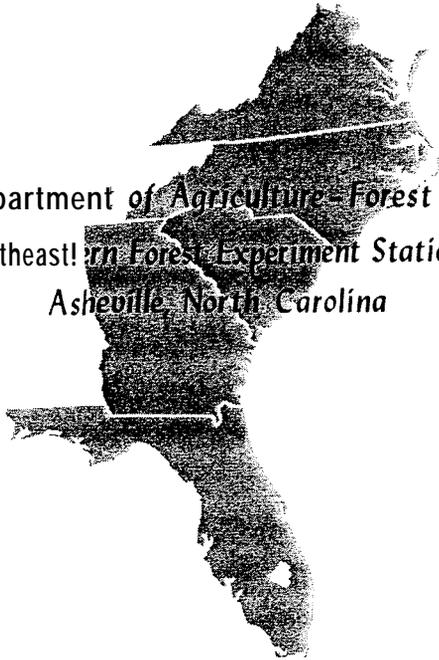


**Deer Browse Resources
of the Atomic Energy Commission's
Savannah River Project Area**

by

William H. Moore



U.S. Department of Agriculture - Forest Service
Southeastern Forest Experiment Station
Asheville, North Carolina

Deer Browse Resources of the Atomic Energy Commission's Savannah River Project Area

by

William H. Moore

Wildlife Biologist

A procedure developed in Georgia^{1 2} was used to inventory the browse resources of the Atomic Energy Commission's Savannah River Project Area near Aiken, South Carolina. Through this procedure, the forest land manager is supplied with relative carrying capacity data for deer. If silvical practices can be related to habitat quality and quantity, he can adjust management procedures to improve wildlife habitat as well as timber.

The 200,831-acre Savannah River Project Area is located in Aiken, Barnwell, and Allendale Counties, a section of the Atlantic Upper Coastal Plain just south of the "fall line" known as the sandhills. Topography is rolling and deep sandy soils predominate. Two major drainages run through the area and flow into the Savannah River, which runs along the area's southwestern boundary. Approximately 33 percent of the area was under cultivation prior to establishment of the Project during the early 1950's.

Presently, the Project Area includes 186,710 acres of usable wildlife habitat (table 1). Of this, 180,064 acres are classed as forest lands, with the remainder being primarily open fields and rights-of-way. The additional 14,121 acres include building sites, water surfaces, and other areas unavailable or nonusable by wildlife,

Table 1. --Acreage distribution by land class, AEC, Savannah River Project Area

Land class	Acres
Forest lands sampled	172,563
Forest lands not sampled'	7,501
Total forest lands	180,064
Nonforest lands, usable by wildlife	6,646
Total usable wildlife habitat	186,710
Other lands	14,121
Total land area	200,831

'These are baldcypress-tupelo sites of the Savannah River Bottom not sampled because of high water.

¹Moore, William H., Ripley, Thomas H., and Clutter, Jerome L. Trials to determine relative deer range carrying capacity values in connection with the Georgia Forest Survey. Fourteenth Annu. Conf. Southeast. Assoc. Game and Fish Commrs. Proc. 1960: 98-104. 1960.

²Ripley, Thomas H., and McClure, Joe P. Deer browse resources of north Georgia. Southeast. Forest Exp. Sta., U. S. Forest Serv. Resource Bull. SE-2, 20 pp. 1963.

³This study was conducted by the Southeastern Forest Experiment Station in cooperation with the Savannah River Project of the Atomic Energy Commission and the National Forests in South Carolina.

A description of major types sampled in the area follows:

1. Pine plantations. -- Longleaf, slash, and loblolly pines planted mostly in old field sites, but including some direct seeding of longleaf in scrub oak sites. Approximately 4,000 acres were planted by private landowners prior to acquisition by the Atomic Energy Commission. The balance was planted or seeded since 1952.
2. Longleaf pine (natural). - - Longleaf pine predominates. On drier sites, common associates are turkey oak, blackjack oak, bluejack oak, scarlet oak, and dwarf post oak. In the branch heads, loblolly pine, hickories, sweetgum, and southern red oak occur.
3. Loblolly pine (natural). --Principal associates are sweetgum, oaks, and hickories on well-drained sites, and spruce pine, yellow-poplar, shortleaf pine, blackgum, and water oak on the poorly drained sites.
4. Longleaf-scrub oak. --These dry sites contain mainly turkey oak, blackjack oak, bluejack oak, scarlet oak, and dwarf post oak, associated with remnants of the former longleaf pine stand.
5. Loblolly-scrub hardwoods. --These are fairly fertile moist sites, with a mixture of water oak, willow oak, blackjack oak, post oak, persimmon, hickories, and blackgum. This type occupies mostly former loblolly pine and loblolly pine-hardwood sites.
6. Pine-hardwoods . * -Loblolly pine is the key species and occupies at least 25 percent of the stand. It is associated with a wide variety of moist site hardwoods, such as sweetgum, yellow-poplar, sweetbay, blackgum, swamp white oak, swamp chestnut oak, and cherrybark oak.
7. Bottomland hardwoods. --This type includes a wide variety of wet sites, the bulk of which occurs along the Upper and Lower Three Runs Drainages and the Savannah River Bottom. Common species are swamp chestnut oak, swamp white oak, cherrybark oak, sweetgum, blackgum, yellow-poplar, red maple, green ash, sycamore, black willow, and cottonwood.

Methods

Fifteen overstory characteristics were chosen as strata for sampling, using existing continuous forest inventory plot data. Each stratum (table 2) was sampled at 20 to 30 locations each for a total of 380 locations, or 3,800 plot samples. Sampling was done during the 3-month period, December 1963 through February 1964.

Table 2. --List of overstory classes sampled showing codes and number of locations in each class

Overstory class	Code number	Locations
		<u>Number</u>
I. Plantations (longleaf, slash, loblolly)		
A. Nonthinned		
1. 0-6 years old	01	30
2. 6+ years old	02	30
B. Thinned (6+ years old)	03	30
II. Natural stands		
A. Longleaf pine	10	30
B. Longleaf-scrub oak	20	20
C. Loblolly pine		
1. Seedlings and saplings	31	30
2. Poletimber and sawtimber	32	30
D. Loblolly-scrub hardwoods	40	30
E. Pine-hardwoods	50	30
F. Bottomland hardwoods		
1. Below 200 feet elevation (Savannah River Bottom)		
a. Seedlings and saplings	81	20
b. Poletimber and sawtimber	82	20
2. Above 200 feet elevation		
a. Upper Three Runs Drainage		
1. Seedlings and saplings	83	20
2. Poletimber and sawtimber	84	20
b. Lower Three Runs Drainage		
1. Seedlings and saplings	85	20
2. Poletimber and sawtimber	86	20
Total		<u>380</u>

Three specific attributes of the browse resource--species occurrence, utilization by deer, and browse weight--were measured on a cylindrical plot, 1 milacre in area and 4½ feet high, at each of 10 systematically arranged points for each sample location. At each point, all woody plants within the plot were recorded by species (up to 10), and each species was assigned one of the four browse preference rankings:

Desirables

1. Preferred--Delicacies or "candy" species. These are usually highly nutritive and are the first species consumed by deer.
2. Staple- -Foundation or "bread and butter" species. These constitute the bulk of deer diet on good range. They are high in nutritive value and provide for normal animal weight gain and reproduction.

