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Photo Series for Quantifying Forest Residues in:

8456694

Loblolly Pine
Eastern White Pine
Pitch Pine
Virginia Pine

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L.J. Horton

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Abstract

A series of 27 photographs displays different forest residue loading levels for areas of like timber type, cutting practice, insect, disease, and wildfire mortality

Information with each photo includes measured weights, volumes and other residue data, information about the timber stand and harvest, brush information, and Northern Forest Fire Laboratory (NFFL) fire behavior fuel model number

These photo series provide a fast and easy-to-use means for quantifying and describing existing and expected residues.

Acknowledgment

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This photo series was researched, photographed, and prepared by Christine M. Lynch, Forestry Technician, Fire Protection, Northeastern Area State and Private Forestry, USDA Forest Service.

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- Pennsylvania Department of Environmental Resources, Bureau of Forestry.

List of Tree Species
Observed During
Field Inventory
(scientific names
from Little 1979)

American chestnut.....	<i>Castanea dentata</i> (Marsh.) Borkh.
Black oak	<i>Quercus velutina</i> Lam.
Blackjack oak	<i>Quercus marilandica</i> Muenchh.
Chestnut oak.....	<i>Quercus prinus</i> L.
Northern red oak	<i>Quercus rubra</i> L.
Scarlet oak	<i>Quercus coccinea</i> Muenchh.
Bear oak	<i>Quercus ilicifolia</i> Wangerh.
Southern red oak	<i>Quercus falcata</i> Michx.
Swamp white oak	<i>Quercus bicolor</i> Willd.
White oak	<i>Quercus alba</i> L.
Willow oak	<i>Quercus phellos</i> L.
Eastern white pine	<i>Pinus strobus</i> L.
Loblolly pine	<i>Pinus taeda</i> L.
Pitch pine.....	<i>Pinus rigida</i> Mill.
Red pine	<i>Pinus resinosa</i> Ait.
Shortleaf pine	<i>Pinus echinata</i> Mill.
Virginia pine	<i>Pinus virginiana</i> Mill.
American holly	<i>Ilex opaca</i> Ait.
Black cherry	<i>Prunus serotina</i> Ehrh.
Blackgum	<i>Nyssa sylvatica</i> Marsh.
Flowering dogwood	<i>Cornus florida</i> L.
Red maple.....	<i>Acer rubrum</i> L.
Sassafras.....	<i>Sassafras albidum</i> (Nutt.) Nees
Sweetgum	<i>Liquidambar styraciflua</i> L.

Other Plant Species
Observed During
Field Inventory
(scientific names
from Petrides 1972,
Cobb 1963, or
Fernald 1950)

American strawberry - bush	<i>Euonymus americanus</i> L.
Bayberry spp.	<i>Myrica</i> spp.
Blackberry spp.	<i>Rubus</i> spp.
Blueberry spp.	<i>Vaccinium</i> spp.
Bracken fern	<i>Pteridium aquilinum</i> (L.) Kuhn.
Devils walking stick	<i>Aralia spinosa</i> L.
Greenbriar (catbriar)	<i>Smilax</i> spp.
Groundpine	<i>Lycopodium complanatum</i>
Highbush blueberry	<i>Vaccinium corymbosum</i> L.
Huckleberry spp.	<i>Gaylussacia</i> spp.
Japanese honeysuckle	<i>Lonicera japonica</i> Thunb.
Mountain-laurel	<i>Kalmia latifolia</i> L.
Partridgeberry	<i>Mitchella repens</i> L.
Pipsissewa	<i>Chimaphila</i> spp.
Poison ivy	<i>Toxicodendron</i> spp.
Pokeweed	<i>Phytolacca americana</i> L.
Sheep laurel	<i>Kalmia angustifolia</i> L.
Spicebush	<i>Lindera benzoin</i> (L.) Blume
Sweetbay	<i>Magnolia virginiana</i> L.
Sweetfern	<i>Comptonia peregrina</i> (L.) Coult.
Sweet pepperbush	<i>Clethra alnifolia</i> L.
Teaberry	<i>Gaultheria procumbens</i> L.
Viburnum	<i>Viburnum</i> spp.
Virginia creeper	<i>Parthenocissus quinquefolia</i> (L.) Planch.
Wildrose	<i>Rosa</i> spp.

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What is This Photo Series?

This array of photos shows different residue loading levels found in natural timber stands of like types or generated from insect, disease, and fire mortality or from cutting practices. Each photo is supplemented with information that includes:

- Measured quantities by size classes, average depth, and residue data.
- Harvesting or mortality information.
- Fuel model
- Brush information

Thus, the series provides a basis for quantifying and describing existing and expected residue loadings on other areas and serves as a communication link between users.

Purpose of Photo Series

Forest residue is the woody debris present on the forest floor. It is made up of stems, branches, twigs, and bark. This residue is caused by natural events, mortality from insects or disease infestation, wildfire, or from previous forestry operations. Together, the accumulated debris and slash can create a hazardous fuel situation that must be dealt with by the land manager. The most important reason for evaluating the forest residue is to determine whether the debris and slash presents an acceptable or unacceptable fire hazard to the selected crop trees or to the surrounding forest area. If the hazard is judged unacceptable, the land manager can make some decisions concerning fire prevention and suppression or the amount and type of treatment needed to abate the hazard.

The photo series can also be of value to the land manager from the standpoint of forest product utilization. Much of the residues remaining in the forest following harvesting operations can be utilized for fuelwood or other products. Since some residues are beneficial for such purposes as nutrient cycling, soil protection, wildlife cover, and microclimate effect, the land manager can also decide how much residue should be removed to reduce the residue to a level considered desirable. To reduce residues to this level requires estimates of existing fuel quantities and quantities expected to be generated by management activities.

Inventory techniques, such as the planar intersect method (Brown 1971), are very useful when a high degree of accuracy is needed. However, these techniques are time consuming and costly to apply extensively. Photo series can be used to make fast, easy, and inexpensive estimates of residue that are adequate for most management needs.

How Can This Series Be Used?

Inventory of Down Residue

Fuel loadings in various residue size classes and average residue depth are characteristics that are visible in the photographs; hence, users can estimate any of these characteristics on an area being inventoried by comparing them with the photos as follows:

1. Observe each characteristic of the residue on the ground (e.g., 1.0–3.0-inch loading).
2. Select a photo which nearly matches, or photos that bracket, the observed characteristic.
3. Obtain the quantitative value for the characteristic being estimated from the data sheet accompanying the selected photo (or interpolate a value between photos).

These steps are repeated for each characteristic desired. If the general area being inventoried has zones of obvious differences in residue loading, the user should consider making separate determinations for each zone which can then be weighted and aggregated for the entire area.

