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Structure of Pine Stands in the Southeast

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Structure of Pine Stands in the Southeast

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ABSTRACT

Distributional and statistical information associated with variables commonly used to describe stand structure are reported for the major pine cover types of the Southeast. Variables presented include stand age, site index, basal area per acre, number of stems per acre, and stand density index. Means, standard deviations, and ranges of these variables are listed by State and physiographic region for loblolly, slash, longleaf, pond,' shortleaf, and Virginia pine cover types. Illustrations of multidimensional relationships among some of the variables are also provided. This information is intended as a general guide to the ranges of conditions found in southeastern pine stands, and can be used by forest growth modelers to design sampling strategies and determine populations of inference.

Keywords : Southern pine, timberland, *Pinus*, stand structure, forest inventory.

Introduction

The five Southeastern States produced 3.6 billion cubic feet of industrial timber products and fuelwood in 1984 (U.S. Department of Agriculture 1988). About 2.5 billion cubic feet of this volume, worth nearly $1.3 billion on the stump, came from softwood species--primarily southern yellow pines. In addition to providing much of the raw material for a huge and growing forest products industry, these species are tremendously important to the ecology of the region. About 40 percent of the 85 million acres of timberland in the Southeast are dominated by yellow pines.

Important decisions governing the management of this resource are frequently based on growth models that utilize such stand structural variables as age, density, and site quality. To simplify the relationships between these structural variables and growth, many models are derived from stands that represent idealized conditions. With minimal attention given to prevailing forest conditions during the sample selection process, the applicability of these models to the general population of stands throughout the region is unclear. Some users, therefore, may be extrapolating beyond the range of the data used to construct the models, even for conditions common throughout the region.

Recent changes in the growth rates of southern yellow pines in the Southeast (Sheffield and others 1985) underscore the need to develop simulation models to evaluate the regional impacts of biotic and abiotic stresses on stand dynamics. These models will likely include some of the same structural variables used in growth and yield models. For meaningful regional biological and economic assessments, it is necessary to demonstrate that results from simulations are relevant to the population of forests within the region.

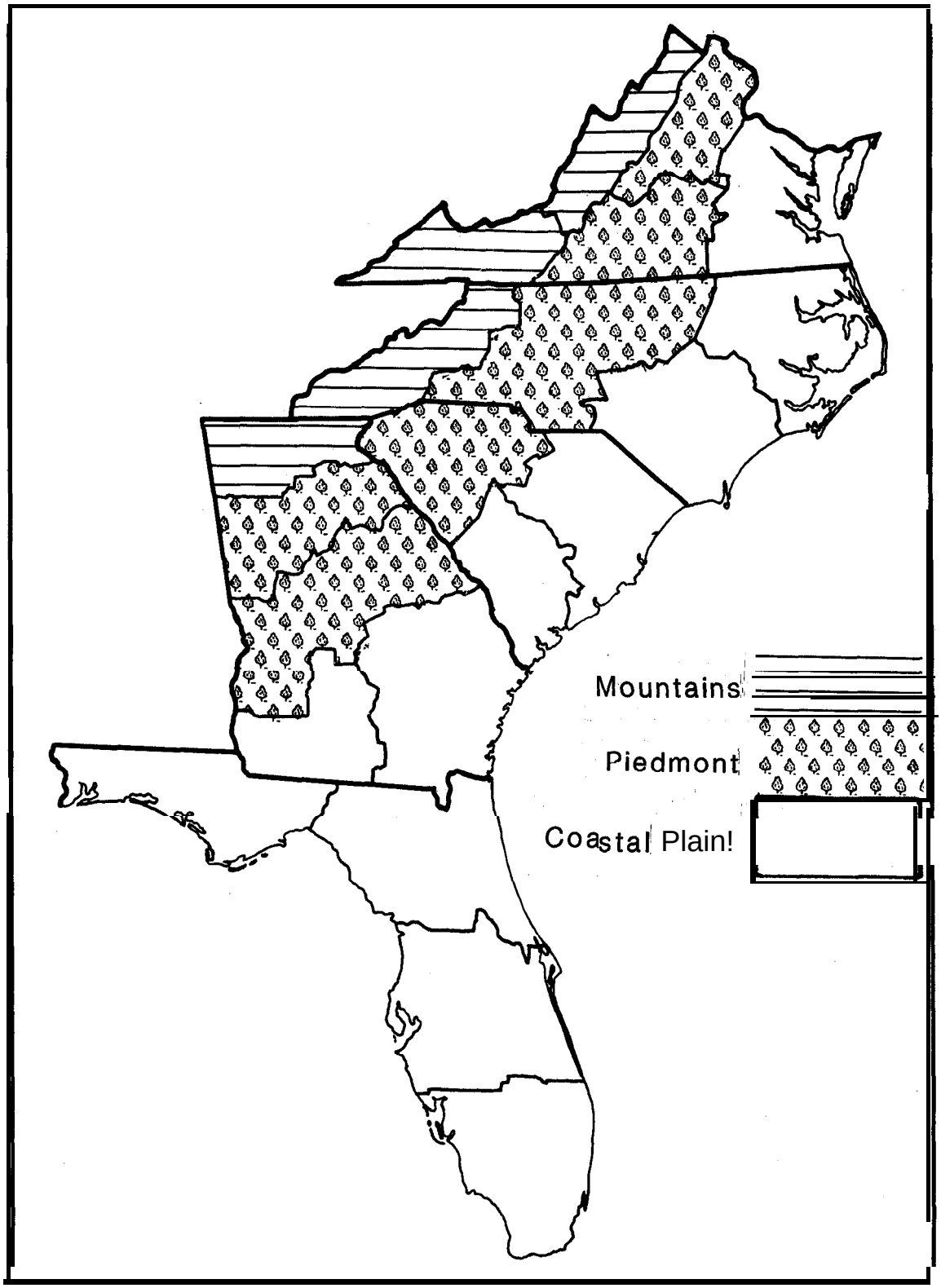

Figure 1.--FIA Survey Units in the Southeast, by State and physiographic region.

Whatever the purpose of a model, maximum utility can be gained by designing sampling strategies that best represent the population of inference. Basic information about the distributions of stand structural characteristics is fundamental to this process. Forest Inventory and Analysis (FIA) is the best source of detailed forest resource data available for regional populations of trees and timber stands. Although FIA acreage and volume data are routinely summarized and reported at State, Survey Unit, and County levels, distributional information about mensurationally based stand level variables has never been published. Our purpose here is to provide this information for variables commonly used to describe the structure and growth of pine stands in the Southeast. This Paper is intended as a general guide to the ranges of conditions found in the major pine cover types of the region.

Sampling Methods

In the Southeast, FIA maintains approximately 27,000 permanent forest plots systematically distributed to attain a proportionate sample of all major forest types, sites, and ownerships. The 5-State region is divided into 21 Survey Units (fig. 1). Each State consists of three to five Survey Units. The boundaries of these Units are compatible with the three major physiographic areas of the Southeast (Mountains, Piedmont, and Coastal Plain). Sampling intensity within each Survey Unit is designed to achieve a minimum accuracy of ± 5 percent per billion cubic feet of growing-stock inventory volume at one standard error. Across the region, each sample represents an average of 3,100 acres of timberland. Data presented in this document were collected over a 7-year period, ranging from the 1980 inventory of Georgia to the 1987 inventory of Florida (table 1).

Stand characteristics at each plot location were estimated from measurements taken from a cluster of five variable-radius points spaced 70 feet apart. The limiting distance of sample trees 5.0 inches d.b.h. and larger was dependent on a basal area factor of 37.5. Trees between 1.0 and 4.9 inches d.b.h. were tallied from five l/300-acre fixed-radius plots that shared common point centers with the cluster of variable plots.

Table 1.--Dates of FIA inventories by State, and numbers of Survey Units by physiographic region, in the Southeast

State	Dates of inventory	Physiographic region	Number of Survey Units
Florida	9/86-10/87	Coastal Plain	4
Georgia	5/80-1/83	Coastal Plain	2
		Piedmont	2
		Mountains	1
North Carolina	11/82-9/84	Coastal Plain	2
		Piedmont	1
		Mountains	1
South Carolina	11/85-9/86	Coastal Plain	2
		Piedmont	1
Virginia	9/84-11/85	Coastal Plain	1
		Piedmont	2
		Mountains	2

Structural Variables

Five descriptors of stand structure were chosen for display: stand age, site index, basal area per acre; numbers of stems per acre, and stand density index. Stand age is defined as the average chronological age of all trees identified as part of a manageable stand. In most cases, especially in pine stands, the manageable stand is synonymous with the primary overstory. Sample trees for estimating site quality were selected from the dominant and codominant trees within each stand. Height and age data from the site trees were used to assign a site index based on the curves developed by Schumacher and Coile (1960). Numbers of trees and basal area per acre were computed by methods adapted from Beers and Miller (1964). Stand density index was calculated as proposed by Reineke (1933). All computations involving numbers of stems, basal area, and density index include trees 1.0 inch d.b.h. and larger. Numbers of trees and basal area statistics are presented for pine species separately, and then again for all species encountered in the sampled stands. The ratio of pine:total species is a useful indicator of hardwood competition.

Organization

Forest cover types were stratified into five broad classes: planted pine, natural pine, oak-pine, upland hardwood, and lowland hardwood stands. Stands with more than 50 percent of the total stocking in pine trees were classified as either "planted" or "natural" pine stands. Stands where pines contributed 25 to 50 percent of the stocking were categorized as "oak-pine." Stands with less than 25 percent of the total stocking in pine were classed as "hardwood." Hardwoods were subdivided into upland or lowland types on the basis of species composition and hydrologic conditions.

Breakdowns of timberland area in the Southeast by broad forest type, physiographic region, and State are shown in figures 2 and 3. The remainder of the Paper is devoted solely to the planted and natural pine segment of the resource.

Explicit information related to stand structure is provided for the following detailed pine cover types:

1. Loblolly pine (*Pinus taeda* L.), natural
2. Loblolly pine, planted
3. Slash pine (*P. elliottii* Engelm.), natural
4. Slash pine, planted
5. Longleaf pine (*P. palustris* Mill.),
6. Pond pine (*P. serotina* Michx.),
7. Shortleaf pine (*P. echinata* Mill.),
8. Virginia pine (*P. virginiana* Mill.), and
9. Other.

These cover types are based on the species that make up a plurality of the pine stocking in each stand. The category listed as "'other" encompasses eastern white pine-eastern hemlock (*P. strobus* L. and-*Tsuga canadensis* (L.) Carr.), red spruce-balsam fir (*Picea rubens* Sarg. and *Abies balsamea* (L.) Mill.), sand pine (*Pinus clausa* (Chapm. ex Engelm.) Vasey ex Sarg.), eastern redcedar (*Juniperus virginiana* L.), spruce pine (*P. glabra* Walt.), pitch pine (*Pinus rigida* Mill.), and Table Mountain pine (*P. pungens* Lamb.) forest types. Of these, the only types of ahy consequence are white pine-hemlock in the northern and mountain areas of the region, and sand pine in Florida. Cypress types are grouped with lowland hardwood stands and are not included in any detailed tables.

Distributions of each structural variable, by pine forest type, are presented in tabular format for 20 combinations of geographic areas:

1. The entire Southeast (table 2),
2. The three physiographic regions of the Southeast (tables 3-5),
3. The five Southeastern States (tables 6-10), and
4. Each State by physiographic region (tables 11-21).

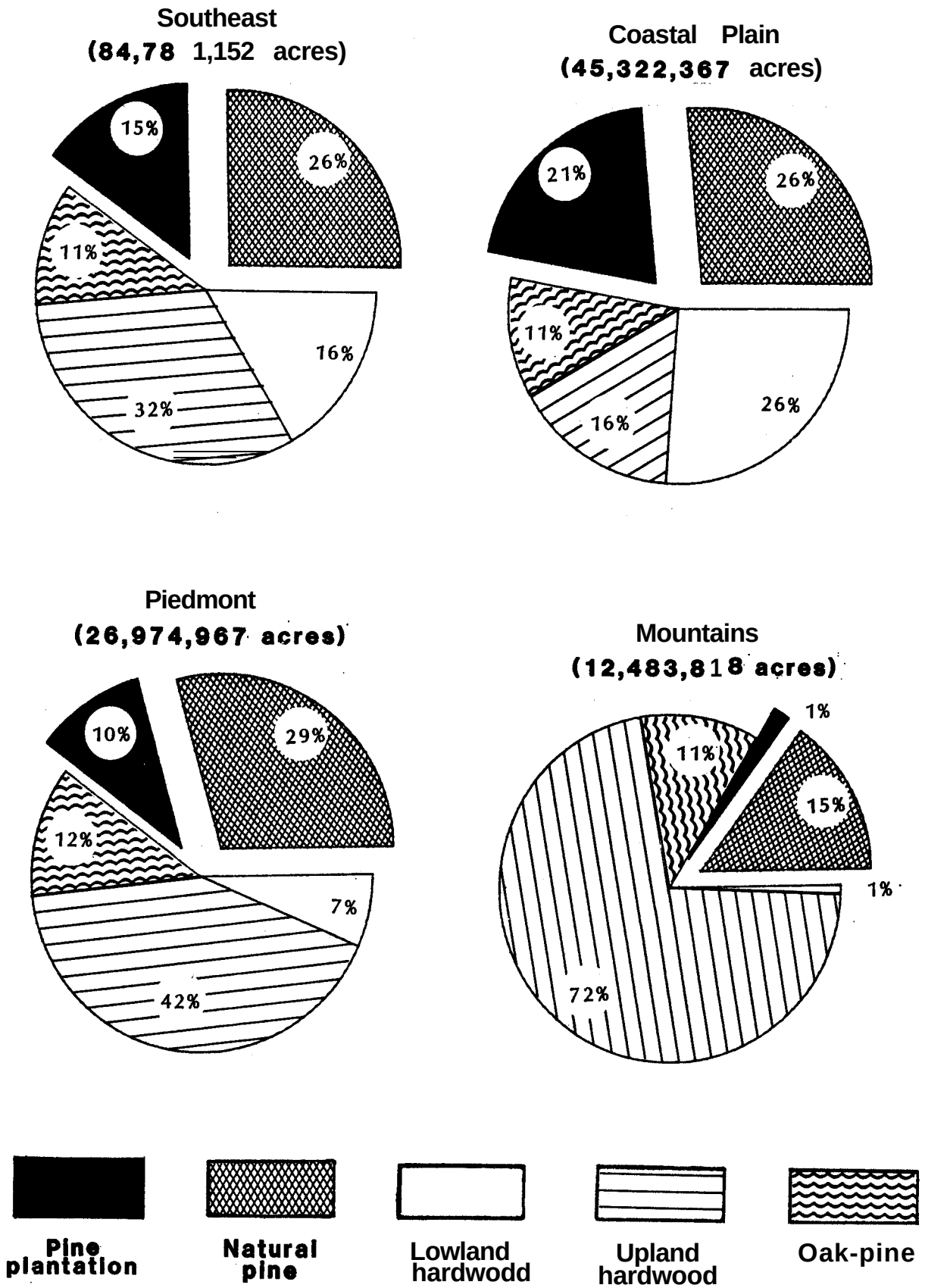

Figure P.-Percentage distribution of all timberland in the Southeast, by broad forest type and physiographio region.

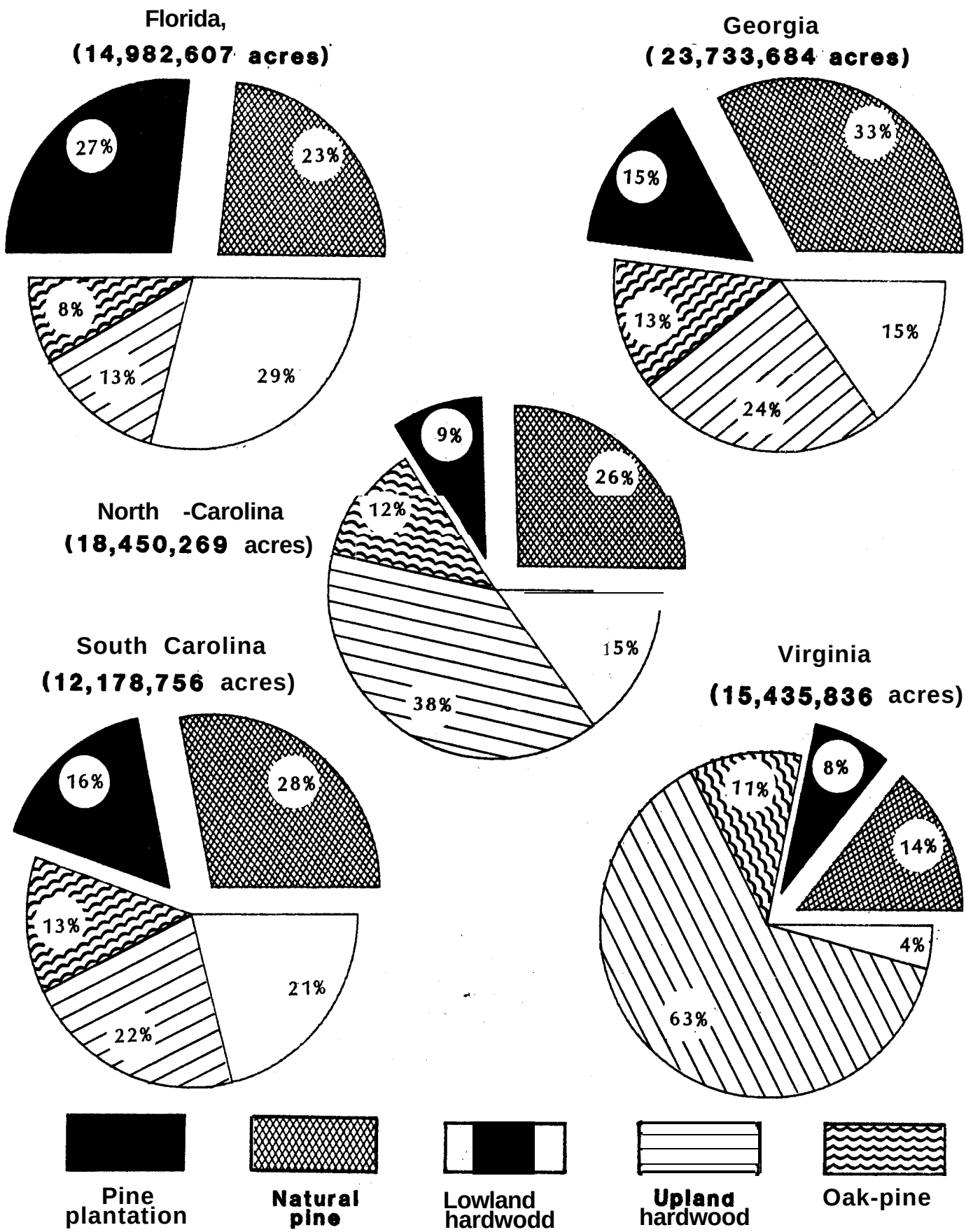

Figure 3.--Percentage distribution of all timberland in the southeast, by broad forest type and State,

Another four tables provide stand structural information by ownership. Detailed pine forest types have been aggregated into two categories (planted and natural) in these tables. Ownership data are provided for:

1. The entire Southeast (table 22), and
2. The three physiographic regions of the Southeast (tables 23-25).

(Tables 2-25 are listed separately at the back.)

In addition to tabular information, breakdowns of acreage by forest type and physiographic region, State, stand age, site index, and basal area per acre are shown graphically in figures 5-9. All remaining illustrations (figs. 10A-64C) show multidimensional relationships among selected structural variables. In most cases, three block charts are provided for each pine cover type:

1. Site index by stand age (frequency distribution where each cell represents a percentage of total acreage),
2. Basal area per acre by stand age (frequency distribution where each cell represents a percentage of total acreage),
3. Site index by stand age (each cell equals the average percentage of total basal area per acre in that cell consisting of species other than yellow pine).

These block charts are presented by pine cover type for:

1. The entire Southeast (figs. 10A-17C),
2. The three physiographic regions of the Southeast (figs. 18A-33C), and
3. The five Southeastern States (figs. 34A-64C).

(Figures 5-64 are listed separately at the back.)

Special Notes

No graphs are provided for the "other" pine forest types. Since this category includes a mixture of minor types, relationships among structural variables are not biologically meaningful. Also, when stratified by State and physiographic region, some of the major pine cover types were poorly represented. For example, few Virginia pine stands are located in Florida. Graphic information is omitted for situations where major types are represented by less than 100,000 acres.

Site index data for Georgia will not be available until the sixth inventory of the State is completed in 1989. For this reason, there are no graphs involving site index for Georgia; only the basal area per acre by stand age relationships are shown (figs. 40-47). Where data from Georgia were aggregated with other States across physiographic regions, the Georgia data were treated as missing values and withheld from calculations of average site indices. Also, when aggregating across physiographic regions, most or all of some major type5 were located exclusively in Georgia, and the corresponding graphs involving site index were unobtainable. This was the situation for planted slash pine stands in the Piedmont (fig. 28) and for natural loblolly and shortleaf pine stands in the Mountains (figs. 31 and 32).

Numbers of pine stems and pine basal area per acre in tables 2-25 refer to yellow pine species only. Numbers and basal area of pines in some "other" pine forest types may therefore be misleading, because some of the types included under this category are not yellow pine forest types. For example, the majority of "other" pine stands in Virginia are white pine-hemlock stands. The only yellow pines these stands might contain are a few scattered Virginia pines. White pine is not included with the pine stems and pine basal area figures shown for these stands.

No separate table is presented for the Coastal Plain of Florida because the entire State is in the Coastal Plain. Such a table would be a duplication of table 6.

Finally, the numbers in the graphs and tables may differ slightly from the given totals or previously published numbers due to rounding.

Example of Use

Suppose a model is to be used to simulate the impact of an environmental stress on the growth of loblolly pine, and that an assessment of the regional impact of this stress is desired. Some of the best data currently available for loblolly are based on research conducted in plantation ecosystems, where uniform spacing and control of competing vegetation simplify the understanding of stand dynamics. As a result, initial attempts to construct a stand-level growth model might logically draw on plantation data. Application of such a model to regional populations of loblolly stands requires a knowledge of

1. the proportion of the total landscape represented by the model,
2. the portion of the landscape not represented by the model, and
3. the assumptions or additional data that would allow greater extrapolation of simulation results.

A model built from loblolly plantation data will be most valid for analyzing the growth of plantations with ages, densities, and site conditions similar to those used to fit the model. The use of such a model for loblolly plantations with stand structures outside the range of sampled data requires assumptions of similar behavior outside the observed range. Furthermore, recalibration of a plantation model for application to natural stands may be especially risky if the distributions of stand structural variables are dissimilar. Major differences indicate that entirely different model specifications may be warranted. In 1 ike manner, stand structural relationships can be used to determine the portability of models between species. Identification of how the distributions of key mensurational stand factors overlap for different cover types is a necessary step in such evaluations.

In figure 4, loblolly and shortleaf basal area data from table 2 are summarized in the form of boxplots (Velleman and Hoaglin 1981). Each box in figure 4 is bounded by the 25th and 75th percentiles, so half of the data from each cover type are concentrated in the boxes. The lines on either side of each box represent the minimum and maxi-

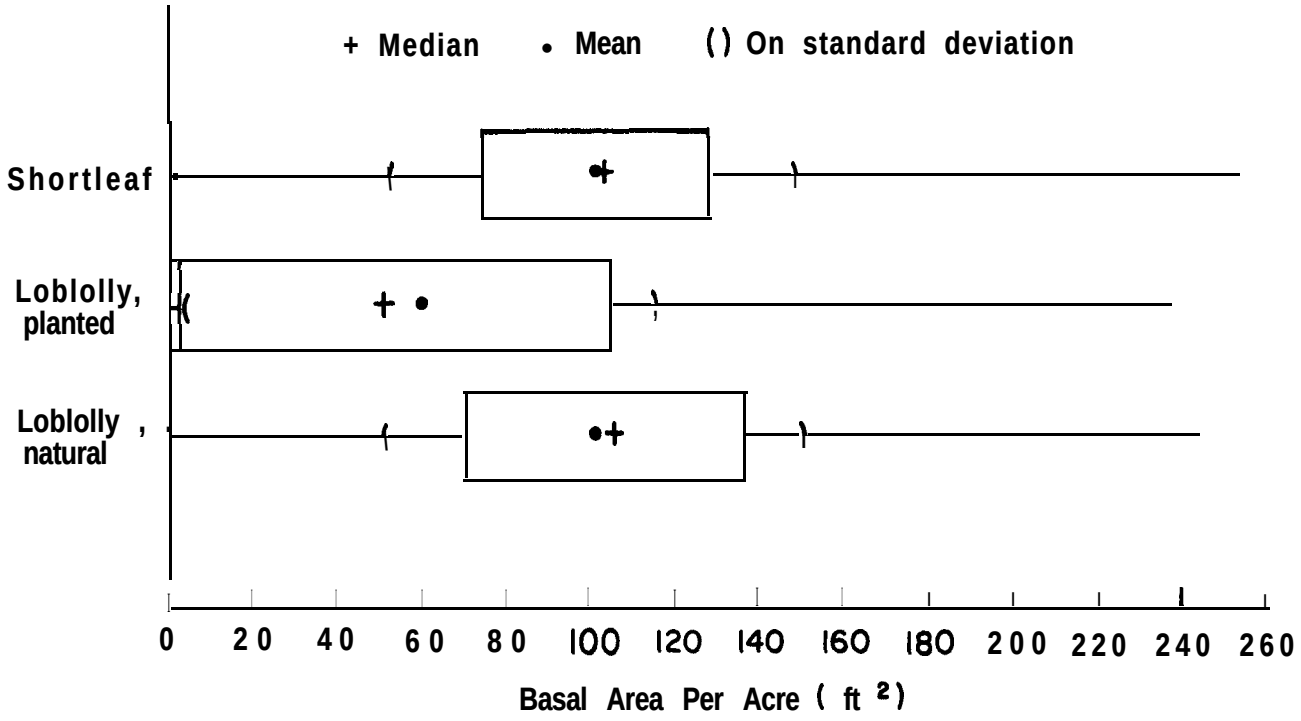

Figure 4.-Box plots of shortleaf and loblolly pine stands in the Southeast.

mum observed values. Medians, means, and standard deviations are also shown.

From these plots it is obvious that, with respect to total basal area, the distributions of planted and natural loblolly stands differ considerably. Basal areas of natural loblolly stands appear to be normally distributed, while those of planted stands are severely skewed, with the mean differing from the median by more than 18 percent. Values to the left of the 25th percentile indicate that one-fourth of all planted loblolly stands in the Southeast contain 3 square feet of basal area, or less. The mean basal area of natural loblolly stands is nearly double that of planted stands. These differences are largely attributable to a mean age of 12 years in planted stands versus 32 years in natural stands (table 2). Also, the proportion of hardwoods in natural stands is more than twice the hardwood ratio of planted stands. Hardwoods make up 27 percent of the basal area in natural loblolly stands, compared with 13 percent in loblolly plantations. Given all these differences, extrapolation of a plantation model to natural loblolly stands cannot be justified on the basis of similar stand structures. On the other hand, the distributions of basal area in natural loblolly and shortleaf pine stands are remarkably similar. Age structures and average amounts of hardwood competition are also alike, suggesting that, with recalibration of parameters, one model specification would probably suffice for both natural loblolly and shortleaf cover types. Distributions of these and other structural variables for more specific geographic areas can likewise be investigated with the tabular data. Additional information about the shape of distributions for two-way interactions between some of the structural variables can be gleaned from referencing the appropriate graphs (figs. 10A–64C).

Data contained in this document are also valuable as a guide to selecting samples for the purpose of modeling. Placement of samples to span one standard deviation of the mean assures two-thirds coverage of a normally distributed population; two standard deviations assures 95-percent coverage. Even when the assumption of normality deteriorates severely, 75 percent of the population will still fall within two standard deviations (Byrkit 1975). Knowledge concerning the shape of the distribution helps determine where to concentrate sampling to best conform to the target population.

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Table Z.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Southeast

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine[d]	Other[e]
Area (thousand acres)	34,103	9,012	5,749	3,869	5,957	2,413	1,248	1,961	2,382	1,512
Sample size (number)	11,554	2,966	1,976	1,432	2,192	875	440	539	661	473
Age (years)										
Mean	27	32	12	31	16	43	37	37	32	34
Standard deviation	18	17	9	15	9	20	18	21	17	28
Minimum	0	0	1	0	1	0	0	2	1	0
25 percentile	12	20	5	22	8	30	26	25	22	IO
Median	25	32	11	31	17	45	38	35	33	26
75 percentile	38	44	19	41	23	58	48	48	42	45
Maximum	165	130	51	86	49	110	98	150	105	165
Site index[f] (feet at age 50)										
Mean	68	75	72	67	67	60	58	64	66	64
Standard deviation	12	12	9	12	9	10	11	12	11	15
Minimum	30	30	40	30	40	30	30	40	40	30
25 percentile	60	70	70	60	60	50	50	60	60	50
Median	70	70	70	70	70	60	60	60	70	60
75 percentile	80	80	80	80	70	70	70	70	70	70
Maximum	120	120	110	110	100	100	100	100	100	110
Total basal area[g] (square feet/acre)										
Mean	78	101	60	71	54	55	69	101	107	80
Standard deviation	53	50	56	50	41	36	45	48	49	60
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	32	70	3	30	15	26	32	75	84	25
Median	75	105	51	66	52	53	66	103	115	65
75 percentile	115	137	105	105	83	77	101	129	141	108
Maximum	347	244	237	347	195	214	201	254	246	240
Pine basal area[g,h] (square feet/acre)										
Mean	60	74	52	58	50	48	54	72	80	30
Standard deviation	43	40	50	41	38	33	32	40	44	34
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	25	48	2	24	15	23	30	47	53	0
Median	59	75	44	53	47	45	53	68	82	23
75 percentile	90	103	90	85	78	68	78	95	106	55
Maximum	249	225	233	249	195	214	150	190	218	140
Total stems[g] (number per acre)										
Mean	669	816	685	505	478	319	716	878	968	681
Standard deviation	543	545	641	482	371	322	572	481	564	539
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	240	427	120	129	227	86	243	562	653	320
Median	552	734	547	351	423	208	580	831	902	591
75 percentile	945	1.117	1,051	716	660	435	1,105	1,131	1.267	900
Maximum	4,575	4.232	3,420	3,578	4.575	2,010	2,832	2,363	4.083	3,362
Pine stems[g,h] (number per acre)										
Mean	331	340	372	281	349	171	260	379	461	222
Standard deviation	329	354	345	301	252	192	232	351	446	379
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	99	107	82	76	171	51	90	153	197	0
Median	247	220	346	187	342	109	193	292	346	136
75 percentile	465	445	550	371	498	216	338	488	573	360
Maximum	4,125	3.247	3,120	2.847	4,125	2,010	1,598	2,105	3,675	3,120
Reineke stand density index[g,i]										
Mean	204	250	189	181	149	127	182	252	268	208
Standard deviation	116	109	127	112	86	79	112	109	109	121
Minimum	1	1	1	2	1	1	2	4	2	1
25 percentile	109	180	85	91	81	67	90	188	214	106
Median	198	256	189	166	145	115	178	252	287	182
75 percentile	286	324	289	254	209	171	264	317	338	275
Maximum	765	564	607	765	450	507	512	558	548	532

[a] Includes 184,000 acres of planted stands.
[b] Includes 11,000 acres of planted stands.
[c] Includes 20,000 acres of planted stands.
[d] Includes 53,000 acres of planted stands.
[e] Includes planted and/or natural stands of eastern redcedar, pitch pine, sand pine, spruce pine, spruce-fir, Table Mountain pine, and white pine-hemlock.

[f] Site indices for Georgia were not available at time of publication and are treated as missing values
[g] Live trees 1.0 inch d.b.h. and larger.
[h] Yellow pine species only.
[i] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 3.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Coastal Plain region of the Southeast

Area/ sample size/ characteristic	All pine types	Pine forest types: Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine[d]	Other[e]
Area (thousand acres)	21,400	4,326	3,250	3,818	5,619	2,309	1,239	114	109	616
Sample size (number)	7,958	1,607	1,227	1,415	2,094	842	437	42	42	252
Age (years)										
Mean	26	34	12	31	16	43	37	38	35	21
Standard deviation	18	19	8	16	9	21	19	17	16	16
Minimum	0	0	1	0	1	0	0	7	8	0
25 percentile	11	20	5	22	8	30	26	26	27	7
Median	24	34	10	31	16	45	38	39	35	20
75 percentile	38	46	18	41	23	57	49	52	43	33
Maximum	130	130	45	86	49	110	98	68	70	83
Site index[f] (feet at age 50)										
Mean	68	75	71	67	67	60	58	69	68	61
Standard deviation	12	12	9	12	10	10	11	13	8	10
Minimum	30	30	40	30	40	30	30	40	50	40
25 percentile	60	70	70	60	60	50	50	60	60	50
Median	70	70	70	70	70	60	60	70	70	60
75 percentile	80	80	80	80	70	70	70	80	70	70
Maximum	120	120	110	110	100	100	100	100	90	90
Total basal area[g] (square feet/acre)										
Mean	69	103	60	71	53	55	69	100	121	46
Standard deviation	52	52	56	52	42	38	47	49	42	35
Minimum	0	0	0	0	0	0	0	15	14	0
25 percentile	26	71	5	30	15	26	32	60	98	13
Median	65	107	50	66	50	53	65	102	125	47
75 percentile	105	142	105	105	83	78	101	128	161	70
Maximum	347	244	228	347	188	214	201	254	216	155
Pine basal area[g,h] (square feet/acre)										
Mean	56	73	51	58	49	48	54	72	88	40
Standard deviation	42	39	48	42	40	35	34	35	38	31
Minimum	0	0	0	0	0	0	0	15	14	0
25 percentile	23	48	3	24	14	23	30	53	63	11
Median	53	75	45	53	46	45	53	66	87	40
75 percentile	84	100	90	85	77	68	78	98	113	60
Maximum	249	210	225	249	188	214	150	184	195	140
Total stems[g] (number per acre)										
Mean	593	817	725	508	478	318	714	709	1,177	579
Standard deviation	538	575	653	505	385	340	600	447	764	517
Minimum	0	0	0	0	0	0	0	11	439	0
25 percentile	184	395	180	131	228	84	242	281	654	219
Median	476	728	600	352	426	206	575	672	973	497
75 percentile	842	1,132	1,096	718	660	433	1,101	1,045	1,344	824
Maximum	4.575	4,232	3,420	3,578	4,575	2,010	2,832	1,675	4,083	3,180
Pine stems[g,h] (number per acre)										
Mean	307	279	389	283	352	171	260	282	606	381
Standard deviation	304	293	338	316	264	201	244	232	759	449
Minimum	0	0	0	0	0	0	0	11	29	0
25 percentile	89	90	120	76	172	52	90	107	178	92
Median	237	178	360	189	346	107	190	188	304	276
75 percentile	446	371	567	372	503	216	340	400	671	475
Maximum	4,125	2,256	2,357	2,847	4,125	2,010	1,598	973	3,675	3,120
Reineke stand density index[g,i]										
Mean	184	256	192	181	148	127	181	232	301	140
Standard deviation	116	113	128	117	90	83	117	113	94	78
Minimum	1	1	1	2	1	1	2	23	49	2
25 percentile	93	180	84	92	78	67	89	142	251	88
Median	172	262	189	166	143	114	178	223	322	141
75 percentile	263	336	291	254	208	171	264	298	369	184
Maximum	765	564	554	765	450	507	512	558	478	402

[a] Includes 184,000 acres of planted stands.

