: 1.39 MBF and 0.60 Cords/Acre

Total: 117 MBF and 50 Cords



Stand 7 Est. Cut: 2.14 MBF and 7.14 Cords/Acre
Total: 30 MBF and 100 Cords

Stand 9 Inoperable

Page 144, Compartment 34, Stand Prescription

Stand 1 Est. Cut: 2.32 Cords/Acre
Total: 65 Cords
Intermed Cut: Remove all sanitation, salvage and thinners
to 70 BA.

Stand 2 Est. Cut: 2.79 Cords/Acre
Total: 635 Cords

Page 145, Compartment 34, Stand Prescription

Stand 3 Est. Cut: 0.83 Cords/Acre
Total: 25 Cords

Stand 5 Est. Cut: 2.00 MBF/Acre
Total: 30 MBF

Stand 6 Inoperable

Page 146, Compartment 35, Stand Prescription

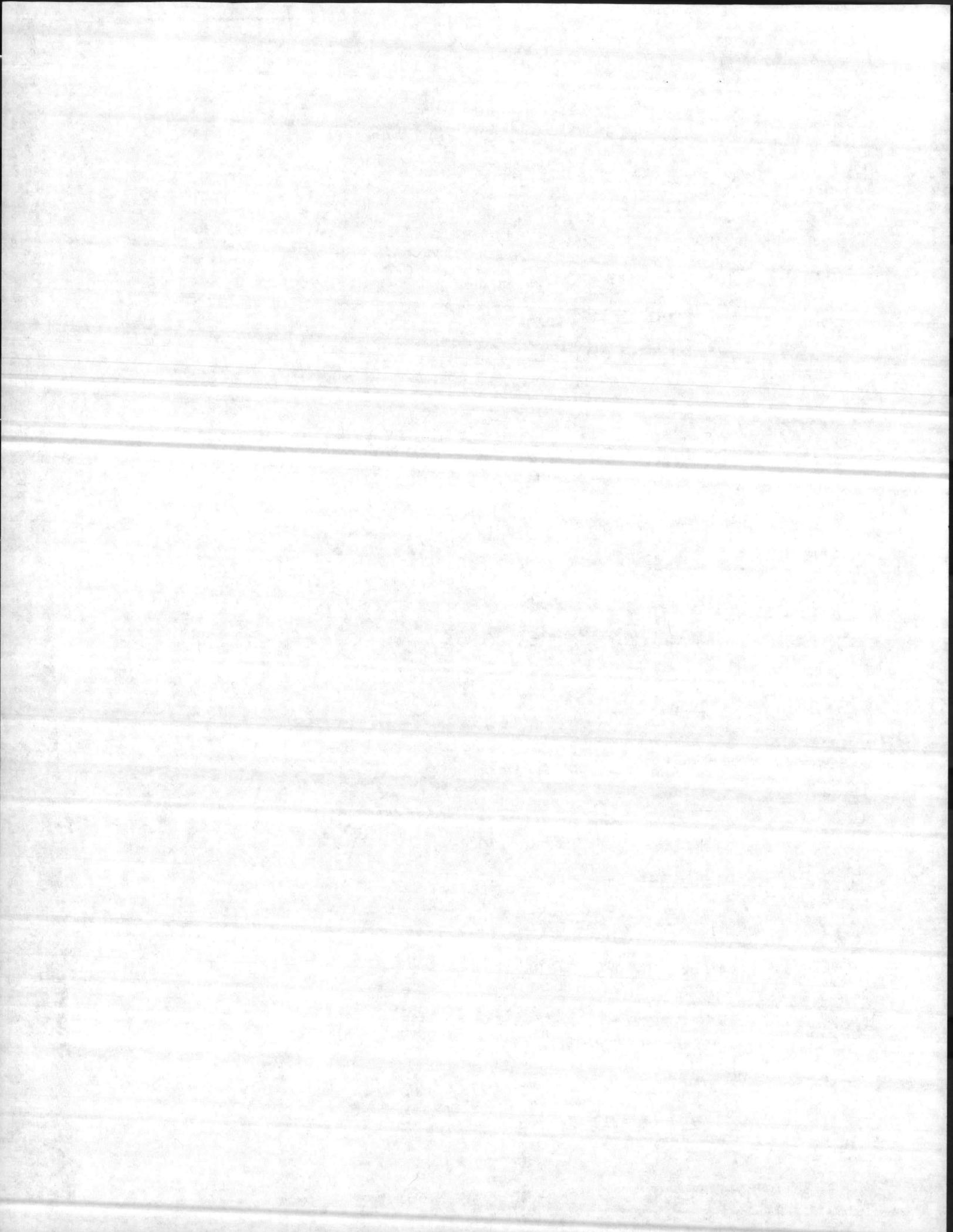
Stand 1 Est. Cut: 2.56 MBF and 10.80 Cords/Acre
Total: 64 MBF and 270 Cords