Residue characteristics not distinguishable by use of the photographs are duff and litter depth and the percentage each residue size class occupies of the total. If values for these characteristics are desired in an inventory, they must be derived from independent sampling or observations.

Inventory information can be used by land managers to:

- evaluate the impact residues have on various aspects of forest management,
- identify areas of unacceptable residue loading,
- identify priority areas for treatment,
- estimate amount of material which can be utilized,
- estimate fire behavior characteristics.

Determination of Desired Residue Level

Land management objectives can be more nearly achieved if a team of appropriate specialists can participate in specifying what residues should remain on site after cutting. Individuals helping with these determinations can study the photo series to recognize the appearance of various quantities and distributions of residue. With this knowledge, they can describe in quantitative terms the residue they believe should be retained to meet environmental concerns and goals of their particular specialty. The group can then use the photo series as a communicative tool to resolve differences in arriving at a desired level.

After treatment, the degree to which objectives were achieved can be judged by comparing observed post-treatment loading with the desired level description.

Photo series are a rudimentary aid for predicting amounts of residue from cutting, insect and disease infestation, and wildfire. Many factors, such as condition of timber stand, topography, logging method, utilization intensity or intensity of insect, disease, or wildfire mortality, may affect the volume of resulting residues; so users should bear in mind that these series depict only a few of the possible combinations.

To predict residue volumes from planned cutting, the user compares timber volume and size information from cutting plans with this kind of information in the photo series. Selecting a photo series level or levels with similar stand characteristics, the user refers to data sheet loading, considers factors which differ from the photo series situations, and quantifies the expected loading.

Predicted loadings can be used to support changes in cutting and removal practices.

NFFL Fire Behavior Fuel Models

For each level presented, one of the 13 Northern Forest Fire Laboratory fire behavior fuel models has been indicated. There are 10 different fire behavior fuel models represented by this series; those of the shrub, timber, and logging slash groups. The type and volume of the fuel residue, as well as the litter present on the site, possess all the fuel descriptors required by the fire behavior model. It should be remembered that the fire behavior fuel model is used in predicting fire behavior in surface wildfires.

The land manager can use the photo series by comparing the known fuel model represented in the pictures to similar areas on the ground for which the fire behavior fuel model is not known. This can be a very useful tool to the land manager unfamiliar with fire

behavior fuel models or to anyone who must make a quick determination of the fire behavior fuel model on a given site.

Use of this photo series can also assist the land manager in fuel mapping and determining the expected fire behavior on a given site.

The following is a key to the 10 fire behavior fuel models represented in this series:

Fire Behavior Fuel Model Key

I. Shrub Group

- A. Vegetation type is southern rough or low pocosin Fuel Model 7
- B. Live fuels absent or sparse; brush is about 2.5 feet deep Fuel Model 6
- C. Live fuel moisture can have a significant damping effect on the fire behavior.
 - 1. Brush is about 2 feet deep with light loading of dead material Fuel Model 5
 - 2. Brush is close to head high with a heavy loading of dead fuels. Produces a very intense fire with high spread rates Fuel Model 4
 - 3. Vegetation type is high pocosin Fuel Model 4

II. Timber Group

A. Surface fuels are mostly foliage litter. Large fuels are scattered and lie on the needles, i.e., are not supported above it by branches. Green fuels are scattered enough to be insignificant to fire spread.

1. Dead foliage litter is short needle, 2-inch or less coniferous or small hardwood leaves tightly compacted Fuel Model 8

2. Dead foliage litter is long needle pine or hardwood leaves loosely compacted Fuel Model 9

B. There is a significant amount of larger fuels, many with attached branches and twigs, or the larger fuels have rotted enough that they are splintered and broken. The larger fuels are fairly well distributed over the area. Some green fuels may be present. The overall depth of the fuel is probably below the knees Fuel Model 10

III. Logging Slash Group

A. Slash is not continuous; other surface fuels, needle litter, or a small amount of grass must be present to help carry the fire. Green fuels are absent or do not play a significant role in fire behavior. Overall slash depth is about 1 foot Fuel Model 11

- B. Slash generally covers the ground, though there may be some bare spots or areas of light coverage. Average slash depth is about 2 feet. Slash is not excessively compacted. Approximately half of the needles may still be on the branches. Green fuels are absent or are not expected to affect fire behavior..... Fuel Model 12
- C. Same as B except needles that are still attached are red. Slash is continuous or nearly so. Slash is not excessively compacted. Approximately half of the needles are still on the branches. Green fuels are absent or are not expected to affect fire behavior Fuel Model 13

Fuel Model Descriptions and Expected Fire Behavior (from Anderson 1982)

Shrub Group

Fire Behavior Fuel Model 4. Fire intensity and fast spreading fires involve the foliage and live and dead fine woody material in the crowns of a nearly continuous secondary overstory. Stands of mature shrub, 6 or more feet tall, such as California mixed chaparral, the high pocosins along the east coast, the pine barrrens of New Jersey or the closed jack pine stands of the north-central states are typical candidates. Besides flammable foliage, there is dead woody material in the stand that significantly contributes to the fire intensity. Height of stands qualifying for this model depends on local conditions. There may also be a deep litter layer that confounds suppression efforts.

Fire Behavior Fuel Model 5. Fire is generally carried in the surface fuels that are made up of litter cast by the shrubs and the grasses or forbs in the understory. The fires are generally not very intense because surface fuel loads are light, the shrubs are young with little dead material, and the foliage contains little volatile material. Shrubs are generally not tall but have nearly total coverage of the area. Young, green stands such as laurel, vine maple, alder, or ever chaparral, manzanita, or chamise with no deadwood would qualify.

Fire Behavior Fuel Model 6. Fires carry through the shrub layer where the foliage is more flammable than in fuel model 5 but require moderate winds, greater than 8 mph at midflame height. Fire will drop to the ground at low wind speeds or openings in the stand. The shrubs are older, but not as tall as shrub types of fuel Model 4, nor do they contain as much fuel as fuel Model 4. A broad range of shrub conditions are covered by this model. Hardwood slash that has cured can be considered.

Fire Behavior Fuel Model 7. Fires burn through the surface and shrub strata with equal ease and can occur at higher dead fuel moisture contents because of the flammable nature of live foliage and other live material. Stands of shrubs are generally between 2 and 6 feet high. Palmetto-gallberry understory, pine overstory sites are typical and low pocosins may be represented.

Timber Group

Fire Behavior Fuel Model 8. Slow burning ground fires with low flame heights are usual, although the fire may encounter an occasional "jackpot" or heavy fuel concentration that can flare up. Only under severe weather conditions involving high temperatures, low humidities, and high winds do the fuels pose fire hazards. Closed canopy stands of short

needle conifers or hardwoods that have leafed out support fires in the compact litter layer. This layer is mainly needles, leaves, and some twigs since little undergrowth is present in the stand.