[b] Includes 11,000 acres of planted stands.

[c] Includes 5,000 acres Of planted stands.

[d] Includes 3,000 acres of planted stands.

[e] Includes planted and/or natural stands of eastern redcedar, sand pine, and spruce pine.

[f] Site indices for Georgia were not available at time of publication and are treated as missing values.

[g] Live trees 1.0 inch d.b.h. and larger.

[h] Yellow pine species only.

[i] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table Q.--Area of timberland, Sample size. and distribution of selected stand characteristics in pine forest types in the Piedmont region of the Southeast

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[a]	Shortleaf pine[b]	Virginia pine[c]	Other[d]
Area (thousand acres)	10,657	4.449	2,404	50	337	99	9	1,535	1,571	203
Sample size ("umber)	3.135	1,307	719	17	98	32	3	434	464	61
Age (years)										
Mean	27	31	13	19	19	43	37	36	32	23
Standard deviation	17	15	10	14	8	20	4	19	16	22
Minimum	0	0	1	0	1	6	32	2	1	0
25 percentile	15	20	5	6	15	26	32	25	20	9
Median	26	30	12	25	22	42	38	35	33	16
75 percentile	38	40	21	37	26	60	41	45	42	25
Maximum	150	88	51	45	35	90	41	150	105	102
Site index[e] (feet at age 50)										
Mean	69	72	72	--	75	--	--	64	66	65
Standard deviation	11	11	10	--	7	--	--	11	10	12
Minimum	40	40	40	--	70	--	--	40	40	40
25 percentile	60	70	70	--	70	--	--	60	60	60
Median	70	70	70	--	75	--	--	60	70	70
75 percentile	80	80	80	--	80	--	--	70	70	70
Maximum	110	110	110	--	80	--	--	90	100	90
Total basal area[f] (square feet/acre)										
Mean	89	98	59	43	67	56	106	101	105	56
Standard deviation	52	47	56	50	41	32	40	46	47	50
Minimum	0	0	0	0	0	8	74	0	0	0
25 percentile	52	68	2	5	37	33	74	74	80	17
Median	94	102	51	46	69	51	93	103	113	39
75 percentile	128	131	106	90	93	70	160	131	140	91
Maximum	246	239	237	169	195	172	160	222	246	187
Pine basal area[f,g] (square feet/acre)										
Mean	68	75	52	39	62	48	88	73	80	17
Standard deviation	44	40	52	46	41	33	24	38	42	23
Minimum	0	0	0	0	0	4	63	0	0	0
25 percentile	38	48	1	3	32	28	63	46	53	0
Median	68	75	43	28	62	38	90	68	83	8
75 percentile	99	105	92	89	85	61	116	95	109	23
Maximum	233	225	233	154	195	172	116	190	218	87
Total stems[f] (number per acre)										
Mean	791	819	634	286	475	333	974	899	981	637
Standard deviation	543	504	623	346	408	240	498	463	518	475
Minimum	0	0	0	0	0	14	426	0	0	0
25 percentile	395	467	93	20	208	118	426	562	646	300
Median	720	742	480	162	390	297	1,179	857	914	522
75 percentile	1,114	1,107	960	516	636	586	1,440	1,177	1,298	981
Maximum	3,663	3,663	3,120	1,327	1,992	929	1,440	2,363	3,180	1,765
Pine stems[f,g] (number per acre)										
Mean	390	399	350	164	310	154	231	408	480	146
Standard deviation	376	390	355	247	246	168	14	344	409	266
Minimum	0	0	0	0	0	14	219	0	0	0
25 percentile	134	142	60	20	169	38	219	158	209	0
Media"	294	277	300	102	275	123	226	319	353	45
75 percentile	522	529	627	205	431	178	246	520	585	182
Maximum	3,247	3,247	3,120	1,027	1,244	798	246	2,105	2,940	1,750
Reineke stand density index[f,h]										
Mean	231	243	185	147	168	123	264	253	265	157
Standard deviation	Ill	102	125	108	82	66	102	103	103	109
Minimum	1	2	2	35	1	14	205	4	2	13
25 percentile	159	179	86	50	114	70	205	187	210	67
Median	240	247	185	131	171	117	209	252	286	158
75 percentile	312	312	283	224	222	163	403	318	340	237
Maximum	607	525	607	415	425	348	403	532	548	420

[a] Includes 0 acres of planted stands.

[b] Includes 12,000 acres of planted stands.

[c] Includes 27,000 acres of planted stands.

[d] Includes planted and/or natural stands of eastern redcedar, pitch pine, sand pine, Table Mountain pine, and white pine-hemlock.

[e] Site indices for Georgia were not available at time of publication and are treated as missing values.

[f] Live trees 1.0 inch d.b.h. and larger.

[g] Yellow pine species only.

[h] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 5.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Mountain region of the Southeast

Area/ sample size/ characteristic	All pine types	Pine forest types: Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine	Shortleaf pine[b]	Virginia pine[c]	Other[d]
Area (thousand acres)	2,048	237	96	--	--	6	--	313	702	694
Sample size (number)	461	52	30	--	--	1	--	63	155	160
Age (years)										
Mean	39	33	13	--	--	50	--	42	34	50
Standard deviation	22	14	8	--	--	—	--	21	15	27
Minimum	0	0	2	--	--	50	--	4	3	3
25 percentile	22	20	5	--	--	50	--	27	25	27
Median	35	32	14	--	--	50	--	40	32	47
75 percentile	50	40	20	--	--	50	--	50	44	65
Maximum	165	70	30	--	--	50	--	98	84	165
Site index[e] (feet at age 50)										
Mean	67	--	88	--	--	--	--	72	66	67
Standard deviation	15	—	4	--	--	—	--	9	12	17
Minimum	30	—	SO	--	--	—	--	60	40	30
25 percentile	60	--	80	--	--	—	--	63	60	60
Median	70	—	85	--	--	--	--	75	70	70
75 percentile	80	--	90	--	--	--	--	80	70	80
Maximum	110	--	90	--	--	--	--	80	9 0	110
Total basal area[f] (square feet/acre)										
Mean	111	122	60	--	--	85	--	105	109	118
Standard deviation	46	44	47	--	--	—	--	36	40	51
Minimum	0	0	0	--	--	85	--	4	0	0
25 percentile	85	90	2	--	--	85	--	88	88	87
Median	113	131	63	--	--	85	--	106	115	120
75 percentile	144	152	125	--	--	85	--	126	139	154
Maximum	240	197	227	--	--	85	--	186	192	240
Pine basal area[f,g] (square feet/acre)										
Mean	59	95	51	--	--	48	--	66	77	26
Standard deviation	44	42	44	--	--	--	--	31	36	33
Minimum	0	0	0	--	--	48	--	1	0	0
25 percentile	15	67	0	--	--	48	--	47	50	0
Median	53	91	44	--	--	48	--	63	75	8
75 percentile	91	121	117	--	--	48	--	85	101	45
Maximum	216	188	216	--	--	48	--	128	173	128
Total stems[f] (number per acre)										
Mean	823	755	644	--	--	381	--	834	908	785
Standard deviation	439	422	464	--	--	--	--	308	427	482
Minimum	0	0	0	--	--	381	--	111	0	0
25 percentile	541	505	13	--	--	381	--	642	663	467
Median	780	707	634	--	--	381	--	802	873	689
75 percentile	1,037	954	1,215	--	--	381	--	1,001	1,132	953
Maximum	3,362	2,514	1,916	--	--	381	--	1,714	3.115	3,362
Pine stems[f,g] (number per acre)										
Mean	268	342	344	--	--	344	--	268	396	102
Standard deviation	268	297	255	--	--	--	--	181	280	180
Minimum	0	0	0	--	--	344	--	23	0	0
25 percentile	45	152	0	--	--	344	--	165	171	0
Median	200	293	329	--	--	344	--	240	314	14
75 percentile	400	410	635	--	--	344	--	391	540	155
Maximum	2,688	1,393	1,163	--	--	344	--	874	2.688	1,206
Reineke stand density index[f,h]										
Mean	268	291	186	--	--	187	--	255	269	275
Standard deviation	93	82	103	--	--	--	--	81	88	99
Minimum	1	73	12	--	--	187	--	14	13	1
25 percentile	215	242	127	--	--	187	--	216	216	214
Median	273	293	224	--	--	187	--	262	281	277
75 percentile	335	346	323	--	--	187	--	306	331	347
Maximum	544	438	544	--	--	187	--	404	484	532

[a] Includes 0 acres of planted stands.

[b] Includes 3,000 acres of planted stands.

[c] Includes 23,000 acres of planted stands.

[d] Includes planted and/or natural stands of eastern redcedar, pitch pine, spruce-fir, Table Mountain Pine, and white pine-hemlock.

[e] Site indices for Georgia were not available at time of publication and are treated as missing values.

[f] Live trees 1.0 inch d.b.h. and larger.

[g] Yellow pine species only.

[h] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 6.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in Florida

Area/ sample size/ characteristic	All pine types	Pine forest type*								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[b]	Virginia pine	Other[c]
Area (thousand acres)	7,526	261	317	1,903	3,296	951	158	30	--	610
Sample size (number)	2,834	97	111	717	1,216	373	59	12	--	249
Age (years)										
Mean	24	29	9	31	15	43	37	34	--	21
Standard deviation	18	18	7	18	9	22	17	9	--	15
Minimum	0	1	1	0	1	0	0	15	--	0
25 percentile	9	13	3	20	7	27	26	29	--	7
Median	21	29	8	32	15	48	36	36	--	20
75 percentile	35	40	15	43	22	59	46	43	--	33
Maximum	90	80	38	86	45	90	80	46	--	a3
Site index (feet at age 50)										
Mean	66	76	68	66	67	62	60	74	--	61
Standard deviation	11	14	10	12	9	10	9	9	--	10
Minimum	30	30	40	30	40	40	40	60	--	40
25 percentile	60	70	60	60	60	50	50	70	--	50
Median	70	80	70	70	70	60	60	70	--	60
75 percentile	70	80	70	70	70	70	70	80	--	70
Maximum	110	110	100	110	100	100	80	100	--	90
Total basal area[d] (square feet/acre)										
Mean	51	77	37	58	49	46	44	96	--	46
Standard deviation	44	51	44	52	42	33	33	41	--	35
Minimum	0	0	0	0	0	0	0	60	--	0
25 percentile	14	39	0	15	10	21	23	65	--	13
Median	45	72	23	49	44	43	40	90	--	48
75 percentile	79	116	62	91	78	69	68	107	--	70
Maximum	347	199	195	347	188	167	150	198	--	153
Pine basal area[d,e] (square feet/acre)										
Mean	45	55	33	49	46	40	38	71	--	40
Standard deviation	39	35	41	42	40	30	27	42	--	31
Minimum	0	0	0	0	0	0	0	26	--	0
25 percentile	12	27	0	15	9	15	23	53	--	12
Median	39	54	18	44	39	38	34	61	--	40
75 percentile	69	78	57	75	73	60	60	84	--	60
Maximum	249	142	194	249	188	165	120	184	--	140
Total stems[d] ("umber per acre,										
Mean	406	557	443	358	441	240	249	485	--	582
Standard deviation	400	430	443	416	369	277	227	384	--	522
Minimum	0	0	0	0	0	0	0	78	--	0
25 percentile	106	208	0	64	194	60	102	127	--	219
Median	339	469	372	227	418	166	212	309	--	500
75 percentile	600	858	720	506	626	306	425	a15	--	a29
Maximum	4,575	1,860	2,151	3.578	4.575	2,010	797	1,111	--	3.160
Pine stems[d,e] (number pet! acre)										
Mean	283	244	305	225	349	132	139	226	--	384
Standard deviation	299	286	292	278	280	180	128	220	--	453
Minimum	0	0	0	0	0	0	0	39	--	0
25 percentile	60	58	0	52	150	35	48	63	--	93
Median	216	138	300	142	345	81	127	123	--	282
75 percentile	420	327	520	300	507	162	224	293	--	478
Maximum	4,125	1,380	1,020	2,460	4,125	2,010	624	811	--	3,120
Reineke stand density index[d,f]										
Mean	139	190	130	150	140	106	108	206	--	140
Standard deviation	95	107	102	114	a9	68	71	102	--	77
Minimum	1	2	4	2	1	3	13	107	--	2
25 percentile	66	125	46	67	bb	55	57	135	--	a9
Median	127	185	129	125	132	98	106	166	--	141
75 percentile	200	265	198	218	201	152	165	237	--	184
Maximum	765	476	421	765	438	371	320	454	--	402

[a] Includes 90,000 acres of planted stands.

[b] Includes 0 acres of planted stands.

[c] Includes planted and natural sand pine stands.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 7.--Area of timberland, sample size. and distribution of selected stand characteristics in pine forest types in Georgia

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine[d]	Other[e]
Area (thousand acres,	11.438	3.757	1.373	1,897	2,161	676	141	915	381	137
Sample size ("umber,	3,684	1,114	452	688	794	236	51	233	85	31
Age (years)										
Mean	26	30	11	31	16	41	37	34	33	36
Standard deviation	16	14	9	13	8	16	15	18	17	30
Minimum	0	0	1	0	1	0	0	2	2	3
25 percentile	15	21	4	24	9	30	30	25	25	9
Media"	25	30	9	30	17	42	40	35	33	22
75 percentile	35	38	18	40	22	52	45	42	40	60
Maximum	99	88	38	85	41	99	90	80	84	70
Site index[f] (feet at age 50)										
Mean	--	--	—	--	--	--	--	--	--	--
Standard deviation	--	--	—	--	--	--	--	--	—	—
Minimum	—	--	--	—	--	--	--	--	--	--
25 percentile	—	--	--	--	--	--	--	--	--	--
Media"	--	--	—	--	--	--	--	--	--	--
75 percentile	--	—	—	--	--	--	—	--	—	--
Maximum	--	—	--	--	--	--	--	—	--	--
Total basal area[4] (square feet/acre)										
Mean	78	97	45	82	56	58	61	93	110	95
Standard deviation	50	47	50	46	40	35	38	41	45	86
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	38	66	0	45	18	30	29	71	94	17
Median	76	101	30	79	56	54	54	95	115	84
75 percentile	113	130	83	115	85	79	85	119	139	138
Maximum	239	239	203	226	195	206	162	191	186	238
Pine basal area[g,h] (square feet/acre)										
Mean	62	73	41	67	52	51	49	65	84	16
Standard deviation	41	40	48	39	38	32	30	32	44	24
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	30	45	0	38	16	26	23	46	56	0
Median	60	73	24	65	51	46	50	63	88	8
75 percentile	90	101	75	93	82	69	63	88	110	25
Maximum	225	225	203	190	195	173	129	166	162	68
Total stems[g] ("umber per acre)										
Mean	628	762	453	645	476	302	534	803	890	690
Standard deviation	480	483	502	511	357	292	425	437	493	513
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	245	433	0	225	227	96	129	537	591	362
Median	537	701	331	526	420	202	360	767	875	615
75 percentile	868	1,018	712	882	649	417	808	1,031	1,217	939
Maximum	3,438	3,247	2,643	3.438	2,509	1,660	I, 927	2,086	3,115	1,702
Pine stems[g,h] (number per acre)										
Mean	336	368	305	338	344	167	201	363	442	105
Standard deviation	322	378	342	323	232	157	150	342	336	190
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	109	119	0	108	175	60	59	155	209	0
Media"	256	256	240	232	344	120	182	291	419	19
75 percentile	466	487	472	462	489	220	289	459	572	180
Maximum	3,247	3,247	2,088	2,847	1,989	1,214	631	1,726	2,688	737
Reineke stand density index[g,i]										
Mean	201	237	153	208	151	128	152	230	269	246
Standard deviation	107	103	111	106	83	77	94	92	99	169
Minimum	1	2	1	4	1	1	11	14	49	8
25 percentile	116	168	72	118	88	70	67	181	216	78
Media"	196	242	147	194	149	116	130	227	285	244
75 percentile	274	309	246	283	207	176	214	291	337	335
Maximum	579	515	494	579	425	507	431	459	443	511

[a] Includes 11,000 acres of planted stands.

[b] Includes 3,000 acres of planted stands.

[c] Includes 5,000 acres of planted stands.

[d] Includes 13,000 acres of planted stands.

[e] Includes planted and/or natural stands of eastern redcedar, pitch pine, sand pine, and white pine-hemlock.

[f] Site indices for Georgia were not available at time of publication and are treated as missing values.

[g] Live trees 1.0 inch d.b.h. and larger.

[h] Yellow pine species only.

[i] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 5.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in North Carolina

Area/ sample size/ characteristic	All pine types	Pine forest type*								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine[d]	Other[e]
Area (thousand acres)	6,346	2,076	1,334	--	195	389	743	503	780	326
Sample size (number)	2,025	682	473	--	61	113	246	144	230	76
Age (years)										
Mean	31	34	13	--	18	43	37	40	32	47
Standard deviation	20	19	7	--	5	23	18	22	15	36
Minimum	0	0	1	--	5	1	0	2	3	0
25 percentile	15	20	7	--	16	32	25	25	22	20
Median	28	33	13	--	19	46	39	38	32	42
75 percentile	44	47	19	--	23	CO	49	55	42	60
Maximum	165	130	33	--	30	110	96	100	70	165
Site index (feet at age 50)										
Mean	69	75	72	--	63	56	56	66	69	72
Standard deviation	13	12	9	--	11	9	11	11	10	21
Minimum	30	50	40	--	50	30	30	40	40	40
25 percentile	60	70	70	--	55	50	50	60	60	60
Median	70	70	70	--	60	50	50	70	70	70
75 percentile	80	80	80	--	70	60	60	70	70	88
Maximum	120	120	110	--	100	90	90	90	100	110
Total basal area[f] (square feet/acre)										
Mean	95	113	70	--	72	55	72	117	109	120
Standard deviation	56	52	54	--	37	40	47	54	49	57
Minimum	0	0	0	--	4	0	0	0	0	3
25 percentile	51	86	16		40	30	36	83	84	86
Median	100	119	68		74	53	70	120	115	121
75 percentile	136	151	120	--	103	76	113	149	140	156
Maximum	254	238	233	--	166	173	197	254	246	226
Pine basal area[f,g] (square feet/acre)										
Mean	68	81	60		64	48	56	83	80	25
Standard deviation	44	40	47		33	35	32	45	42	37
Minimum	0	0	0		3	0	0	0	0	0
25 percentile	38	55	13	--	38	26	31	52	53	0
Median	69	83	58	--	68	45	54	80	82	8
75 percentile	100	110	98		88	69	79	111	105	44
Maximum	233	222	233		147	154	134	190	218	118
Total stem8[f] (number per acre)										
Mean	890	974	832	--	746	436	859	984	995	893
Standard deviation	598	581	656	--	435	411	606	515	519	670
Minimum	0	0	0		171	0	0	0	0	41
25 percentile	448	584	298		420	112	362	600	676	509
Median	830	933	720		627	313	762	912	925	738
75 percentile	1.280	1,326	1,362		962	709	1.344	1,289	1,281	1,112
Maximum	4,232	4,232	3.420		2,185	1,860	2,832	2,363	2.940	3,362
Pine stems[f,g] (number per acre)										
Mean	347	328	410	--	430	218	302	382	450	112
Standard deviation	328	320	321	--	202	224	260	371	403	221
Minimum	0	0	0	--	71	0	0	0	0	0
25 percentile	120	115	190		301	60	121	130	192	0
Median	266	218	386		398	140	219	280	350	33
75 percentile	495	441	598		544	323	420	513	579	181
Maximum	2,580	2,047	2,340		987	838	1.598	2,105	2,580	1,206
Reineke stand density index[f,h]										
Mean	248	286	214	--	183	139	196	294	276	281
Standard deviation	121	109	122		94	88	116	115	107	121
Minimum	1	1	2		16	8	3	10	2	14
25 percentile	163	228	116	--	108	87	96	219	215	222
Median	260	294	212	--	182	129	199	295	287	284
75 percentile	338	368	323	--	251	182	280	353	345	356
Maximum	558	553	554	--	437	399	512	558	548	506

[a] Includes 32,000 acres of planted stands.
[b] Includes 4,000 acres of planted stands.
[c] Includes 8,000 acres of planted stands.
[d] Includes less than 1.000 acres of planted stands.
[e] Includes planted and/or natural stands of eastern redcedar, pitch pine, spruce-fir, Table Mountain pine, and white pine-hemlock.
[f] Live trees 1.0 inch d.b.h. and larger.
[g] Yellow pine species only.
[h] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 9.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in South Carolina

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine[d]	Other[e]
Area (thousand acres)	6,437	2,235	1,636	69	305	396	201	367	191	37
Sample size (number)	1,955	816	584	27	121	153	82	108	52	12
Aye (years)										
Mean	28	33	13	37	27	43	36	37	35	34
Standard deviation	19	18	10	17	7	22	17	23	22	35
Minimum	0	0	1	6	6	0	1	3	2	5
25 percentile	11	19	5	24	25	28	25	25	24	14
Median	27	34	10	35	27	43	40	35	34	17
75 percentile	40	45	19	50	30	59	49	50	45	58
Maximum	150	90	51	75	49	104	75	150	105	102
Site index (feet at age 50)										
Mean	71	74	73	79	69	62	64	63	64	64
Standard deviation	12	12	10	12	11	10	10	12	10	14
Minimum	40	40	40	50	40	40	40	40	40	40
25 percentile	60	70	70	70	60	50	60	60	60	50
Median	70	70	70	80	70	60	60	60	60	70
75 percentile	80	80	80	90	80	70	70	70	70	70
Maximum	110	110	110	100	90	90	100	90	90	80
Total basal area[f] (square feet/acre)										
Mean	80	94	57	101	83	71	83	94	96	72
Standard deviation	52	50	56	45	35	41	42	45	50	53
Minimum	0	0	0	1	13	0	0	1	0	23
25 percentile	39	64	3	74	54	44	47	66	64	27
Median	83	98	44	103	75	65	86	99	97	52
75 percentile	118	129	100	142	105	96	122	122	133	108
Maximum	244	244	228	193	187	214	201	176	180	160
Pine basal area[f,g] (square feet/acre)										
Mean	64	71	51	75	73	62	66	66	72	30
Standard deviation	44	40	51	37	32	38	31	38	46	33
Minimum	0	0	0	1	11	0	0	0	0	0
25 percentile	30	45	2	54	47	38	40	38	46	7
Median	63	69	39	68	68	57	68	60	70	16
75 percentile	93	98	90	105	93	83	88	88	97	51
Maximum	225	202	225	159	157	214	150	148	173	87
Total stems[f] (number per acre)										
Mean	668	738	556	702	716	421	688	921	723	743
Standard deviation	525	543	534	416	444	357	478	488	426	516
Minimum	0	0	0	178	52	0	0	60	0	258
25 percentile	263	326	143	313	326	127	278	595	466	371
Median	558	610	480	665	583	315	595	921	712	497
75 percentile	955	1,041	794	972	1,039	623	1,049	1,172	923	1,043
Maximum	3,663	3,663	3,159	2.028	2,099	1,625	2,214	1,970	1,654	1,765
Pine stems[f,g] (number per acre)										
Mean	328	328	339	254	339	225	246	433	331	280
Standard deviation	331	365	328	168	224	235	179	342	326	542
Minimum	0	0	0	24	39	0	0	0	0	0
25 percentile	100	88	91	126	174	76	119	223	154	21
Median	238	200	313	190	285	144	203	358	256	72
75 percentile	455	422	540	440	453	270	328	546	365	215
Maximum	3,120	3,000	3,120	675	1,456	1,403	1,081	1,311	1.380	1,750
Reineke stand density index[f,h]										
Mean	207	232	170	235	200	162	203	236	233	175
Standard deviation	111	106	122	102	81	91	104	106	106	98
Minimum	1	2	1	6	33	9	2	4	12	61
25 percentile	125	162	66	176	141	94	119	181	170	83
Median	208	233	162	245	188	141	213	231	238	148
75 percentile	287	299	268	299	247	228	291	300	306	244
Maximum	564	564	474	459	450	425	485	452	411	323

[a] Includes 51,000 acres of planted stands.
[b] Includes 5,000 acres of planted stands.
[c] Includes 6,000 acres of planted stands.
[d] Includes 4,000 acres Of planted stands.
[e] Includes planted and/or natural stands of eastern redcedar, pitch pine, spruce pine, and white pine-hemlock.
[f] Live trees 1.0 inch d.b.h. and larger.
[g] Yellow pine species only.
[h] Stand density indices of stands with no trees et least 1.0 inch d.b.h. are treated as missing values.

Table 10.--Area of timberland. sample size, and distribution of selected stand characteristics in pine forest types in Virginia

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine[a]	Shortleaf pine[a]	Virginia pine[b]	Other[c]
Area, thousand acres,	3,357	683	1.09"	--	--	--	5	147	1,030	402
Sample size (number)	1,056	257	356	--	--	--	2	42	294	105
Age (years)										
Mean	29	37	14	--	--	--	81	46	32	44
Standard deviation	20	19	8	--	--	--	24	19	16	29
Minimum	0	0	1	--	--	--	60	7	1	3
25 percentile	13	22	6	--	--	--	60	35	20	18
Median	25	37	13	--	--	--	79	49	33	44
75 percentile	42	50	20	--	--	--	98	55	44	62
Maximum	110	106	41	--	--	--	98	85	79	110
Site index (feet at age 50)										
Mean	68	73	70	--	--	--	51	63	65	63
Standard deviation	11	9	8	--	--	--	12	13	10	15
Minimum	30	40	50	--	--	--	40	40	40	30
25 percentile	60	70	70	--	--	--	40	50	60	50
Median	70	70	70	--	--	--	50	60	60	60
75 percentile	70	80	78	--	--	--	60	70	70	70
Maximum	100	100	100	--	--	--	60	90	100	100
Total basal area[d] (square feet/acre)										
Mean	99	120	77	--	--	--	118	123	107	97
Standard deviation	55	45	58	--	--	--	39	46	48	63
Minimum	0	0	0	--	--	--	84	17	0	0
25 percentile	65	96	16	--	--	--	84	104	84	61
Median	109	128	82	--	--	--	115	125	117	98
75 percentile	142	152	125	--	--	--	146	154	143	136
Maximum	240	234	237	--	--	--	146	216	229	240
Pine basal area[d,e] (square feet/acre)										
Mean	68	81	62	--	--	--	57	84	79	25
Standard deviation	47	35	50	--	--	--	5	42	43	37
Minimum	0	0	0	--	--	--	53	10	0	0
25 percentile	31	60	10	--	--	--	53	55	52	0
Median	71	81	62	--	--	--	56	75	83	8
75 percentile	100	107	97	--	--	--	60	109	108	36
Maximum	210	210	198	--	--	--	60	169	201	128
Total stems[d] (number per acre)										
Mean	982	995	1,064	--	--	--	523	951	1,022	653
Standard deviation	616	540	716	--	--	--	164	391	586	444
Minimum	0	0	0	--	--	--	376	251	0	0
25 percentile	571	574	497	--	--	--	376	713	663	376
Median	913	896	1,020	--	--	--	509	960	946	641
75 percentile	1,366	1.288	1,705	--	--	--	641	1,190	1,335	880
Maximum	4.083	3,086	3,082	--	--	--	641	2,100	4,083	1,852
Pine stems[d,e] (number per acre)										
Mean	397	297	477	--	--	--	55	359	501	99
Standard deviation	394	267	372	--	--	--	20	289	487	197
Minimum	0	0	0	--	--	--	41	70	0	0
25 percentile	125	108	240	--	--	--	41	157	207	0
Median	300	190	445	--	--	--	57	248	352	15
75 percentile	536	359	642	--	--	--	73	494	612	145
Maximum	3,675	2,020	2,357	--	--	--	73	1,380	3,675	1,206
Reineke stand density index[d,f]										
Mean	262	300	238	--	--	--	259	297	267	231
Standard deviation	116	93	133	--	--	--	84	105	106	118
Minimum	1	1	1	--	--	--	183	51	4	1
25 percentile	200	247	142	--	--	--	183	251	217	175
Median	281	305	261	--	--	--	251	308	291	239
75 percentile	345	363	339	--	--	--	319	367	342	315
Maximum	607	543	607	--	--	--	319	503	531	532

[a] Includes 0 acres Of planted stands.

[b] Includes 36,000 acres of planted stands.

[c] Includes planted and/or natural stands of eastern redcedar, pitch pine, Table Mountain pine, and white pine-hemlock.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table Il.--Area of timberland, sample size. and distribution of selected stand characteristics in pine forest types in the Coastal Plain region of Georgia

Area/ sample size/ characteristic	All pine type*	Pine forest types: Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine	Other[d]
Area (thousand acres)	5.286	524	350	1.847	1,830	572	133	28	--	2
Sample size (number)	1,957	186	140	671	698	203	48	10	--	1
Age (years)										
Mean	26	33	9	32	15	41	37	36	--	6
Standard deviation	16	14	8	14	8	16	17	1 7	--	--
Minimum	0	0	1	0	1	0	0	9	--	6
25 percentile	15	25	3	24	9	31	30	24	--	6
Median	24	31	8	30	16	42	40	30	--	6
75 percentile	35	40	14	40	21	51	47	53	--	6
Maximum	99	65	36	85	41	99	90	60	--	6
Site index[e] (feet at age 50)										
Mean	--	--	--	--	--	--	--	--	--	--
Standard deviation	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--
25 percentile	--	--	--	--	--	--	--	--	--	--
Media"	--	--	--	--	--	--	--	--	--	--
75 percentile	--	--	--	--	--	--	--	--	--	--
Maximum	--	--	--	--	--	--	--	--	--	--
Total basal area[f] (square feet/acre)										
Mean	68	99	3.3	83	54	58	57	93	--	2
Standard deviation	48	47	47	49	42	37	39	46	--	--
Minimum	0	0	0	0	0	0	0	15	--	2
25 percentile	30	69	0	46	16	30	26	53	--	2
Median	66	101	14	80	53	54	53	103	--	2
75 percentile	100	133	72	116	84	80	83	131	--	2
Maximum	226	225	202	226	176	206	162	159	--	2
Pine basal area[f,g] (square feet/acre)										
Mean	58	71	34	68	51	52	46	70	--	2
Standard deviation	41	36	43	41	40	35	31	31	--	--
Minimum	0	0	0	0	0	0	0	15	--	2
25 percentile	25	46	0	38	15	26	23	50	--	2
Media"	55	70	10	65	50	48	45	70	--	2
75 percentile	83	94	67	94	81	75	62	105	--	2
Maximum	190	173	188	190	176	173	129	105	--	2
Total stems[f] (number per acre)										
Mean	534	686	376	655	475	296	5 0 5	632	--	180
Standard deviation	468	487	407	548	371	320	439	403	--	--
Minimum	0	0	0	0	0	0	0	11	--	180
25 percentile	185	338	0	240	233	94	122	365	--	180
Media"	437	611	291	528	420	198	345	640	--	180
75 percentile	748	975	614	892	651	390	737	936	--	180
Maximum	3.438	2,804	1.804	3,438	2,509	1,660	1,927	1,322	--	180
Pine stems[f,g] ("umber per acre)										
Mean	307	247	260	343	350	167	199	236	--	180
Standard deviation	284	231	282	347	244	165	166	180	--	--
Minimum	0	0	0	0	0	0	0	11	--	180
25 percentile	101	81	0	112	180	61	58	99	--	180
Media"	245	192	227	238	352	120	172	189	--	180
75 percentile	448	367	424	465	503	220	290	417	--	180
Maximum	2,847	1,414	1.684	2,847	1.989	1,214	631	542	--	180
Reineke stand density index[f,h]										
Mean	178	238	147	209	148	128	145	216	--	8
Standard deviation	107	105	108	114	88	83	97	105	--	--
Minimum	1	2	1	4	2	1	11	23	--	8
25 percentile	98	168	54	120	85	69	61	147	--	8
Media"	168	235	128	195	145	115	118	232	--	8
75 percentile	241	314	221	284	206	176	214	291	--	8
Maximum	579	515	494	579	422	507	431	351	--	8

a Includes 11,000 acres of planted stands.

b Includes 3,000 acres of planted stands.

c Includes 2,000 acres of planted stands.

d Planted sand pine.

e Site indices for Georgia were not available at time of publication and are treated as missing values.

f Live trees 1.0 inch d.b.h. and larger.

g Yellow pine species only.

h Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 12.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Piedmont region Of Georgia

Area/ sample size/ characteristic	All pine types	Pine forest types: Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[a]	Shortleaf pine[a]	Virginia pine[a]	Other[b]
Area (thousand acres)	5,124	2,996	933	50	331	99	9	611	62	33
Sample size (number)	1,503	876	284	17	96	32	3	168	17	10
Age (years)										
Mean	26	29	11	19	19	43	37	32	32	11
Standard deviation	15	14	9	14	8	20	4	15	16	7
Minimum	0	0	1	0	1	6	32	2	2	4
25 percentile	14	20	4	6	14	26	32	24	28	4
Median	26	30	9	25	22	42	38	35	34	10
75 percentile	35	38	20	37	25	60	41	40	40	19
Maximum	90	88	38	45	35	90	41	79	70	22
Site index[c] (feet at age 50)										
Mean	--	--	--	--	--	--	--	--	--	--
Standard deviation	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--
25 percentile	--	--	--	--	--	--	--	--	--	--
Median	--	--	--	--	--	--	--	--	--	--
75 percentile	--	--	--	--	--	--	--	--	--	--
Maximum	--	--	--	--	--	--	--	--	--	--
Total basal area[d] (square feet/acre)										
Mean	82	95	46	43	66	56	106	89	117	29
Standard deviation	49	45	51	49	41	32	40	38	42	36
Minimum	0	0	0	0	0	8	74	0	32	0
25 percentile	47	64	0	5	37	33	74	68	93	0
Median	87	100	36	46	68	51	93	91	121	14
75 percentile	119	128	86	90	93	70	160	117	150	66
Maximum	239	239	203	169	195	172	160	191	170	102
Pine basal area[d,e] (square feet/acre)										
Mean	64	72	43	39	61	48	88	66	93	12
Standard deviation	42	38	49	46	41	33	24	30	45	21
Minimum	0	0	0	0	0	4	63	0	24	0
25 percentile	35	45	0	3	32	28	63	45	60	0
Median	63	71	32	28	61	38	90	62	95	5
75 percentile	95	100	81	89	83	61	116	89	133	17
Maximum	225	225	203	154	195	172	116	166	156	68
Total stems[d] (number per acre)										
Mean	687	775	462	286	477	333	974	799	834	389
Standard deviation	486	465	518	346	411	240	498	434	322	395
Minimum	0	0	0	0	0	14	426	0	328	0
25 percentile	329	451	0	20	202	118	426	520	552	0
Median	629	720	336	162	390	297	1,179	751	875	337
75 percentile	963	1,038	715	516	642	586	1,440	1,038	1,084	850
Maximum	3,247	3.247	2,643	1,327	1,992	929	1,440	2.086	1,456	987
Pine stems[d,e] (number per acre)										
Mean	366	391	317	164	309	154	231	405	428	154
Standard deviation	364	383	360	246	247	168	14	356	268	229
Minimum	0	0	0	0	0	14	219	0	57	0
25 percentile	116	133	0	20	168	38	219	151	164	0
Median	266	277	235	102	275	123	226	315	463	59
75 percentile	494	529	480	205	430	178	246	505	611	321
Maximum	3.247	3,247	2,088	1,027	1,244	798	246	1,726	1,010	737
Reineke stand density index[d,f]										
Mean	213	232	152	147	167	123	264	223	277	113
Standard deviation	103	99	109	107	83	66	102	86	92	93
Minimum	1	3	2	35	1	14	205	48	83	13
25 percentile	140	167	76	50	114	70	205	173	214	13
Median	219	240	148	131	171	117	209	223	290	64
75 percentile	292	307	246	224	218	163	403	284	344	192
Maximum	515	515	422	415	425	248	403	459	423	261

[a] Includes 0 acres of planted stands;

[b] Includes natural eastern redcedar and planted sand pine stands.