Stand 2 Est. Cut: 0.42 Cords/Acre
Total: 28 Cords

Page 147, Compartment 35, Stand Prescription

Stand 3 Est. Cut: 2.28 Cords/Acre
Total: 244 Cords

Stand 4 Est. Cut: 0.92 MBF and 0.79 Cords/Acre
Total: 213 MBF and 184 Cords



Stand 5

Inoperable

Stand 9

Est. Cut: 4.20 Cords per acre

Total: 42 Cords

Intermed Cut: Cut all salvage, sanitation and thinners
in North East 10 acres of Stand to 70 BA.

Page 148, Compartment 35, Stand Prescription

Stand 11

Inoperable

Page 214, Compartment 56, Stand Prescription

Stand 5

Est. Cut: 2.45 MBF and 0.44 Cord/Acre

Total: 213 MBF and 38 Cords

Removal Cut: Remove all residual saw timber.

Page 215, Compartment 56, Stand Prescription

Stand 8

Est. Cut: 0.63 MBF and 0.52 Cords/Acre

Total: 41 MBF and 34 Cords

Removal Cut: Remove all residual saw timber.

Page 216, Compartment 56, Stand Prescription

Stand 10

Est. Cut: 0.45 MBF and 0.32 Cords/Acre

Total: 77 MBF and 55 Cords

Removal Cut: Remove all residual saw timber.

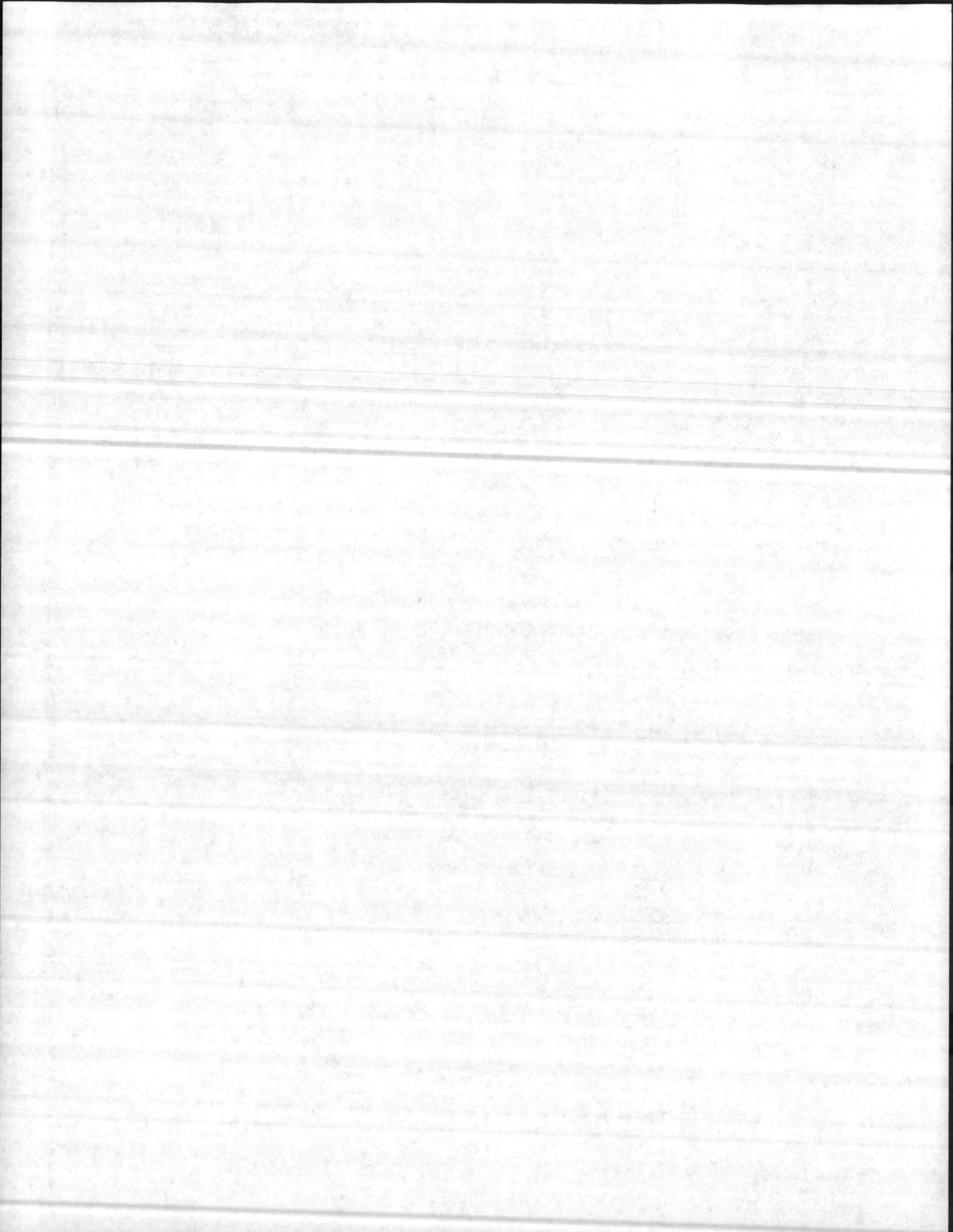
Page 217, Compartment 56, Stand Prescription