Fire Behavior Fuel Model 9. Fires run through the surface litter faster than in Fire Behavior Fuel Model 8 and have higher flame height. Both long-needle conifer and hardwoods are representative, but high winds will actually cause higher rates of spread than predicted. This is due to spotting caused by rolling or blowing leaves. Concentrations of dead, down, woody material will contribute to possible torching out of trees, spotting, and crowning activity.

Fire Behavior Fuel Model 10. The fires burn in the surface and ground fuels with greater fire intensity than the other timber, litter models. Dead, down fuels include greater quantities of 3-inch or larger limb wood resulting from overmaturity or natural events that create a large load of dead material on the forest floor. Crowning out, spotting, and torching of individual trees is more frequent in this fuel situation, leading to potential fire control difficulties. Any forest type may be considered if heavy down materials are present; examples are insect or disease-ridden stands, wind-thrown stands, overmature situations with deadfall, and aged light thinning or partial-cut slash.

Fire Behavior Fuel Model 11. Fires are fairly active in the slash and herbaceous material intermixed with the slash. The spacing of the rather light fuel load, shading from the overstory, or the aging of the fine fuels can contribute to limiting the fire potential. Light partial cuts or thinning operations in mixed conifer stands, hardwood stands, and southern pine harvests are considered. Clearcut operations generally produce more slash than represented here. The less than 3-inch material load is less than 12 tons per acre.

Fire Behavior Fuel Model 12. Rapidly spreading fires with high intensities capable of generating firebrands can occur. When a fire starts, it is generally sustained until a fuelbreak or change in fuels is encountered. The visual impression is dominated by slash and much of it is less than 3 inches in diameter. These fuels total less than 35 tons per acre and give the impression of well distributed fuels. Heavily thinned conifer stands, clearcuts, and medium or heavy partial cuts are represented.

Fire Behavior Fuel Model 13. Fire is generally carried across the area by a continuous layer of slash. Large quantities of greater than 3-inch material are present. Fires spread quickly through the fine fuels and intensity builds up more slowly as the large fuels start burning. Active flaming is sustained for long periods and a wide variety of firebrands can be generated. These contribute to spotting problems as the weather conditions become more severe. Clearcuts and heavy partial cuts in mature and overmature stands are depicted where the slash load is dominated by the greater than 3-inch material.

How Was This Series Developed?

Areas photographed for these series were selected to show typical residue loading variations in the pitch, eastern white, loblolly, and virginia pine types in the Northeast. Photos were taken and data collected as follows:

1. Areas were photographed and the material in the photo area sampled in accordance with "Guidelines For Developing or Supplementing Natural Photo Series" (Maxwell and Ward 1980).
 2. The measurement technique was in accordance with "Handbook For Inventorying Downed Woody Material" (Brown 1974).
 3. Timber stand, logging, and residue treatment data were obtained from timber sale or project records in field offices.
- The marker in these photos is 1 foot square, and the pole is painted in contrasting colors at 1-foot intervals to provide perspective.
 - Undisturbed stumps are not included in residue quantities.
 - Rotted residue is that which would come apart or splinter when kicked.

Reminders to Users

The data for each level are presented on the page facing the photo. Facing picture and data pages have the same code for the residue situation shown. The code shows:

- a. Order of rank from lightest loading to heaviest loading in the series of photographs.
- b. Forest type, e.g., PP = pitch pine, LL = loblolly pine, WP = eastern white pine, VP = Virginia pine.
- c. Forest size class, where:
 - 1 = ≤ 5 -inch dbh
 - 2 = 5.1 to 11-inch dbh
 - 3 = 11.1 to 20-inch dbh
 - 4 = > 20 -inch dbh
- d. History of area, where:
 - N = Natural stands, no cutting practices—includes those which have insect, disease, or wildfire mortality.
 - H = Commercially harvested stands, all cutting practices.
 - P = Precommercial treatment

Example: 1-WP-3-N is the first photo in the series for eastern white pine, the diameter of the standing trees is 11.1 to 20.0 inches, and no cuttings or treatments have been applied in the stand.

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LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume ³ (Ft ³ /Acre)	Percent		
0-0.25	0.9	54.7	14	Average fuel depth (inches)	4.9
0.26-1.0	2.7	172.2	46	Average duff depth (inches)	0.0
1.1-3.0	1.3	78.6	21	Average diameter of 3.1 inch sound (inches)	5.8
3 + Sound	0.9	55.9	15	Average diameter of 3.1-inch rotten (inches)	4.3
3 + Rotten	0.2	15.1	4	Average d.b.h. of standing trees (inches)	7.9
Total	6.0	376.4	100	Basal area / acre	140

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)		Stems cut/acre		Dominant species	poison ivy,
Average stems/acre cut		Stems remaining/acre		sweetgum, maple sprouts	
Average d.b.h. of stems cut (inches)		Basal area/acre before		Average height (inches)	30
Stand age (years)		Basal area/acre after		Average crown height (inches)	54
Cutting prescription		Average d.b.h. before (inches)		Ground space occupied (percent)	60
Yarding method		Average d.b.h. after (inches)		FUEL MODEL	
Slash treatment		Thinning method		Fire Behavior Fuel Model	9
Period since cut or treatment (months)		Slash treatment		REMARKS	
		Period since thin (months)

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume ³ (Ft ³ /Acre)	Percent	
0-0.25	0.5	28.9	6	Average fuel depth (inches) <u>3.4</u>
0.26-1.0	4.3	272.1	55	Average duff depth (inches) <u>0.4</u>
1.1-3.0	2.5	156.5	32	Average diameter of 3.1 inch sound (inches) <u>4.0</u>
3 + Sound	0.4	27.0	5	Average diameter of 3.1-inch rotten (inches) <u>3.1</u>
3 + Rotten	0.1	8.2	2	Average d.b.h. of standing trees (inches) <u>8.9</u>
Total	7.8	492.7	100	Basal area / acre <u>130</u>
HARVEST INFORMATION				BRUSH INFORMATION
Gross volume cruised (mbf/acre) <u>4 Cords</u>				Dominant species <u>sweetgum, willow</u>
Average stems/acre cut <u>250</u>				<u>oak, poison ivy</u>
Average d.b.h. of stems cut (inches) <u>6.0</u>				Average height (inches) <u>30</u>
Stand age (years) <u>26</u>				Average crown height (inches) <u>54-72</u>
Cutting prescription <u>Select</u>				Ground space occupied (percent) <u>35</u>
Yarding method <u>Tractor</u>				FUEL MODEL
Slash treatment <u>Burn</u>				Fire Behavior Fuel Model <u>9</u>
Period since cut or treatment (months) <u>8 years</u>				REMARKS
Thinning method <u>Selection cut</u>				
Slash treatment <u>Prescribed burn</u>				
Period since thin (months) <u>8 years</u>				
Average d.b.h. after (inches) <u>8.9</u>				
Average d.b.h. before (inches) <u>6.0</u>				
Basal area/acre after <u>130</u>				
Basal area/acre before <u>180</u>				
Stems remaining/acre <u>450</u>				
Stems cut/acre <u>250</u>