[c] Site indices for Georgia were not available at time of publication and are treated as missing values.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated es missing values.

Table 13.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Mountain region of Georgia

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine	Shortleaf pine[b]	Virginia pine[c]	Other[d]
Area (thousand acres)	1,031	237	91	--	--	6	--	276	319	102
Sample size ("umber)	224	52	28	--	--	1	--	55	68	20
Age (years)										
Mean	34	33	12	--	--	50	--	39	33	45
Standard deviation	17	13	7	--	--	--	--	18	14	25
Minimum	0	0	2	--	--	50	--	4	4	3
25 percentile	20	20	4	--	--	50	--	27	24	18
Median	31	32	11	--	--	50	--	37	32	51
75 percentile	43	40	20	--	--	50	--	50	40	60
Maximum	a4	70	30	--	--	50	--	80	a4	70
Site index[e] (feet at age 50,										
Mean	--	--	--	--	--	--	--	--	--	--
Standard deviation	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--
25 percentile	--	--	--	--	--	--	--	--	--	--
Media"	--	--	--	--	--	--	--	--	--	--
75 percentile	--	--	--	--	--	--	--	--	--	--
Maximum	--	--	--	--	--	--	--	--	--	--
Total basal area[f] (square feet/acre)										
Mean	106	122	56	--	--	a5	--	101	108	118
Standard deviation	46	43	44	--	--	--	--	35	37	71
Minimum	0	0	0		--	a5	--	4	0	0
25 percentile	80	90	1	--	--	a5	--	85	94	67
Median	110	131	54	--	--	a5	--	101	115	120
75 percentile	139	152	123	--	--	a5	--	120	139	157
Maximum	238	197	167	--	--	a5	--	181	la6	238
Pine basal area[f,g] (square feet/acre)										
Mean	71	95	48	--	--	48	--	65	a2	18
Standard deviation	42	41	41	--	--	--	--	29	36	22
Minimum	0	0	0	--	--	48	--	1	0	0
25 percentile	44	67	0	--	--	48	--	47	54	0
Media"	68	91	34	--	--	48	--	60	a6	a
75 percentile	105	121	114	--	--	48	--	a3	106	29
Maximum	188	188	150	--	--	48	--	128	162	68
Total stems[f] (number per acre)										
Mean	813	755	652	--	--	381	--	a29	901	798
Standard deviation	408	414	460	--	--	--	--	318	432	414
Minimum	0	0	0	--	--	381	--	111	0	0
25 percentile	562	505	4	--	--	381	--	642	601	564
Media"	782	707	634	--	--	381	--	792	a74	699
75 percentile	1,099	954	1,200	--	--	381	--	1,035	1,254	952
Maximum	3,115	2,514	1,916	--	--	381	--	1,714	3,115	1,702
Pine stems[f,g] ("umber per acre,										
Mean	333	342	348	--	--	344	--	281	444	87
Standard deviation	269	292	253	--		--	--	181	288	137
Minimum	0	0	0	--	--	344	--	26	0	0
25 percentile	139	152	0	--	--	344	--	177	226	0
Media"	286	293	329	--	--	344	--	255	414	14
75 percentile	473	410	588	--	--	344	--	397	572	164
Maximum	2,688	1,393	1,163	--	--	344	--	a74	2,688	449
Reineke stand density index[f,h]										
Mean	262	291	179	--	--	187	--	248	268	283
Standard deviation	92	80	99	--	--	--	--	79	82	133
Minimum	12	73	12	--	--	187	--	14	49	70
25 percentile	212	242	104	--	--	187	--	212	223	183
Median	267	293	209	--	--	187	--	259	281	277
75 percentile	333	346	308	--	--	187	--	300	336	386
Maximum	511	438	387	--	--	187	--	398	443	511

[a] Includes 0 acres of planted stands.

[b] Includes 3,000 acres of planted stands.

[c] Includes 13,000 acres of planted stands.

[d] Includes planted and/or natural stands of eastern redcedar, pitch pine, and white pine-hemlock.

[e] Site indices for Georgia were not available at time of publication and are treated as missing values.

[f] Live trees 1.0 inch d.b.h. and larger.

[g] Yellow pine species only.

[h] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 14.--Area of timberland, samples i z e , and distribution of selected stand characteristics in pine forest types in the Coastal Plain region of North Carolina

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine[c]	Other
Area (thousand acres,	4,006	1,602	1,052	--	195	389	743	18	7	--
Sample size ("umber,	1,332	537	368	--	61	113	246	5	2	--
Age (years)										
Mean	29	34	12	--	18	43	37	45	23	--
Standard deviation	20	20	7	--	5	23	18	25	11	--
Minimum	0	0	1	--	5	1	0	7	15	--
25 percentile	13	20	7	--	16	32	25	22	15	--
Median	25	34	12	--	19	46	39	55	23	--
75 percentile	42	48	18	--	23	60	49	63	30	--
Maximum	130	130	32	--	30	110	96	65	30	--
Site index (feet at age 50)										
Mean	68	75	71	--	63	56	56	57	65	--
Standard deviation	14	12	9	--	11	9	11	15	7	--
Minimum	30	50	40	--	50	30	30	40	60	--
25 percentile	60	70	70	--	55	50	50	45	60	--
Median	70	70	70	--	60	50	50	60	65	--
75 percentile	SO	SO	SO	--	70	60	60	70	70	--
Maximum	120	120	100	--	100	90	90	SO	70	--
Total basal area[d] (square feet/acre)										
Mean	85	110	69	--	72	55	72	119	109	--
Standard deviation	55	53	55	--	38	41	48	88	31	--
Minimum	0	0	0	--	4	0	0	31	88	--
25 percentile	40	81	19	--	40	30	36	45	88	--
Median	90	117	65	--	74	53	70	131	109	--
75 percentile	131	150	116	--	103	76	113	203	130	--
Maximum	254	238	211	--	166	173	197	254	130	--
Pine basal area[d,e] (square feet/acre)										
Mean	64	76	59	--	64	48	56	79	82	--
Standard deviation	41	39	47	--	34	36	33	46	3	--
Minimum	0	0	0	--	3	0	0	19	SO	--
25 percentile	36	53	16	--	38	26	31	39	SO	--
Median	68	79	57	--	68	45	54	87	82	--
75 percentile	97	105	97		88	69	79	122	84	--
Maximum	182	180	182	--	147	154	134	124	84	--
Total stems[d] (number per acre,										
Mean	854	962	855	--	746	436	859	1,008	1,049	--
Standard deviation	623	597	681	--	444	420	618	310	476	--
Minimum	0	0	0	--	171	0	0	747	728	--
25 percentile	395	576	316	--	420	112	362	785	728	--
Median	780	944	748	--	627	313	762	826	1,049	--
75 percentile	1.274	1,313	1,330	--	962	709	1,344	1,268	1,370	--
Maximum	4,232	4,232	3,420	--	2,185	1,860	2,832	1.373	1,370	--
Pine stems[d,e] ("umber per acre)										
Mean	333	296	432	--	430	218	302	383	536	--
Standard deviation	308	305	344	--	206	229	266	235	246	--
Minimum	0	0	0	--	71	0	0	125	370	--
25 percentile	117	99	219	--	301	60	121	166	370	--
Median	252	194	410	--	39s	140	219	385	536	--
75 percentile	480	397	624	--	544	323	420	560	702	--
Maximum	2,340	2,047	2,340	--	987	838	1,598	703	702	--
Reineke stand density index[d,f]										
Mean	229	281	213	--	183	139	196	290	278	--
Standard deviation	123	111	125	--	96	89	118	185	89	--
Minimum	1	1	2	--	16	8	3	96	218	--
25 percentile	131	223	113	--	108	87	96	129	218	--
Median	238	292	208	--	182	129	199	340	278	--
75 percentile	328	366	322	--	251	182	280	452	338	--
Maximum	558	553	554	--	437	399	512	558	338	--

[a] Includes 32,000 acres of planted stands.

[b] Includes 4,000 acres of planted stands.

[c] Includes 0 acres of planted stands.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 15.--Area of timberland, sample size. and distribution of selected stand characteristics in pine forest types in the Piedmont region of North Caroline

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine	Shortleaf pine[a]	Virginia pine[b]	Other[c]
Area (thousand acres,	1.811	473	276	--	--	--	--	448	569	45
Sample size ("umber)	575	145	103	--	--	--	--	131	183	13
Age (years)										
Mean	31	33	14	--	--	--	--	38	32	28
Standard deviation	18	17	9	--	--	--	--	21	15	24
Minimum	0	0	1	--	--	--	--	2	3	0
25 percentile	18	20	7	--	--	--	--	24	21	10
Median	29	31	16	--	--	--	--	36	32	19
75 percentile	43	45	24	--	--	--	--	53	42	49
Maximum	100	75	33	--	--	--	--	100	70	69
Site index (feet et age 50)										
Mean	71	77	76	--	--	--	--	65	68	61
Standard deviation	11	11	9	--	--	--	--	10	10	12
Minimum	40	50	50	--	--	--	--	40	40	40
25 percentile	60	70	70	--	--	--	--	60	60	50
Median	70	80	70	--	--	--	--	70	70	60
75 percentile	80	80	80	--	--	--	--	70	70	70
Maximum	110	110	110	--	--	--	--	90	100	80
Total basal area[d] (square feet/acre)										
Mean	107	125	72	--	--	--	--	115	105	70
Standard deviation	54	49	56	--	--	--	--	53	49	65
Minimum	0	0	0	--	--	--	--	0	0	3
25 percentile	75	99	11	--	--	--	--	a3	82	9
Median	112	125	75	--	--	--	--	118	110	53
75 percentile	145	157	130	--	--	--	--	149	139	115
Maximum	246	238	233	--	--	--	--	222	246	187
Pine basal area[d,e] (square feet/acre)										
Mean	81	97	61	--	--	--	--	84	79	32
Standard deviation	47	45	51	--	--	--	--	45	41	33
Minimum	0	0	0	--	--	--	--	0	0	0
25 percentile	52	66	8	--	--	--	--	53	54	1
Media"	a3	100	60	--	--	--	--	80	83	23
75 percentile	113	128	104	--	--	--	--	106	105	59
Maximum	233	222	233	--	--	--	--	190	218	85
Total stems[d] (number per acre)										
Mean	956	1,013	750	--	--	--	--	992	996	753
Standard deviation	554	565	608	--	--	--	--	532	510	498
Minimum	0	0	0	--	--	--	--	0	0	41
25 percentile	561	584	240	--	--	--	--	591	654	300
Media"	898	897	592	--	--	--	--	918	940	837
75 percentile	1,345	1,388	1,373	--	--	--	--	1,336	1,313	1,107
Maximum	3,014	3,014	2,376	--	--	--	--	2,363	2,940	1,519
Pine stems[d,e] (number per acre)										
Mean	417	435	328	--	--	--	--		478	173
Standard deviation	369	370	245	--	--	--	--	379	412	164
Minimum	0	0	0	--	--	--	--	0	0	0
25 percentile	170	180	147	--	--	--	--	134	204	16
Media"	314	314	304	--	--	--	--	290	367	120.
75 percentile	547	551	513	--	--	--	--	520	625	285
Maximum	2,580	1,770	896	--	--	--	--	2,105	2,580	525
Reineke stand density index[d,f]										
Mean	274	304	214	--	--	--	--	292	267	179
Standard deviation	116	107	120	--	--	--	--	114	107	155
Minimum	2	3	4	--	--	--	--	10	2	14
25 percentile	203	243	141	--	--	--	--	219	210	25
Median	282	298	228	--	--	--	--	290	278	158
75 percentile	352	372	325	--	--	--	--	355	345	281
Maximum	552	525	552	--	--	--	--	532	548	420

[a] Includes 8,000 acres of planted stands.

[b] Includes 0 acres of planted stands.

[c] Includes planted and/or natural stands of eastern redcedar, pitch pine, Table Mountain pine, and white pine-hemlock.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 16.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest/types in the Mountain region of North Carolina

Area/ sample size/ characteristic	All pine types	Pine forest types: Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine	Shortleaf pine	Virginia pine[a]	Other[b]
Area (thousand acres)	528	--	5	--	--	--	--	37	205	281
Sample sire (number)	118	--	2	--	--	--	--	8	45	63
Age (years)										
Mean	44	--	24	--	--	--	--	63	33	50
Standard deviation	26	--	3	--	--	--	--	22	13	31
Minimum	3	--	19	--	--	--	--	37	3	10
26 percentile	27	--	19	--	--	--	--	41	27	26
Media"	40	--	22	--	--	--	--	59	35	43
75 percentile	63	--	25	--	--	--	--	79	42	64
Maximum	165	--	25	--	--	--	--	98	56	165
Site index (feet at age 50)										
Mean	72	--	88	--	--	--	--	72	71	73
Standard deviation	16	--	4	--	--	--	--	9	10	19
Minimum	40	--	80	--	--	--	--	60	40	40
25 percentile	60	--	80	--	--	--	--	63	60	60
Media"	70	--	85	--	--	--	--	75	70	70
75 percentile	80	--	90	--	--	--	--	80	80	90
Maximum	110	--	90	--	--	--	--	80	90	110
Total basal area[c] (square feet/acre)										
Mean	125	--	136	--	--	--	--	131	120	128
Standard deviation	41	--	47	--	--	--	--	35	41	41
Minimum	0	--	116	--	--	--	--	73	0	17
25 percentile	102	--	116	--	--	--	--	95	95	103
Media"	127	--	172	--	--	--	--	137	123	127
75 percentile	154	--	227	--	--	--	--	148	151	158
Maximum	227	--	227	--	--	--	--	186	192	226
Pine basal area[c,d] (square feet/acre)										
Mean	51	--	107	--	--	--	--	79	81	24
Standard deviation	45	--	57	--	--	--	--	38	39	32
Minimum	0	--	a3	--	--	--	--	23	0	0
25 percentile	0	--	83	--	--	--	--	38	53	0
Media"	45	--	149	--	--	--	--	79	75	8
75 percentile	83	--	216	--	--	--	--	113	107	38
Maximum	216	--	216	--	--	--	--	121	173	118
Total stems[c] ("umber per acre,										
Mean	937	--	512	--	--	--	--	867	990	915
Standard deviation	522	--	550	--	--	--	--	178	468	586
Minimum	0	--	276	--	--	--	--	586	0	142
25 percentile	603	--	276	--	--	--	--	764	717	517
Median	843	--	926	--	--	--	--	852	907	727
75 percentile	1,128	--	1,575	--	--	--	--	935	1,130	1,215
Maximum	3,362	--	1,575	--	--	--	--	1,205	2,271	3,362
Pine stems[c,d] (number per acre)										
Mean	213	--	290	--	--	--	--	167	371	102
Standard deviation	266	--	293	--	--	--	--	115	296	192
Minimum	0	--	164	--	--	--	--	23	0	0
25 percentile	0	--	164	--	--	--	--	76	154	0
Media"	146	--	510	--	--	--	--	155	291	21
75 percentile	327	--	855	--	--	--	--	251	467	136
Maximum	1,958	--	855	--	--	--	--	398	1,958	1,206
Reineke stand density index[c,e]										
Mean	299		282	--	--	--	--	308	301	297
Standard deviation	84	--	135	--	--	--	--	71	87	84
Minimum	42	--	224	--	--	--	--	195	117	42
26 percentile	246	--	224	--	--	--	--	225	257	242
Media"	300	--	384	--	--	--	--	333	300	299
75 percentile	354	--	544	--	--	--	--	341	366	362
Maximum	544	--	544	--	--	--	--	404	464	506

[a] Includes 0 acres of planted stands.

[b] Includes planted and/or natural stands of pitch pine, spruce-fir, Table Mountain pine, and white pine-hemlock.

[c] Live trees 1.0 inch d.b.h. end larger,

[d] Yellow pine species only.

[a] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 17.--Area of timberland. sample size, and distribution of Selected Stand characteristics in pine forest types in the Coastal Plain region of South Carolina

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine[a]	Pond pine[b]	Shortleaf pine[c]	Virginia pine	Other[d]
Area (thousand acres)	3,304	1,342	965	69	298	396	201	30	--	3
Sample size (number)	1,339	555	389	27	119	153	82	12	--	2
Age (years)										
Mean	27	32	12	37	27	43	36	36	--	56
Standard deviation	19	18	9	10	7	23	18	18	--	12
Minimum	0	0	1	6	6	0	1	7	--	41
25 percentile	11	10	5	24	24	7.0	25	10	--	41
Median	26	33	8	35	27	43	40	38	--	52
75 percentile	40	44	18	50	30	59	49	53	--	63
Maximum	104	90	45	75	49	104	75	63	--	63
Site index (feet at age 50)										
Mean	72	76	73	79	69	62	64	70	--	60
Standard deviation	12	12	10	12	12	10	11	12	--	16
Minimum	40	40	40	50	40	40	40	50	--	40
25 percentile	60	70	70	70	60	50	60	63	--	40
Median	70	70	70	80	70	60	60	70	--	55
75 percentile	80	80	80	90	80	70	70	70	--	70
Maximum	110	110	110	100	90	90	100	90	--	70
Total basal area[e] (square feet/acre)										
Mean	78	94	54	101	82	71	83	88	--	112
Standard deviation	53	51	54	48	37	44	45	38	--	71
Minimum	0	0	0	1	13	0	0	22	--	23
25 percentile	36	61	4	74	54	44	47	54	--	23
Media"	79	90	38	103	75	65	86	106	--	89
75 percentile	115	131	98	142	105	96	122	115	--	155
Maximum	244	244	228	193	187	214	201	128	--	155
Pine basal area[e,f] (square feet/acre)										
Mean	63	71	48	75	72	62	66	66	--	56
Standard deviation	44	41	50	39	34	40	33	29	--	44
Minimum	0	0	0	1	11	0	0	20	--	0
25 percentile	30	45	3	54	47	38	40	40	--	0
Median	63	70	35	68	68	57	68	65	--	41
75 percentile	91	98	90	105	90	83	88	90	--	83
Maximum	225	202	225	159	157	214	150	105	--	83
Total stems[e] (number per acre)										
Mean	611	667	551	702	724	421	688	728	--	450
Standard deviation	504	520	510	442	472	379	508	535	--	153
Minimum	0	0	0	178	52	0	0	111	--	258
25 percentile	232	272	146	313	333	127	270	264	--	258
Median	521	547	487	665	584	315	595	622	--	400
75 percentile	906	982	814	972	1,041	623	1,049	1,299	--	542
Maximum	3,300	3,300	3,159	2.028	2,099	1,625	2,214	1,675	--	542
Pine stems[e,f] [number per acre)										
Mean	293	274	346	254	339	225	246	283	--	36
Standard deviation	283	302	293	178	239	250	190	214	--	29
Minimum	0	0	0	24	39	0	0	49	--	0
25 percentile	92	80	99	126	171	76	119	114	--	0
Median	214	167	320	190	285	144	203	223	--	27
75 percentile	433	368	540	440	453	270	328	444	--	54
Maximum	2,256	2,256	1,616	675	1,456	1,403	1,001	743	--	54
Reineke stand density index[e,g]										
Mean	198	226	164	235	199	162	203	207	--	238
Standard deviation	112	110	120	108	87	97	110	87	--	140
Minimum	1	2	1	6	33	9	2	58	--	61
25 percentile	119	155	64	176	141	94	119	139	--	61
Median	196	227	158	245	188	141	213	217	--	192
75 percentile	277	302	260	299	247	228	291	275	--	323
Maximum	564	564	474	459	450	425	485	348	--	322

[a] Includes 51,000 acres of planted stands.

[b] Includes 5,000 acres of planted stands.

[c] Includes 2,000 acres of planted stands.

[d] Includes natural stands of eastern redcedar and spruce pine.

[e] Live trees 1.0 inch d.b.h. and larger.

[f] Yellow pine species only.

[g] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 18.--Area of timberland, sample sire. and distribution of selected stand characteristics in pine forest types in the Piedmont region of South Carolina

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine	Shortleaf pine	Virginia pine[a]	Other[b,c]
Area (thousand acres,	2,134	893	671	--	7	--	--	338	191	34
Sample size (number)	616	261	195	--	2	--	--	96	52	10
Age (years)										
Mean	28	34	15	--	28	--	--	37	35	32
Standard deviation	19	17	12	--	0	--	--	21	19	33
Minimum	0	0	1	--	28	--	--	3	2	5
25 percentile	13	20	5	--	28	--	--	25	24	13
Median	28	35	12	--	28	--	--	35	34	16
75 percentile	41	48	25	--	28	--	--	50	45	32
Maximum	150	75	51	--	28	--	--	150	105	102
Site index (feet et age 50)										
Mean	69	70	72	--	75	--	--	62	64	65
Standard deviation	11	11	10	--	7	--	--	11	9	14
Minimum	40	40	40	--	70	--	--	40	40	40
25 percentile	60	60	70	--	70	--	--	60	60	50
Median	70	70	70	--	75	--	--	60	60	70
75 percentile	SO	SO	SO	--	SO	--	--	70	70	73
Maximum	110	100	110	--	SO	--	--	90	90	SO
Total basal area[d] (square feet/acre)										
Mean	84	95	61	--	102	--	--	95	96	68
Standard deviation	52	47	57	--	16	--	--	42	45	46
Minimum	0	0	0	--	90	--	--	1	0	25
25 percentile	42	69	2	--	90	--	--	69	64	28
Median	88	98	58	--	102	--	--	96	97	52
75 percentile	123	128	108	--	113	--	--	125	133	85
Maximum	220	216	220	--	113	--	--	176	180	160
Pine basal area[d,e] (square feet/acre)										
Mean	64	71	54	--	102	--	--	66	72	27
Standard deviation	44	39	53	--	16	--	--	35	41	29
Minimum	0	0	0	--	90	--	--	0	0	0
25 percentile	32	47	1	--	90	--	--	38	46	7
Median	64	68	45	--	102	--	--	59	70	16
75 percentile	94	98	93	--	113	--	--	88	97	40
Maximum	218	162	218	--	113	--	--	148	173	87
Total stems[d] (number per acre)										
Mean	757	845	562	--	360	--	--	937	723	770
Standard deviation	546	559	563	--	175	--	--	434	382	500
Minimum	0	0	0	--	233	--	--	60	0	280
25 percentile	360	449	134	--	233	--	--	600	466	382
Median	676	729	471	--	357	--	--	934	712	497
75 percentile	1,067	1,139	780	--	481	--	--	1,172	923	1,145
Maximum	3,663	3,663	3,120	--	481	--	--	1,970	1,654	1.765
Pine stems[d,e] (number per a&e)										
Mean	382	409	330	--	360	--	--	447	331	303
Standard deviation	388	431	371	--	175	--	--	316	293	530
Minimum	0	0	0	--	233	--	--	0	0	0
25 percentile	130	132	71	--	233	--	--	231	154	34
Median	289	266	300	--	357	--	--	370	56	105
75 percentile	501	510	501	--	481	--	--	552	365	281
Maximum	3,120	3,000	3,120	--	481	--	--	1.311	1,380	1,750
Reineke stand density index[d,f]										
Mean	221	240	179	--	212	--	--	236	233	169
Standard deviation	108	98	123	--	48	--	--	97	195	86
Minimum	2	2	2	--	177	--	--	4	12	70
25 percentile	154	166	67	--	177	--	--	185	170	83
Median	230	242	176	--	211	--	--	234	238	148
75 percentile	29s	29s	283	--	245	--	--	304	306	218
Maximum	509	509	466	--	245	--	--	452	411	309

[a] Includes 4,000 acres of planted stands.

[b] Includes 4,000 acres of planted stands.

[c] Includes planted and/or natural stands of eastern redcedar, pitch pine, and white pine-hemlock.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 19.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Coastal Plain region of Virginia

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine[a]	Shortleaf pine[a]	Virginia pine[b]	Other
Area (thousand acres)	1,278	596	566	--	--	--	5	9	102	--
Sample size (number)	496	232	219	--	--	--	2	3	40	--
Age (years)										
Mean	27	38	14	--	--	--	81	57	36	--
Standard deviation	20	21	8	--	--	--	26	10	16	--
Minimum	0	0	1	--	--	--	60	50	8	--
25 percentile	12	23	7	--	--	--	60	50	27	--
Median	23	38	13	--	--	--	79	54	36	--
75 percentile	40	50	20	--	--	--	98	68	44	--
Maximum	106	106	41	--	--	--	98	68	70	--
Site index (feet at age 50)										
Mean	72	74	71	--	--	--	51	67	69	--
Standard deviation	9	10	7	--	--	--	14	16	8	--
Minimum	40	40	50	--	--	--	40	50	50	--
25 percentile	70	70	70	--	--	--	40	50	60	--
Median	70	70	70	--	--	--	50	70	70	--
75 percentile	80	80	80	--	--	--	60	80	70	--
Maximum	100	100	100	--	--	--	60	80	90	--
Total basal area[c] (square feet/acre)										
Mean	103	121	80	--	--	--	118	135	122	--
Standard deviation	57	49	59	--	--	--	43	30	44	--
Minimum	0	0	0	--	--	--	84	103	14	--
25 percentile	68	95	16	--	--	--	84	103	99	--
Median	111	128	86	--	--	--	115	148	125	--
75 percentile	145	154	127	--	--	--	146	154	161	--
Maximum	234	234	225	--	--	--	146	154	216	--
Pine basal area[c,d] (square feet/acre)										
Mean	73	81	62	--	--	--	57	93	89	--
Standard deviation	44	39	48	--	--	--	5	40	40	--
Minimum	0	0	0	--	--	--	53	53	14	--
25 percentile	45	59	11	--	--	--	53	53	63	--
Median	75	80	63	--	--	--	56	98	87	--
75 percentile	102	105	97	--	--	--	60	128	113	--
Maximum	210	210	193	--	--	--	60	128	195	--
Total stems[c] (number per acre)										
Mean	1,078	995	1,151	--	--	--	523	1,064	1.186	--
Standard deviation	680	592	739	--	--	--	182	300	796	--
Minimum	0	0	0	--	--	--	376	757	439	--
25 percentile	577	574	540	--	--	--	376	757	653	--
Median	964	881	1,176	--	--	--	509	1,114	973	--
75 percentile	1,503	1,322	1,790	--	--	--	641	1,319	1,322	--
Maximum	4,083	3,086	3,082	--	--	--	641	1,319	4.083	--
Pine stems[c,d] (number per acre)										
Mean	409	285	508	--	--	--	55	421	611	--
Standard deviation	417	286	399	--	--	--	22	509	794	--
Minimum	0	0	0	--	--	--	41	117	29	--
25 percentile	128	104	276	--	--	--	41	117	174	--
Median	300	174	446	--	--	--	57	167	296	--
75 percentile	541	343	660	--	--	--	73	973	648	--
Maximum	3,675	2,020	2,357	--	--	--	73	973	3,675	--
Reineke stand density index[c,e]										
Mean	278	300	248	--	--	--	259	331	303	--
Standard deviation	120	103	138	--	--	--	94	75	97	--
Minimum	1	1	1	--	--	--	183	248	49	--
25 percentile	214	245	156	--	--	--	183	248	252	--
Median	292	303	271	--	--	--	251	371	322	--
75 percentile	362	363	340	--	--	--	319	372	376	--
Maximum	543	543	522	--	--	--	319	372	478	--

[a] Includes 0 acres of planted stands.

[b] Includes 3,000 acres of planted stands.

[c] Live trees 1.0 inch d.b.h. and larger.

[d] Yellow pine species only.

[e] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 20.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Piedmont region of Virginia

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine	Shortleaf pine[a]	Virginia pine[b]	Other[c]
Area (thousand acres)	1,590	87	524	--	--	--	--	138	750	91
Sample size (number)	441	25	137	--	--	--	--	39	212	28
Age (years)										
Mean	26	30	14	--	--	--	--	45	31	22
Standard deviation	17	lb	9	--	--	--	--	18	15	18
Minimum	0	0	1	--	--	--	--	7	1	3
25 percentile	13	18	6	--	--	--	--	34	19	9
Median	23	31	13	--	--	--	--	45	33	19
75 percentile	38	47	19	--	--	--	--	54	41	30
Maximum	85	55	34	--	--	--	--	85	79	75
Site index (feet at age 50)										
Mean	67	69	69	--	--	--	--	62	65	66
Standard deviation	10	9	8	--	--	--	--	12	9	10
Minimum	40	50	50	--	--	--	--	40	40	40
25 percentile	60	60	70	--	--	--	--	50	60	60
Median	70	70	70	--	--	--	--	60	60	70
75 percentile	70	70	70	--	--	--	--	70	70	70
Maximum	100	90	90	--	--	--	--	90	100	90
Total basal area[d] (square feet/acre)										
Mean	95	116	74	--	--	--	--	122	107	53
Standard deviation	55	47	60	--	--	--	--	44	46	47
Minimum	0	0	0	--	--	--	--	17	0	0
25 percentile	57	103	13	--	--	--	--	104	82	21
Median	106	127	78	--	--	--	--	122	117	37
75 percentile	136	147	118	--	--	--	--	154	143	99
Maximum	237	195	237	--	--	--	--	216	229	154
Pine basal area[d,e] (square feet/acre)										
Mean	72	87	62	--	--	--	--	83	82	a
Standard deviation	4s	39	55	--	--	--	--	40	42	8
Minimum	0	0	0	--	--	--	--	IO	0	0
25 percentile	29	69	4	--	--	--	--	55	56	0
Median	74	100	55	--	--	--	--	75	84	8
75 percentile	105	112	98	--	--	--	--	109	112	15
Maximum	201	157	198	--	--	--	--	169	201	27
Total stems[d] (number per acre)										
Mean	985	994	970	--	--	--	--	944	1,047	619
Standard deviation	600	577	732	--	--	--	--	376	543	462
Minimum	0	0	0	--	--	--	--	251	0	0
25 percentile	585	562	302	--	--	--	--	696	694	230
Median	930	947	895	--	--	--	--	946	964	604
75 percentile	1,363	1,272	1,470	--	--	--	--	1,188	1,378	074
Maximum	3,180	2,308	2,615	--	--	--	--	2,100	3,180	1,635
Pine stems[d,e] (number per acre)										
Mean	450	384	445	--	--	--	--	355	524	71
Standard deviation	394	314	367	--	--	--	--	263	432	133
Minimum	0	0	0	--	--	--	--	70	0	0
25 percentile	174	169	148	--	--	--	--	158	238	0
Median	355	215	442	--	--	--	--	249	375	21
75 percentile	581	484	620	--	--	--	--	483	629	65
Maximum	2,940	1,040	1,969	--	--	--	--	1.380	2,940	632
Reineke stand density index[d,f]										
Mean	255	300	228	--	--	--	--	295	270	152
Standard deviation	116	92	138	--	--	--	--	101	101	96
Minimum	2	57	2	--	--	--	--	51	4	15
25 percentile	190	251	120	--	--	--	--	252	216	73
Median	279	319	239	--	--	--	--	300	291	175
75 percentile	338	370	315	--	--	--	--	361	344	235
Maximum	607	449	607	--	--	--	--	503	531	337

[a] Includes 0 acres of planted stands.

[b] Includes 23,000 acres of planted stands.

[c] Includes planted and/or natural stands of eastern redcedar and white pine-hemlock.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as *missing values.*

Table 11.--Area of timberland, sample sire, end distribution of selected stand characteristics in pine forest types in the Mountain region of Virginia

Area/ sample size/ characteristic	All pine types	Pine forest types								
		Natural loblolly	Planted loblolly	Natural slash	Planted slash	Longleaf pine	Pond pine	Shortleaf pine	Virginia pine[a]	Other[b]
Area (thousand acres)	489	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	178	311
Sample size (number)	119	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	42	77
nge (years)										
Mean	4.5	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	37	51
Standard deviation	24	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	18	25
Minimum	3	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	6	3
25 percentile	27	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	23	30
Median	47	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	33	50
75 percentile	61	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	52	67
Maximum	110	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	70	110
Site index (feet at age 50)										
Mean	62	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	61	62
Standard deviation	13	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	11	14
Minimum	30	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	40	30
25 percentile	50	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	58	50
Median	60	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	60	60
75 percentile	70	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	70	70
Maximum	100	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	80	100
Total basal area[c] (square feet/acre)										
Mean	105	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	97	109
Standard deviation	49	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	40	52
Minimum	0	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	3	0
25 percentile	77	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	69	78
Median	107	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	102	109
75 percentile	137	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	131	150
Maximum	240	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	157	240
Pine basal area[c,d] (square feet/acre)										
Mean	41	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	62	30
Standard deviation	38	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	31	36
Minimum	0	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	3	0
25 percentile	0	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	42	0
Median	38	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	53	8
75 percentile	71	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	89	59
Maximum	128	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	126	128
Total stems[c] (number per acre)										
Mean	722	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	825	663
Standard deviation	376	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	355	377
Minimum	0	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	200	0
25 percentile	437	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	627	379
Median	724	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	788	653
75 percentile	923	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	1,001	896
Maximum	1,852	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	1,782	1,852
Pine stems[c,d] (number per acre)										
Mean	191	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	338	107
Standard deviation	234	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	238	188
Minimum	0	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	42	0
25 percentile	0	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	169	0
Median	116	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	260	13
75 percentile	263	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	505	157
Maximum	1,206	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	947	1,206
Reineke stand density index[c,e]										
Mean	246	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	236	152
Standard deviation	96	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	89	99
Minimum	1	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	13	1
25 percentile	191	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	183	193
Median	256	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	237	272
75 percentile	316	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	307	335
Maximum	532	[illegible]	[illegible]	[illegible]	[illegible]	--	[illegible]	[illegible]	394	532

[a] Includes 9.000 acres of planted stands.