Stand 13

Est. Cut: 7.00 Cords/Acre

Total: 14.0 Cords

Removal Cut: Remove all residual timber on two acres
in North portion of Stand.



Page 218, Compartment 57, Stand Prescription

Stand 1 Inoperable
 Stand 2 Est. Cut: 0.51 MBF and 0.21 Cords/Acre
Total: 72 MBF and 30 Cords
 Stand 5 Inoperable

Page 219, Compartment 57, Stand Prescription

Stand 8 Inoperable

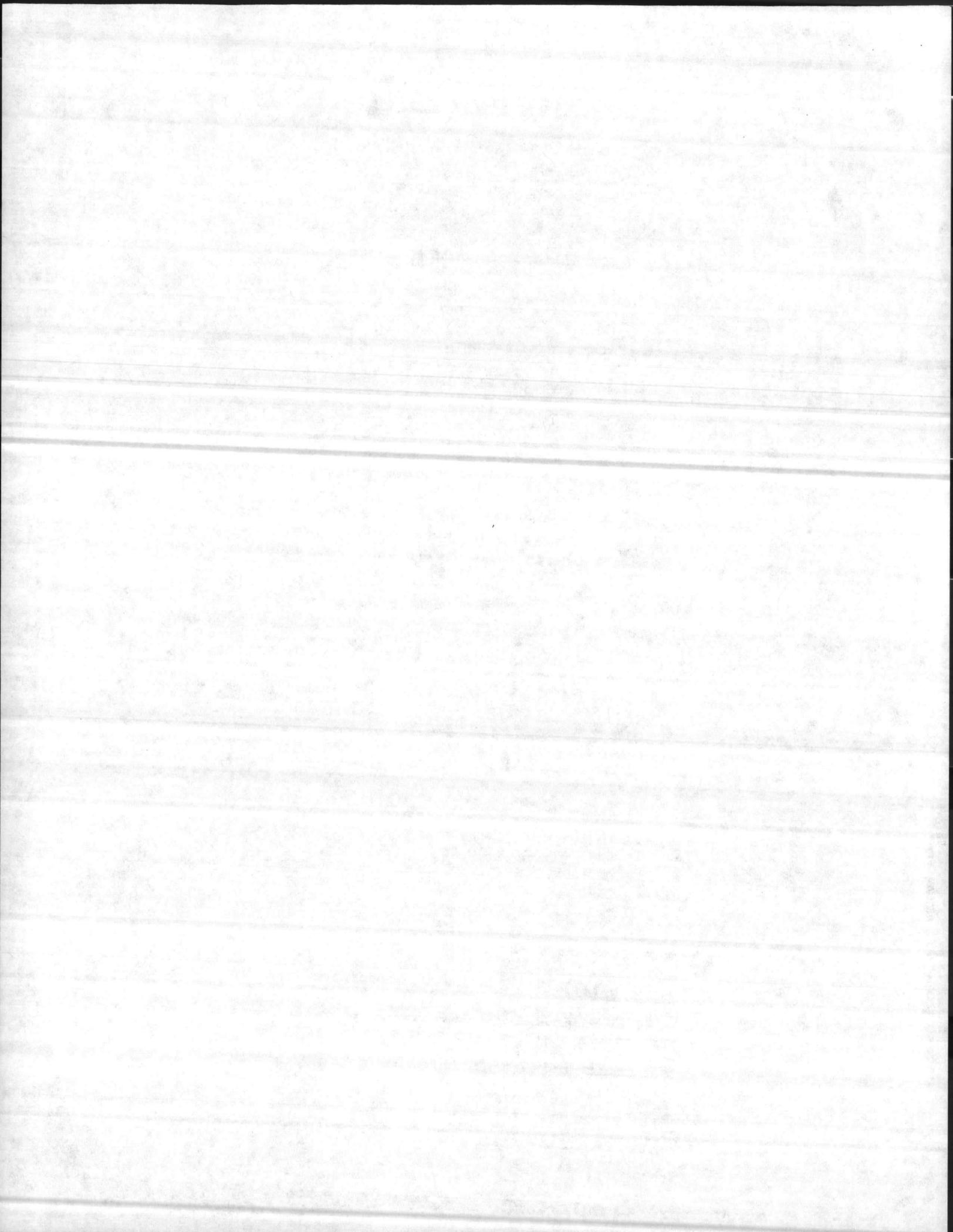
Page 18, Fiscal Year 1968

<u>COMP.</u>	<u>TIMBER HARVEST</u>	
	<u>STANDS</u>	<u>ACRES</u>
8	1, 3, 4, 5, 6, 7, 8, 9, 10, 13, 15	540
9	4, 8, 9	624
25	1, 2, 5, 7, 11	590
52	1, 2, 5, 6, 7, 8, 9, 10, 13, 14	608
55	1, 6, 7, 8	569
58	1, 3, 4, 5, 6, 8	<u>790</u>
	<u>TOTAL CUT</u>	<u>3,721</u>

Prescribe Burn: 6, 12, 13, 14, 27, 30, 38, 43, 48
~~11, 15, 27, 31, 33, 38, 43, 45, 50,~~
 51, 53, 59
~~55, 60~~ and N $\frac{1}{2}$ of 9

Page 61, Compartment 8, Stand Prescription

Stand 1 Est. Cut: 1.15 MBF and 2.58 Cords/Acre