Undesirables

3. Emergency- -Life-sustaining species. These provide a large part of the diet on overstocked ranges. They are generally low in nutritive value and produce little or no animal weight gain, and animal reproduction is usually low.
4. Stuffing- -Starvation species. These plants have little or no food value. Animals continually lose weight and animal **reproduction** is very low, if they are a major part of the diet. Some may even be toxic.

Browse weight of each species was then estimated and the presence or absence of use by deer was recorded. Weight of browse present in the cylindrical plot in terms of pounds of dry browse per acre available during the winter period was estimated with the aid of photograph standards (see footnote 2). Estimates were made to the nearest 10 pounds per acre. Control checks of estimates were made by clipping at least two plots weekly, but more often when needed, to maintain crew accuracy of estimates within 10 percent of clipped weights. The total **number of** woody species occurring in each plot was also recorded.

In addition, three overstory variables were measured **from each** plot: (1) Basal area, (2) height of the nearest dominant tree, and (3) **species** of the dominant tree. All plot data were summarized by preference class, averaged for the location, and viewed as a single observation (cluster sample). Frequency of occurrence, percent utilization, and browse weights were examined for differences between major types, stand sizes, age classes, and various type combinations by standard analyses of variance computations. Characteristics of the understory and the overstory were examined for significant relationships. Basal area, overstory height, and time of survey were used as independent variables in standard multiple regression analyses.

Results and Discussion

The multiple regression analyses of various expressions of basal area, height, time of survey, and transformations thereof (**X** variables) in combination with frequency occurrence, weight, and degree of use of the various browse classes (**Y** variables) yielded no significant or meaningful relationships. These same understory observations were examined for differences between various combinations of overstory attributes by analysis of variance. These results, as expected, were meaningful, and are presented in the appendix, together with probability statements and confidence limits.

Summaries of plant occurrence, browse weight, and degree of use are shown in tables 3, 4, and 5. Generally speaking, the better sites contained more desirable species and greater weight of desirable browse. For example, the bottomland sites contained many more desirable species than the drier upland sites. Desirable plants, however, occurred less frequently in plantations than in natural stands. A similar pattern existed for desirable browse weight.

Overall, very little browse utilization was in evidence on the Project Area. Nevertheless, some use was noted throughout the area, particularly in the bottomlands and adjacent sites. Apparently, higher browsing pressure and more favorable browse supplies are both associated with the better hardwood sites.

It has been assumed that approximately 625 pounds of desirable browse are required to support an average white-tailed deer over winter (see footnote 2). By using browse weights shown in table 4, the approximate carrying capacity values for the overstory classes sampled were calculated and are shown in table 6. Based on these figures, the approximate carrying capacity for the area would be between 5,000 to 6,000 animals. This, of course, does not include other foodstuffs, such as mast or dry fallen leaves, or old field and roadside greeneries, such as winter rosettes and Japanese honeysuckle. The latter is especially abundant and actual optimum carrying capacity may be more like 8,000 to 10,000 animals.

Table 3. --Percent of plots on which browse plants occurred by preference and overstory classes sampled

Overstory class	Browse preference class					Total (All classes)	
	Preferred	Staple	Emergency	Stuffing	Desirable ¹		Undesirable ²
	----- Percent -----						
I. Plantations (longleaf, slash, loblolly)	7	13	45	50	20	80	84
A. Nonthinned	3	9	36	56	12	79	81
1. 0-6 years old	3	8	37	69	11	87	89
2. 6+ years old	3	10	36	41	13	70	72
B. Thinned (6+ years old)	14	21	62	39	35	81	89
II. Natural stands							
A. Longleaf pine	23	24	72	51	46	88	93
B. Longleaf-scrub oak	8	34	97	33	42	98	99
C. Loblolly pine	18	41	76	56	53	91	95
1. Seedlings and saplings	9	42	79	51	51	92	95
2. Poletimber and sawtimber	28	39	72	62	55	91	95
D. Loblolly-scrub hardwoods	25	50	85	46	64	94	97
E. Pine-hardwoods	33	78	95	57	87	97	100
F. Bottomland hardwoods	49	79	90	60	91	98	100
1. Below 200 feet elevation (Savannah River Bottom)	60	70	91	60	91	96	100
a. Seedlings and saplings	55	70	90	59	89	95	100
b. Poletimber and sawtimber	65	71	92	62	94	98	100
2. Above 200 feet elevation							
a. Upper Three Runs Drainage	44	89	89	56	95	98	100
1. Seedlings and saplings	41	88	86	48	94	97	100
2. Poletimber and sawtimber	47	89	92	64	95	99	100
b. Lower Three Runs Drainage	44	77	90	63	87	98	100
1. Seedlings and saplings	46	73	90	62	87	98	100
2. Poletimber and sawtimber	42	81	90	64	88	99	100

¹Desirable = Preferred or Staple.

²Undesirable = Emergency or Stuffing.

Table 4. --Weight of browse by preference class for overstory class sampled

Overstory class	Browse preference class						Total
	Preferred	Staple	Emergency	Stuffing	Desirable'	Undesirablea	
	----- Pounds per acr -----						
I. Plantations (longleaf, slash, loblolly)	6	4	8	33	10	41	51
A. Nonthinned	7	4	5	47	11	52	63
1. 0-6 years old	2	4	6	72	6	78	84
2. 6+ years old	13	3	5	22	16	27	43
B. Thinned (6+ years old)	4	6	12	4	10	16	26
II. Natural stands							
A. Longleaf pine	3	5	6	29	8	35	43
B. Longleaf-scrub oak	6	4	24	62	10	86	96
C. Loblolly pine	6	6	9	14	12	23	35
1. Seedlings and saplings	3	8	10	13	11	23	34
2. Poletimber and sawtimber	9	5	8	15	14	23	37
D. Loblolly-scrub hardwoods	46	8	15	48	54	63	117
E. Pine-hardwoods	10	11	20	31	21	51	72
F. Bottomland hardwoods	24	35	21	40	59	61	120
1. Below 200 feet elevation (Savannah River Bottom)	15	22	13	21	37	34	71
a. Seedlings and saplings	20	41	8	15	61	23	84
b. Poletimber and sawtimber	11	2	17	26	13	43	56
2. Above 200 feet elevation							
a. Upper Three Runs Drainage	25	66	30	76	91	106	197
1. Seedlings and saplings	23	114	17	122	137	139	276
2. Poletimber and sawtimber	26	18	42	31	44	73	117
b. Lower Three Runs Drainage	32	16	20	22	48	42	90
1. Seedlings and saplings	51	15	22	18	66	40	106
2. Poletimber and sawtimber	13	16	17	26	29	43	72

'Desirable = Preferred + Staple.

^aUndesirable = Emergency + Stuffing.