[b] Includes planted and/or natural stands of eastern redcedar, pitch pine, Table Mountain pine, and white pine-hemlock.

[c] Live trees 1.0 inch d.b.h. and larger.

[d] Yellow pine species only.

[e] Stand density indices of stands with no trees et least 1.0 inch d.b.h. are treated as missing values.

Table 22.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Southeast, by ownership and stand origin

Area/ sample size/ characteristic	Ownership and stand origin									
	National forest		Other public		Forest industry[a]		Farmer		Other private[b]	
	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted
Area (thousand acres)	1,243	343	1,616	471	3,251	7,795	5,151	1,097	10.4'31	2,705
Sample size ("umber,	419	132	772	250	1,112	2,756	1,630	365	3,198	920
Age (years)										
Mean	50	14	41	19	32	14	35	14	33	16
Standard deviation	24	11	16	8	18	8	17	IO	18	IO
Minimum	0	1	0	1	0	1	0	1	0	1
25 percentile	40	5	28	13	20	6	25	5	20	6
Median	50	10	39	21	32	13	35	12	32	15
75 percentile	60	18	51	27	41	20	45	23	44	25
Maximum	165	56	96	49	96	68	110	51	130	42
Site index[c] (feet at age 50)										
Mean	66	64	64	66	68	69	71	73	67	69
Standard deviation	14	9	11	9	13	9	13	IO	13	11
Minimum	30	40	30	40	30	40	40	50	30	40
25 percentile	60	60	60	60	60	60	60	70	60	60
Median	70	60	70	70	70	70	70	70	70	70
75 percentile	SO	70	70	70	SO	70	SO	SO	SO	78
Maximum	100	90	110	100	110	110	120	110	110	110
Total basal area[d] (square feet/acre)										
Mean	87	42	82	59	85	56	96	56	90	58
Standard deviation	49	40	42	36	54	49	51	52	53	50
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	46	2	52	35	40	9	59	5	48	8
Media"	78	30	85	67	88	49	98	49	89	54
75 percentile	110	62	123	100	128	92	131	92	125	91
Maximum	,347	142	249	227	252	228	240	237	254	233
Pine basal area[d,e] (square feet/acre)										
Mean	58	34	65	52	64	50	70	47	66	50
Standard deviation	36	33	34	34	42	44	42	46	43	46
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	34	1	38	24	31	7	43	2	37	5
Media"	60	25	68	53	64	45	68	42	62	43
75 percentile	83	52	92	87	94	83	97	78	92	SO
Maximum	192	135	249	216	225	225	214	180	218	233
Total stems[d] ("umber per acre)										
Mean	565	712	553	578	766	598	734	537	741	537
Standard deviation	484	693	388	360	615	532	514	572	664	518
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	152	126	205	300	241	222	355	120	293	135
Median	376	511	496	523	682	480	658	386	641	420
75 percentile	708	1.172	824	814	1,147	835	1,019	780	1,012	741
Maximum	2,631	3,180	3,115	2,417	3.438	3,312	3,180	3,420	4,232	4.575
Pine stems[d,e] (number per acre)										
Mean	237	517	252	363	339	374	303	314	328	326
Standard deviation	304	564	235	230	371	298	321	329	353	319
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	67	66	87	171	88	169	95	60	99	76
Median	146	380	171	322	220	360	208	265	217	300
75 percentile	283	838	340	455	464	539	394	452	427	503
Maximum	2,256	3,120	2,688	2.088	3,247	3,120	2,940	2,340	3,675	4,125
Reineke stand density index[d,f]										
Mean	204	141	192	159	230	168	234	163	223	172
Standard deviation	109	96	95	77	120	111	114	114	120	105
Minimum	7	2	1	1	2	1	1	1	1	1
25 percentile	105	52	118	106	130	79	150	61	127	88
Median	177	124	192	167	234	158	237	161	220	163
75 percentile	261	23.3	285	237	315	246	313	235	,301	233
Maximum	765	402	591	544	653	554	533	607	586	552

[a] Includes stands leased to forest industry.

[b] Includes miscellaneous private individuals and corporations other than forest industry.

[c] Site indices for Georgia were not available at time of publication and are treated as missing values.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 23.--Area of timberland, sample Size, and distribution of selected stand characteristics in pine forest types in the Coastal Plain region of the Southeast, by ownership end stand origin

Area/ sample size/ characteristic	Ownership and stand origin									
	National forest		Other public		Forest industry[a]		Farmer		Other private[b]	
	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted
Area (thousand acres)	701	247	1,253	418	2,172	6,107	2,918	747	4,958	1.677
Sample sire (number)	285	104	561	207	785	2,243	1,030	269	1,776	698
Age (years)										
Mean	47	13	41	19	32	14	36	13	33	15
Standard deviation	19	10	17	9	19	8	18	10	18	10
Minimum	0	1	0	1	0	1	0	1	0	1
25 percentile	36	5	28	13	20	7	25	5	21	6
Median	49	9	40	21	33	14	35	9	34	13
75 percentile	58	18	52	27	43	20	47	22	45	24
Maximum	110	56	96	49	96	68	106	40	130	42
Site index[c] (feet at age 50)										
Mean	67	61	64	65	68	69	73	72	67	68
Standard deviation	12	9	13	10	14	10	13	9	13	10
Minimum	40	40	30	40	30	40	40	50	30	40
25 percentile	60	60	60	60	60	60	70	70	60	60
Median	70	60	70	70	70	70	70	70	70	70
75 percentile	SO	76	70	70	80	70	80	80	SO	70
Maximum	100	90	110	100	100	100	120	100	110	110
Total basal area[d] (square feet/acre)										
Mean	68	35	74	58	78	56	91	51	78	52
Standard deviation	43	34	44	37	57	49	52	49	53	47
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	37	2	45	32	30	12	53	4	37	6
Median	61	26	72	63	78	50	92	47	75	45
75 percentile	91	53	110	90	121	91	127	85	115	85
Maximum	347	141	249	225	252	228	238	183	264	193
Pine basal area[d,e] (square feet/acre)										
Mean	57	32	59	52	59	51	69	45	60	47
Standard deviation	32	30	35	35	43	43	40	45	40	44
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	33	1	38	25	25	10	44	2	30	4
Median	53	24	60	53	60	47	68	38	58	39
75 percentile	83	46	85	75	87	83	93	75	85	76
Maximum	192	127	249	188	206	225	214	175	195	193
Total stern,[d] (number per acre)										
Mean	370	698	497	569	693	580	,655	531	616	533
Standard deviation	386	681	401	368	646	517	620	562	571	525
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	125	127	173	294	154	240	247	73	179	120
Median	240	480	412	532	643	480	569	391	469	420
75 percentile	499	1.031	754	814	1,086	783	954	817	900	728
Maximum	2,496	3,180	i.924	2,099	3,436	3,312	2,826	3,420	4.232	4,575
Pine stems[d,e] (number per acre)										
Mean	209	562	225	358	286	373	259	331	264	345
Standard deviation	230	598	220	231	321	282	278	357	308	331
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	76	120	81	197	71	180	81	56	76	81
Median	139	418	160	332	187	360	173	282	166	304
75 percentile	253	840	299	457	407	535	349	457	331	531
Maximum	2.286	3,120	2,135	1,565	2,153	2,858	1,715	2,340	3,675	4.125
Reineke stand density index[d,f]										
Mean	153	123	174	155	212	165	220	156	196	158
Standard deviation	94	84	100	79	131	110	117	109	122	104
Minimum	7	2	1	1	2	1	1	1	1	1
25 percentile	86	49	108	103	102	81	130	60	95	73
Median	136	112	168	154	215	156	221	159	185	150
75 percentile	196	174	258	215	309	236	304	227	285	220
Maximum	765	402	591	405	653	554	533	467	586	490

[a] Includes stands leased to forest industry.

[b] Includes miscellaneous private individuals and corporations other than forest industry.

[c] Site indices for Georgia were not available at time of publication and are treated as missing values.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands with no trees at least 1.0 inch d.b.h. are treated as missing values.

Table 24.--Area of timberland, sample size, and distribution of selected stand characteristics in pine forest types in the Piedmont region of the Southeast, by ownership and stand origin

Area/ sample size/ characteristic	Ownership and stand origin									
	National forest		Other public		Forest industry[a]		Farmer		Other private[b]	
	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted
Area (thousand acres)	215	74	336	50	984	1,606	1,917	323	4,385	767
Sample size (number)	64	23	194	33	292	485	535	90	1,209	210
Age (years)										
Mean	49	13	40	15	31	12	33	16	30	17
Standard deviation	27	11	13	7	16	8	16	12	16	11
Minimum	0	1	3	1	0	1	0	2	0	1
25 percentile	44	6	25	12	21	5	21	6	19	8
Median	52	13	38	20	30	10	33	16	30	19
75 percentile	63	18	50	29	40	19	43	25	40	25
Maximum	150	48	90	33	79	38	100	51	88	42
Site index[c] (feet at age 50)										
Mean	74	70	67	73	68	70	68	74	67	73
Standard deviation	13	6	7	6	11	9	11	12	11	11
Minimum	40	60	50	60	50	50	40	50	40	40
25 percentile	70	70	60	70	60	70	60	70	60	70
Median	70	70	70	70	70	70	70	70	70	70
75 percentile	80	70	70	80	80	70	70	80	70	80
Maximum	100	90	100	90	90	110	110	110	110	110
Total basal area[d] (square feet/acre)										
Mean	102	57	109	59	100	55	101	62	97	69
Standard deviation	43	49	31	35	46	56	48	58	49	54
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	78	7	83	43	78	1	68	7	64	25
Median	102	62	113	78	107	42	105	61	100	71
75 percentile	127	112	137	123	134	102	135	100	130	104
Maximum	190	137	235	201	239	223	238	237	246	233
Pine basal area[d,e] (square feet/acre)										
Mean	75	45	86	51	76	49	73	52	72	62
Standard deviation	35	42	29	31	40	52	41	50	42	51
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	58	2	53	39	53	0	45	2	44	19
Median	75	39	85	75	78	36	75	48	68	60
75 percentile	98	70	111	109	107	88	98	90	100	95
Maximum	148	135	222	201	225	218	203	180	218	233
Total stems[d] (number per acre)										
Mean	789	865	752	631	911	654	863	553	848	545
Standard deviation	576	779	343	416	549	626	493	636	512	539
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	391	142	411	276	564	60	524	147	498	152
Median	579	991	661	563	859	513	806	349	792	394
75 percentile	1,040	1,552	986	1,348	1,220	960	1,156	674	1,129	779
Maximum	2,325	2,348	2,792	2.417	3.247	3,120	3,180	2,615	3,663	2,643
Pine stems[d,e] (number per acre,										
Mean	391	457	357	408	459	377	383	288	407	299
Standard deviation	484	493	259	284	454	375	370	276	380	303
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	76	83	118	162	152	49	151	76	152	80
Median	162	300	224	300	354	349	292	216	296	250
75 percentile	486	811	419	583	685	540	495	455	535	460
Maximum	1,817	1,628	2,454	2.088	3,247	3,120	2,940	1,232	3,000	2,043
Reineke stand density index[d,f]										
Mean	259	183	254	173	260	177	250	171	240	197
Standard deviation	75	119	68	78	95	128	107	125	110	104
Minimum	109	9	6	12	2	1	6	4	2	2
25 percentile	191	72	186	107	211	73	187	57	173	127
Median	251	214	263	201	267	170	264	167	244	190
75 percentile	299	314	322	300	328	286	322	246	312	257
Maximum	420	354	505	449	532	549	527	607	548	552

[a] Includes stands leased to forest industry.

[b] Includes miscellaneous private individuals and corporations other than forest industry.

[c] Site indices for Georgia were not available at time of publication and are treated as missing values.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pine species only.

[f] Stand density indices of stands wit,, no trees at least 1.0 inch d.b.h. are treated as missing values.

Tsbl. 25.--Area of timberland, sample sir., and distribution of selected stand characteristic. in pin. forest types in th. Mountain region of the Southeast. by ownership and stand origin

Area/ sample size/ characteristic	Ownership and stand origin									
	National forest		Other public		Forest industry[a]		Farmer		Other private[b]	
	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted	Natural	Planted
Area (thousand acres)	327	22	27	3	95	82	316	27	1,087	60
Sample size (number)	70	5	17	10	35	28	65	6	213	12
Age (years)										
Mean	59	19	56	25	30	12	39	20	38	23
Standard deviation	27	18	15	2	15	7	18	11	20	11
Minimum	6	2	15	14	0	2	4	3	3	5
25 percentile	44	3	27	18	20	4	30	11	26	15
Median	60	25	35	24	30	13	36	19	35	24
75 percentile	70	35	51	29	40	17	48	30	50	31
Maximum	165	45	a6	38	80	30	110	36	109	38
Site index[c] (feet at age 50)										
Mean	56	80	63	81	67	75	66	78	70	80
Standard deviation	14	10	10	3	11	6	9	10	16	23
Minimum	30	70	40	70	40	70	50	70	40	40
25 percentile	45	70	60	75	60	70	60	70	60	65
Median	50	80	60	80	70	75	70	75	70	80
75 percentile	65	90	80	100	80	80	70	88	80	95
Maximum	90	90	90	100	110	80	80	90	110	110
Tot.1 basal area[d] (square feet/acre)										
Mean	117	65	114	197	105	67	115	102	112	109
Standard deviation	44	63	28	12	41	49	40	70	44	70
Minimum	12	0	45	118	0	0	0	0	0	0
25 percentile	88	4	122	123	57	3	a2	34	89	41
Median	113	78	150	217	107	63	114	104	112	125
75 percentile	142	129	156	225	125	127	146	173	140	151
Maximum	238	142	227	227	202	201	240	187	226	210
Pin. basal area[d..] (square feet/acre)										
Mean	49	26	79	78	59	45	60	39	66	13
Standard deviation	37	38	16	27	33	39	51	50	45	25
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	8	0	75	0	17	0	6	0	36	0
Median	51	0	91	0	55	28	50	9	63	0
75 percentile	75	65	128	31	96	109	97	94	94	21
Maximum	128	a3	150	216	121	150	188	108	17s	68
Total stems[d] (number per acre)										
Mean	a34	462	684	941	943	a64	677	517	881	572
Standard deviation	394	694	264	140	414	502	323	302	480	344
Minimum	142	0	46	342	0	0	60	0	0	0
25 percentile	599	9	583	376	598	74	435	185	599	317
Median	718	276	828	509	943	988	709	634	807	518
75 percentile	1,004	1,099	1,337	1.083	1,184	1.376	881	734	1,057	914
Maximum	2,631	1,673	3,115	1,575	2,514	1,916	1,439	754	3,362	1,024
Pine stems[d..] (number per acre)										
Mean	197	219	218	305	330	383	221	142	303	101
Standard deviation	240	410	249	107	241	279	201	136	296	141
Minimum	0	0	0	0	0	0	0	0	0	0
25 percentile	22	0	112	0	95	0	29	0	101	0
Median	155	0	238	0	275	401	200	129	232	0
75 percentile	292	556	627	86	598	705	341	269	428	231
Maximum	1,206	947	2.688	a55	1,135	1,200	840	283	1,393	316
Reineke stand density index[d,f]										
Mean	276	184	258	423	287	228	259	261	272	262
Standard deviation	92	127	65	26	74	97	95	100	95	134
Minimum	39	14	73	248	110	38	2	129	1	12
25 percentile	213	67	273	299	184	148	187	178	224	167
Median	277	229	335	393	264	266	267	258	273	293
75 percentile	343	283	404	430	319	362	323	349	330	338
Maximum	511	300	532	544	487	426	420	401	506	461

[a] Includes stands leased to forest industry.

[b] Includes miscellaneous private individuals and corporations other than forest industry.

[c] Site indices for Georgia were not available at time of publication and are treated as missing values.

[d] Live trees 1.0 inch d.b.h. and larger.

[e] Yellow pin. species only.

[f] Stand density indices of stands with no tree. at least 1.0 inch d.b.h. are treated . . missing values.

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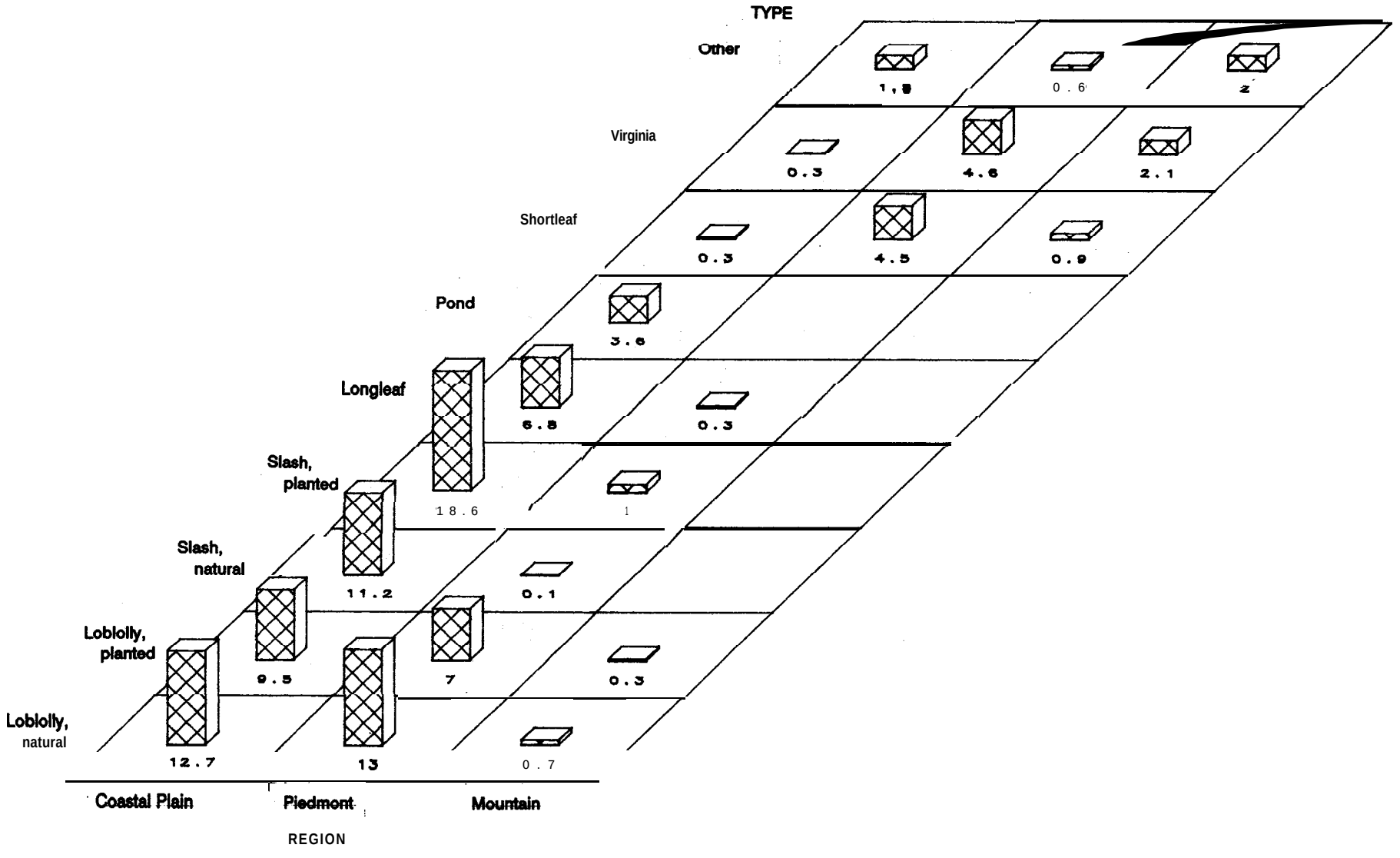


Figure 5.–Percentage distribution of pine timberland in the Southeast, by forest type and physiographii region. (Represents 34,103,117 acres.)

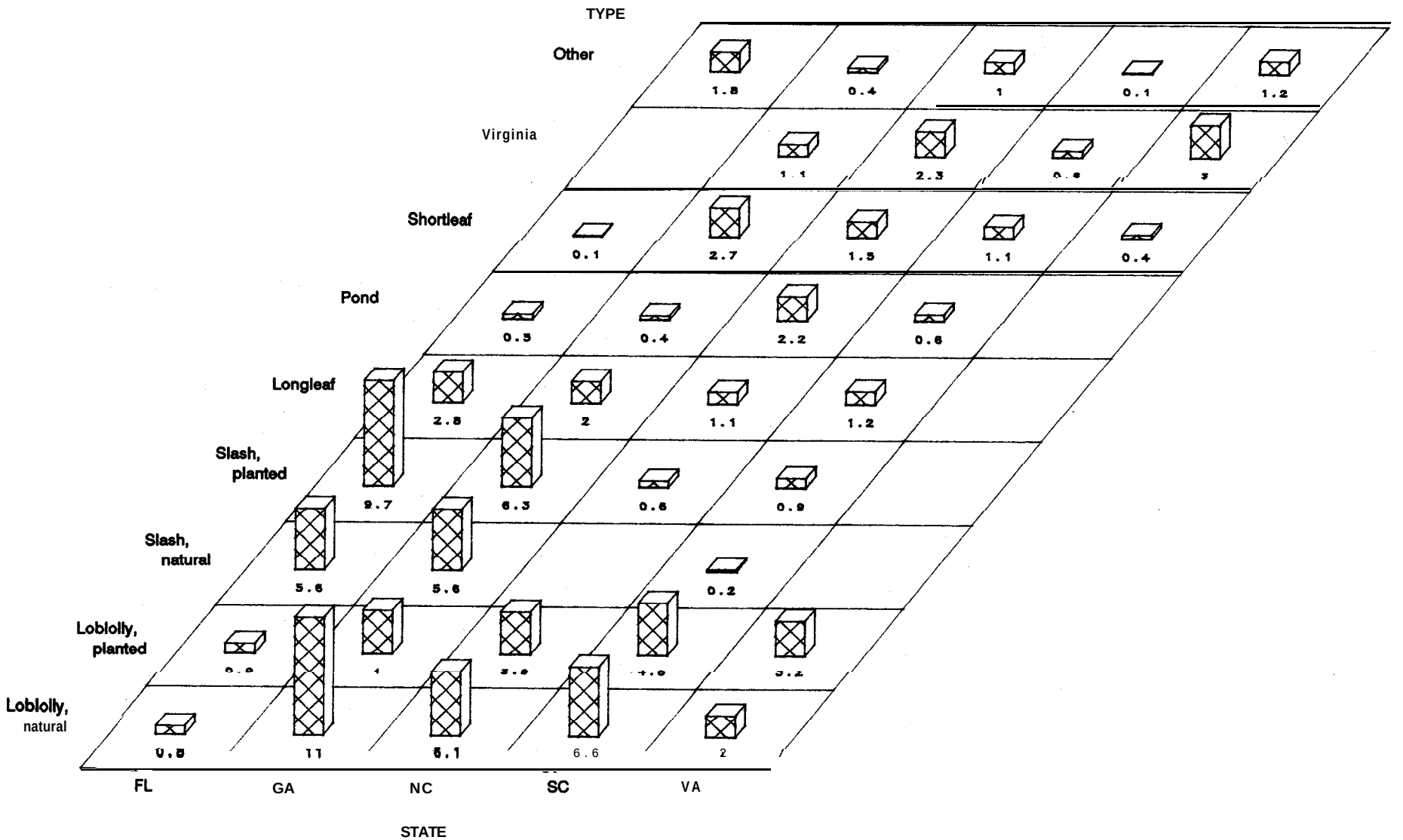


Figure B.-Percentage distribution of pine timberland in the Southeast, by forest type and State. (Represents 34,103,117 acres.)

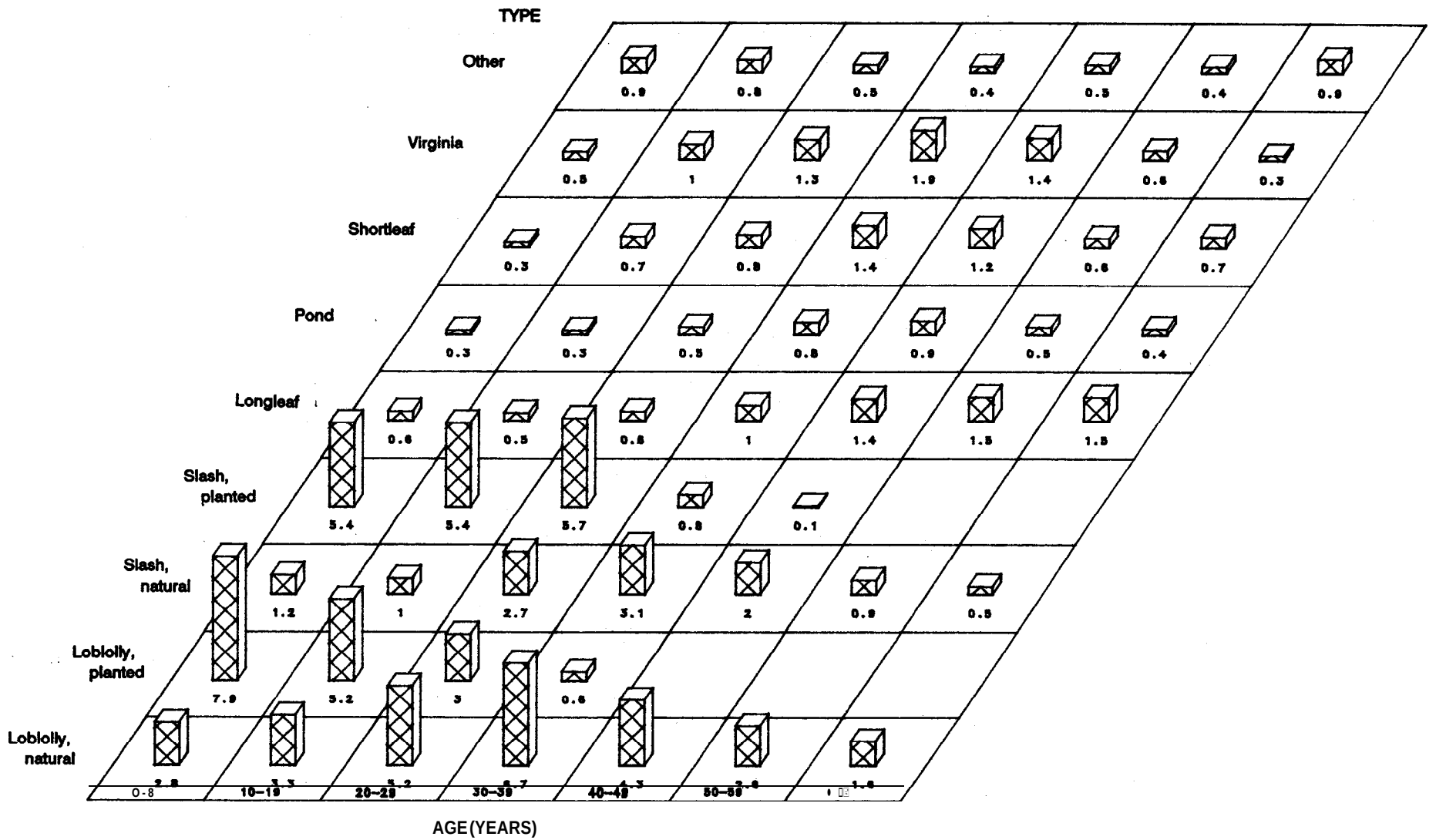


Figure 7.--Percentage diibutbn of pine timberland in the Southeast, by forest type and stand age. (Represents 34,103,117 acres.)

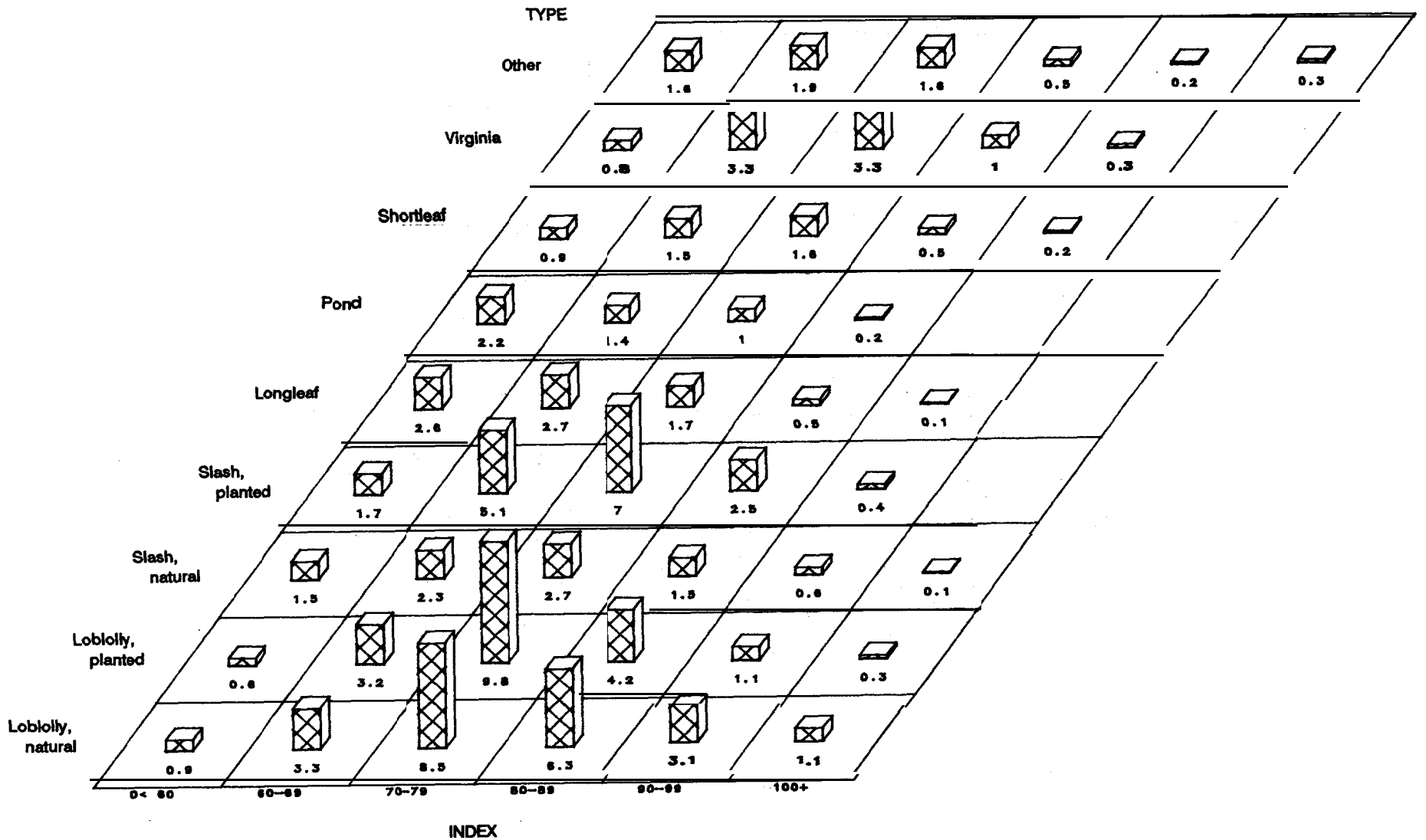


Figure 8.–Percentage distribution of pine timberland in the Southeast, by forest type and site index. (Represents 34,103,117 acres. Georgia site index data treated as missing values.)

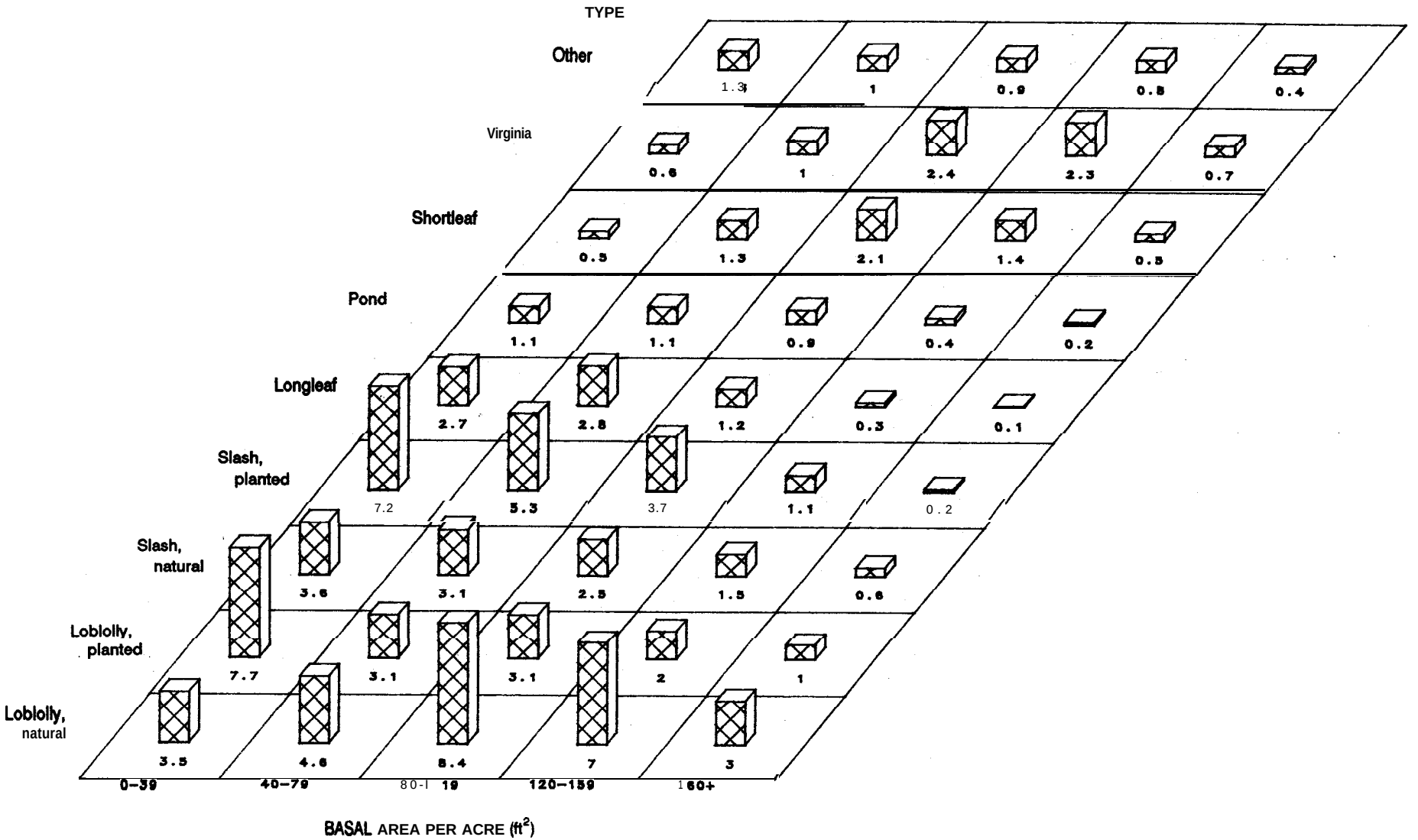


Figure O.-Percentage distribution of pine timberland in the Southeast, by forest type and basal area per acre. (Represents 34,103,117 acres.)