LOADING				OTHER MEASUREMENTS	
Size Class (Inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	0.6	40.2	8	Average fuel depth (inches)	3.5
0.26-1.0	1.7	106.8	19	Average duff depth (inches)	4.6
1.1-3.0	2.0	128.2	23	Average diameter of 3.1 inch sound (inches)	9.4
3 + Sound	4.2	282.7	48	Average diameter of 3.1-inch rotten (inches)	3.8
3 + Rotten	0.2	11.9	2	Average d.b.h. of standing trees (inches)	14.9
Total	8.8	549.9	100	Basal area / acre	140

PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Stems cut/acre		Dominant species	blueberry,
Stems remaining/acre		American holly	
Basal area/acre before		Average height (inches)	29
Basal area/acre after		Average crown height (inches)	48
Average d.b.h. before (inches)		Ground space occupied (percent)	20
Average d.b.h. after (inches)		FUEL MODEL	
Thinning method		Fire Behavior Fuel Model	9
Slash treatment		REMARKS	
Period since thin (months)			

HARVEST INFORMATION	
Gross volume cruised (mbf/acre)	
Average stems/acre cut	
Average d.b.h. of stems cut (inches)	
Stand age (years)	
Cutting prescription	
Yarding method	
Slash treatment	
Period since cut or treatment (months)

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent	
0-0.25	0.4	22.6	3	Average fuel depth (inches) <u>4.7</u>
0.26-1.0	4.3	272.1	34	Average duff depth (inches) <u>0.2</u>
1.1-3.0	3.7	234.4	29	Average diameter of 3.1 inch sound (inches) <u>4.7</u>
3 + Sound	2.7	168.4	21	Average diameter of 3.1-inch rotten (inches) <u>4.4</u>
3 + Rotten	1.6	99.3	13	Average d.b.h. of standing trees (inches) <u>8.0</u>
Total	12.7	796.9	100	Basal area / acre <u>110</u>

HARVEST INFORMATION		BRUSH INFORMATION	
PRECOMMERCIAL THINNING INFORMATION		Dominant species: poison ivy, red maple, Japanese honeysuckle, blackberry	
Stems cut/acre	<u>400</u>	Average height (inches)	<u>24</u>
Stems remaining/acre	<u>350</u>	Average crown height (inches)	<u>60-72</u>
Basal area/acre before	<u>180</u>	Ground space occupied (percent)	<u>80</u>
Basal area/acre after	<u>110</u>	FUEL MODEL	
Average d.b.h. before (inches)	<u>8.0</u>	Fire Behavior Fuel Model	<u>9</u>
Average d.b.h. after (inches)	<u>8.0</u>	REMARKS	
Thinning method	<u>Every third row</u>		
Slash treatment	<u>None</u>		
Period since thin (months)	<u>12</u>		

HARVEST INFORMATION	
Gross volume cruised (mbf/acre)	<u> </u>
Average stems/acre cut	<u> </u>
Average d.b.h. of stems cut (inches)	<u> </u>
Stand age (years)	<u>25</u>
Cutting prescription	<u>Row Thin</u>
Yarding method	<u>Hand</u>
Slash treatment	<u>None</u>
Period since cut or treatment (months)	<u>12</u>

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume ³ (Ft./Acre)	Percent		
0-0.25	0.9	59.1	4	Average fuel depth (inches)	10.9
0.26-1.0	3.6	228.7	13	Average duff depth (inches)	1.2
1.1-3.0	6.2	390.9	23	Average diameter of 3.1 inch sound (inches)	5.3
3 + Sound	10.6	664.3	39	Average diameter of 3.1-inch rotten (inches)	5.4
3 + Rotten	5.8	363.9	21	Average d.b.h. of standing trees (inches)	3.3
Total	27.2	1706.8	100	Basal area / acre	70
				BRUSH INFORMATION	
				Dominant species: devils walking stick, blueberry, American holly, red maple	
				Average height (inches) 36	
				Average crown height (inches) 60	
				Ground space occupied (percent) 100	
				FUEL MODEL	
				Fire Behavior Fuel Model 12	
				REMARKS	
PRECOMMERCIAL THINNING INFORMATION					
Stems cut/acre 6250					
Stems remaining/acre 750					
Basal area/acre before N/A					
Basal area/acre after 65					
Average d.b.h. before (inches) N/A					
Average d.b.h. after (inches) 3.3					
Thinning method N/A					
Slash treatment None					
Period since thin (months) 8					
HARVEST INFORMATION					
Gross volume cruised (mbf/acre) _____					
Average stems/acre cut _____					
Average d.b.h. of stems cut (inches) _____					
Stand age (years) _____					
Cutting prescription _____					
Yarding method _____					
Slash treatment _____					
Period since cut or treatment (months) _____

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent	
0-0.25	1.2	76.7	3	Average fuel depth (inches) <u>4.5</u>
0.26-1.0	5.8	363.9	16	Average duff depth (inches) <u>3.5</u>
1.1-3.0	10.9	682.5	31	Average diameter of 3.1 inch sound (inches) <u>5.2</u>
3 + Sound	16.1	1011.2	46	Average diameter of 3.1-inch rotten (inches) <u>4.6</u>
3 + Rotten	1.4	90.5	4	Average d.b.h. of standing trees (inches) <u>6.4</u>
Total	35.4	2224.7	100	Basal area / acre <u>30</u>

PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION
Stems cut/acre		Dominant species: maple, blackgum, American holly sprouts
Stems remaining/acre		Average height (inches) <u>24</u>
Basal area/acre before		Average crown height (inches) <u>28</u>
Basal area/acre after		Ground space occupied (percent) <u>10</u>
Average d.b.h. before (inches)		FUEL MODEL
Average d.b.h. after (inches)		Fire Behavior Fuel Model <u>12</u>
Thinning method		REMARKS
Slash treatment		
Period since thin (months)		