Total: 69 MBF and 155 Cords
 Stand 3 Est. Cut: 2.18 Cords/Acre
Total: 98 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
 to 70 BA.



Stand 4 Est. Cut: 2.29 MBF and 7.59 Cords/Acre

Page 62, Compartment 8, Stand Prescription

Stand 5 Est. Cut: 1.42 Cords/Acre

Total: 27 Cords

Intermed Cut: Cut all sanitation, salvage and thinners
to 70 BA.

Stand 6 Est. Cut: 1.07 MBF and 3.57 Cords/Acre

Total: 269 MBF and 895 Cords

Stand 7 Est. Cut: 3.08 MBF and 1.42 Cords/Acre

Total: 80 MBF and 37 Cords

Removal Cut: Remove all residual saw timber.

Stand 8 Est. Cut: 1.64 MBF/Acre

Total: 36 MBF

Removal Cut: Remove all residual saw timber.

Stand 9 Est. Cut: 3.53 MBF and 4.42 Cords/Acre

Total: 155 MBF and 199 Cords

Page 63, Compartment 8, Stand Prescription

Stand 10 Est. Cut: 2.36 Cords/Acre

Total: 52 Cords

Stand 11 Inoperable

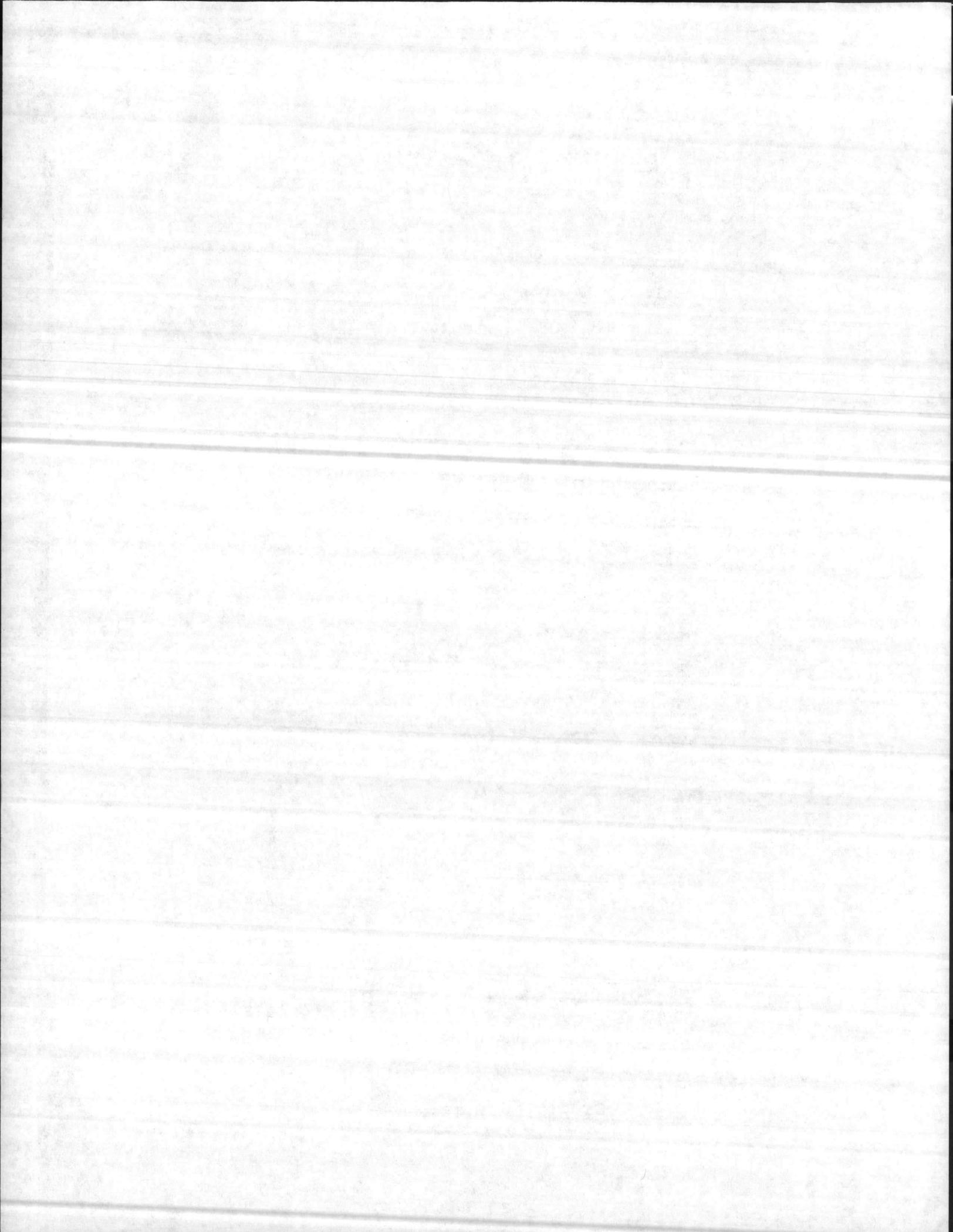
Page 64, Compartment 8, Stand Prescription