Table 5. --Percent of browse plants used for each preference class and overstory class sampled

Overstory class	Browse preference class						Total
	Preferred	Staple	Emergency	Stuffing	Desirable'	Undesirablea	
	-----Percent-----						
I. Plantations (longleaf, slash, loblolly)	Tr. ³	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.
A. Nonthinned	0	Tr.	0	0	Tr.	0	Tr.
1. 0-6 years old	0	0	0	0	0	0	0
2. 6+ years old	0	Tr.	0	0	Tr.	0	Tr.
B. Thinned (6+ years old)	Tr.	0	Tr.	Tr.	Tr.	Tr.	Tr.
II. Natural stands							
A. Longleaf pine	2	Tr.	0	0	1	0	Tr.
B. Longleaf-scrub oak	Tr.	0	0	0	Tr.	0	Tr.
C. Loblolly pine	Tr.	Tr.	Tr.	0	Tr.	Tr.	Tr.
1. Seedlings and saplings	0	Tr.	Tr.	0	Tr.	Tr.	Tr.
2. Poletimber and sawtimber	Tr.	Tr.	Tr.	0	Tr.	Tr.	Tr.
D. Loblolly-scrub hardwoods	2	1	Tr.	0	2	Tr.	1
E. Pine-hardwoods	7	Tr.	Tr.	Tr.	3	Tr.	2
F. Bottomland hardwoods	1	Tr.	Tr.	Tr.	1	Tr.	1
1. Below 200 feet elevation (Savannah River Bottom)	6	Tr.	Tr.	Tr.	3	Tr.	2
a. Seedlings and saplings	1	Tr.	Tr.	0	1	Tr.	1
b. Poletimber and sawtimber	13	Tr.	1	1	7	1	4
2. Above 200 feet elevation							
a. Upper Three Runs Drainage	Tr.	Tr.	Tr.	0	Tr.	Tr.	Tr.
1. Seedlings and saplings	Tr.	Tr.	Tr.	0	0	0	Tr.
2. Poletimber and sawtimber	Tr.	Tr.	Tr.	0	Tr.	Tr.	Tr.
b. Lower Three Runs Drainage	Tr.	Tr.	Tr.	Tr.	1	Tr.	1
1. Seedlings and saplings	Tr.	Tr.	Tr.	Tr.	Tr.	Tr.	1
2. Poletimber and sawtimber	1	Tr.	1	Tr.	1	Tr.	1

'Desirable = Preferred + Staple.

^aUndesirable = Emergency + Stuffing.

³Less than 0.5 percent used.

Table 6. -- Computed carrying capacity values for overstory classes sampled

Overstory class	Acres per deer	Area	Computed carrying capacity (Area + acres per deer)
I. Plantations (longleaf, slash, loblolly)			
A. Nonthinned	57	69,880	1,236
1. 0-6 years old	56	65,880	1,171
2. 6+ years old	04	32,421	312
B. Thinned (6+ years old)	39	33,459	859
	62	4,000	65
II. Natural stands	26	102,683	4,017
A. Longleaf pine	78	14,142	181
B. Longleaf-scrub oak	62	19,066	308
C. Loblolly pine	48	29,423	610
1. Seedlings and saplings	57	9,491	167
2. Poletimber and sawtimber	45	19,932	443
D. Loblolly-scrub hardwoods	12	8,293	691
E. Pine-hardwoods	30	4,123	137
F. Bottomland hardwoods	13	27,636	2,090
1. Below 200 feet elevation (Savannah River Bottom)	33	7,703	230
a. Seedlings and saplings	10	884	88
b. Poletimber and sawtimber	48	6,819	142
2. Above 200 feet elevation	11	19,933	1,860
a. Upper Three Runs Drainage	9	14,168	1,526
1. Seedlings and saplings	5	3,993	799
2. Poletimber and sawtimber	14	10,175	727
b. Lower Three Runs Drainage	17	5,765	334
1. Seedlings and saplings	9	1,096	122
2. Poletimber and sawtimber	20	4,669	212
Total (sampled area)		172,563	5,253

Table 7. --Frequency distribution, utilization, and weight of deer browse resources by preference class for natural upland and bottomland stands

Browse ¹ preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Upland (10, 20, 31, 32, 40, 50)* (n=170)		Bottomland (81, 82, 83, 84, 85, 86) (n=120)		Prob ability of a di fferenc	Upland (10, 20, 31, 32, 40, 50) (n=170)		Bottomland (81, 82, 83, 84, 85, 86) (n=120)		Prob ability of a di fferenc	Upland (10, 7.0, 31, 32, 40, 50) (n=170)		Bottomland (81, 82, 83, 84, 85, 86) (n=120)		Prob ability of a di fferenc
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
-----		-- Percent		-----		-----		Percent		-----		Pounds per acre		-----	
1	21	(17 to 26)	49	(42 to 56)	99.5	1	(0 to 3)	1	(1 to 3)	n.s.	13	(0 to 26)	24	(10 to 38)	n.s.
2	45	(39 to 51)	79	(74 to 84)	99.5	Tr.		Tr.		--	7	(5 to 8)	35	(2 to 67)	95.0
Desirable	59	(53 to 65)	91	(88 to 95)	99.5	1	(0 to 1)	1	(0 to 2)	n.s.	20	(7 to 33)	59	(23 to 94)	97.5
3	84	(80 to 88)	90	(87 to 93)	97.5	Tr.		Tr.		--	13	(10 to 16)	21	(15 to 26)	97.5
4	51	(47 to 55)	60	(54 to 66)	97.5	Tr.		Tr.		--	31	(13 to 50)	40	(15 to 64)	n.s.
Undesirable	94	(92 to 96)	98	(96 to 99)	99.5	Tr.		Tr.		--	44	(26 to 63)	61	(35 to 86)	n.s.
Total	97	(95 to 98)	100	(99 to 100)	99.5	Tr.		1	(0 to 1)	90.0	64	(47 to 96)	120	(78 to 164)	95.0

¹See text for browse class explanation.
* Forest types included, see text.
n = Number of locations.
Tr. = Trace (less than 0.5 percent).

Table 8. -- Frequency distribution, utilization, and weight of deer browse resources by preference class for natural pine, pine-hardwoods, and bottomland stands