HARVEST INFORMATION	
Gross volume cruised (mbf/acre)	<u>323.6</u>
Average stems/acre cut	<u>54</u>
Average d.b.h. of stems cut (inches)	<u>15.0</u>
Stand age (years)	<u>65</u>
Cutting prescription	<u>Clearcut</u>
Yarding method	<u>Skidder</u>
Slash treatment	<u>None</u>
Period since cut or treatment (months)	<u>7</u>

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume 3 (Ft ³ /Acre)		
0-0.25	0.2	12.6	Average fuel depth (inches)	3.1
0.26-1.0	1.1	69.1	Average duff depth (inches)	1.0
1.1-3.0	5.5	348.2	Average diameter of 3.1 inch sound (inches)	7.0
3 + Sound	30.3	1902.9	Average diameter of 3.1-inch rotten (inches)	7.2
3 + Rotten	3.6	224.4	Average d.b.h. of standing trees (inches)	8.1
Total	40.7	2557.1	Basal area / acre	None

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)	351.0	Stems cut/acre		Dominant species:	loblolly regeneration, sweet pepperbush, grass, red maple
Average stems/acre cut	77	Stems remaining/acre		Average height (inches)	36
Average d.b.h. of stems cut (inches)	14.0	Basal area/acre before		Average crown height (inches)	72
Stand age (years)	65	Basal area/acre after		Ground space occupied (percent)	100
Cutting prescription	Clearcut	Average d.b.h. before (inches)		FUEL MODEL	
Yarding method	Skidder	Average d.b.h. after (inches)		Fire Behavior Fuel Model	13
Slash treatment	Prescribed burn	Thinning method		REMARKS	
Period since cut or treatment (months)	24-36	Slash treatment		Harvested 4 years ago	
		Period since thin (months)		Prescribe burned 4 years ago	
				Spot planted 3 years ago	
				Bushed 1 year ago

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft. ³ /Acre)	Percent		
0-0.25	0.3	19.5	1	Average fuel depth (inches)	2.5
0.26-1.0	1.1	69.1	3	Average duff depth (inches)	4.7
1.1-3.0	1.9	120.7	4	Average diameter of 3.1 inch sound (inches)	9.8
3 + Sound	29.4	1847.6	67	Average diameter of 3.1-inch rotten (inches)	6.6
3 + Rotten	11.0	691.3	25	Average d.b.h. of standing trees (inches)	12.5
Total	43.7	2748.1	100	Basal area / acre	90

HARVEST INFORMATION		BRUSH INFORMATION	
		Dominant species poison ivy, greenbriar, blueberry, groundpine	
Gross volume cruised (mbf/acre)	_____	Average height (inches)	30
Average stems/acre cut	_____	Average crown height (inches)	72
Average d.b.h. of stems cut (inches)	_____	Ground space occupied (percent)	60
Stand age (years)	_____	FUEL MODEL	
Cutting prescription	_____	Fire Behavior Fuel Model	10
Yarding method	_____	REMARKS	
Slash treatment	_____	50% of this loblolly pine stand was killed by the Southern Pine Beetle 10 years ago.	
Period since cut or treatment (months)	_____

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	1.4	88.6	3	Average fuel depth (inches)	6.2
0.26-1.0	3.2	198.6	7	Average duff depth (inches)	1.7
1.1-3.0	6.1	384.0	13	Average diameter of 3.1 inch sound (inches)	5.3
3 + Sound	31.2	1962.6	67	Average diameter of 3.1-inch rotten (inches)	9.4
3 + Rotten	4.7	294.1	10	Average d.b.h. of standing trees (inches)	N/A
Total	46.6	2928.5	100	Basal area / acre	None

HARVEST INFORMATION		BRUSH INFORMATION	
		Dominant species American holly, red maple sprouts	
Gross volume cruised (mbf/acre)	431.0	Average height (inches)	12
Average stems/acre cut	76	Average crown height (inches)	30
Average d.b.h. of stems cut (inches)	14.0	Ground space occupied (percent)	5
Stand age (years)	57	FUEL MODEL	
Cutting prescription	Clearcut	Fire Behavior Fuel Model	13
Yarding method	Skidder	REMARKS	
Slash treatment	Chopped	Harvested 8 months ago.	
Period since cut or treatment (months)	2	Chopped 2 months ago.

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	0.2	14.7	4	Average fuel depth (inches)	8.0
0.26-1.0	1.0	90.7	24	Average duff depth (inches)	3.4
1.1-3.0	1.3	115.4	30	Average diameter of 3.1 inch sound (inches)	3.9
3 + Sound	0.8	75.1	19	Average diameter of 3.1-inch rotten (inches)	4.6
3 + Rotten	1.0	89.7	23	Average d.b.h. of standing trees (inches)	12.8
Total	4.2	385.5	100	Basal area / acre	120
HARVEST INFORMATION				BRUSH INFORMATION	
				Dominant species blueberry, white pine regeneration	
Gross volume cruised (mbf/acre)				Stems cut/acre	
Average stems/acre cut				Stems remaining/acre	
Average d.b.h. of stems cut (inches)				Basal area/acre before	22
Stand age (years)				Basal area/acre after	40
Cutting prescription				Average d.b.h. before (inches)	
Yarding method				Average d.b.h. after (inches)	80
Slash treatment				FUEL MODEL	
Period since cut or treatment (months)				Fire Behavior Fuel Model	5
				REMARKS

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent	
0-0.25	0.2	13.7	2	Average fuel depth (inches) <u>11.2</u>
0.26-1.0	1.2	112.6	20	Average duff depth (inches) <u>3.6</u>
1.1-3.0	2.2	201.5	36	Average diameter of 3.1 inch sound (inches) <u>4.2</u>
3 + Sound	2.2	201.5	35	Average diameter of 3.1-inch rotten (inches) <u>3.9</u>
3 + Rotten	0.4	38.5	7	Average d.b.h. of standing trees (inches) <u>5.8</u>
Total	6.2	567.7	100	Basal area / acre <u>100</u>

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)		Stems cut/acre	None	Dominant species	blueberry, oak
Average stems/acre cut		Stems remaining/acre	300	sprouts	
Average d.b.h. of stems cut (inches)		Basal area/acre before	140	Average height (inches)	14
Stand age (years)		Basal area/acre after	100	Average crown height (inches)	18
Cutting prescription		Average d.b.h. before (inches)	N/A	Ground space occupied (percent)	15
Yarding method		Average d.b.h. after (inches)	5.8	FUEL MODEL	
Slash treatment		Thinning method	Chemical Frill	Fire Behavior Fuel Model	8
Period since cut or treatment (months)		Slash treatment	N/A	REMARKS	
		Period since thin (months)	24		
					Stand was chemically treated (frilled) approximately 2 years ago.