Stand 13 Est. Cut: 2.64 MBF and 1.00 Cords/Acre

Total: 29 MBF and 11 Cords

Stand 15 Est. Cut: 2.73 MBF and 4.68 Cords/Acre

Total: 60 MBF and 103 Cords



Page 65, Compartment 9, Stand Prescription

NOTE: All Stands north of center East-West Road were not marked because burning was not accomplished. These Stands will be burned in Winter of 1967-1968 and marked for sale in FY 1969 Sale.

Stand 4 Est. Cut: 0.28 MBF and 0.73 Cords/Acre
Total: 142 MBF and 367 Cords

Page 67, Compartment 9, Stand Prescription

Est. Cut: 1.42 MBF and 3.99 Cords/Acre
Total: 109 MBF and 307 Cords

Stand 9 Est. Cut: 0.67 MBF and 1.19 Cords/Acre
Total: 29 MBF and 51 Cords
Intermed Cut: Cut all sanitation, salvage and thinners to 70 BA.

Page 116, Compartment 25, Stand Prescription

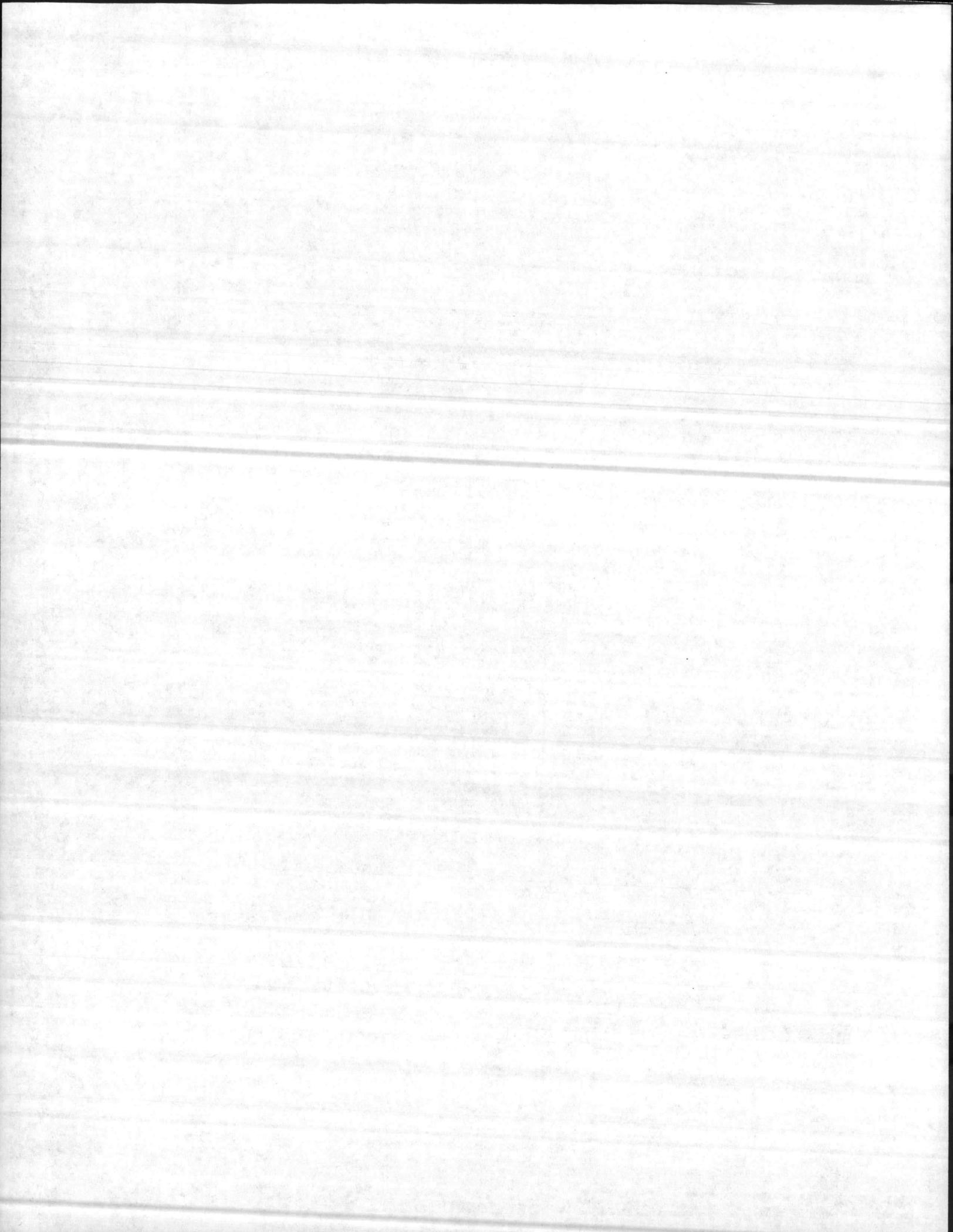
Stand 1 Est. Cut: 2.83 MBF and 4.75 Cords/Acre
Total: 34 MBF and 57 Cords

Stand 2 Est. Cut: 9.50 Cords/Acre
Total: 76 Cords
Intermed Cut: Cut all sanitation, salvage and thinners to 70 BA in an eight acre portion previously unthinned.

Stand 4 Inoperable

Stand 5 Est. Cut: 2.62 MBF and 5.23 Cords/Acre
Total: 126 MBF and 251 Cords/Acre

Seed Tree: Remove all merchantable material except 10-12 Hardwood* or Pine Seed Trees per acre. [#]Gum or Poplar



Page 117, Compartment 25, Stand Prescription

Stand 7 Est. Cut: 1.18 MBF and 1.77 Cords/Acre
Total: 26 MBF and 39 Cords
Seed Tree Cut: Remove all merchantable material except
10-12 Hardwood or Pine Seed Trees per acre.