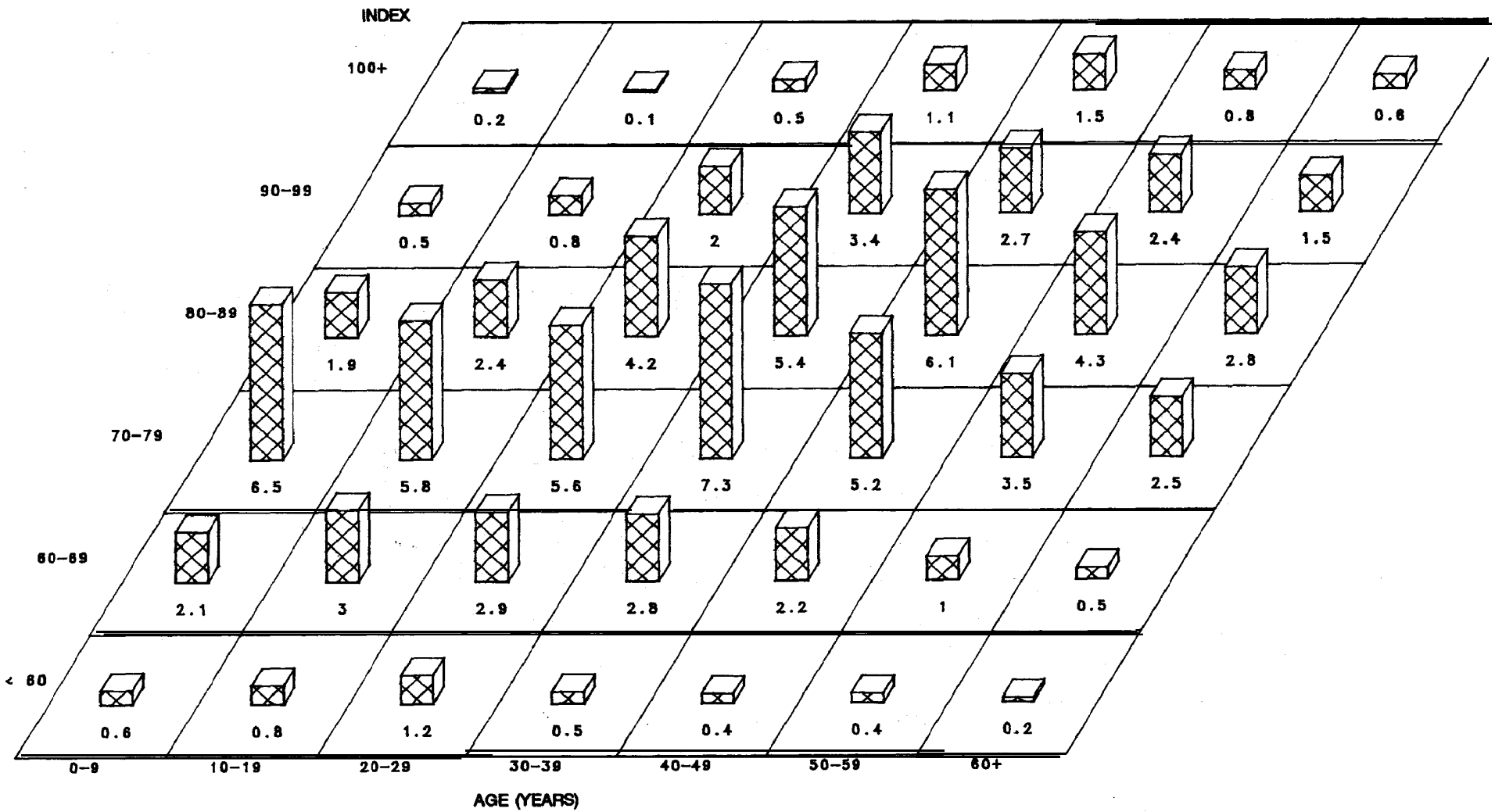


Figure 10A.--Percentage distribution of natural loblolly pine stands in the Southeast, by site index and stand age. (Represents 9,011,884 acres. Georgia site index data treated as missing values.)

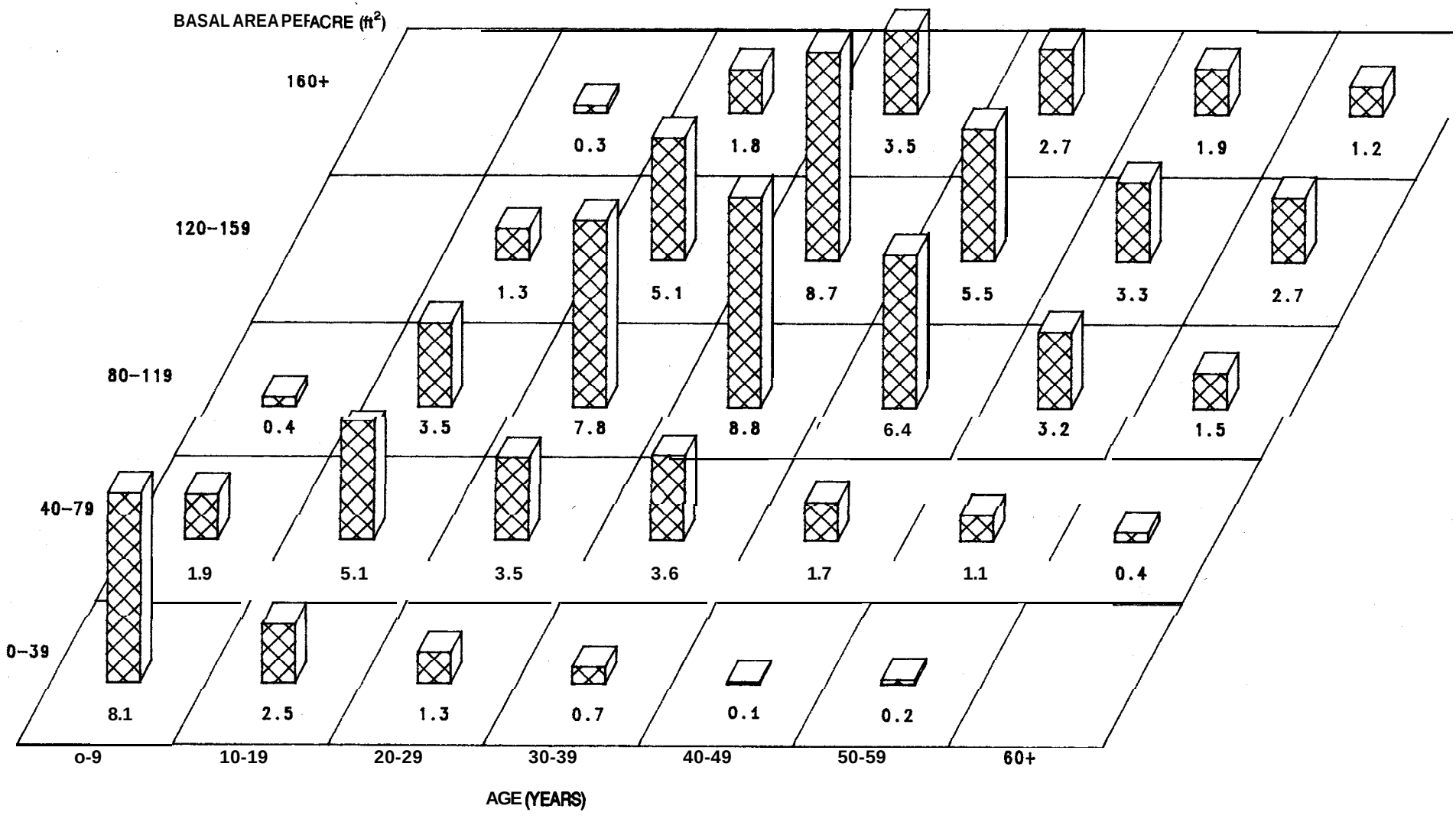


Figure IOB.-Percentage distribution of natural loblolly pine stands in the Southeast, by basal area per acre and stand age. (Represents 9,011,684 acres.)

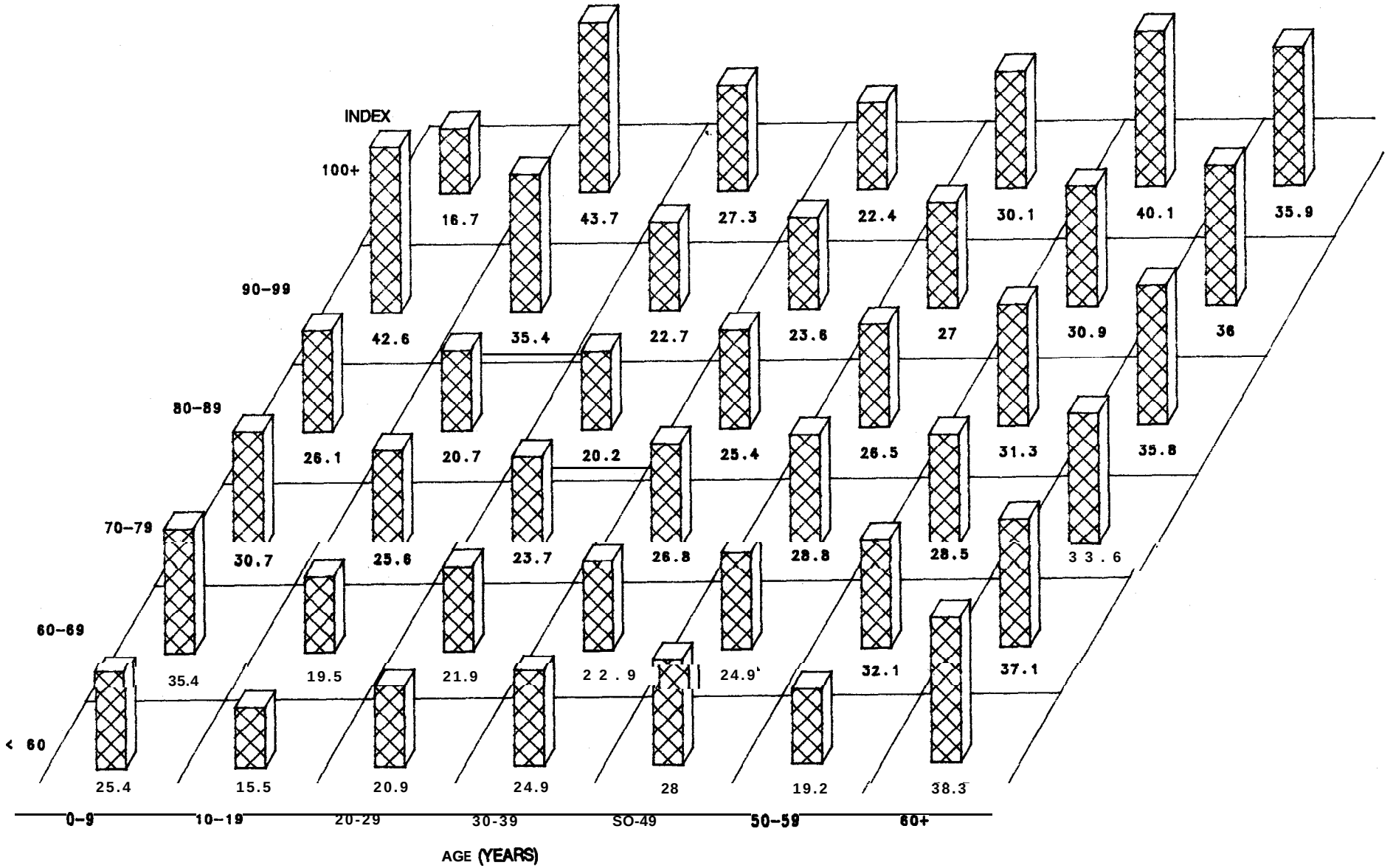


Figure 10C.--Percentage diibution of basal area **per** acre in **non-yellow-pine** species, by site index and stand age, for natural **loblolly** pine stands in the Southeast. (Represents **9,011,884** acres. Georgia site index data treated as missing values.)

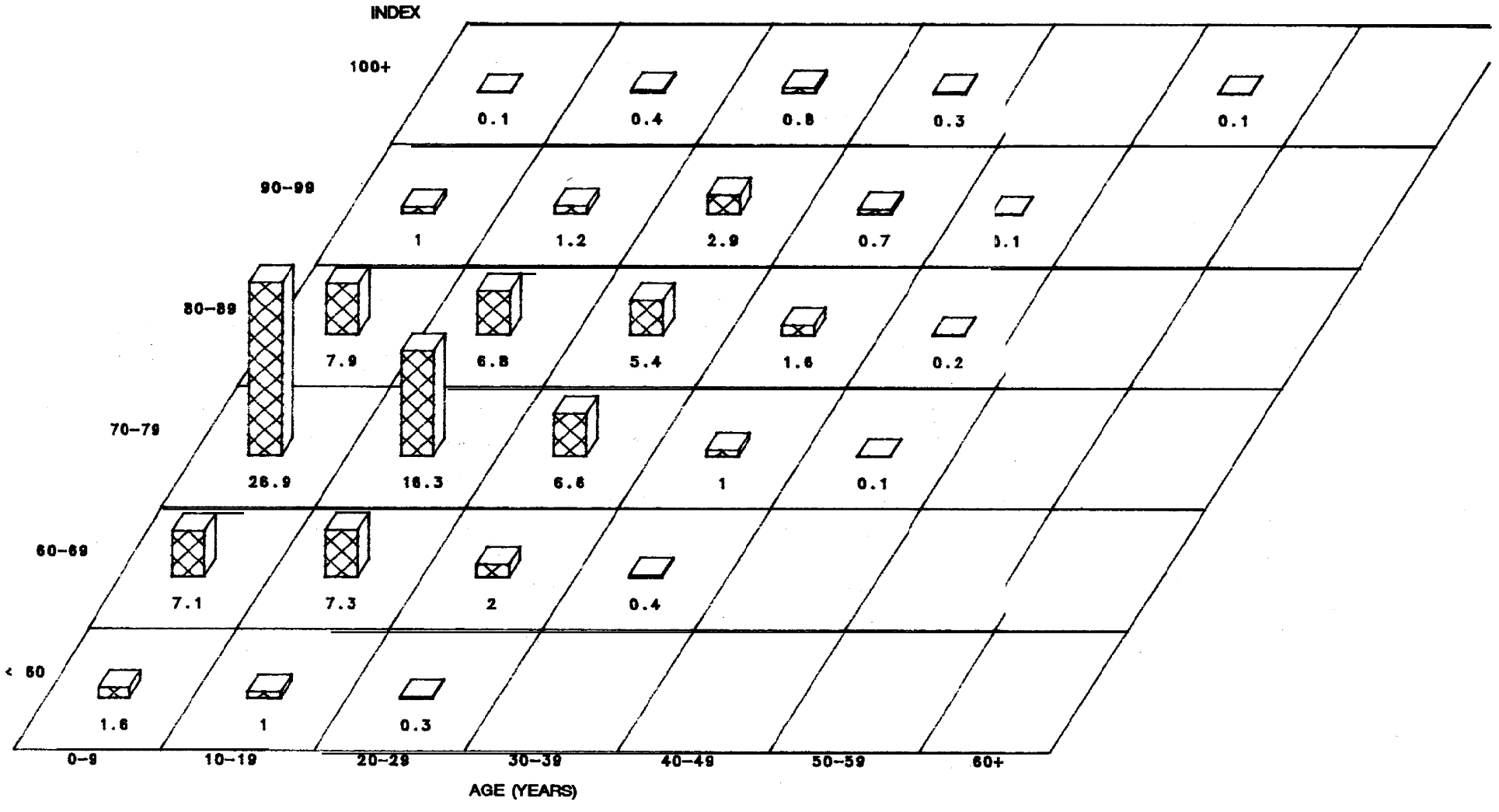


Figure 11A.–Percentage distribution of planted loblolly pine stands in the Southeast, by site index and stand age. (Represents 5,749,124 acres. Georgia site index treated as missing values.)

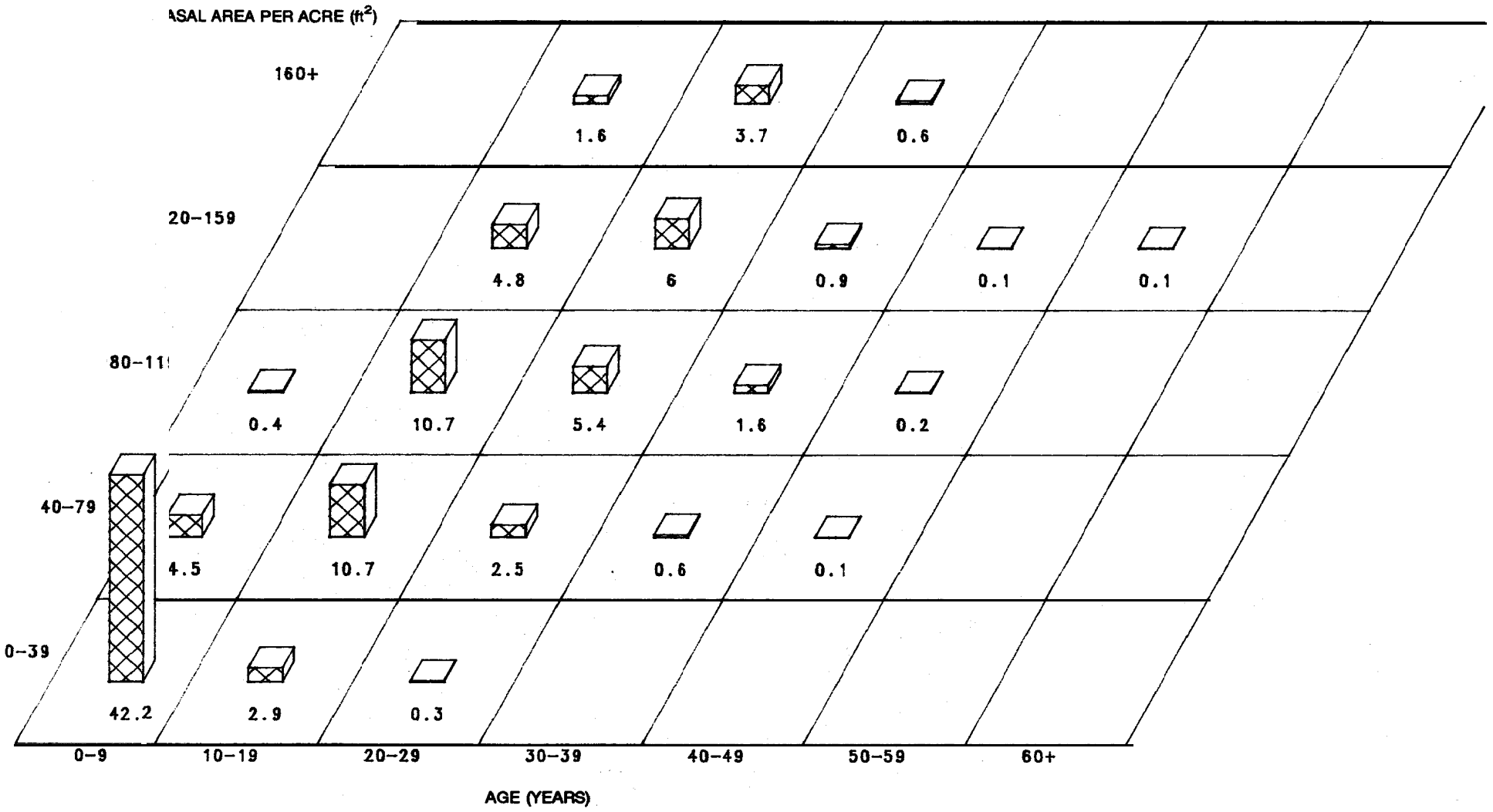


Figure 11B.--Percentage distribution of planted loblolly pine stands in the Southeast, by basal area per acre and stand age. (Represents 5,749,124 acres.)

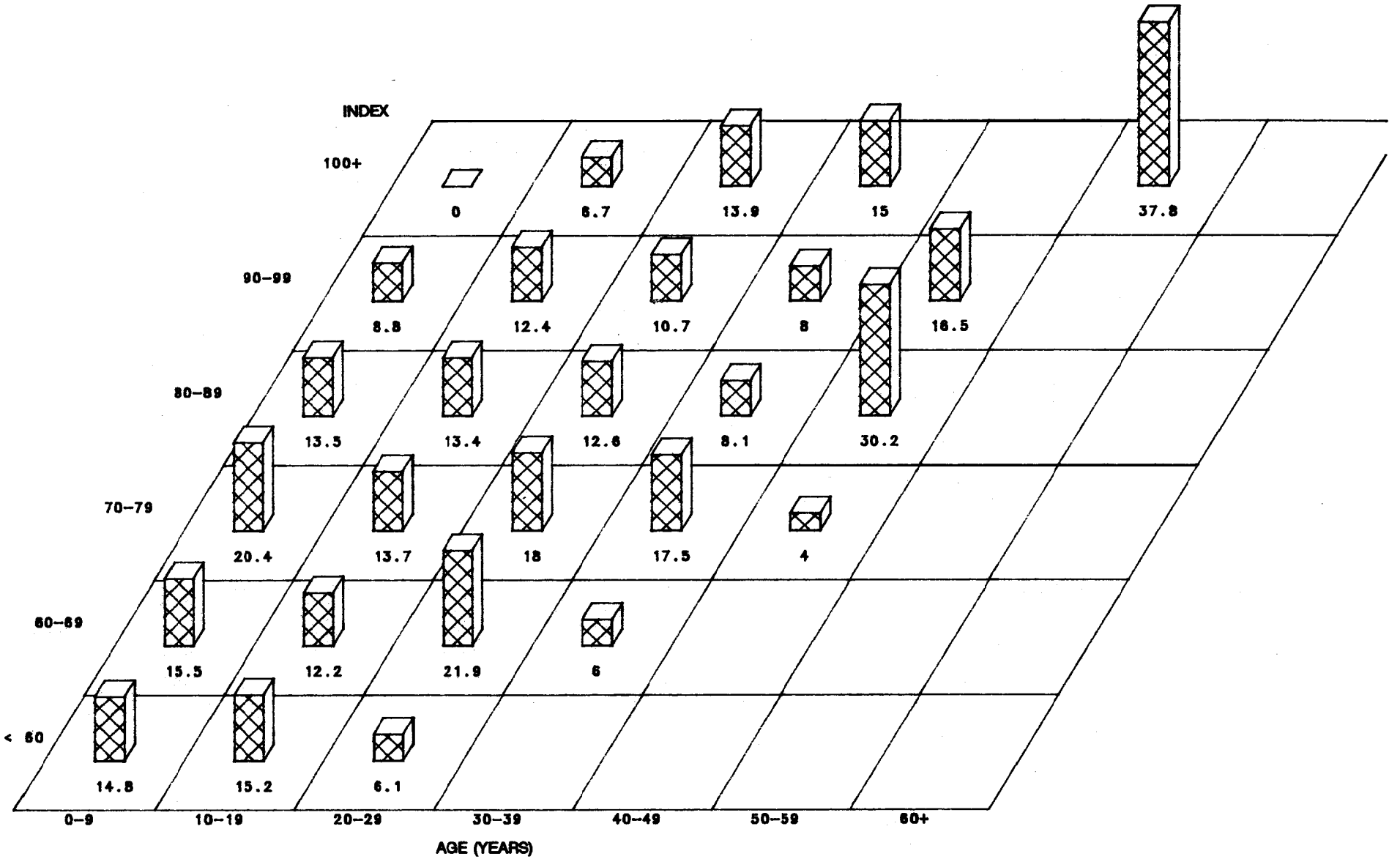


Figure 11C.--Percentage distribution of basal area per acre in non-yellow-pine species, by site index and stand age, for planted loblolly pine stands in the Southeast. (Represents 5,749,124 acres. Georgia site index data treated as missing values.)

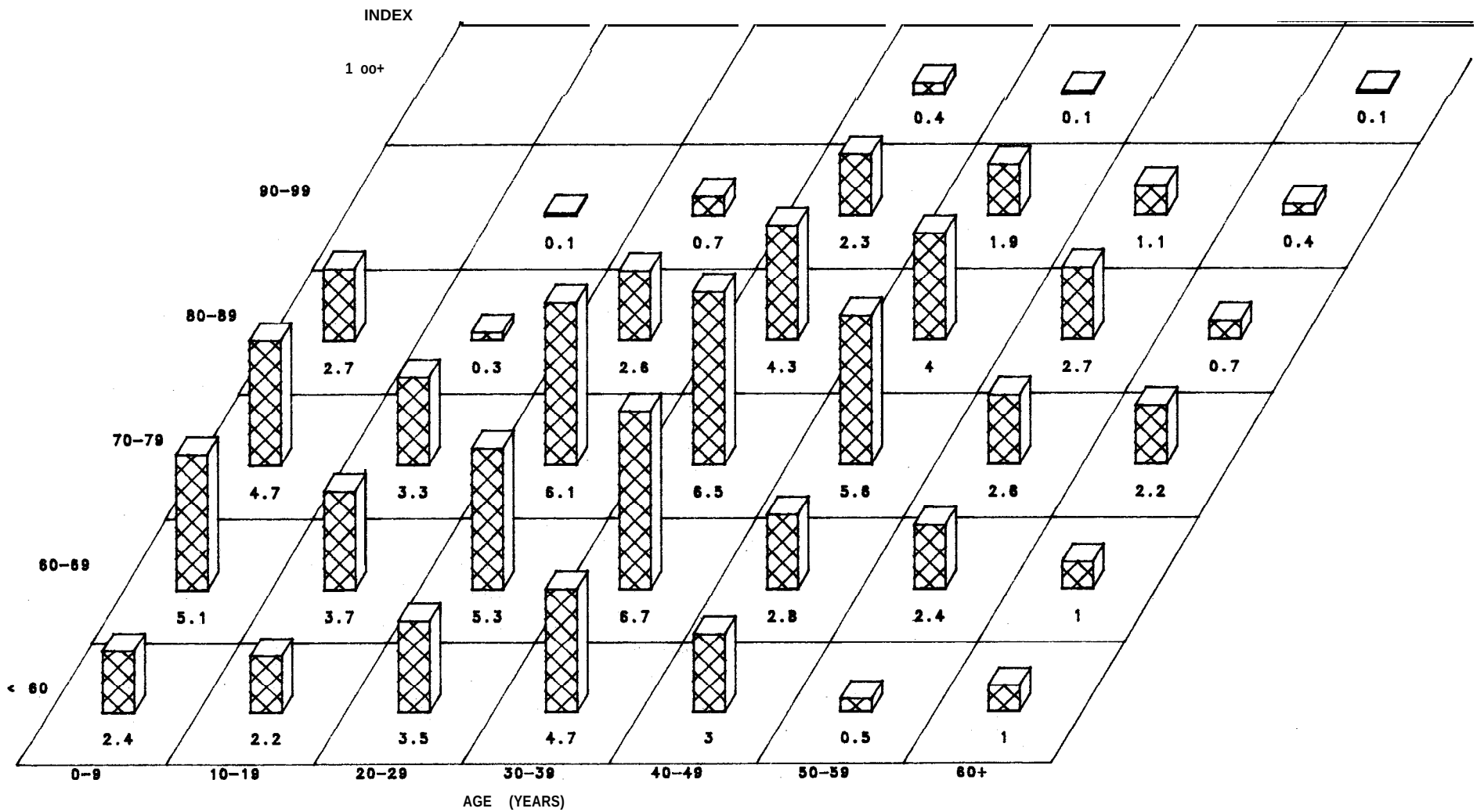


Figure 12A.--Percentage distribution of natural slash pine stands in the Southeast, by site index and stand age. (Represents 3,868,669 acres. Georgia site index data treated as missing values.)

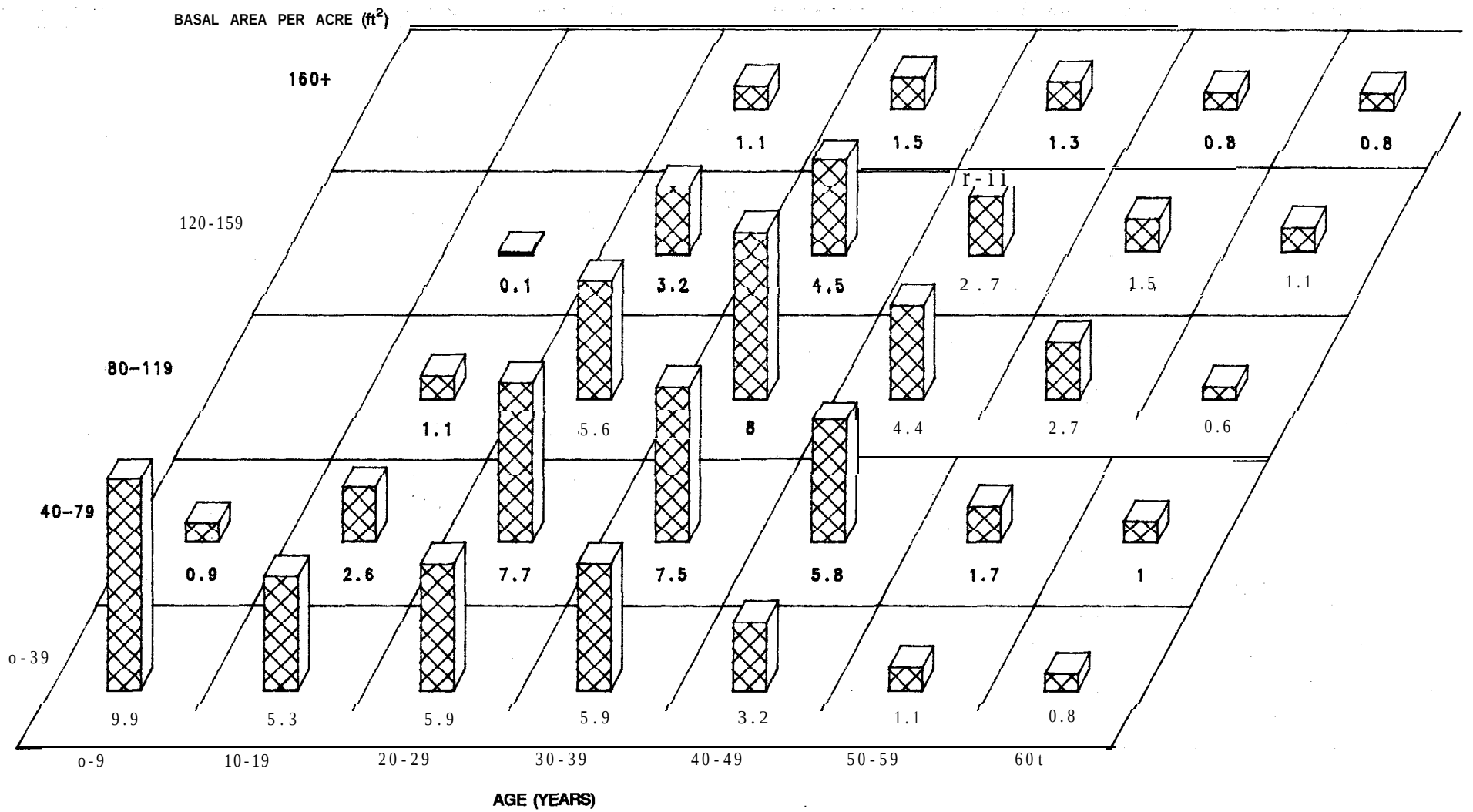


Figure 12B.--Percentage distribution of natural slash pine stands in the Southeast, by basal area per acre and stand age. (Represents 3,868,669 acres.)