Browse ¹ preference class	Distribution of plots occupied						Distribution of browse classes utilized						Browse weight					
	Natural pine (10, 31, 32)* (n = 90)		Pine-hardwoods (50) (n = 30)		Bottomland (81, 82, 83, 84, 85, 86) (n = 120)		Natural pine (10, 31, 32) (n = 90)		Pine-hardwoods (50) (n = 30)		Bottomland (81, 82, 83, 84, 85, 86) (n = 120)		Natural pine (10, 31, 32) (n = 90)		Pine-hardwoods (50) (n = 30)		Bottomland (81, 82, 83, 84, 85, 86) (n = 120)	
	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05
	Percent						Percent						Pounds per acre					
1	19 (13 to 26)	33 (21 to 48)	49 (42 to 56)	99.5	Tr.	7 (1 to 20)	1 (1 to 3)	99.5	5 (3 to 7)	10 (2 to 18)	24 (10 to 38)	95.0						
2	35 (27 to 43)	78 (67 to 88)	79 (74 to 84)	99.5	Tr.	Tr.	Tr.	--	6 (3 to 8)	11 (6 to 15)	35 (2 to 67)	n.s.						
Desirable	51 (42 to 59)	87 (78 to 94)	91 (88 to 95)	99.5	Tr.	3 (1 to 6)	1 (0 to 2)	90.0	11 (7 to 14)	21 (10 to 32)	59 (23 to 94)	95.0						
3	74 (67 to 81)	95 (89 to 99)	90 (87 to 93)	99.5	Tr.	Tr.	Tr.	--	8 (5 to 10)	20 (11 to 31)	41 (15 to 69)	n.s.						
4	55 (50 to 59)	57 (46 to 68)	60 (54 to 66)	n.s.	Tr.	Tr.	Tr.	--	19 (8 to 30)	31 (7 to 55)	40 (15 to 64)	n.s.						
Undesirable	90 (87 to 94)	97 (94 to 99)	98 (96 to 99)	99.5	Tr.	Tr.	Tr.	--	27 (16 to 38)	51 (25 to 77)	61 (35 to 86)	90.0						
Total	94 (91 to 96)	100 (99 to 100)	100 (99 to 100)	99.5	Tr.	2 (1 to 4)	1 (0 to 1)	99.5	38 (29 to 52)	72 (44 to 100)	120 (78 to 164)	99.5						

¹ See text for browse class explanation.
 * Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 9. -- Frequency distribution, utilization, and weight of deer browse resources by preference class for bottomland sites

Browse ¹ preference class	Distribution of plots occupied						Distribution of browse classes utilized						Browse weight					
	Savannah River Bottom (81, 82)* (n = 40)		Upper Three Runs Drainage (83, 84) (n = 40)		Lower Three Runs Drainage (85, 86) (n = 40)		Savannah River Bottom (81, 82) (n = 40)		Upper Three Runs Drainage (83, 84) (n = 40)		Lower Three Runs Drainage (85, 86) (n = 40)		Savannah River Bottom (81, 82) (n = 40)		Upper Three Runs Drainage (83, 84) (n = 40)		Lower Three Runs Drainage (85, 86) (n = 40)	
	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05
	Percent						Percent						Pounds per acre					
1	60 (49 to 71)	44 (32 to 55)	44 (31 to 57)	90.0	Tr.	8 (2 to 1)	Tr.	Tr.	15 (10 to 21)	25 (2 to 47)	32 (-5 to 69)	n.s.						
2	70 (59 to 80)	89 (81 to 94)	77 (68 to 85)	99.0	Tr.	Tr.	Tr.	--	22 (-9 to 52)	66 (-29 to 161)	16 (8 to 24)	n.s.						
Desirable	91 (84 to 97)	95 (90 to 98)	87 (80 to 94)	n.s.	Tr.	3 (1 to 6)	Tr.	1 (0 to 1)	99.0	37 (6 to 68)	91 (-6 to 188)	48 (10 to 86)	n.s.					
3	91 (85 to 96)	89 (83 to 94)	90 (85 to 94)	n.s.	Tr.	Tr.	Tr.	--	13 (9 to 17)	30 (15 to 44)	20 (14 to 25)	95.0						
4	60 (49 to 71)	56 (46 to 66)	63 (52 to 73)	n.s.	Tr.	0	Tr.	--	21 (4 to 37)	78 (3 to 150)	22 (14 to 28)	n.s.						
Undesirable	96 (93 to 99)	98 (96 to 99)	98 (96 to 100)	n.s.	Tr.	Tr.	Tr.	--	34 (17 to 50)	106 (31 to 180)	42 (32 to 51)	95.0						
Total	100 (99 to 100)	100 (99 to 100)	100 (99 to 100)	n.s.	Tr.	2 (1 to 4)	Tr.	1 (0 to 1)	99.0	71 (38 to 102)	197 (79 to 319)	90 (57 to 132)	95.0					

¹ See text for browse class explanation.
 * Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 10. --Frequency distribution, utilization, and weight of deer browse resources by preference class for stand size on all bottomland sites

Browse' preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Seedlings and saplings (81, 83, 85)* (n=60)		Poletimber and sawtimber (82, 84, 86) (n=60)		Probability of a difference	Seedlings and saplings (81, 83, 85) (n=60)		Poletimber and sawtimber (82, 84, 86) (n=60)		Probability of a difference	Seedlings and saplings (81, 83, 85) (n=60)		Poletimber and sawtimber (82, 84, 86) (n=60)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----					----- Percent -----					----- Pounds per acre ----- Percent					
1	47	(38 to 56)	51	(41 to 62)	n. s.	Tr.	3	(1 to 6)	97.5	32	(5 to 58)	17	(7 to 26)	n. s.	
2	78	(70 to 84)	81	(73 to 88)	n. s.	Tr.	Tr.	--	--	57	(-9 to 123)	12	(8 to 17)	n. s.	
Desirable	90	(84 to 95)	93	(88 to 96)	n. s.	Tr.	2	(1 to 3)	95.0	89	(18 to 159)	29	(17 to 41)	90.0	
3	89	(84 to 93)	91	(87 to 95)	n. s.	Tr.	Tr.	--	--	16	(11 to 20)	26	(16 to 35)	90.0	
4	56	(47 to 65)	63	(55 to 71)	n. s.	Tr.	Tr.	--	--	52	(2 to 101)	28	(16 to 39)	n. s.	
Undesirable	97	(94 to 98)	98	(97 to 100)	n. s.	Tr.	Tr.	--	--	68	(17 to 117)	54	(39 to 67)	n. s.	
Total	100	(99 to 100)	100	(99 to 100)	n. s.	Tr.	1	(1 to 2)	97.5	158	(74 to 242)	83	(65 to 103)	90.0	

¹See text for browse class explanation.

* Forest types included, see text.

n = Number of locations.

Tr. = Trace (less than 0.5 percent).

Table 11. -- Frequency distribution, utilization, and weight of deer browse resources by preference class for bottomland seedling and sapling stands