Stand 8 Inoperable

Page 118, Compartment 25, Stand Prescription

Stand 11 Est. Cut: 1.89 MBF and 2.27 Cords/Acre
Total: 185 MBF and 222 Cords

Page 199, Compartment 52, Stand Prescription

Stand 1 Est. Cut: 1.48 MBF and 1.17 Cords/Acre
Total: 43 MBF and 34 Cords

Stand 2 Est. Cut: 0.84 Cords/Acre
Total: 123 Cords

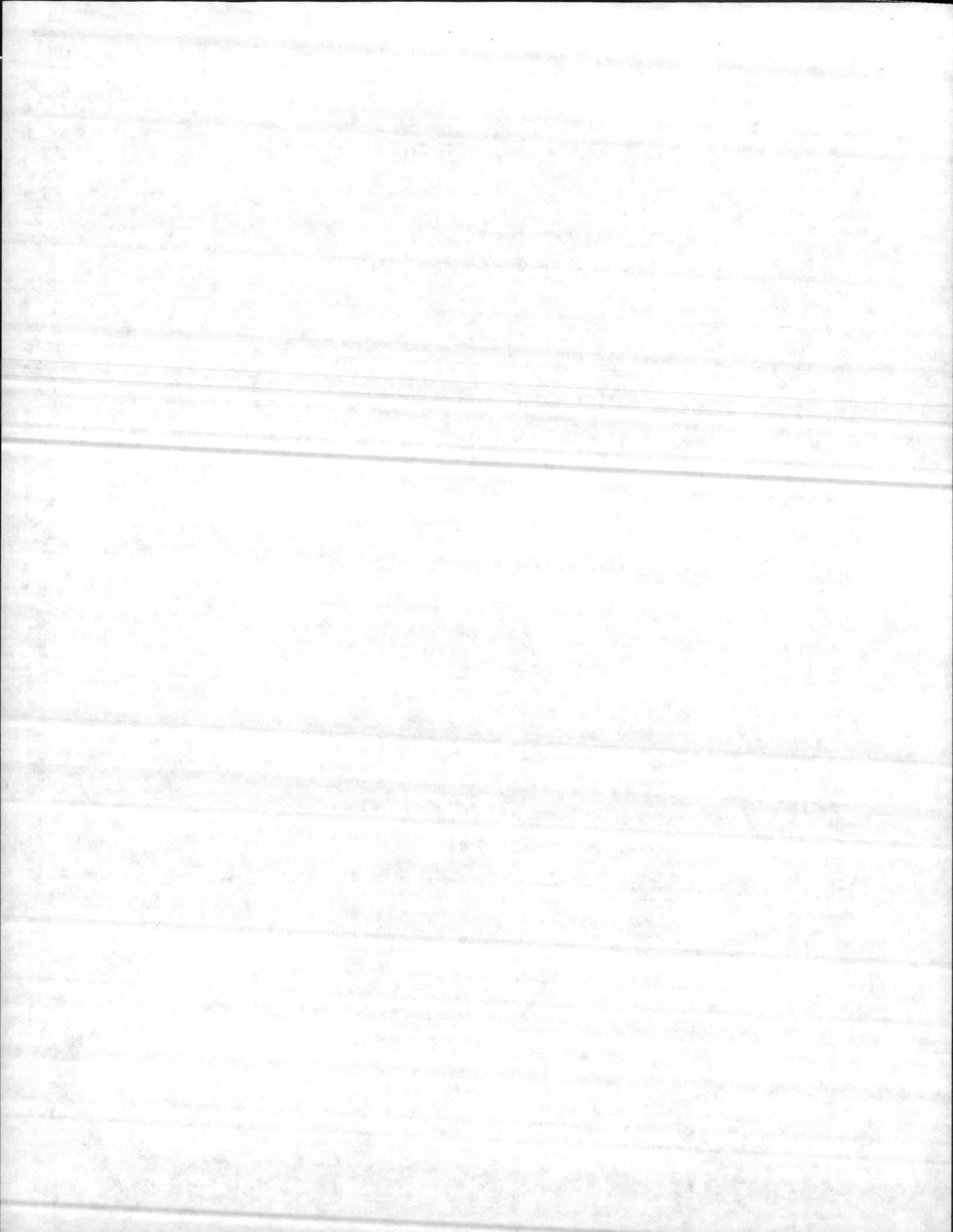
Stand 3 Inoperable

Page 200, Compartment 52, Stand Prescription

Stand 5 Est. Cut: 0.33 MBF and 0.17 Cord/Acre
Total: 8 MBF and 4 Cords
Removal Cut: Remove all residue saw timber.

Stand 6 Est. Cut: 3.14 Cords/Acre
Total: 110 Cords

Stand 7 Est. Cut: 7.79 MBF and 4.86 Cords/Acre
Total: 592 MBF and 369 Cords
Clear Cut: Remove all merchantable timber. Prepare site
by disking and plant to Slash Pine.



Page 201, Compartment 52, Stand Prescription

Stand 8 Est. Cut: 0.81 MBF and 1.69 Cords/Acre

Total: 44 MBF and 91 Cords

Stand 9 Est. Cut: 1.04 MBF and 1.08 Cords/Acre

Total: 26 MBF and 27 Cords

Intermed Cut: Cut all sanitation, salvage and thinners
in the portion of the stand that can be logged from the
high land. This stand is ^{soft} a wet bay type.