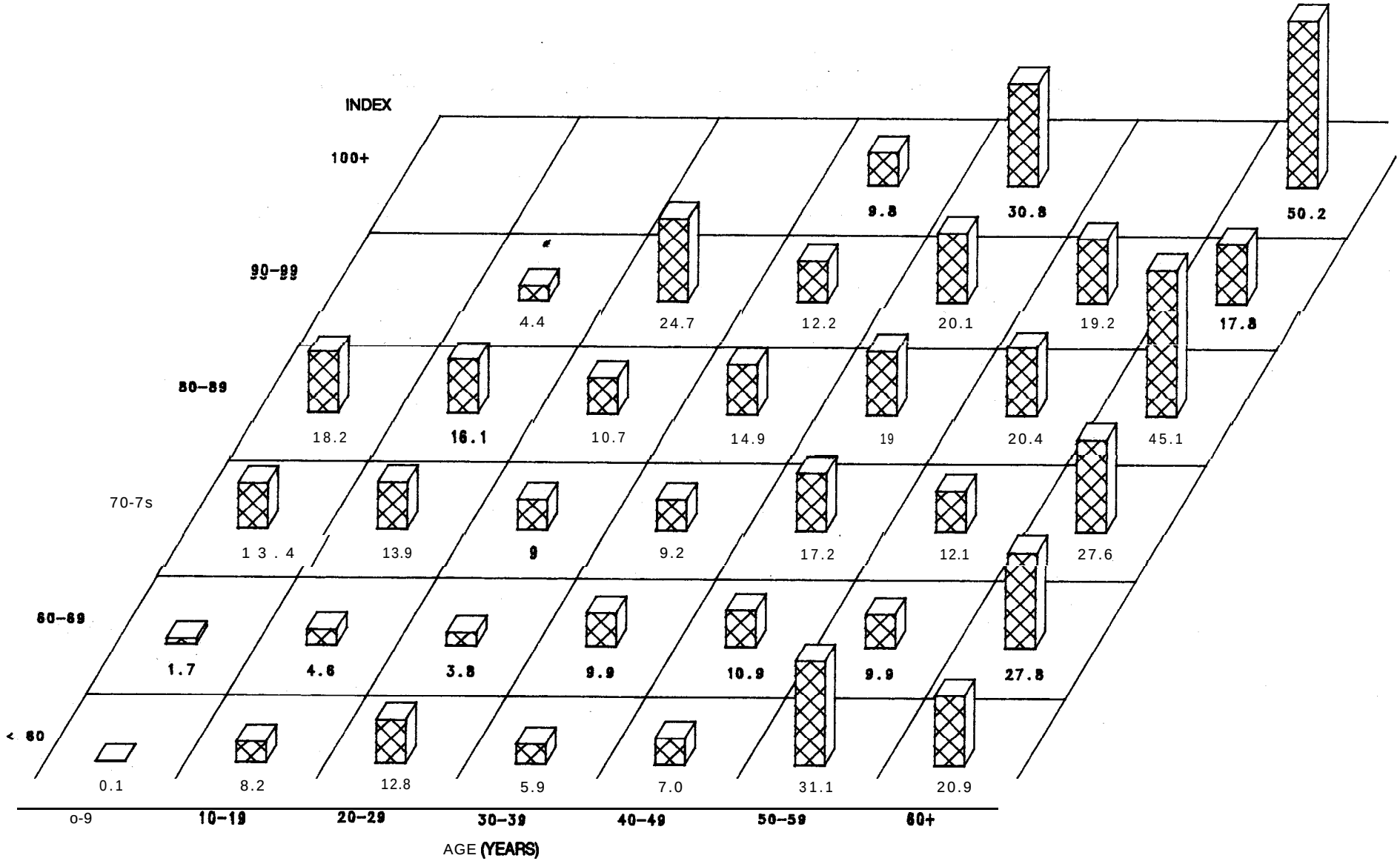


Figure 12C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for natural slash pine stands in the Southeast. (Represents 3,868,669 acres. Georgia site index data treated as missing values.)

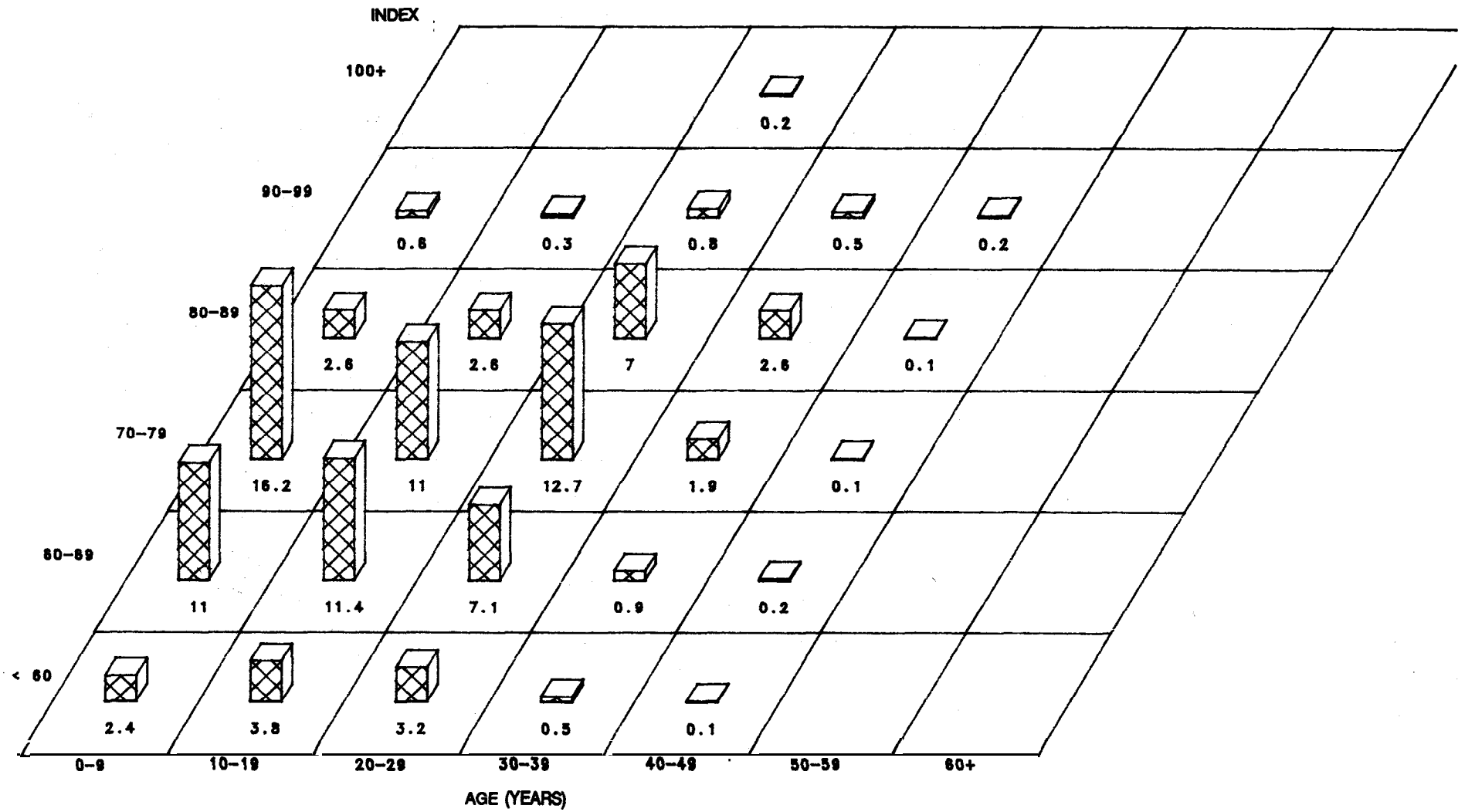


Figure 13A.--Percentage distribution of planted slash pine stands in the Southeast, by site index and stand age. (Represents 5,956,523 acres. Georgia site index data treated as missing values.)

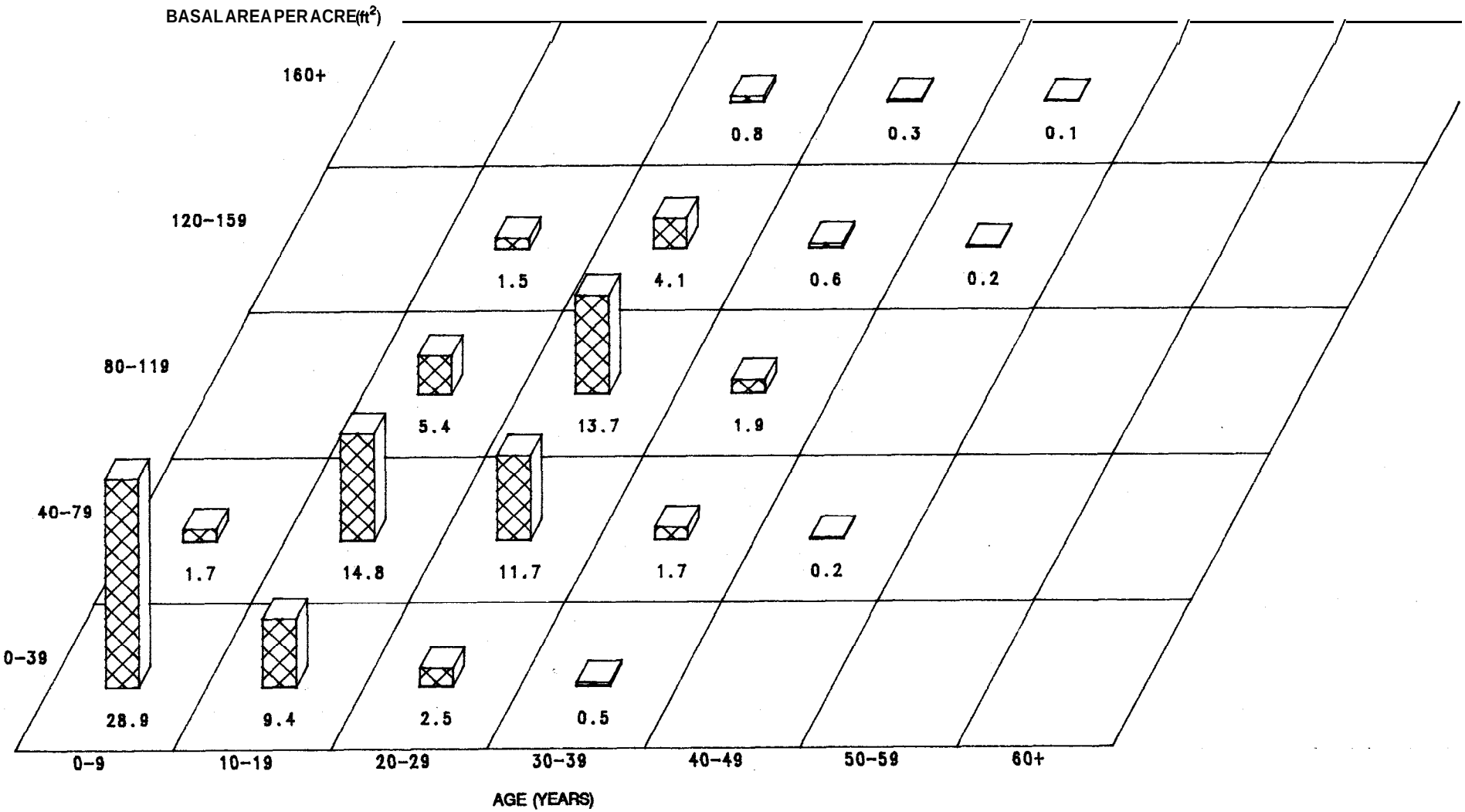


Figure 13B.–Percentage distribution of planted slash pine stands in the Southeast, by basal area per acre and stand age. (Represents 5,956,523 acres.)

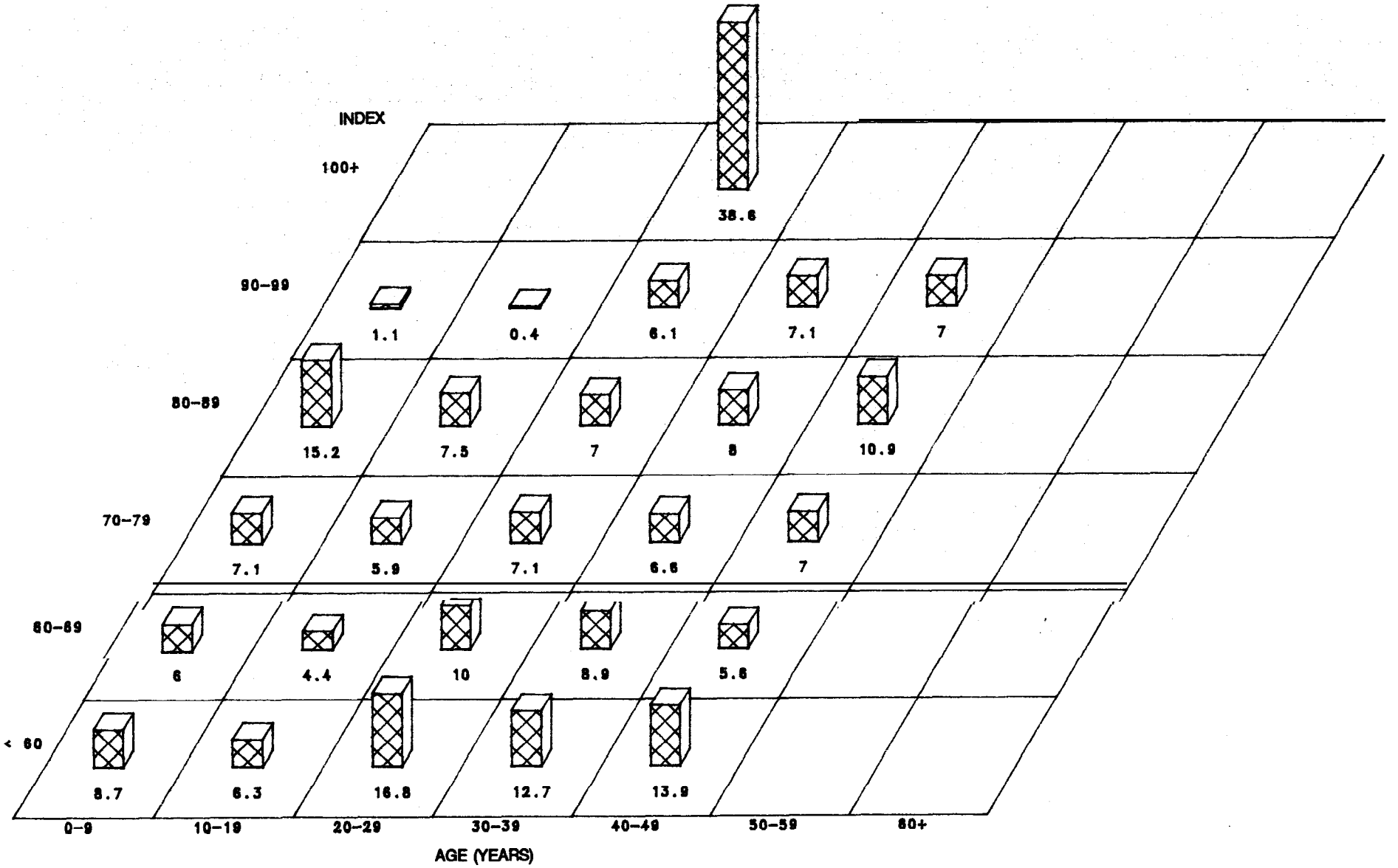


Figure 13C.--Percentage of basal area per acre of non-yellow-pine species, by site index and stand age, for planted slash pine stands in the Southeast. (Represents 5,956,523 acres. Georgia site index data treated as missing values.)

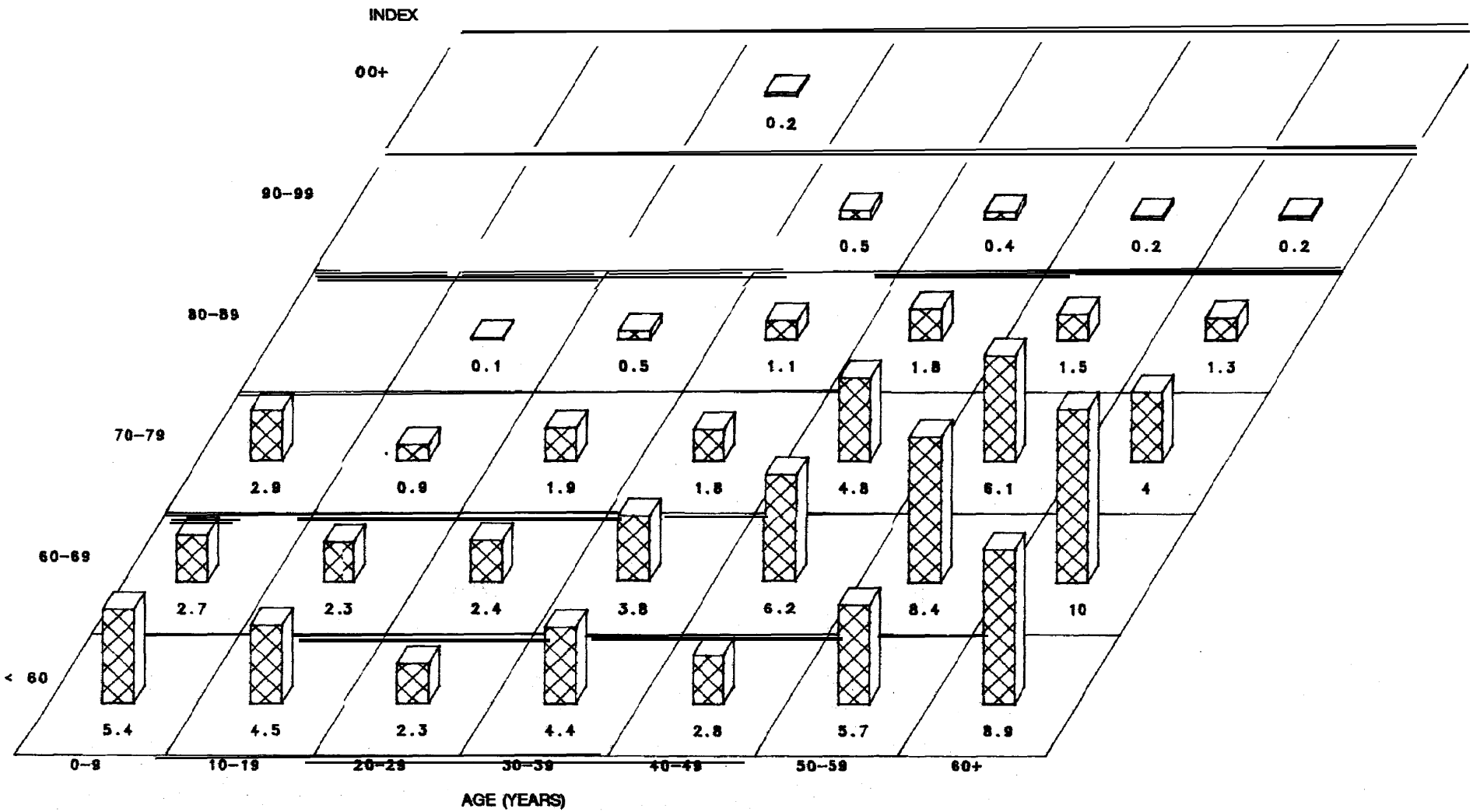


Figure 14A.--Percentage distribution of longleaf pine stands in the Southeast, by site index and stand age. (Represents 2,229,279 acres of natural stands and 183,595 acres of planted stands. Georgia site index data treated as missing values.)

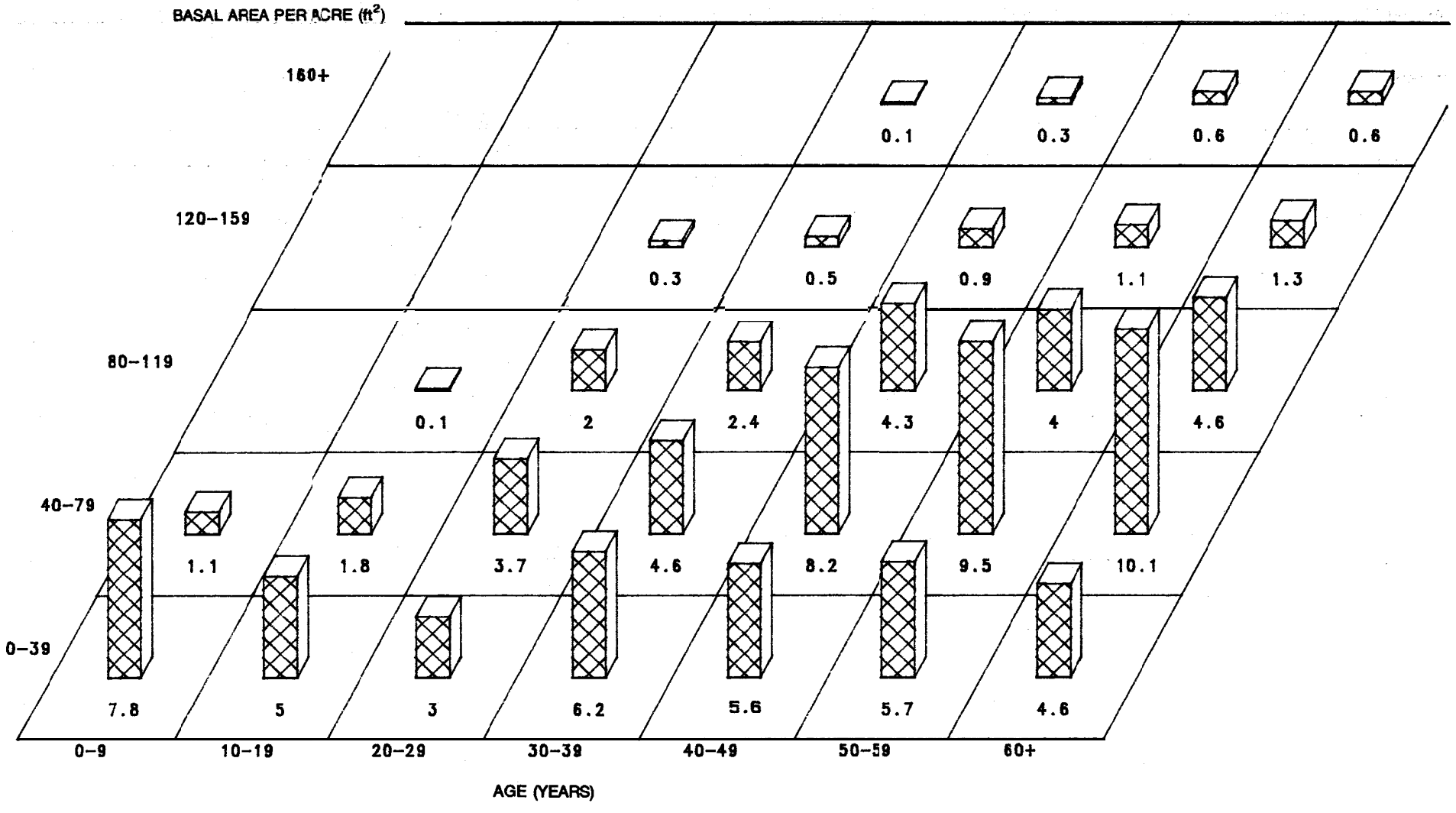


Figure 14B.--Percentage distribution of longleaf pine stands in the Southeast, by basal area per acre and stand age. (Represents 2,229,279 acres of natural stands, and 183,595 acres of planted stands.)

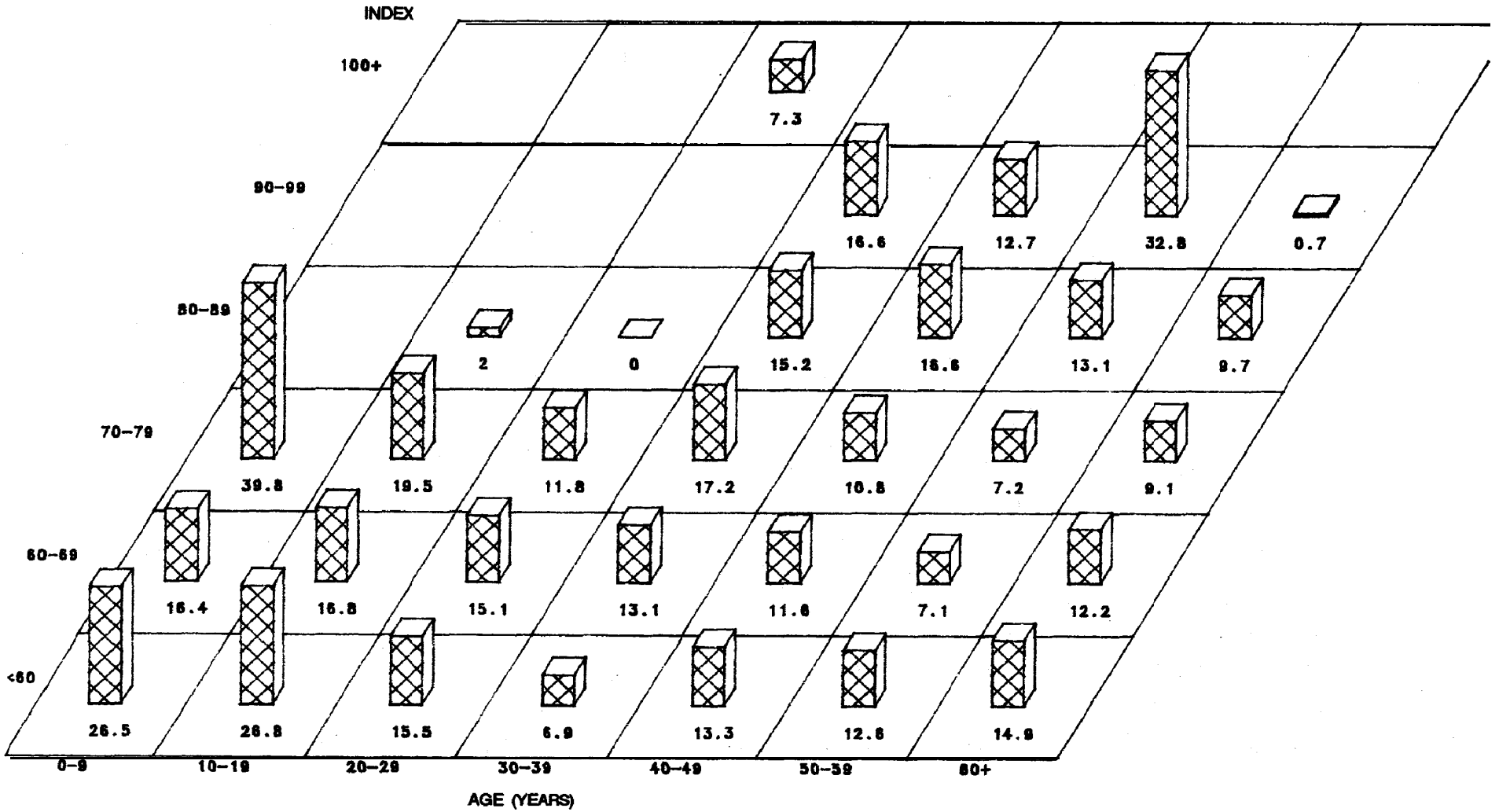


Figure 14C.--Percentage of basal area per acre of non-yellow-pine species, by site index and stand age, for longleaf pine stands in the Southeast. (Represents 2,229,279 acres of natural, and 183,595 acres of planted stands. Georgia site index data treated as missing values.)

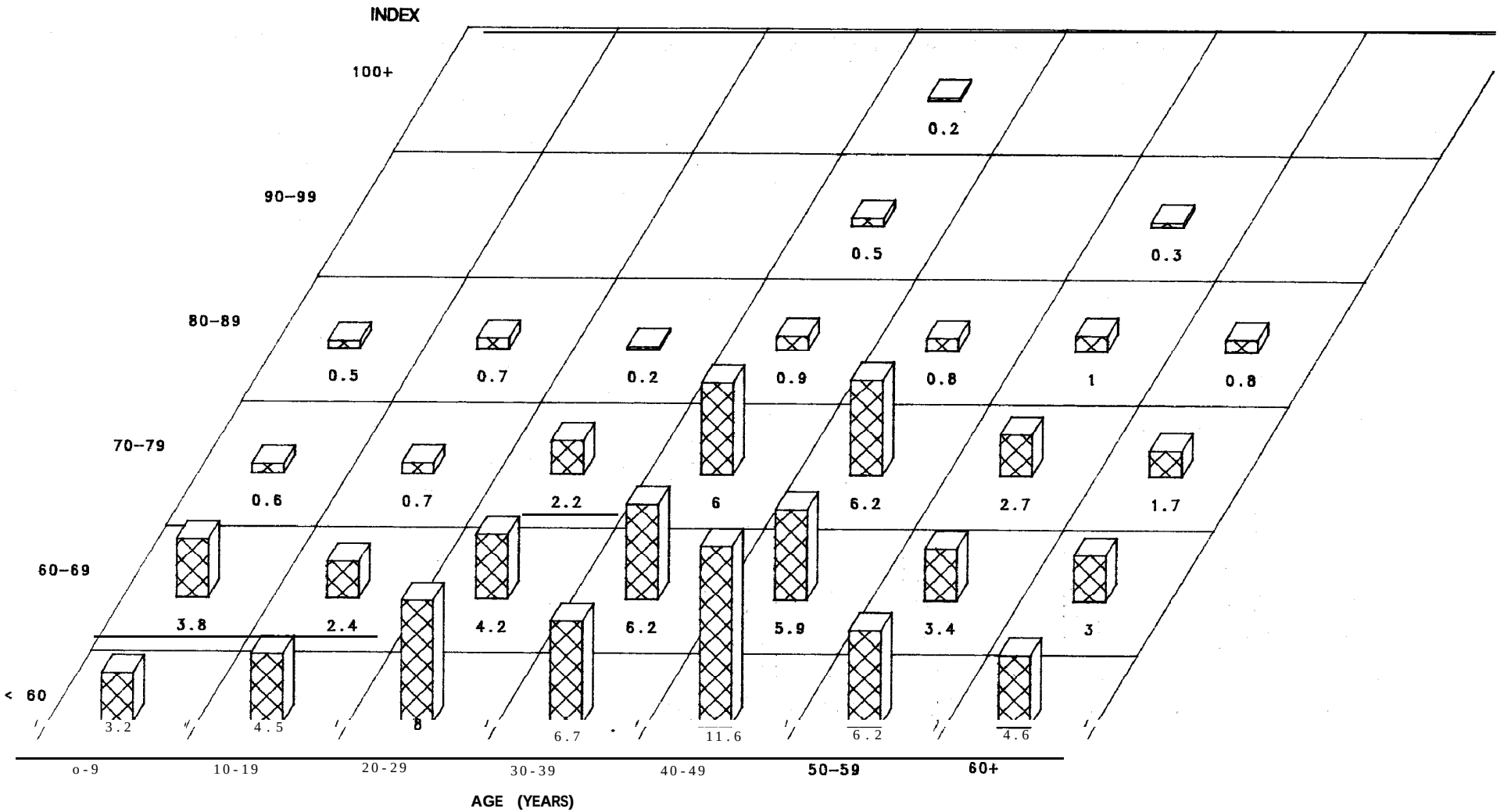


Figure 15A.--Percentage distribution of pond pine stands in the Southeast, by site index and stand age. (Represents 1,237,175 acres of natural stands, and 11,045 acres of planted stands. Georgia site index data treated as missing values.

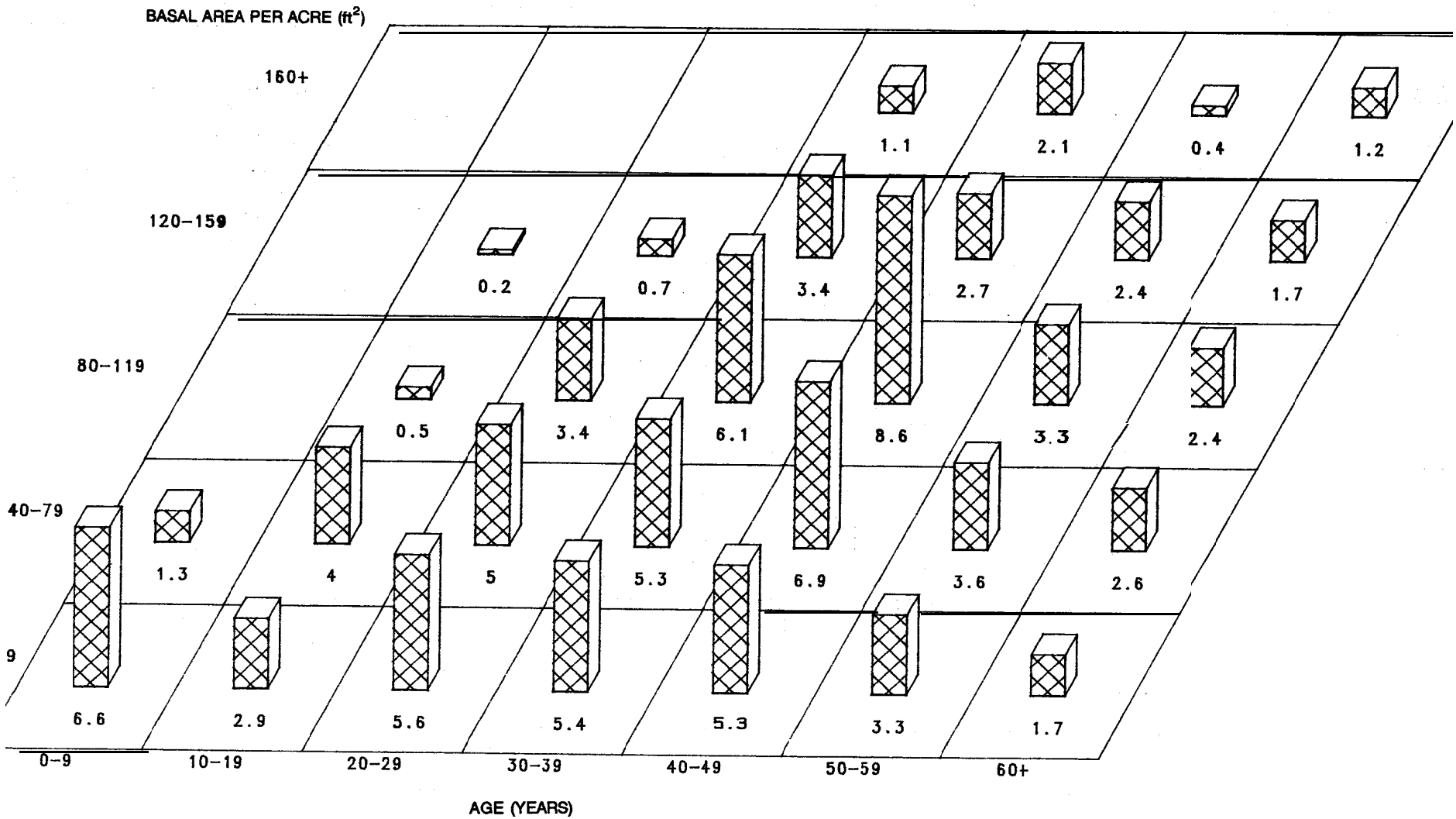


Figure 15B.--Percentage distribution of pond pine stands in the Southeast, by basal area per acre and stand age. (Represents 1,237,175 acres of natural stands, and 11,046 acres of planted stands.)