Browse ¹ preference class	Distribution of plots occupied							Distribution of browse classes utilized							Browse weight								
	Savannah River Bottom (81)* (n = 20)		Upper Three Runs Drainage (83) (n = 20)		Lower Three Runs Drainage (85) (n = 20)		Probability of a difference	Savannah River Bottom (81) (n = 20)		Upper Three Runs Drainage (83) (n = 20)		Lower Three Runs Drainage (85) (n = 20)		Probability of a difference	Savannah River Bottom (81) (n = 20)		Upper Three Runs Drainage (83) (n = 20)		Lower Three Runs Drainage (85) (n = 20)		Probability of a difference		
	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05
	----- Percent -----							----- Percent -----							----- Pounds per acre -----							Per- cent	
1	5.5	(36 to 72)	4	1	(26 to 56)	46	(31 to 61)	n. s.	1	(0 to 4)	Tr.		Tr.	n. s.	20	(10 to 30)	23	(-16 to 63)	5	1	(-23 to 126)	n. s.	
2	70	(53 to 85)	88		(76 to 96)	73	(64 to 82)	90.0	Tr.		Tr.		Tr.	--	41	(-22 to 104)	114	(-82 to 311)	15		(2 to 29)	n. s.	
Desirable	89	(73 to 98)	94		(85 to 99)	87	(79 to 94)	n. s.	1	(0 to 2)	Tr.		Tr.	n. s.	61	(-1 to 122)	137	(-61 to 336)	66		(-10 to 143)	n. s.	
3	00	(81 to 96)	86		(75 to 94)	90	(84 to 95)	n. s.	Tr.		0		Tr.	--	8	(5 to 12)	17	(9 to 25)	22		(12 to 31)	95.0	
4	59	(41 to 75)	4	8	(34 to 63)	62	(43 to 79)	n. s.	0		0		Tr.	--	15	(-4 to 35)	122	(-28 to 271)	1	8	(9 to 26)	n. s.	
Undesirable	95	(89 to 98)	97		(93 to 99)	98	(94 to 100)	n. s.	Tr.		0		Tr.	--	23	(-5 to 42)	139	(-13 to 290)	4	0	(26 to 53)	n. s.	
Total	100	(98 to 100)	100		(99 to 100)	100	(99 to 100)	n. s.	1	(0 to 2)	Tr.		1	(0 to 1)	n. s.	84	(24 to 148)	276	(37 to 519)	106		(35 to 185)	n. s.

¹ See text for browse class explanation.

* Forest types Included, see text.

n = Number of locations.

Tr. = Trace (less than 0.5 percent).

Table 12. -- Frequency distribution, utilization, and weight of deer browse resources by preference class for bottomland poletimber and sawtimber stands

Browse ¹ preference class	Distribution of plots occupied							Distribution of browse classes utilized							Browse weight								
	Savannah River Bottom (82)* (n = 20)		Upper Three Runs Drainage (84) (n = 20)		Lower Three Runs Drainage (86) (n = 20)		Probability of a difference	Savannah River Bottom (82) (n = 20)		Upper Three Runs Drainage (84) (n = 20)		Lower Three Runs Drainage (86) (n = 20)		Probability of a difference	Savannah River Bottom (82) (n = 20)		Upper Three Runs Drainage (84) (n = 20)		Lower Three Runs Drainage (86) (n = 20)		Probability of a difference		
	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05
	----- Percent -----							----- Percent -----							----- Pounds per acre -----							Per- cent	
1	65	(51 to 78)	47		(29 to 65)	42	(22 to 64)	n. s.	13	(4 to 26)	Tr.		1	(0 to 4)	99.5	11	(7 to 16)	26	(0 to 52)	13		(-2 to 28)	n. s.
2	71	(55 to 84)	89		(79 to 98)	81	(64 to 93)	n. s.	Tr.		Tr.		Tr.	--	2	(0 to 4)	18	(9 to 26)	16		(7 to 26)	99.5	
Desirable	94	(88 to 98)	95		(88 to 99)	88	(73 to 97)	n. s.	7	(2 to 13)	Tr.		1	(0 to 2)	99.5	13	(8 to 18)	44	(11 to 76)	29		(12 to 47)	n. s.
3	92	(83 to 98)	92		(84 to 98)	50	(81 to 96)	n. s.	1	(0 to 3)	Tr.		1	(0 to 2)	n. s.	17	(11 to 24)	42	(14 to 70)	17		(10 to 24)	90.0
4	82	(45 to 77)	64		(48 to 78)	84	(52 to 75)	n. s.	1	(0 to 5)	0		Tr.	97.5	28	(-3 to 55)	31	(13 to 48)	26		(13 to 49)	n. s.	
Undesirable	98	(93 to 100)	99		(97 to 100)	99	(95 to 100)	n. s.	1	(0 to 3)	Tr.		Tr.	n. s.	43	(16 to 71)	73	(44 to 102)	43		(28 to 59)	n. s.	
Total	100	(99 to 100)	100		(99 to 100)	100	(98 to 100)	n. s.	4	(1 to 8)	Tr.		1	(0 to 2)	99.0	56	(33 to 75)	117	(73 to 168)	72		(56 to 102)	97.5

¹ See text for browse class explanation.

* Forest types included, see text.

n = Number of locations.

Tr. = Trace (less than 0.5 percent).

Table 13. --Frequency distribution, utilization, and weight of deer browse resources by preference class for stand size on Savannah River Bottom sites

Browse ¹ preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Seedlings and saplings (81)* (n = 20)		Poletimber and sawtimber (82) (n = 20)		Probability of a difference	Seedlings and saplings (81) (n = 20)		Poletimber and sawtimber (82) (n = 20)		Probability of a difference	Seedlings and saplings (81) (n = 20)		Poletimber and sawtimber (82) (n = 20)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----					----- Percent -----					----- Pounds per acre -----					
1	55	(36 to 73)	65	(51 to 78)	n. s.	1	(0 to 4)	13	(4 to 26)	99.0	20	(10 to 30)	11	(7 to 16)	n. s.
2	70	(53 to 85)	71	(55 to 84)	n. s.	Tr.		Tr.		--	41	(22 to 104)	2	(0 to 4)	n. s.
Desirable	89	(73 to 98)	94	(88 to 98)	n. s.	1	(0 to 2)	7	(2 to 13)	99.0	61	(-1 to 123)	13	(8 to 18)	n. s.
3	90	(81 to 96)	92	(83 to 98)	n. s.	Tr.		1	(0 to 3)	n. s.	8	(5 to 12)	17	(11 to 24)	97.5
4	59	(41 to 75)	62	(45 to 77)	n. s.	0		1	(0 to 5)	--	15	(-4 to 35)	26	(-3 to 55)	n. s.
Undesirable	95	(89 to 98)	98	(93 to 100)	n. s.	Tr.		1	(0 to 3)	n. s.	23	(5 to 42)	43	(16 to 71)	n. s.
Total	100	(98 to 100)	100	(99 to 100)	n. s.	1	(0 to 2)	4	(1 to 8)	97.5	84	(24 to 148)	56	(33 to 75)	n. s.

¹ See text for browse class explanation.
 *Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 14. --Frequency distribution, utilization, and weight of deer browse resources by preference class for stand size on Upper Three Runs Drainage sites

Browse ¹ preference class	Distribution of plots occupied				Distribution of browse classes utilized				Browse weight						
	Seedlings and saplings (83)* (n = 20)		Poletimber and sawtimber (84) (n = 20)		Probability of a difference	Seedlings and saplings (83) (n = 20)		Poletimber and sawtimber (84) (n = 20)		Probability of a difference	Seedlings and saplings (83) (n = 20)		Poletimber and sawtimber (84) (n = 20)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----			 Percent Pounds per acre				Percent			
1	41	(26 to 56)	47	(29 to 65)	n. s.	Tr.	Tr.	--	23	(-16 to 63)	26	(0 to 52)	n. s.		
2	88	(76 to 96)	89	(79 to 96)	n. s.	Tr.	Tr.	--	114	(-82 to 311)	18	(9 to 26)	n. s.		
Desirable	94	(85 to 99)	95	(88 to 99)	n. s.	Tr.	Tr.	--	137	(-61 to 336)	44	(11 to 76)	n. s.		
3	86	(75 to 94)	92	(84 to 98)	n. s.	0	Tr.	--	17	(9 to 25)	42	(14 to 70)	90.0		
4	48	(34 to 63)	64	(48 to 78)	n. 6.	0	0	--	122	(-28 to 271)	31	(13 to 48)	n. s.		
Undesirable	97	(93 to 99)	99	(97 to 100)	n. s.	0	Tr.	--	139	(-13 to 290)	73	(44 to 102)	n. s.		
Total	100	(99 to LOO)	100	(99 to 100)	n. s.	Tr.	Tr.	--	276	(37 to 519)	117	(73 to 166)	n. s.		