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume ³ (Ft ³ /Acre)	Percent		
0-0.25	0.1	9.2	1	Average fuel depth (inches)	3.6
0.26-1.0	1.6	146.5	19	Average duff depth (inches)	1.0
1.1-3.0	2.3	210.6	28	Average diameter of 3.1 inch sound (inches)	4.6
3 + Sound	3.4	311.3	40	Average diameter of 3.1-inch rotten (inches)	4.0
3 + Rotten	1.0	91.6	12	Average d.b.h. of standing trees (inches)	12.2
Total	8.5	769.2	100	Basal area / acre	160
HARVEST INFORMATION				BRUSH INFORMATION	
				Dominant species spicebush	
Stems cut/acre					
Stems remaining/acre				Average height (inches) 24	
Basal area/acre before				Average crown height (inches) 78	
Basal area/acre after				Ground space occupied (percent) 15 (patchy)	
Average d.b.h. before (inches)					
Average d.b.h. after (inches)				FUEL MODEL	
Thinning method				Fire Behavior Fuel Model 10	
Slash treatment				REMARKS	
Period since thin (months)

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume ³ (Ft ³ /Acre)	Percent	
0-0.25	0.3	25.6	3	Average fuel depth (inches) 10.4
0.26-1.0	1.5	132.8	16	Average duff depth (inches) 3.4
1.1-3.0	3.9	359.9	44	Average diameter of 3.1 inch sound (inches) 5.6
3 + Sound	3.3	298.5	36	Average diameter of 3.1-inch rotten (inches) 3.4
3 + Rotten	0.1	10.1	1	Average d.b.h. of standing trees (inches) 13.4
Total	9.0	826.9	100	Basal area / acre 70
HARVEST INFORMATION			PRECOMMERCIAL THINNING INFORMATION	
Gross volume cruised (mbf/acre)	N/A		Dominant species blueberry	
Average stems/acre cut	120		Average height (inches) 30	
Average d.b.h. of stems cut (inches)	13.5		Average crown height (inches) 30	
Stand age (years)	70		Ground space occupied (percent) 75	
Cutting prescription	Shelterwood Cut		FUEL MODEL	
Yarding method	Skidder		Fire Behavior Fuel Model 11	
Slash treatment	None		REMARKS	
Period since cut or treatment (months)	6

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent	
0-0.25	0.6	53.1	3	Average fuel depth (inches) <u>16.6</u>
0.26-1.0	2.0	185.9	12	Average duff depth (inches) <u>3.8</u>
1.1-3.0	7.9	719.8	45	Average diameter of 3.1 inch sound (inches) <u>4.3</u>
3 + Sound	6.7	617.2	39	Average diameter of 3.1-inch rotten (inches) <u>3.2</u>
3 + Rotten	0.2	16.2	1	Average d.b.h. of standing trees (inches) <u>10.2</u>
Total	17.4	1592.4	100	Basal area / acre <u>40</u>

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)	<u>N/A</u>	Stems cut/acre		Dominant species	<u>blueberry</u>
Average stems/acre cut	<u>120</u>	Stems remaining/acre		Average height (inches)	<u>30</u>
Average d.b.h. of stems cut (inches)	<u>13.5</u>	Basal area/acre before		Average crown height (inches)	<u>30</u>
Stand age (years)	<u>70</u>	Basal area/acre after		Ground space occupied (percent)	<u>45</u>
Cutting prescription	<u>Select cut</u>	Average d.b.h. before (inches)		FUEL MODEL	
Yarding method	<u>Skidder</u>	Average d.b.h. after (inches)		Fire Behavior Fuel Model	<u>12</u>
Slash treatment	<u>None</u>	Thinning method		REMARKS	
Period since cut or treatment (months)	<u>6</u>	Slash treatment			
		Period since thin (months)

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)		
0-0.25	0.3	23.8	Average fuel depth (inches)	6.3
0.26-1.0	2.4	218.9	Average duff depth (inches)	3.3
1.1-3.0	7.6	697.8	Average diameter of 3.1 inch sound (inches)	5.0
3 + Sound	9.6	876.3	Average diameter of 3.1-inch rotten (inches)	4.3
3 + Rotten	0.2	15.6	Average d.b.h. of standing trees (inches)	8.6
Total	20.0	1832.3	Basal area / acre	30

HARVEST INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)	N/A	Dominant species blueberry, grass, fern, oak sprouts	
Average stems/acre cut	120	Average height (inches)	13
Average d.b.h. of stems cut (inches)	9.7	Average crown height (inches)	24
Stand age (years)	60	Ground space occupied (percent)	80
Cutting prescription	Diameter Cut	FUEL MODEL	11
Yarding method	Skidder	Fire Behavior Fuel Model	
Slash treatment	None	REMARKS	
Period since cut or treatment (months)	27	Cut 3 years ago. Burned by wildfire 2 years ago. Heavy mortality in residual stand.

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	0.1	9.2	>1	Average fuel depth (inches)	15.3
0.26-1.0	0.9	82.4	3	Average duff depth (inches)	1.9
1.1-3.0	4.4	402.9	15	Average diameter of 3.1 inch sound (inches)	6.7
3 + Sound	23.6	2161.1	78	Average diameter of 3.1-inch rotten (inches)	4.1
3 + Rotten	1.3	119.0	4	Average d.b.h. of standing trees (inches)	11.6
Total	30.3	2774.6	100	Basal area / acre	100

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)		Stems cut/acre		Dominant species spicebush, fern, white pine regeneration	
Average stems/acre cut		Stems remaining/acre		Average height (inches)	72
Average d.b.h. of stems cut (inches)		Basal area/acre before		Average crown height (inches)	120
Stand age (years)		Basal area/acre after		Ground space occupied (percent)	30
Cutting prescription		Average d.b.h. before (inches)		FUEL MODEL	
Yarding method		Average d.b.h. after (inches)		Fire Behavior Fuel Model	10
Slash treatment		Thinning method		REMARKS	
Period since cut or treatment (months)		Slash treatment		Blowdown occurred 12 years ago.	
		Period since thin (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	3.2	229.3	84	Average fuel depth (inches)	2.0
0.26-1.0	0.3	19.9	7	Average duff depth (inches)	0.6
1.1-3.0	0.1	7.8	3	Average diameter of 3.1 inch sound (inches)	3.1
3 + Sound	0.1	7.8	3	Average diameter of 3.1-inch rotten (inches)	3.2
3 + Rotten	0.1	8.6	3	Average d.b.h. of standing trees (inches)	3.4
Total	3.8	273.5	100	Basal area / acre	50