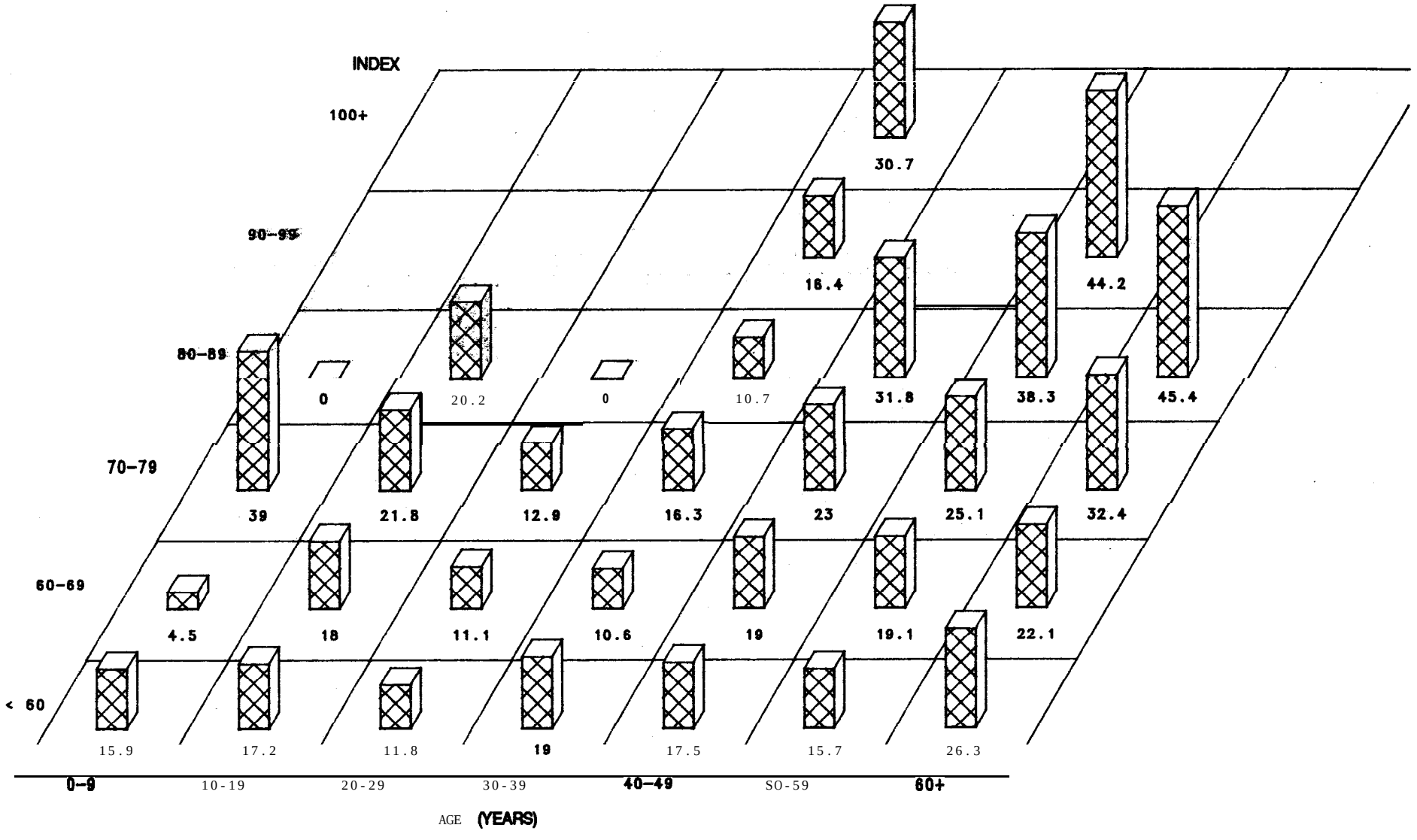


Figure 15C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for pond pine in the Southeast. (Represents 1,237,175 acres of natural stands, and 11,046 acres of planted stands. Georgia site index data treated as missing values.)

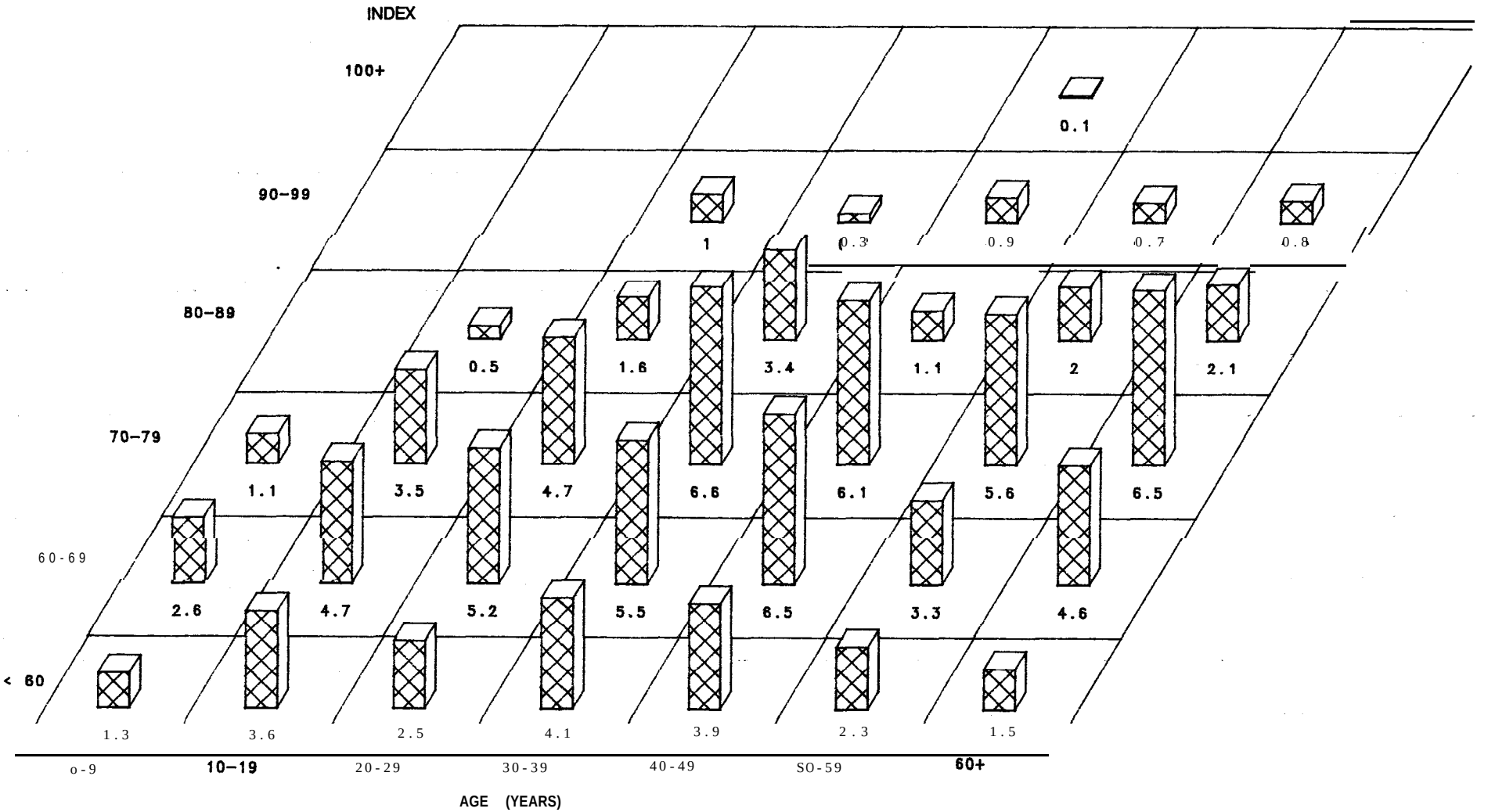


Figure 16A.–Percentage distribution of shortleaf pine stands in the Southeast, by site index and stand age. (Represents 1,941,495 acres of natural stands, and 19,991 acres of planted stands. Georgia site index data treated as missing values.)

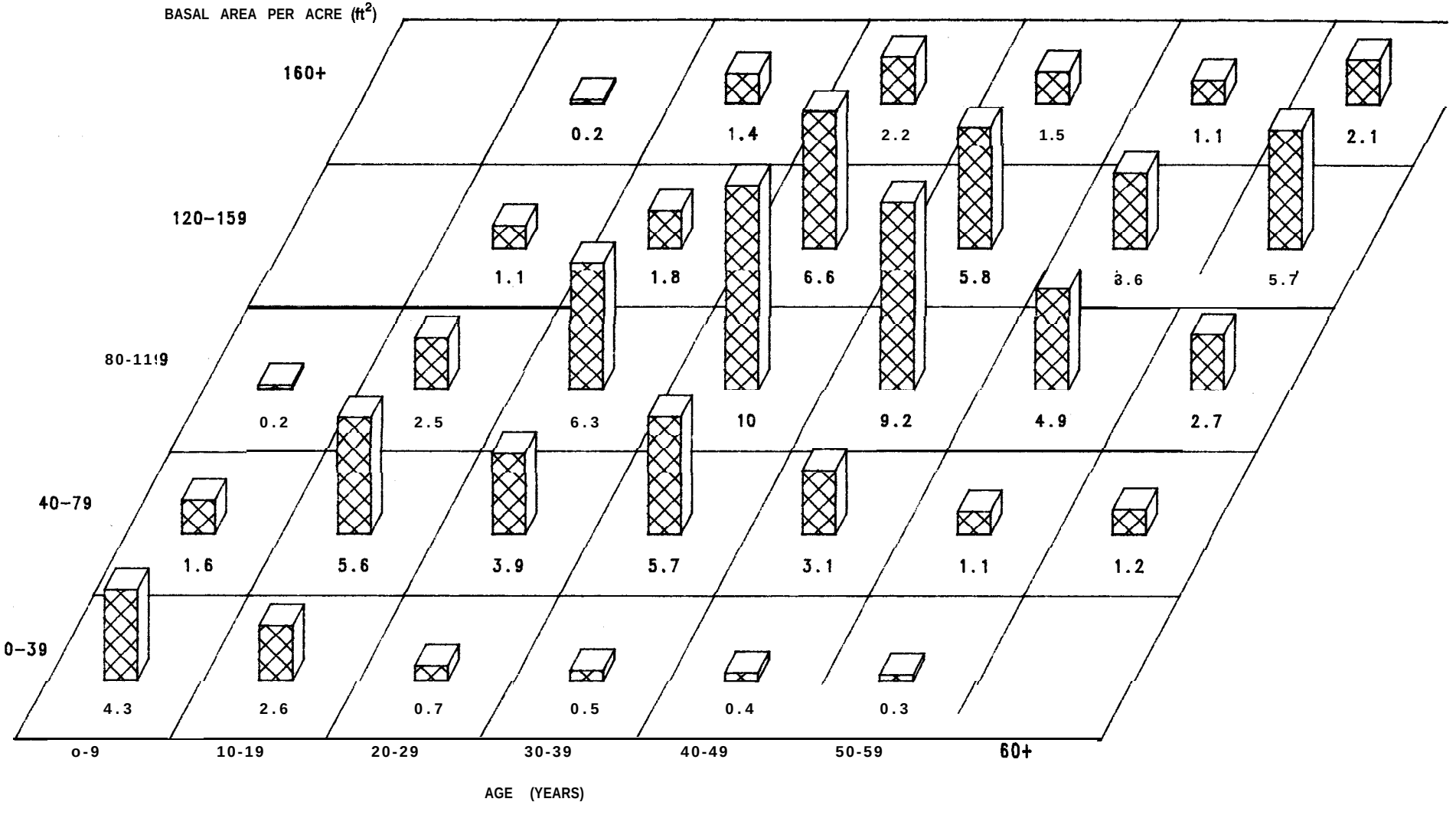


Figure 16B.–Percentage distribution of shortleaf pine stands in the Southeast, by basal area per acre and stand age. (Represents 1,941,495 acres of natural stands, and 19,981 of planted stands.)

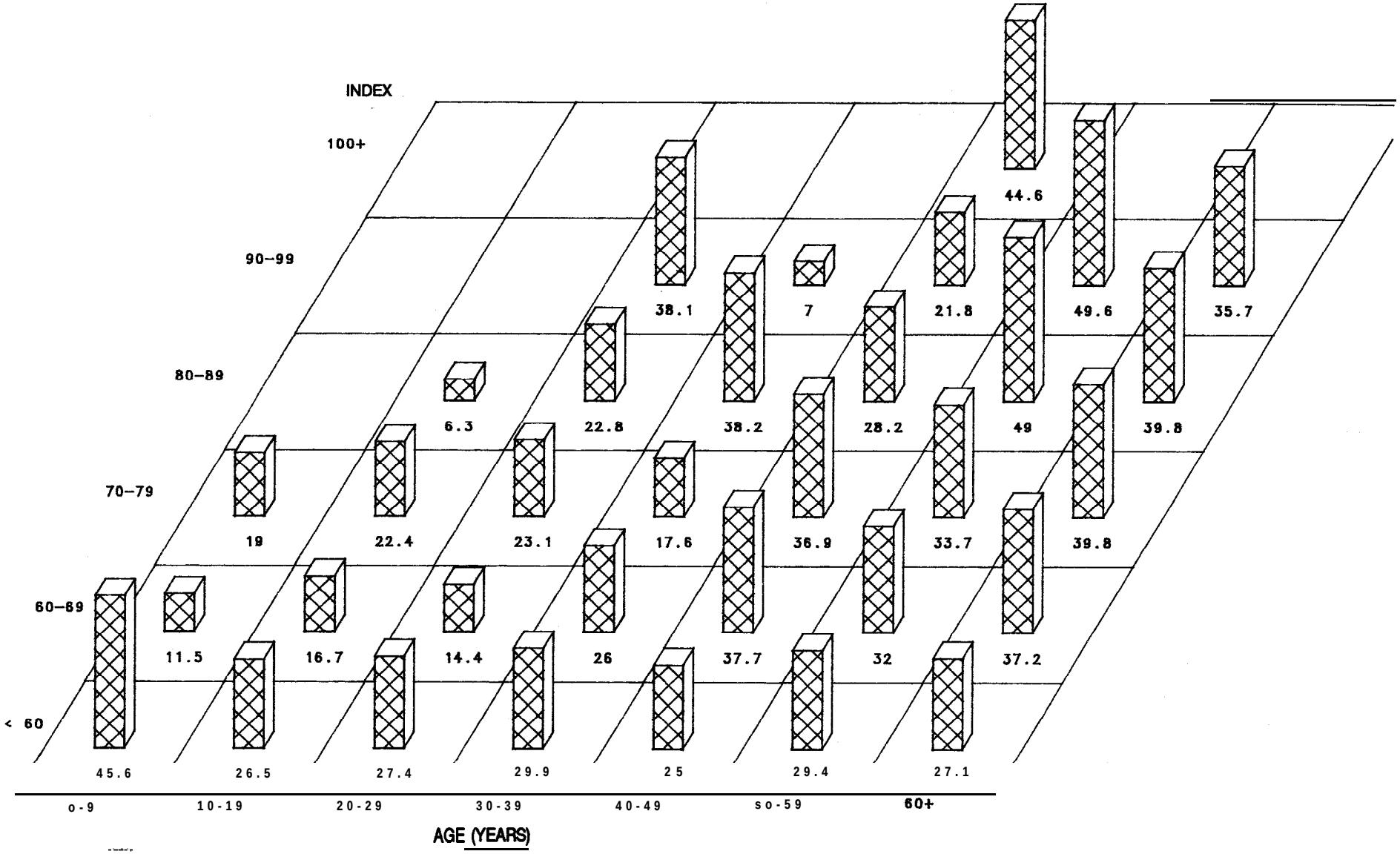
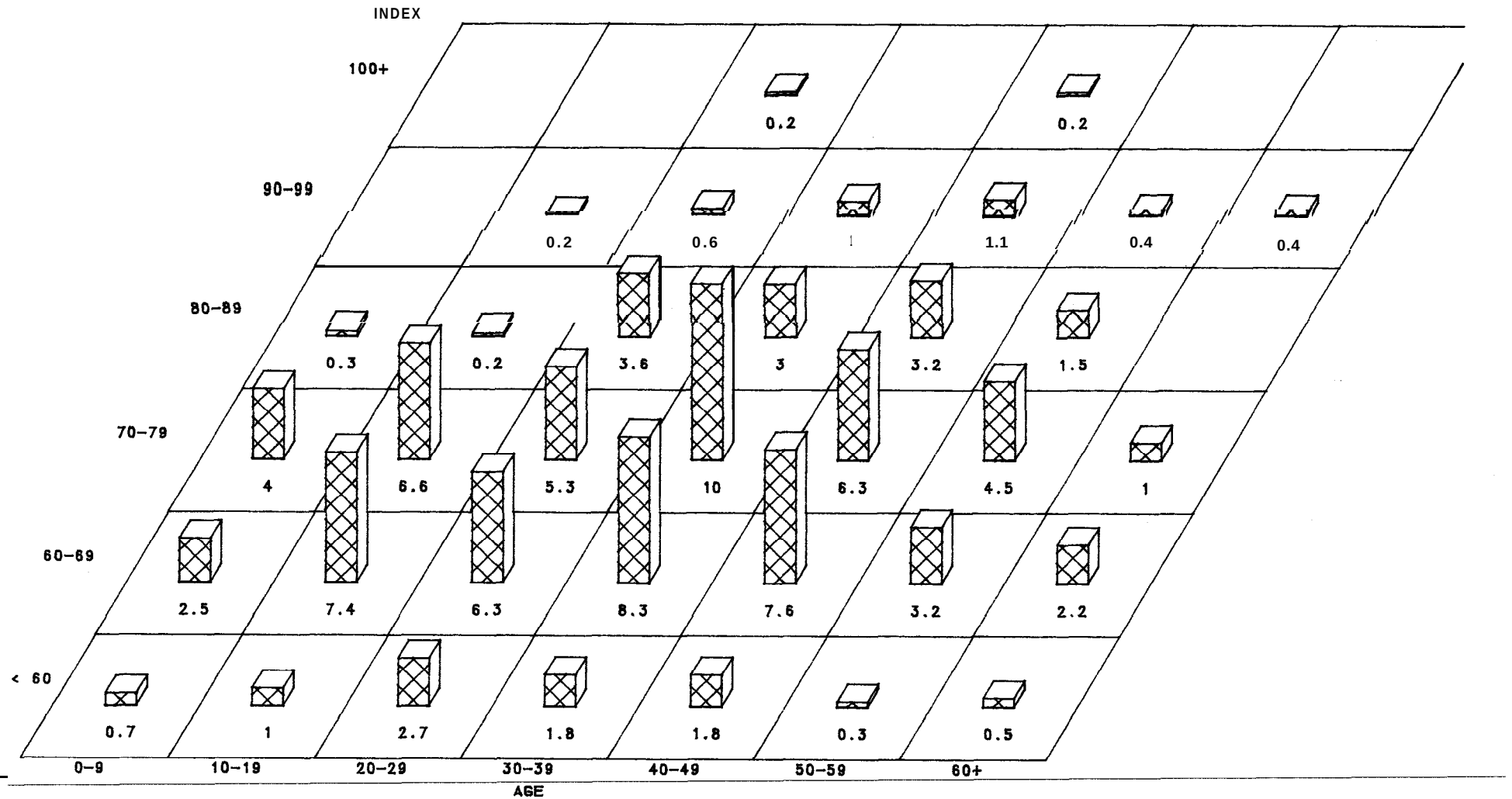


Figure 16C.--Percentage of basal area in non-yellowpine species, by site index and stand age; for shortleaf pine stands in the Southeast (Represents 1,941,495 acres of natural stands, and 19,981 acres of planted stands. Georgia site index data treated as missing values.)



Fiiure **17A.–Percentage** distribution of Virginia pine stands in lhe **Southeast,** by site index and stand age. (Represents **2,329,237** acres of **natural** stands, and **52,738 acres** of planted stands. Georgia site index data treated as missing values.)

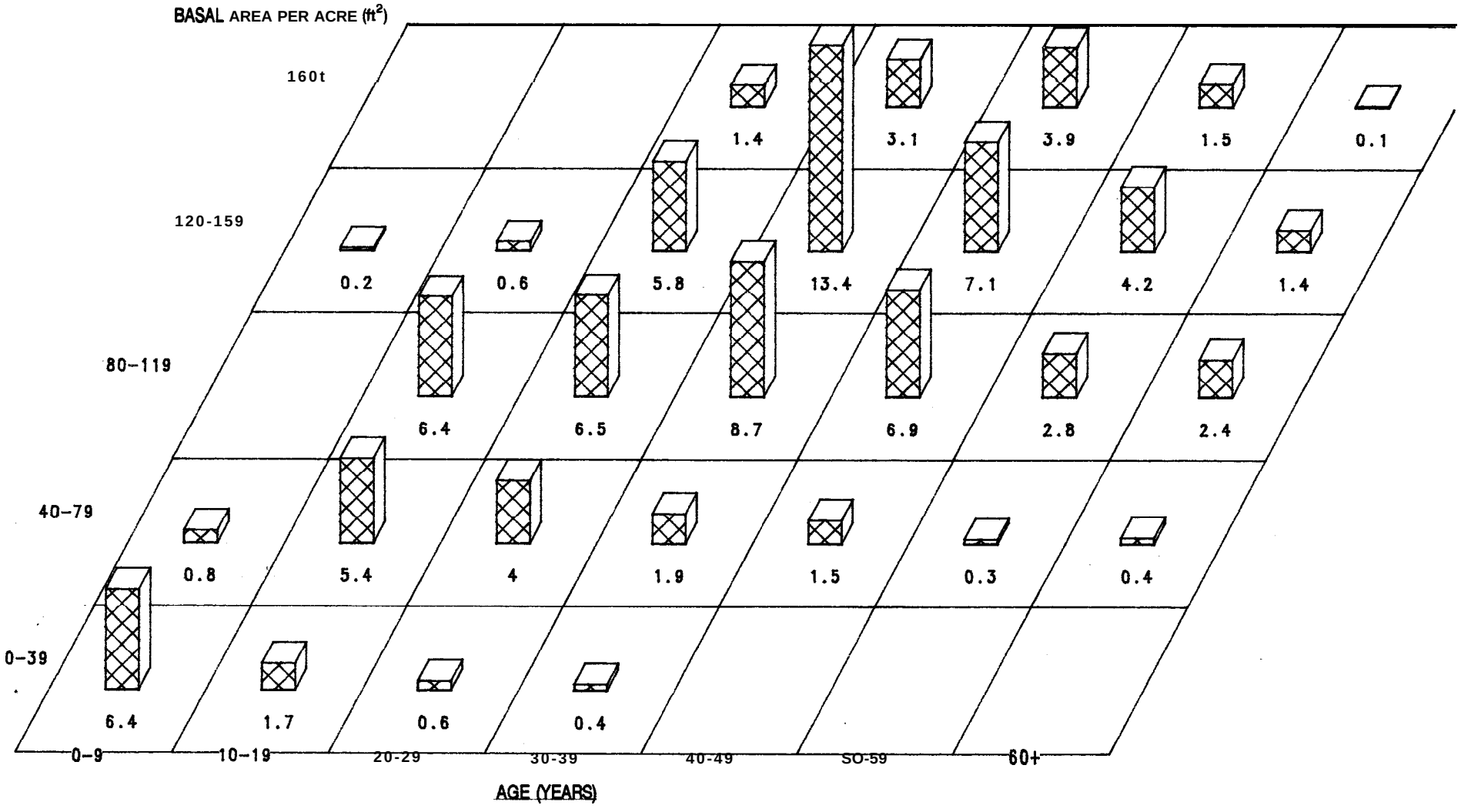


Figure 17B.--Percentage distribution of Virginia pine stands in the Southeast, by basal area per acre and stand age. (Represents 2,329,237 acres of natural stands, and 52,736 acres of planted stands.)

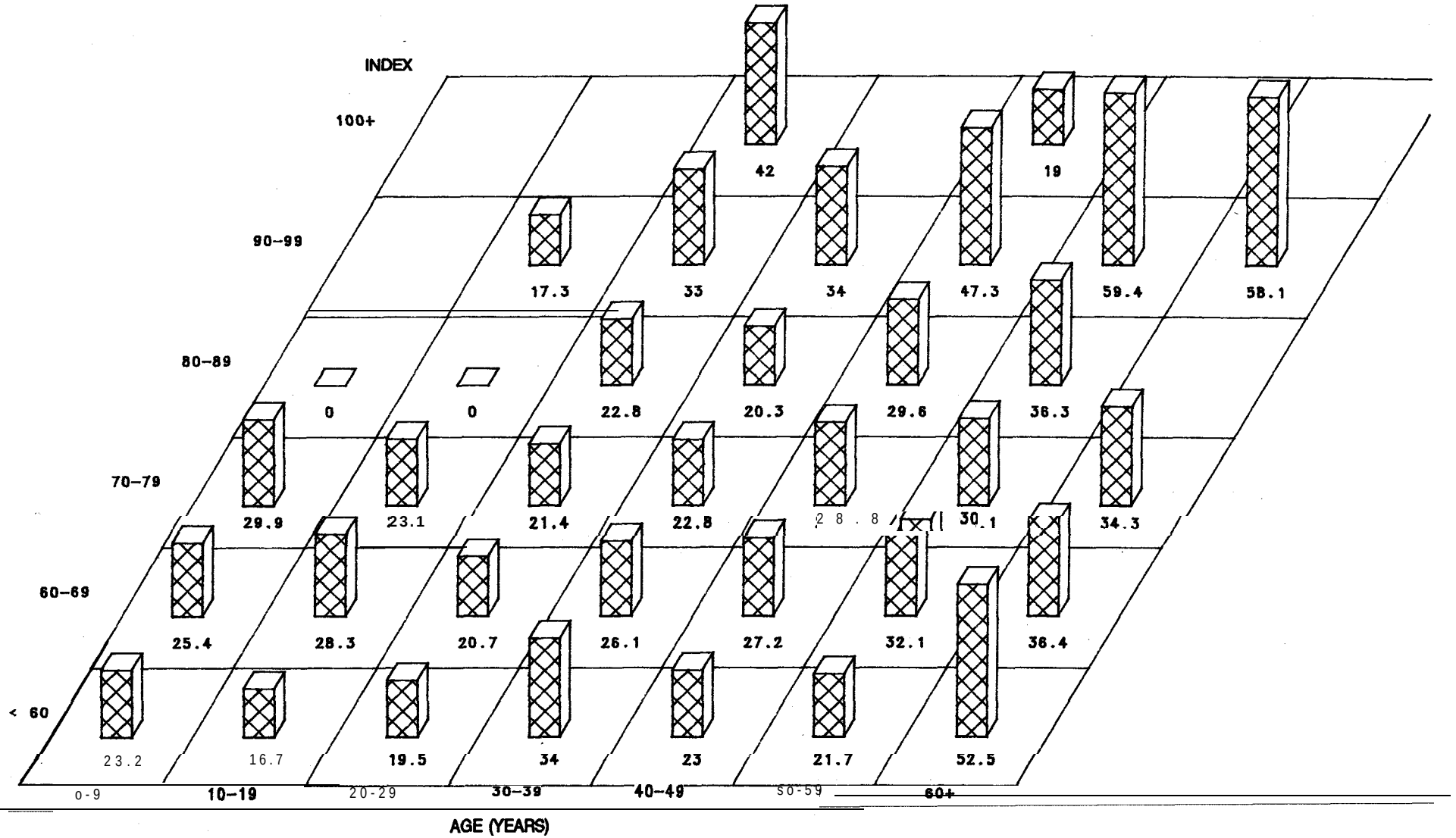


Figure 17C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for Virginia pine stands in the Southeast (Represents 2,329,237 acres of natural stands, and 52,738 acres of planted stands. Georgia site index data treated as missing values.)

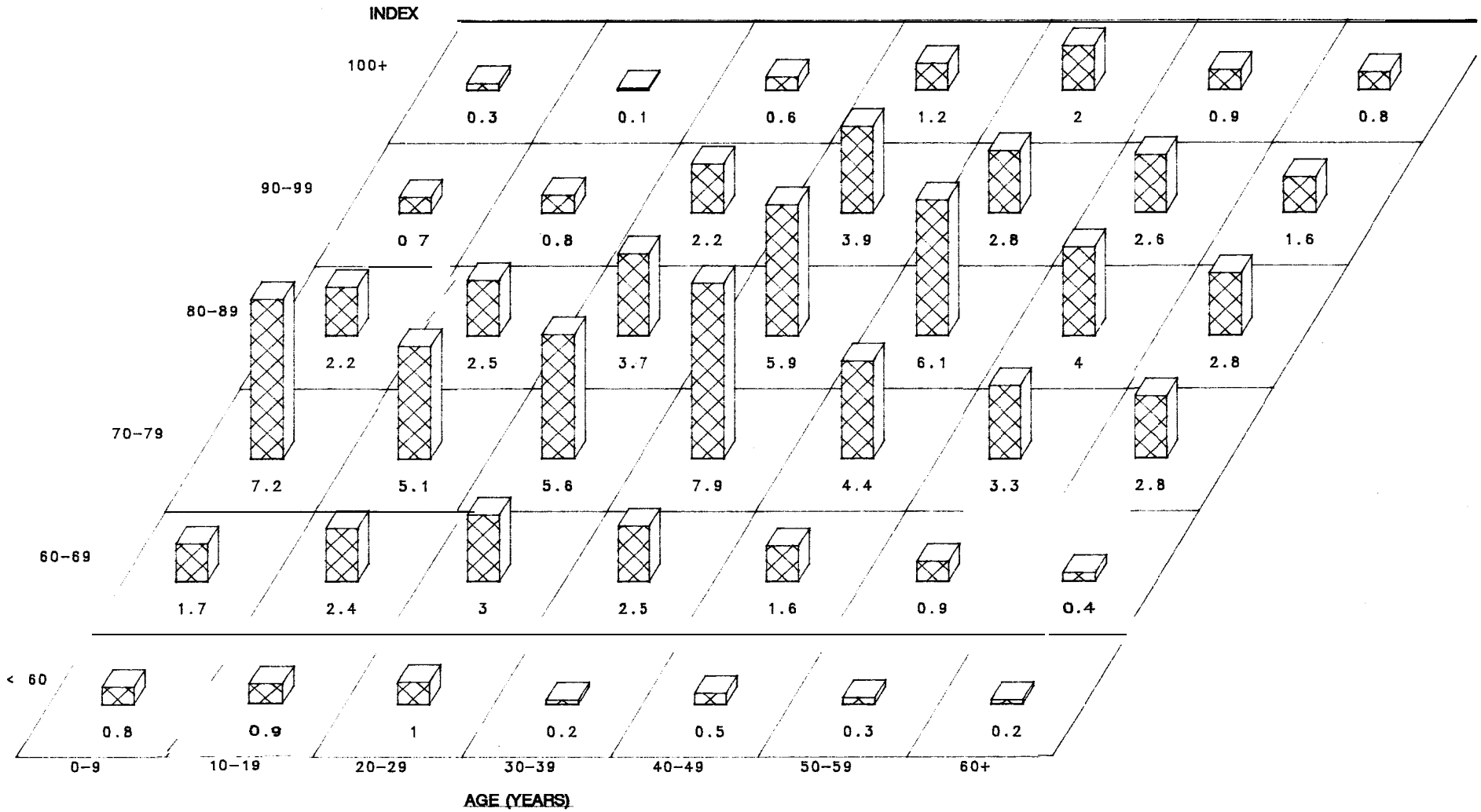


Figure 18A.--Percentage distribution of natural loblolly pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 4,325,638 acres. Georgia site index data treated as missing values.)

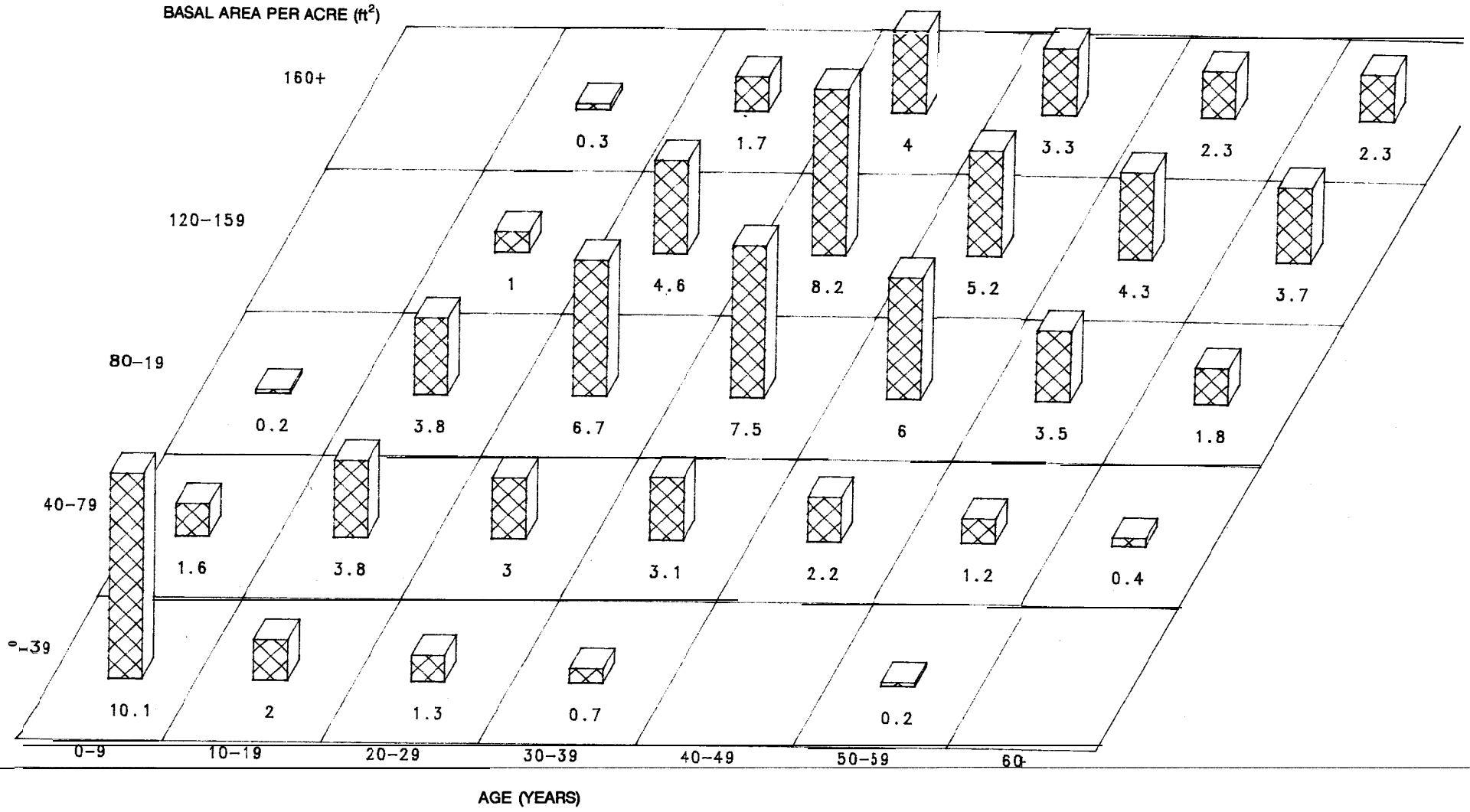


Figure 18B.--Pcentage distribution of natural loblolly pine stands in the Coastal Plain region of the Southeast, by basal area per ac and stand age(Represents 4,325,638 acres.)