¹ See text for browse class explanation.
 *Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 15.--Frequency distribution, utilization, and weight of deer browse resources by preference class for stand size on Lower Three Runs Drainage sites

Browse ¹ preference class	Distribution of plots occupied						Distribution of browse classes utilized						Browse weight					
	Seedlings and saplings (85)* (n = 20)		Poletimber and sawtimber (86) (n = 20)		Probability of a difference		Seedlings and saplings (85) (n = 20)		Poletimber and sawtimber (86) (n = 20)		Probability of a difference		Seedlings and saplings (85) (n = 20)		Poletimber and sawtimber (86) (n = 20)		Probability of a difference	
	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05
1	46	(31 to 61)	42	(22 to 64)	n. s.	Tr.	Tr.	1	(0 to 4)	n. s.	51	(-23 to 126)	13	(-2 to 28)	n. s.			
2	73	(64 to 82)	81	(64 to 93)	n. s.	Tr.	Tr.	Tr.	Tr.	--	15	(2 to 29)	16	(7 to 26)	n. s.			
Useable	87	(79 to 94)	88	(73 to 97)	n. s.	Tr.	Tr.	1	(0 to 2)	n. s.	66	(-10 to 143)	29	(12 to 47)	n. s.			
3	90	(84 to 95)	90	(81 to 96)	n. s.	Tr.	Tr.	1	(0 to 2)	n. s.	22	(12 to 31)	17	(10 to 24)	n. s.			
4	62	(43 to 79)	64	(52 to 75)	n. s.	Tr.	Tr.	Tr.	Tr.	--	18	(9 to 26)	26	(13 to 39)	n. s.			
Undesirable	98	(94 to 100)	99	(95 to 100)	n. s.	Tr.	Tr.	Tr.	Tr.	--	40	(26 to 63)	43	(28 to 59)	n. s.			
Total	100	(99 to 100)	100	(98 to 100)	n. s.	1	(0 to 1)	1	(0 to 2)	n. s.	106	(35 to 185)	72	(56 to 102)	n. s.			

¹ See text for browse class explanation.
 * Forest types included, see text
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 16. --Frequency distribution, utilization, and weight of deer browse resources by preference class for forest type on natural upland sites

Browse ¹ preference class	Distribution of plots occupied						Probability of a difference	Distribution of browse classes utilized						Probability of a difference	Browse weight						Probability of a difference
	Natural pine (31, 32, 10)* (n = 90)		Pine-hardwoods (50) (n = 30)		Longleaf-scrub oak and loblolly-scrub hardwoods (20, 40) (n = 50)			Natural pine (31, 32, 10) (n = 90)		Pine-hardwoods (50) (n = 30)		Longleaf-scrub oak and loblolly-scrub hardwoods (20, 40) (n = 50)			Natural pine (31, 32, 10) (n = 90)		Pine-hardwoods (50) (n = 30)		Longleaf-scrub oak and loblolly-scrub hardwoods (20, 40) (n = 50)		
	Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----						----- Percent -----						----- Pounds per acre -----						Per- Cent			
1	19	(14 to 26)	33	(21 to 48)	17	(11 to 25)	90.0	Tr.		7	(1 to 20)	1	(0 to 3)	99.0	5	(3 to 7)	10	(2 to 18)	30	(15 to 74)	n. s.
2	35	(27 to 43)	78	(67 to 88)	43	(33 to 54)	99.5	Tr.		Tr.		Tr.		--	8	(3 to 8)	11	(6 to 15)	6	(4 to 9)	90.0
Desirable	51	(42 to 59)	87	(78 to 94)	56	(46 to 65)	99.5	Tr.		3	(1 to 6)	1	(0 to 2)	90.0	11	(7 to 14)	21	(10 to 32)	36	(-9 to 81)	n. s.
3	14	(6 to 81)	95	(89 to 98)	91	(85 to 95)	99.5	Tr.		Tr.		Tr.		--	8	(6 to 10)	20	(10 to 31)	19	(11 to 26)	99.5
4	55	(50 to 59)	57	(46 to 68)	41	(32 to 50)	99.0	0		Tr.		0		--	19	(8 to 30)	31	(7 to 55)	54	(-6 to 113)	n. s.
Undesirable	90	(87 to 94)	97	(94 to 99)	96	(93 to 98)	99.0	Tr.		Tr.		Tr.		--	27	(16 to 38)	51	(25 to 77)	73	(13 to 131)	n. s.
Total	94	(91 to 96)	100	(99 to 100)	98	(96 to 99)	99.5	Tr.		2	(1 to 4)	Tr.		99.5	36	(29 to 52)	72	(44 to 100)	109	(49 to 207)	99.0

¹See text for browse class explanation.

* Forest types included, see text.

n = Number of locations.

Tr. = Trace (less than 0.5 percent).

Table 17. --Frequency distribution, utilization, and weight of deer browse resources by preference class for longleaf-scrub oak and loblolly-scrub hardwoods stands

Browser preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Longleaf-scrub oak (20)* (n = 20)		Loblolly-scrub hardwoods (40) (n = 30)		Probability of a difference	Longleaf-scrub oak (20) (n = 20)		Loblolly-scrub hardwoods (40) (n = 30)		Probability of a difference	Longleaf-scrub oak (20) (n = 20)		Loblolly-scrub hardwoods (40) (n = 30)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----					----- Percent -----					----- Pounds per acre ----- Percent					
1	8	(3 to 16)	25	(15 to 36)	97.5	Tr.	2	(0 to 7)	n. s.	6	(0 to 11)	46	(-30 to 122)	n. s.	
2	34	(19 to 51)	50	(36 to 63)	n. s.	0	1	(0 to 2)	-	4	(1 to 6)	8	(4 to 12)	n. s.	
Desirable	42	(28 to 60)	64	(51 to 75)	95.0	Tr.	2	(0 to 4)	95.0	10	(3 to 16)	54	(-22 to 129)	n. s.	
3	97	(91 to 99)	85	(77 to 92)	97.5	0	Tr.	--	--	24	(7 to 42)	15	(9 to 20)	n. s.	
4	33	(20 to 48)	46	(35 to 57)	n. s.	0	0	--	--	62	(-53 to 176)	48	(-21 to 118)	n. s.	
Undesirable	98	(95 to 100)	94	(89 to 98)	n. s.	0	Tr.	--	--	86	(-28 to 200)	63	(-6 to 132)	n. s.	
Total	99	(97 to 100)	97	(93 to 99)	n. s.	Tr.	1	(0 to 2)	97.5	96	(-16 to 212)	117	(35 to 262)	n. s.	