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)	_____	Stems cut/acre	_____	Dominant species blueberry, bracken fern, scrub oak	_____
Average stems/acre cut	_____	Stems remaining/acre	_____	Average height (inches)	30
Average d.b.h. of stems cut (inches)	_____	Basal area/acre before	_____	Average crown height (inches)	66
Stand age (years)	_____	Basal area/acre after	_____	Ground space occupied (percent)	65
Cutting prescription	_____	Average d.b.h. before (inches)	_____	FUEL MODEL	_____
Yarding method	_____	Average d.b.h. after (inches)	_____	Fire Behavior Fuel Model	7
Slash treatment	_____	Thinning method	_____	REMARKS	_____
Period since cut or treatment (months)	_____	Slash treatment	_____	Prescribed burn one year ago. Dead scrub oak visible in under- brush is 54" high.	_____
	_____	Period since thin (months)	_____		_____

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (ft ³ /Acre)	Percent		
0-0.25	2.6	187.3	69	Average fuel depth (inches)	2.6
0.26-1.0	0.2	14.2	5	Average duff depth (inches)	1.4
1.1-3.0	0.6	40.6	15	Average diameter of 3.1 inch sound (inches)	3.7
3 + Sound	0.3	22.1	8	Average diameter of 3.1-inch rotten (inches)	3.2
3 + Rotten	0.1	8.5	3	Average d.b.h. of standing trees (inches)	6.9
Total	3.8	272.8	100	Basal area / acre	80
HARVEST INFORMATION				PRECOMMERCIAL THINNING INFORMATION	
				BRUSH INFORMATION	
Gross volume cruised (mbf/acre)				Dominant species <u>blueberry,</u>	
Average stems/acre cut				scrub oak	
Average d.b.h. of stems cut (inches)				Average height (inches) <u>30-84</u>	
Stand age (years)				Average crown height (inches) <u>94</u>	
Cutting prescription				Ground space occupied (percent) <u>80</u>	
Yarding method				FUEL MODEL	
Slash treatment				Fire Behavior Fuel Model <u>7</u>	
Period since cut or treatment (months)				REMARKS

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	3.7	264.9	61	Average fuel depth (inches)	1.4
0.26-1.0	0.2	12.8	3	Average duff depth (inches)	0.5
1.1-3.0	0.6	40.6	9	Average diameter of 3.1 inch sound (inches)	-
3 + Sound	-	-	-	Average diameter of 3.1-inch rotten (inches)	4.7
3 + Rotten	1.6	115.4	27	Average d.b.h. of standing trees (inches)	3.1
Total	6.1	433.7	100	Basal area / acre	40

PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION
Stems cut/acre		Dominant species blueberry, scrub and blackjack oak
Stems remaining/acre		Average height (inches)
Basal area/acre before		Average crown height (inches)
Basal area/acre after		Ground space occupied (percent)
Average d.b.h. before (inches)		
Average d.b.h. after (inches)		
Thinning method		FUEL MODEL
Slash treatment		Fire Behavior Fuel Model
Period since thin (months)		REMARKS
		Burned by wildfire:
		10 years ago
		35 years ago
		50 years ago

HARVEST INFORMATION	
Gross volume cruised (mbf/acre)	
Average stems/acre cut	
Average d.b.h. of stems cut (inches)	
Stand age (years)	
Cutting prescription	
Yarding method	
Slash treatment	
Period since cut or treatment (months)

LOADING			OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent	
0-0.25	3.2	227.9	50	Average fuel depth (inches) <u>4.3</u>
0.26-1.0	0.4	30.6	7	Average duff depth (inches) <u>3.6</u>
1.1-3.0	1.3	89.0	20	Average diameter of 3.1 inch sound (inches) <u>3.5</u>
3 + Sound	1.3	91.9	21	Average diameter of 3.1-inch rotten (inches) <u>3.0</u>
3 + Rotten	0.1	7.8	2	Average d.b.h. of standing trees (inches) <u>4.7</u>
Total	6.3	447.3	100	Basal area / acre <u>80</u>
HARVEST INFORMATION				BRUSH INFORMATION
				Dominant species <u>highbush blueberry,</u> <u>huckleberry, sheep laurel</u>
Stems cut/acre				Average height (inches) <u>56-90</u>
Stems remaining/acre				Average crown height (inches) <u>120</u>
Basal area/acre before				Ground space occupied (percent) <u>95</u>
Basal area/acre after				FUEL MODEL
Average d.b.h. before (inches)				Fire Behavior Fuel Model <u>6</u>
Average d.b.h. after (inches)				REMARKS
Thinning method				
Slash treatment				
Period since thin (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	3.1	217.9	44	Average fuel depth (inches)	2.3
0.26-1.0	0.4	29.9	6	Average duff depth (inches)	0.7
1.1-3.0	1.4	96.9	20	Average diameter of 3.1 inch sound (inches)	4.1
3 + Sound	2.1	147.4	30	Average diameter of 3.1-inch rotten (inches)	-
3 + Rotten	-	-	-	Average d.b.h. of standing trees (inches)	7.0
Total	6.9	492.2	100	Basal area / acre	0

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)		Stems cut/acre		Dominant species scrub oak, pitch pine regeneration, hickory	
Average stems/acre cut		Stems remaining/acre		Average height (inches)	24-48
Average d.b.h. of stems cut (inches)		Basal area/acre before		Average crown height (inches)	70
Stand age (years)		Basal area/acre after		Ground space occupied (percent)	100
Cutting prescription		Average d.b.h. before (inches)		FUEL MODEL	
Yarding method		Average d.b.h. after (inches)		Fire Behavior Fuel Model	6
Slash treatment		Thinning method		REMARKS	
Period since cut or treatment (months)		Slash treatment		Burned by wildfire:	
		Period since thin (months)		5 years ago	
				50 years ago

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	4.2	299.1	56	Average fuel depth (inches)	2.5
0.26-1.0	1.3	92.6	17	Average duff depth (inches)	3.5
1.1-3.0	1.8	128.2	24	Average diameter of 3.1 inch sound (inches)	---
3 + Sound	---	---	---	Average diameter of 3.1-inch rotten (inches)	3.8
3 + Rotten	0.2	14.2	3	Average d.b.h. of standing trees (inches)	8.3
Total	7.5	534.1	100	Basal area / acre	100

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)		Stems cut/acre		Dominant species: huckleberry, scrub oak, chestnut oak, scarlet oak	
Average stems/acre cut		Stems remaining/acre		Average height (inches)	8
Average d.b.h. of stems cut (inches)		Basal area/acre before		Average crown height (inches)	24
Stand age (years)		Basal area/acre after		Ground space occupied (percent)	30
Cutting prescription		Average d.b.h. before (inches)		FUEL MODEL	
Yarding method		Average d.b.h. after (inches)		Fire Behavior Fuel Model	9
Slash treatment		Thinning method		REMARKS	
Period since cut or treatment (months)		Slash treatment			
		Period since thin (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (ft ³ /Acre)	Percent		
0-0.25	10.0	712.2	47	Average fuel depth (inches)	3.2
0.26-1.0	2.8	199.4	13	Average duff depth (inches)	2.4
1.1-3.0	6.3	448.7	29	Average diameter of 3.1 inch sound (inches)	3.4
3 + Sound	2.1	149.6	10	Average diameter of 3.1-inch rotten (inches)	4.0
3 + Rotten	0.2	14.2	1	Average d.b.h. of standing trees (inches)	---
Total	21.4	1524.2	100	Basal area / acre	---