Stand 10 Est. Cut: 2.06 MBF and 1.53 Cords/Acre

Total: 128 MBF and 95 Cords

Page 202, Compartment 52, Stand Prescription

Stand 13 Est. Cut: 1.50 MBF and 1.17 Cords/Acre

Total: 15 MBF and 28 Cords

Page 203, Compartment 52, Stand Prescription

Stand 14 Est. Cut: 0.27 MBF and 1.71 Cords

Total: 15 MBF and 94 Cords

Page 211, Compartment 55, Stand Prescription

Stand 1 Est. Cut: 1.81 MBF and 10.03 Cords/Acre

Total: 56 MBF and 311 Cords

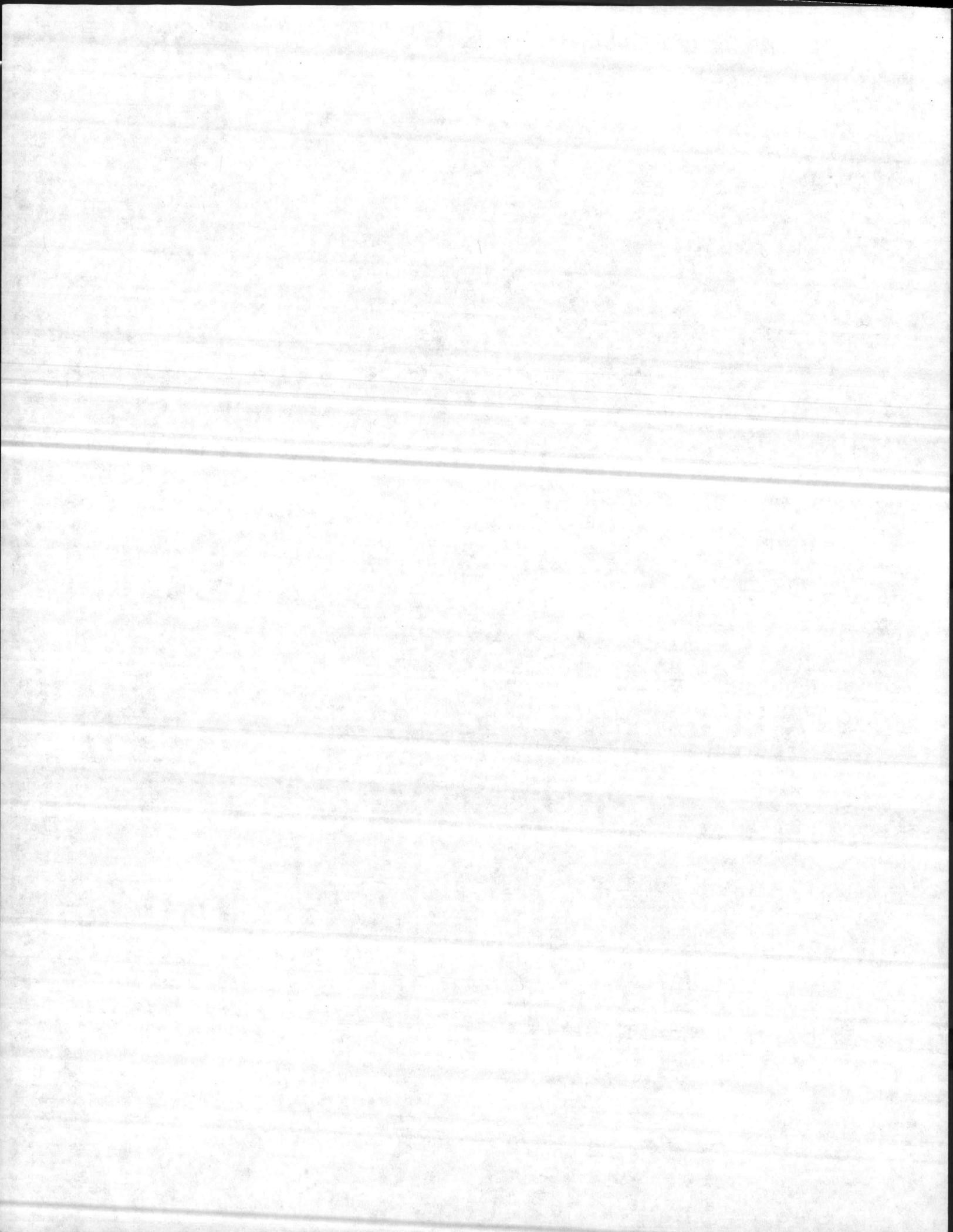
Page 212, Compartment 55, Stand Prescription

Stand 6 Est. Cut: 5.00 Cords/Acre

Total: 110 Cords

Stand 7 Est. Cut: 1.18 MBF and 1.05 Cords/Acre

Total: 569 MBF and 506 Cords



Stand 8 Est. Cut: 1.09 MBF and 1.33 Cords/Acre
Total: 36 MBF and 44 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to a 70 BA.

Page 221, Compartment 58, Stand Prescription

Stand 1 Est. Cut: 1.12 MBF and 1.28 Cords/Acre
Total: 415 MBF and 473 Cords
Removal Cut: Remove all residual saw timber.

Stand 3 Est. Cut: 0.27 MBF and 2.68 Cords/Acre
Total: 44 MBF and 432 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 70 BA.

Stand 4 Est. Cuts: 2.02 MBF and 5.25 Cords/Acre
Total: 81 MBF and 210 Cords

Page 222, Compartment 58, Stand Prescription

Stand 5 Est. Cuts: 0.82 MBF and 0.42 Cords/Acre
Total: 75 MBF and 39 Cords

Stand 6 Est. Cut: 0.47 MBF and 2.64 Cords/Acre
Total: 27 MBF and 153 Cords

Stand 8 Est. Cut: 0.37 MBF and 0.56 Cords/Acre
Total: 26 MBF and 39 Cords
Intermed Cut: Cut all sanitation, salvage and thinners
to 65 BA.