¹ See text for browse class explanation.
 * Forest types included, see text
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 18. --Frequency distribution, utilization, and weight of deer browse resources by preference class for natural loblolly and longleaf pine stands

Browse ¹ preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Loblolly (31, 32)* (n = 60)		Longleaf (10) (n = 30)		Probability of a difference	Loblolly (31, 32) (n = 60)		Longleaf (10) (n = 30)		Probability of a difference	Loblolly (31, 32) (n = 60)		Longleaf (10) (n = 30)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limit5 .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----		----- Percent -----		----- Pounds per acre -----		----- Percent -----									
1	18	(11 to 25)	23	(11 to 36)	n. s.	Tr.	2	(0 to 6)	90.0	6	(3 to 9)	3	(2 to 5)	n. s.	
2	41	(30 to 52)	24	(13 to 36)	90.0	Tr.	Tr.		--	6	(3 to 9)	5	(1 to 10)	n. s.	
Desirable	53	(42 to 64)	46	(32 to 61)	n. s.	Tr.	1	(0 to 6)	90.0	12	(8 to 16)	8	(3 to 13)	n. s.	
3	76	(67 to 84)	72	(59 to 83)	n. s.	Tr.	0		--	9	(6 to 12)	6	(4 to 9)	n. s.	
4	56	(50 to 63)	51	(42 to 59)	n. s.	0	0		--	14	(8 to 20)	29	(-4 to 61)	n. s.	
Undesirable	91	(87 to 95)	88	(80 to 94)	n. s.	Tr.	0		--	23	(17 to 29)	35	(3 to 67)	n. s.	
Total	35	(91 to 97)	93	(86 to 97)	n. s.	Tr.	Tr.		--	35	(29 to 44)	43	(15 to 81)	n. s.	

See text for browse class explanation.
 *Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 19. --Frequency distribution, utilization, and weight of deer browse resources by preference class for stand size on natural loblolly pine sites

Browse ¹ preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Seedlings and saplings (31)* (n = 30)		Poletimber and sawtimber (32) (n = 30)		Probability of a difference	Seedlings and saplings (31) (n = 30)		Poletimber and sawtimber (32) (n = 30)		Probability of a difference	Seedlings and saplings (31) (n = 30)		Poletimber and sawtimber (32) (n = 30)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
-----percent-----					-----percent-----					-----Pounds per acre----- Percent					
1	9	(4 to 16)	28	(16 to 43)	99.0	0	Tr.		--	3	(-1 to 7)	9	(3 to 14)	90.0	
2	42	(25 to 61)	39	(26 to 52)	n. s.	Tr.	Tr.		--	8	(3 to 13)	5	(2 to 7)	n. s.	
Desirable	51	(34 to 68)	55	(41 to 69)	n. s.	Tr.	Tr.		--	11	(4 to 17)	14	(7 to 20)	n. s.	
3	79	(65 to 90)	72	(61 to 82)	n. s.	Tr.	Tr.		--	10	(6 to 15)	8	(4 to 12)	n. s.	
4	51	(43 to 59)	62	(52 to 71)	90.0	0	0		--	13	(3 to 24)	15	(8 to 22)	n. s.	
Undesirable	92	(85 to 97)	91	(85 to 96)	n. s.	Tr.	Tr.		--	23	(13 to 34)	23	(15 to 30)	n. s.	
Total	95	(90 to 98)	95	(90 to 98)	n. s.	Tr.	Tr.		--	34	(23 to 48)	37	(27 to 47)	n. s.	

¹ See text for browse class explanation.
*Forest types included, see text.
n = Number of locations
Tr. = Trace (less than 0.5 percent).

Table 20. --Frequency distribution, utilization, and weight of deer browse resources by preference class for planted and natural pine stands

Browser preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Planted pine (01, 02, 03)* (n = 90)		Natural Pine (10, 31, 32) (n = 90)		Probability of a difference	Planted pine (01, 02, 03) (n = 90)		Natural pine (10, 31, 32) (n = 90)		Probability of a difference	Planted pine (01, 02, 03) (n = 90)		Natural pine (10, 31, 32) (n = 90)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
Percent					Percent					Pounds per acre		Percent			
1	7	(3 to 9)	19	(13 to 26)	99.5	Tr.		Tr.	--	6	(-1 to 13)	5	(3 to 7)	n. s.	
2	13	(8 to 17)	35	(27 to 43)	99.5	Tr.		Tr.	--	4	(2 to 7)	6	(3 to 8)	n. s.	
Desirable	20	(15 to 27)	51	(42 to 59)	99.5	Tr.		Tr.	--	10	(2 to 18)	11	(7 to 14)	n. s.	
3	45	(35 to 55)	74	(67 to 81)	99.5	Tr.		Tr.	--	8	(3 to 12)	8	(6 to 10)	n. s.	
4	50	(43 to 57)	55	(50 to 59)	n. s.	Tr.		0	--	33	(16 to 49)	19	(8 to 30)	n. s.	
Undesirable	80	(73 to 85)	90	(87 to 94)	99.5	Tr.		Tr.	--	41	(23 to 57)	27	(16 to 38)	n. s.	
Total	84	(78 to 89)	94	(91 to 96)	99.5	Tr.		Tr.	--	51	(29 to 54)	38	(29 to 52)	n. s.	

¹ See text for browse class explanation.

*Forest types included, see text.

n = Number of locations.

Tr. = Trace (less than 0.5 percent).

Table 21. --Frequency distribution, utilization, and weight of deer browse resources by preference class for thinning class on pine plantations

Browse ¹ preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	Nonthinned (01, 02)* (n = 60)		Thinned (03) (n = 30)		Probability of a difference	Nonthinned (01, 02) (n = 60)		Thinned (03) (n = 30)		Probability of a difference	Nonthinned (01, 02) (n = 60)		Thinned (03) (n = 30)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
----- Percent -----					----- Percent -----					----- Pounds per acre -----		Percent			
1	3	(1 to 5)	14	(7 to 23)	99.5	0		Tr.	--	7	(-3 to 17)	4	(0 to 7)	n. s.	
2	9	(5 to 14)	21	112 to 32)	97.5	Tr.	0		--	4	(1 to 6)	6	(-1 to 13)	n. s.	
Desirable	12	(9 to 19)	35	(25 to 52)	99.5	Tr.		Tr.	--	11	(-1 to 22)	10	(2 to 17)	n. s.	
3	36	(25 to 49)	62	(47 to 76)	97.5	0		Tr.	--	5	13 to 8)	12	(-3 to 26)	n. s.	
4	56	147 to 64)	39	(29 to 51)	95.0	0		Tr.	--	47	(23 to 71)	4	(1 to 6)	97.5	
Undesirable	79	(71 to 86)	81	(68 to 91)	n.s.	0		Tr.	--	52	(29 to 76)	16	(1 to 30)	95.0	
Total	81	(74 to 88)	89	(79 to 96)	n. s.	Tr.		Tr.	--	63	(34 to 71)	26	(10 to 29)	97.5	