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)	2145	Stems cut/acre		Dominant species: Scarlet oak, blueberry, blackgum, chestnut oak, sassafras, red maple	
Average stems/acre cut	340	Stems remaining/acre		Average height (inches)	18
Average d.b.h. of stems cut (inches)	8.0	Basal area/acre before		Average crown height (inches)	42
Stand age (years)	N/A	Basal area/acre after		Ground space occupied (percent)	70
Cutting prescription	Clearcut	Average d.b.h. before (inches)		FUEL MODEL	
Yarding method	Skidder	Average d.b.h. after (inches)		Fire Behavior Fuel Model	12
Slash treatment	None	Thinning method		REMARKS	
Period since cut or treatment (months)	9	Slash treatment			
		Period since thin (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume ³ (Ft ³ /Acre)	Percent		
0-0.25	3.5	233.7	24	Average fuel depth (inches)	2.8
0.26-1.0	0.8	53.4	5	Average duff depth (inches)	2.3
1.1-3.0	2.3	153.6	16	Average diameter of 3.1 inch sound (inches)	4.1
3 + Sound	5.5	367.2	37	Average diameter of 3.1-inch rotten (inches)	4.2
3 + Rotten	2.6	173.6	18	Average d.b.h. of standing trees (inches)	10.1
Total	14.7	981.5	100	Basal area / acre	90
				BRUSH INFORMATION	
PRECOMMERCIAL THINNING INFORMATION				Dominant species: American chestnut, bayberry, sweetbay magnolia	
Stems cut/acre				Average height (inches) 42	
Stems remaining/acre				Average crown height (inches) 157	
Basal area/acre before				Ground space occupied (percent) 60	
Basal area/acre after				FUEL MODEL	
Average d.b.h. before (inches)				Fire Behavior Fuel Model 9	
Average d.b.h. after (inches)				REMARKS	
Thinning method					
Slash treatment					
Period since thin (months)					
HARVEST INFORMATION					
Gross volume cruised (mbf/acre)					
Average stems/acre cut					
Average d.b.h. of stems cut (inches)					
Stand age (years)					
Cutting prescription					
Yarding method					
Slash treatment					
Period since cut or treatment (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft. ³ /Acre)	Percent		
0-0.25	4.8	320.5	32	Average fuel depth (inches)	3.3
0.26-1.0	1.6	86.8	11	Average duff depth (inches)	3.7
1.1-3.0	2.8	187.0	19	Average diameter of 3.1 inch sound (inches)	4.2
3 + Sound	2.1	140.2	14	Average diameter of 3.1-inch rotten (inches)	5.1
3 + Rotten	3.6	240.4	24	Average d.b.h. of standing trees (inches)	7.7
Total	15.0	1001.6	100	Basal area / acre	110

HARVEST INFORMATION		PRECOMMERCIAL THINNING INFORMATION		BRUSH INFORMATION	
Gross volume cruised (mbf/acre)		Stems cut/acre		Dominant species: blueberry, viburnum, greenbriar, American holly	
Average stems/acre cut		Stems remaining/acre		Average height (inches)	32
Average d.b.h. of stems cut (inches)		Basal area/acre before		Average crown height (inches)	52
Stand age (years)		Basal area/acre after		Ground space occupied (percent)	80
Cutting prescription		Average d.b.h. before (inches)		FUEL MODEL	
Yarding method		Average d.b.h. after (inches)		Fire Behavior Fuel Model	9
Slash treatment		Thinning method		REMARKS	
Period since cut or treatment (months)		Slash treatment		Stand appears to be breaking up naturally.	
		Period since thin (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	3.8	283.2	21	Average fuel depth (inches)	3.0
0.26-1.0	1.1	83.5	6	Average duff depth (inches)	2.0
1.1-3.0	1.9	143.9	10	Average diameter of 3.1 inch sound (inches)	6.1
3 + Sound	5.2	386.8	29	Average diameter of 3.1-inch rotten (inches)	5.0
3 + Rotten	6.1	452.4	34	Average d.b.h. of standing trees (inches)	11.8
Total	18.1	1349.8	100	Basal area / acre	60
				BRUSH INFORMATION	
				Dominant species American holly, greenbriar, blueberry, flowering dogwood, sassafras.	
				Stems cut/acre	
				Stems remaining/acre	
				Basal area/acre before	Average height (inches) 60
				Basal area/acre after	Average crown height (inches) 144
				Average d.b.h. before (inches)	Ground space occupied (percent) 25
				Average d.b.h. after (inches)	
				FUEL MODEL	
				Thinning method	Fire Behavior Fuel Model 10
				Slash treatment	
				Period since thin (months)	REMARKS
HARVEST INFORMATION					
Gross volume cruised (mbf/acre)					
Average stems/acre cut					
Average d.b.h. of stems cut (inches)					
Stand age (years)					
Cutting prescription					
Yarding method					
Slash treatment					
Period since cut or treatment (months)

LOADING				OTHER MEASUREMENTS	
Size Class (inches)	Weight (Tons/Acre)	Volume (Ft ³ /Acre)	Percent		
0-0.25	7.7	514.1	37	Average fuel depth (inches)	5.1
0.26-1.0	1.9	126.9	9	Average duff depth (inches)	3.5
1.1-3.0	5.9	393.9	28	Average diameter of 3.1 inch sound (inches)	3.1
3 + Sound	0.2	13.4	1	Average diameter of 3.1-inch rotten (inches)	5.0
3 + Rotten	5.2	347.2	25	Average d.b.h. of standing trees (inches)	5.6
Total	21.1	1408.9	100	Basal area / acre	150
HARVEST INFORMATION				BRUSH INFORMATION	
Gross volume cruised (mbf/acre)				Dominant species: blueberry, red maple greenbriar, American holly	
Average stems/acre cut				Average height (inches)	
Average d.b.h. of stems cut (inches)				Average crown height (inches)	
Stand age (years)				Ground space occupied (percent)	
Cutting prescription				FUEL MODEL	
Yarding method				Fire Behavior Fuel Model	
Slash treatment				REMARKS	
Period since cut or treatment (months)