¹ See text for browse class explanation.
 * Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 22. --Frequency distribution, utilization, and weight of deer browse resources by preference class for age class on nonthinned pine plantations

Browse' preference class	Distribution of plots occupied					Distribution of browse classes utilized					Browse weight				
	O-6 years (01)* (n = 30)		6+ years (02) (n = 30)		Probability of a difference	O-6 years (01) (n = 30)		6+ years (02) (n = 30)		Probability of a difference	O-6 years (01) (n = 30)		6+ years (02) (n = 30)		Probability of a difference
	Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05		Mean	Confidence limits .05	Mean	Confidence limits .05	
	----- Percent -----					----- Percent -----					----- Pounds per acre -----				
1	3	(1 to 6)	3	(1 to 8)	n. s.	0		0		--	2	(0 to 3)	13	(-9 to 34)	n. s.
2	8	(3 to 16)	10	(4 to 17)	n. s.	0		Tr.		--	4	(-1 to 9)	3	(1 to 5)	n. s.
Desirable	11	(7 to 22)	13	(7 to 22)	n. s.	0		Tr.		--	6	(0 to 111)	16	(-7 to 38)	n. s.
3	37	(21 to 53)	36	(19 to 55)	n. s.	0		0		--	6	(2 to 9)	5	(2 to 8)	n. s.
4	69	(56 to 81)	41	(33 to 50)	99.5	0		0		--	72	(26 to 118)	22	(10 to 33)	95.0
Undesirable	87	(78 to 94)	70	(58 to 81)	97.5	0		0		--	78	(32 to 123)	27	(16 to 38)	95.0
Total	89	(81 to 95)	72	(60 to 82)	99.0	0		Tr.		--	82	(35 to 89)	43	(18 to 69)	n. s.

1 See text for browse class explanation.
 *Forest types included, see text.
 n = Number of locations.
 Tr. = Trace (less than 0.5 percent).

Table 23. --Comparison of the average number of woody species per sample plot by overstory class

Overstory class	Average number species	
I. Pine plantations (longleaf, slash, loblolly)	1.6	
A. Nonthinned	1.4	
1. 0-6 years old		1.5
2. 6+ years old		<u>1.3</u>
B. Thinned (6+ years old)	<u>1.9</u>	
II. Natural upland stands	3.1	
A. Pines	2.7	
1. Longleaf		2.4
2. Loblolly		<u>2.8</u>
a. Seedlings and saplings		
b. Poletimber and sawtimber		<u>2.1</u>
B. Scrub	3.0	
1. Longleaf-oak		2.8
2. Loblolly-hardwoods		<u>3.2</u>
C. Pine-hardwoods	<u>4.5</u>	
III. Bottomland hardwoods	4.6	
A. Seedlings and saplings	4.5	
B. Poletimber and sawtimber	<u>4.7</u>	
C. Savannah River Bottom	4.3	
1. Seedlings and saplings		4.2
2. Poletimber and sawtimber		<u>4.3</u>
D. Upper Three Runs Drainage	4.9	
1. Seedlings and saplings		4.7
2. Poletimber and sawtimber		<u>5.1</u>
E. Lower Three Runs Drainage	4.7	
1. Seedlings and saplings		4.6
2. Poletimber and sawtimber		4.8
Mean	3.7	

Table 24. --List of utilized locations by forest type showing percent of browse plants used

Forest type'	Location number	Percent used	Forest type'	Location number	Percent used
2	395	3.2	81	393	1.9
			81	420	2.2
3	386	3.7	81	946	2.0
3	469	7.1	81	948	2.5
3	960	4.5	81	949	2.9
3	971	5.7	81	952	12.5
			81	979	5.2
10	226	8.3	81	983	1.7
10	319	8.6	81	985	3.6
10	372	3.2	82	418	1.7
10	397	6.3	82	441	2.8
10	540	5.6	82	442	3.6
10	602	3.0	82	486	1.9
			82	505	1.9
20	559	3.0	82	509	46.2
			82	528	3.8
31	533	2.2	82	552	14.3
31	558	1.8	82	572	7.4
31	578	2.3	82	589	16.7
31	912	25.0	82	594	5.1
31	934	6.3	82	609	1.8
			82	619	6.0
32	37	1.9	82	620	18.3
32	233	11.1	82	628	1.7
32	425	5.6	83	346	9.1
32	530	1.6	83	534	1.7
32	573	8.1	83	908	3.0
32	590	1.8	83	919	1.2
			63	950	1.4
40	146	2.8	84	a4	2.0
40	198	3.3	84	271	24.4
40	290	9.1	84	406	1.9
40	313	5.1	84	494	4.0
40	318	13.3	85	414	3.9
40	465	9.4	85	417	2.6
40	575	2.4	85	922	5.4
40	576	9.5	85	943	2.6
40	607	18.2	85	951	2.9
			85	964	3.1
50	7	3.6	85	988	3.7
50	225	17.9	85	989	2.9
50	265	12.1	86	415	4.2
50	289	22.6	86	435	2.8
50	338	2.4	86	439	1.7
50	339	12.1	86	459	3.2
50	592	5.0	86	461	6.1
50	595	2.8	86	484	1.4
50	974	6.9	86	520	9.3
50	980	2.6	86	549	4.2
50	982	10.7	86	597	1.5
50	984	6.0	86	909	1.8
50	991	2.2	86	965	1.8
			86	972	4.2

'See table 2 in text for explanation of forest type code.

Table 25. --A list of woody species dominant on one or more plots by forest type, and arranged by preference classes

Browse preference class	Pine plantations				Natural stands											
	Non-thinned		6+ years - thinned	Longleaf pine	Longleaf- scrub oak	Loblolly pine		Loblolly-scrub hardwoods	Pine-hardwoods	Bottomland hardwoods						
	0-6 years	6+ years				Seedlings and saplings	Poletimber and sawtimber			Savannah River	Bottom	Upper Three Runs Drainage		Lower Three Runs Drainage		
			Seedlings and saplings	Poletimber and sawtimber	Seedlings and saplings			Poletimber and sawtimber	Seedlings and saplings			Poletimber and sawtimber				
Preferred:																
Greenbrier						X	X	x	x	x		X	X	X	X	X
Japanese honeysuckle						x	x	x	x	x		X	X	X	X	X
Staple:																
Blackgum							x	x	x	x			X	X	X	X
Boxelder												X				
Bramble						X	x	x	x	x		X	X	X	X	X
Chokeberry										x	x		X	X		
Climbing hydrangea												X				
Eastern baccharis												X				
Flowering dogwood												X	X	X	X	X
Grape							x	x	x	x	X	X	X	X	X	X
Green ash														X		
Black maple						X		X		X	X		X			
Piedmont azalea																
Rattan-vine														X		
Redbay													X	X	X	X
Sassafras						X	x	x	x	x		X				X
Serviceberry														X		
Soft maple																
St. John's-wort														X	X	
Swamp-honeysuckle																X
Sweetbay													X	X	X	X
Sweetshrub													X			
Viburnum													X	X	X	X
White ash													X			
Willow																X
Yellow jessamine						X		X	x	x	X		X	X	X	X
Yellow-poplar																X

92