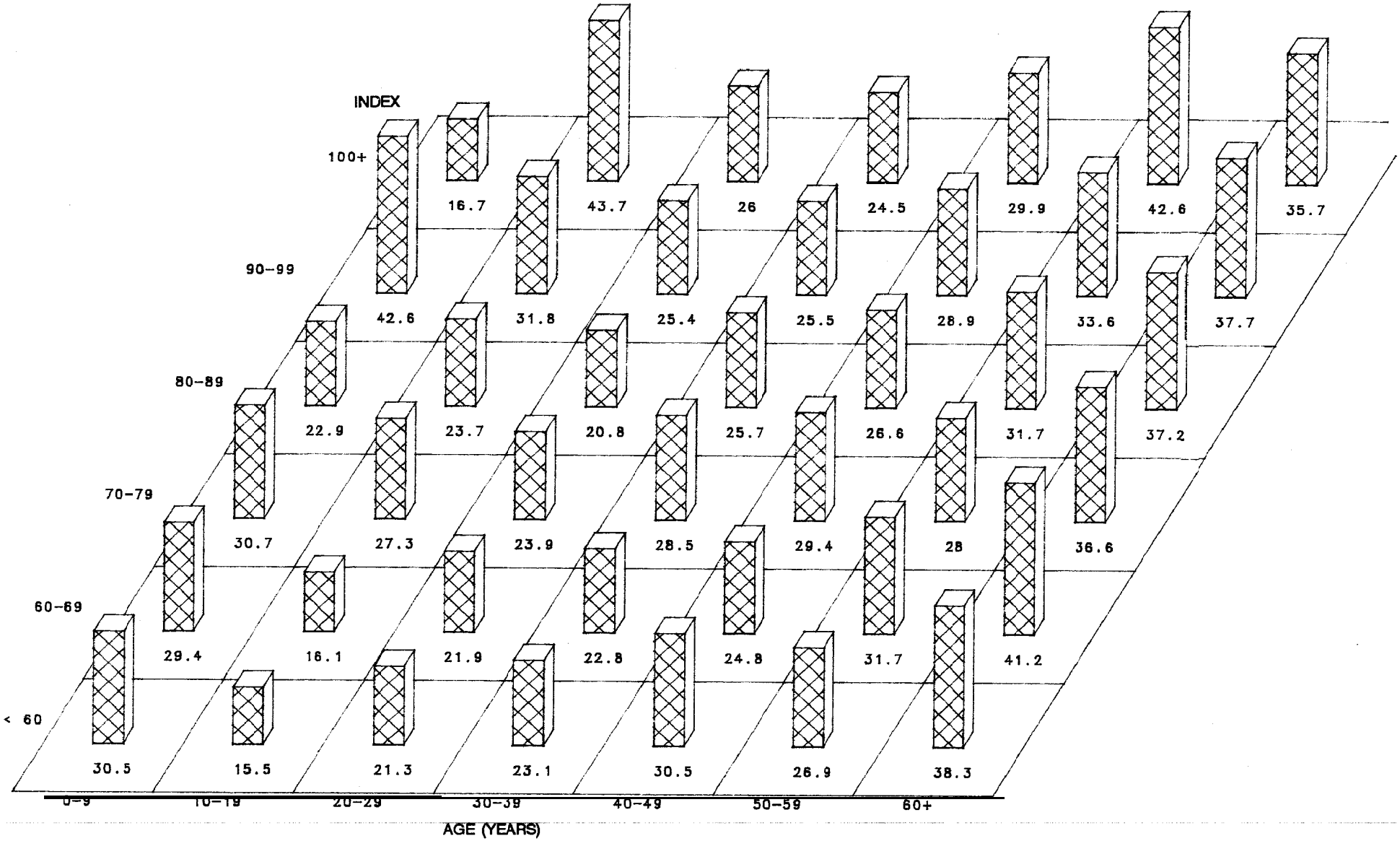


Figure 18C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for natural loblolly pine stands in the Coastal Plain region of the Southeast. (Represents 4,325,638 acres. Georgia site index data treated as missing values.)

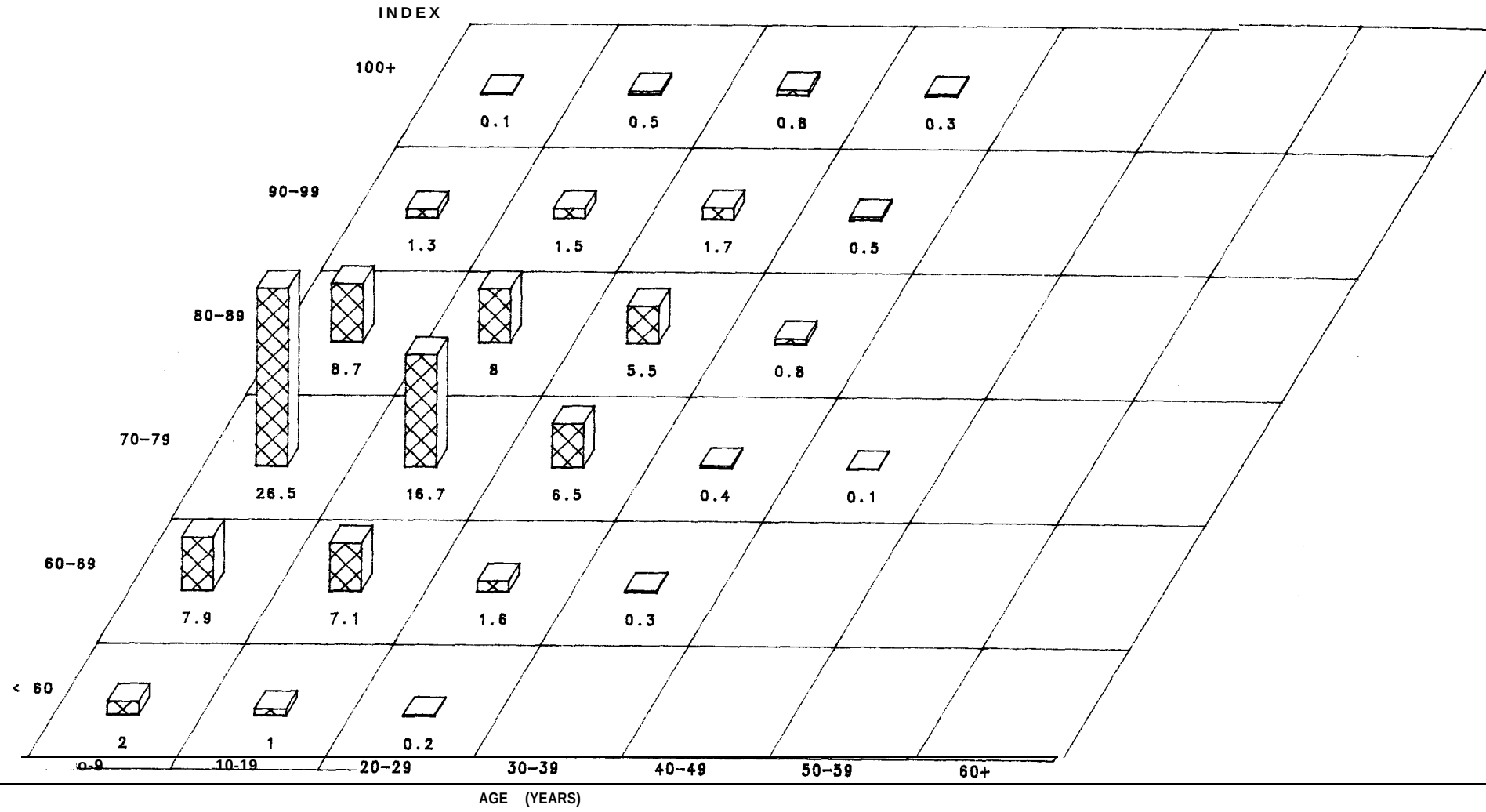


Figure 19A.--Percentage distribution of planted loblolly pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 3,249,672 acres. Georgia site index data treated as missing values.)

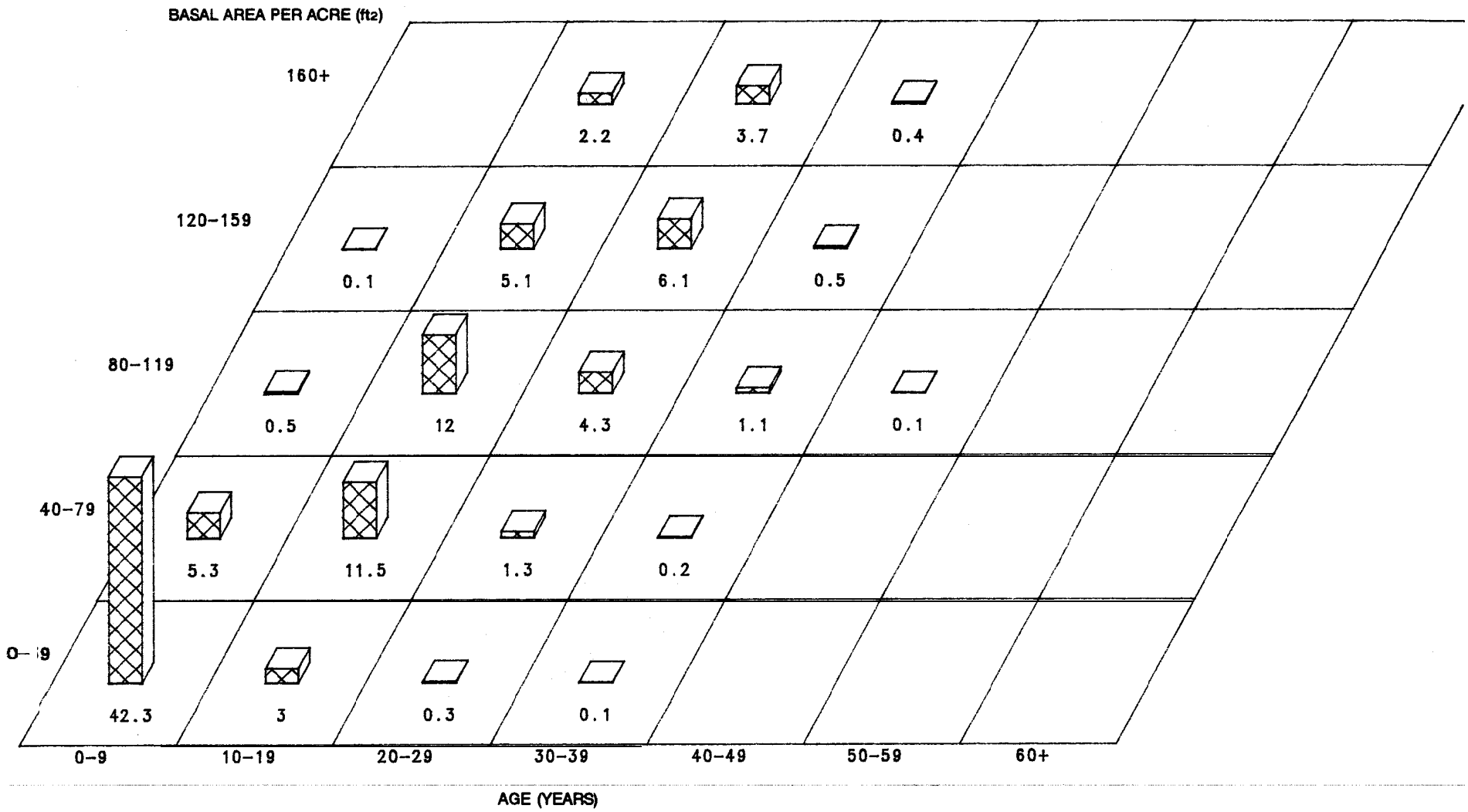


Figure 19B.–Percentage distribution of planted loblolly pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 3,249,672 acres.)

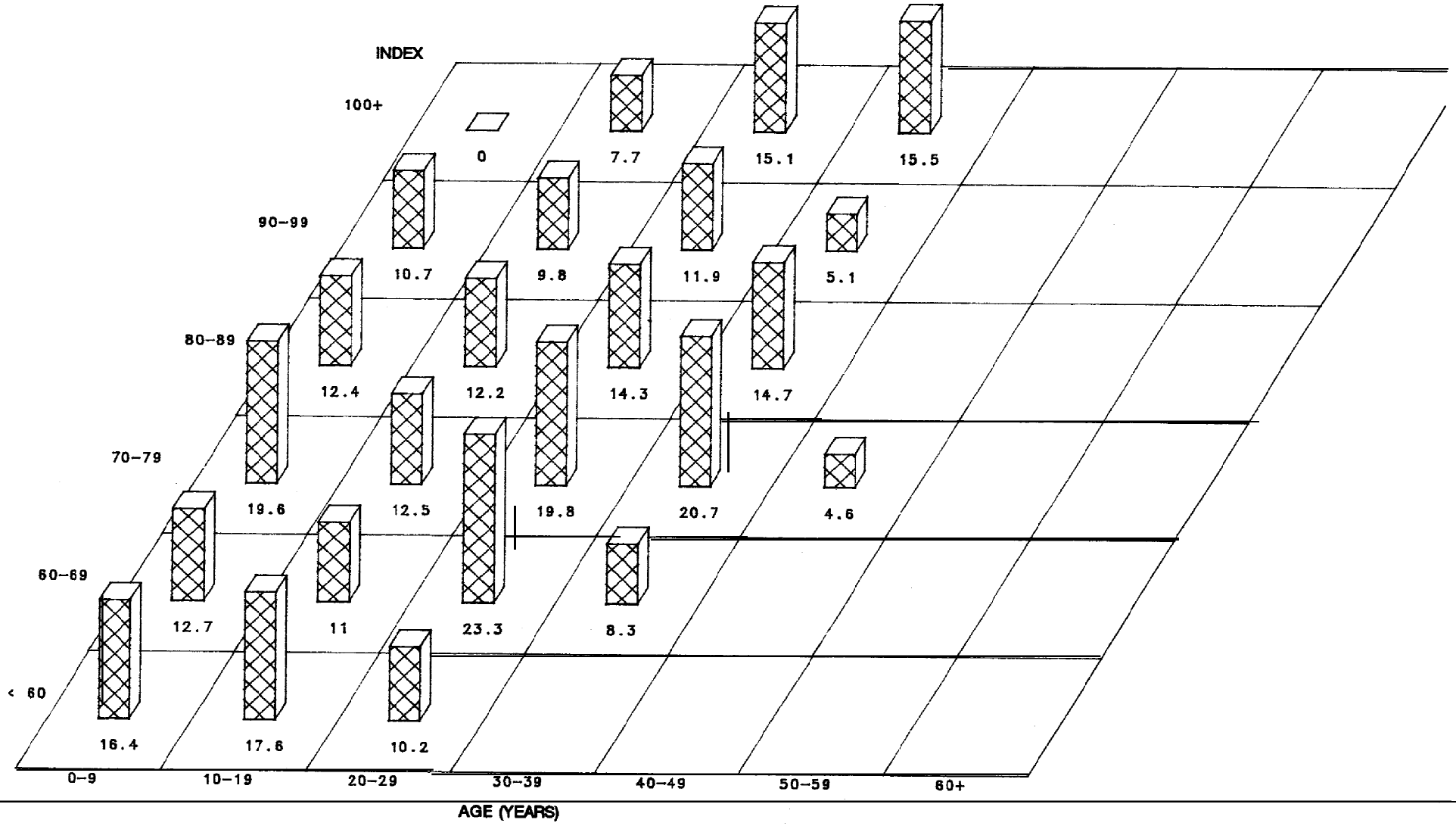


Figure 19C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted loblolly pine stands in the Coastal Plain region of the Southeast. (Represents 3,249,672 acres. Georgia site index data treated as missing values.)

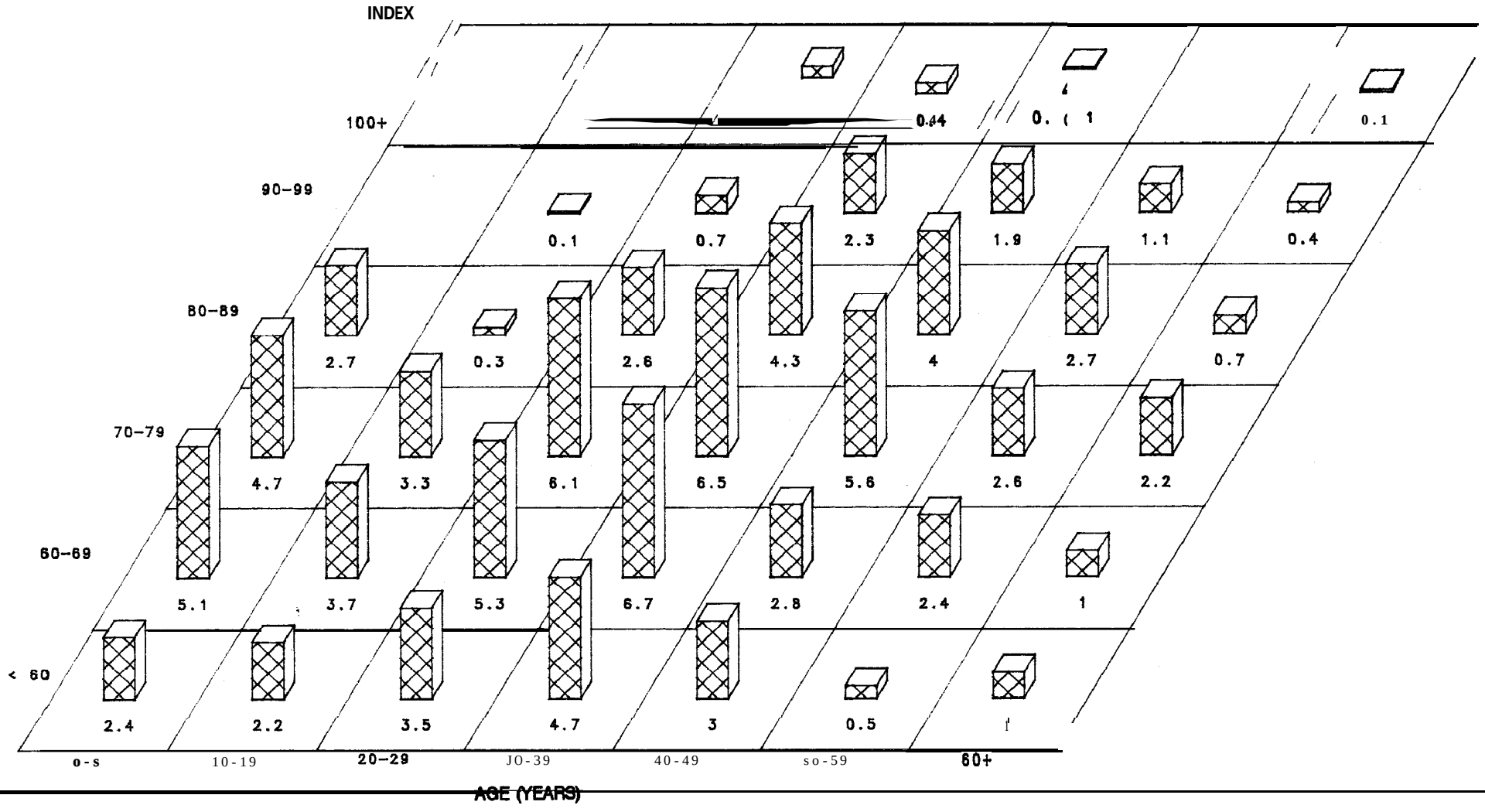


Figure 20A.--Percentage distribution of natural slash pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 3,818,356 acres. Georgia site index data treated as missing values.)

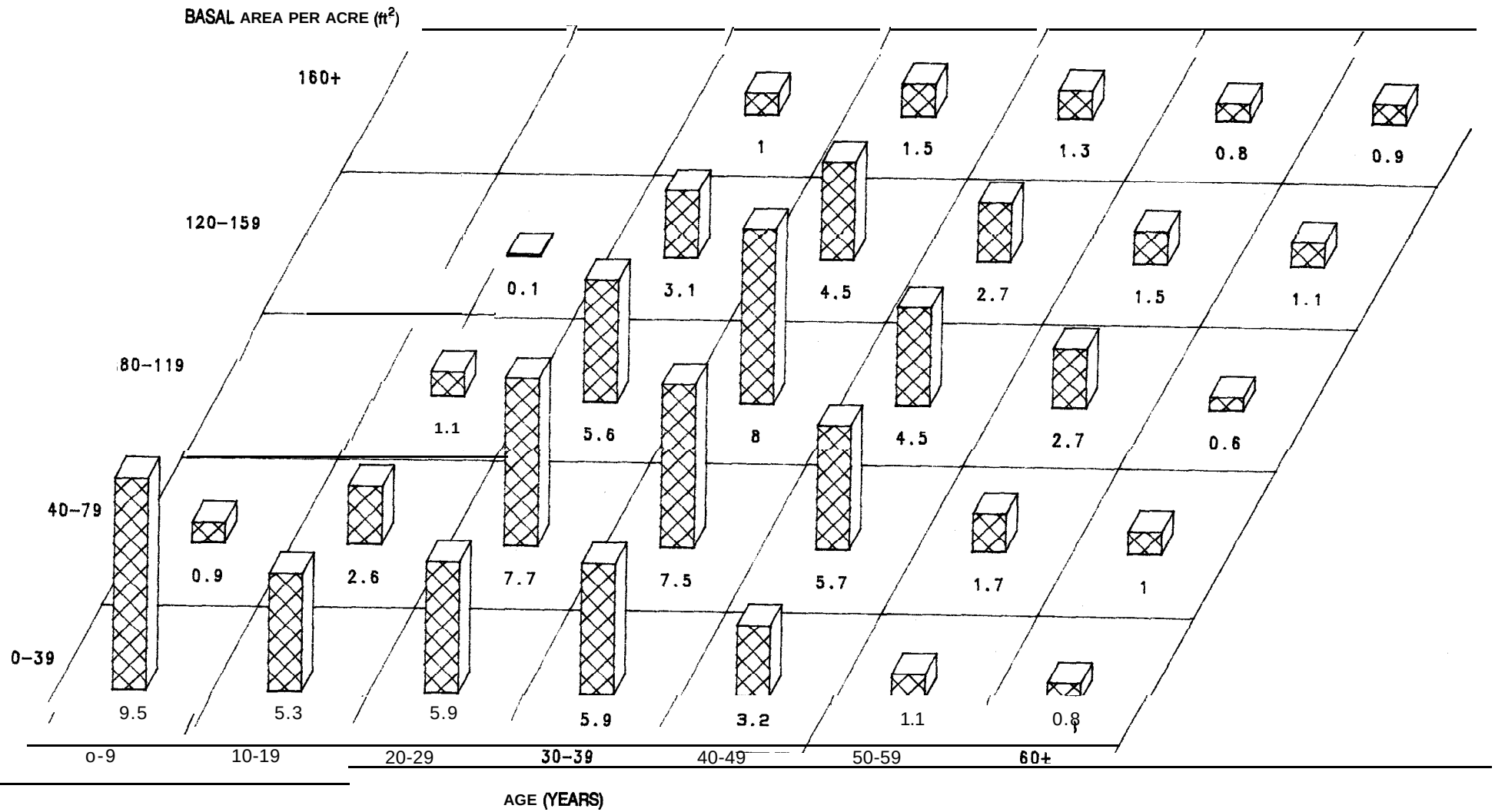


Figure 20B.--Percentage distribution of natural slash pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 5818,358 acres.)

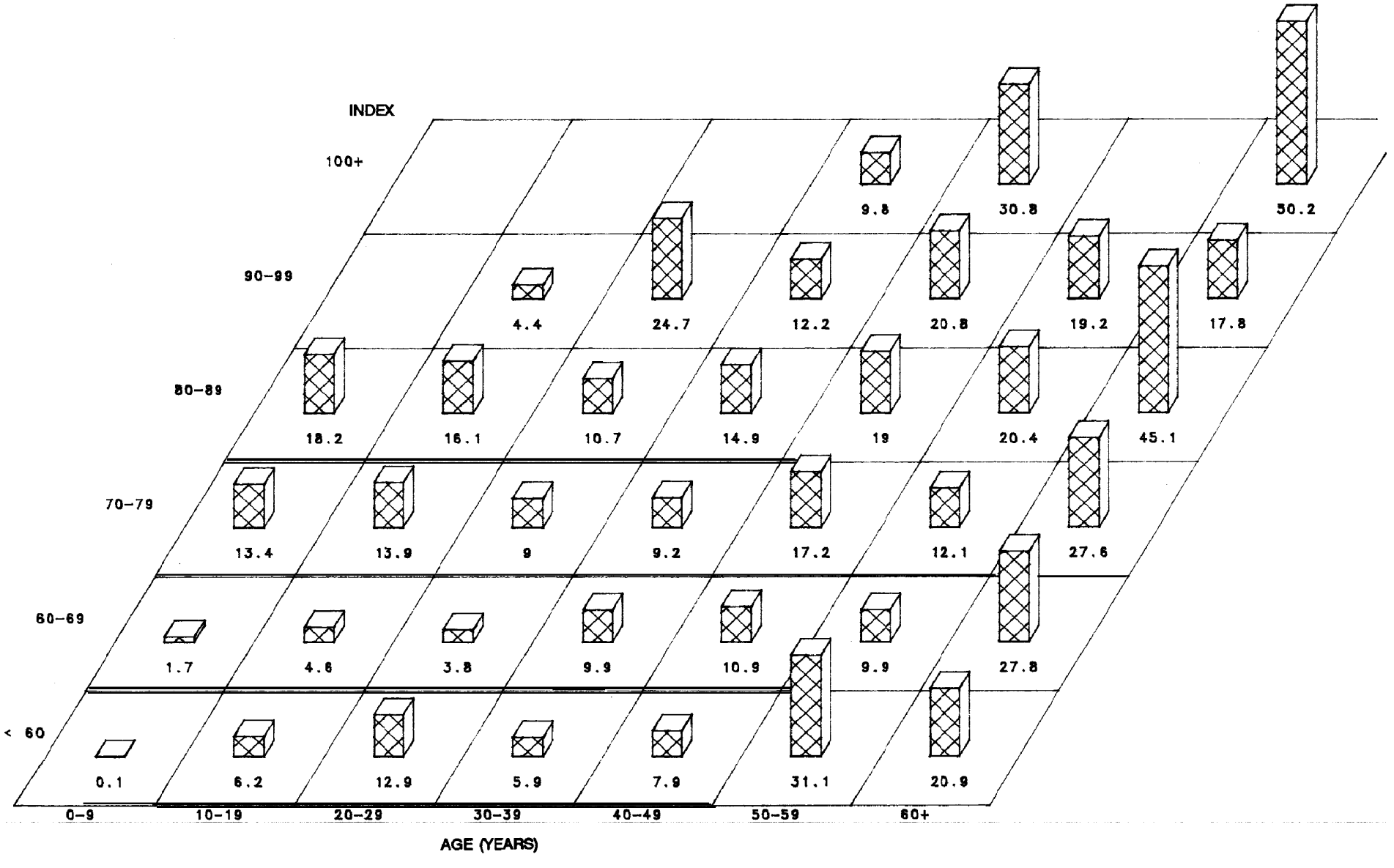


Figure 20C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for natural slash pine stands in the Coastal Plain region of the Southeast. (Represents 3,818,356 acres. Georgia site index data treated as missing values.)

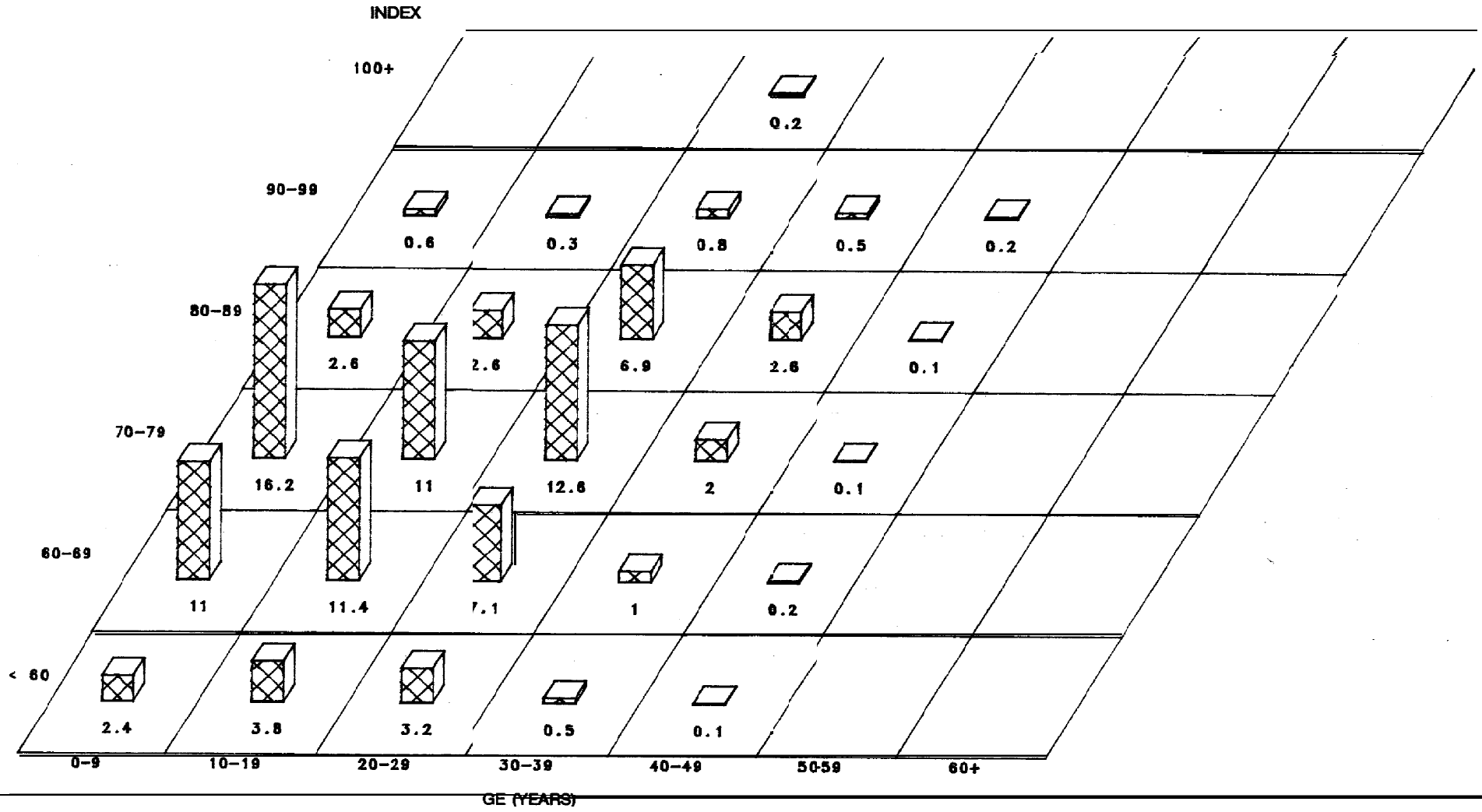


Figure 21A.--Percentage distribution of planted slash pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 5,619,115 acres. Georgia site index data treatec as missing values.)

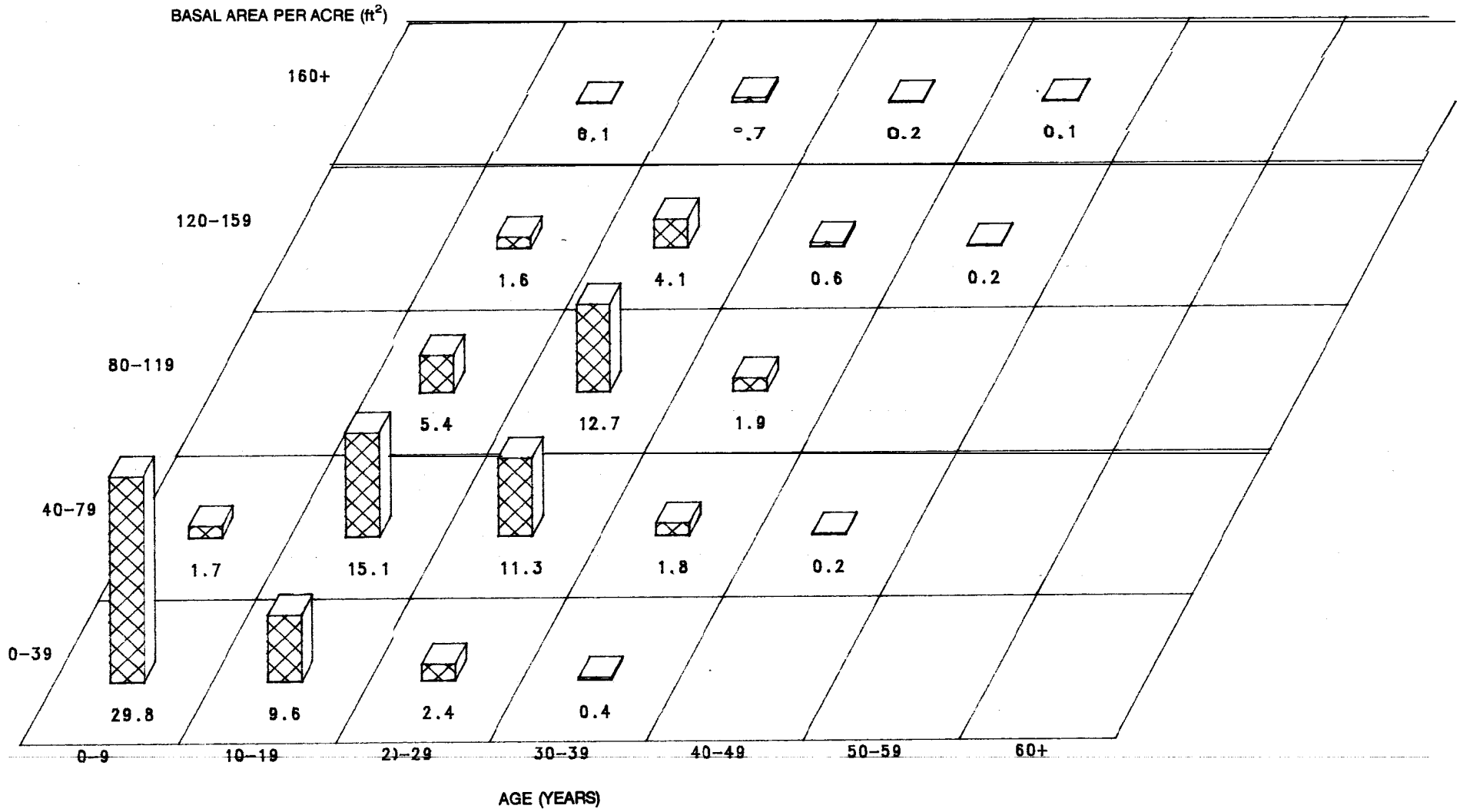


Figure 21B.–Percentage distribution of planted slash pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 5,619,115 acres.)

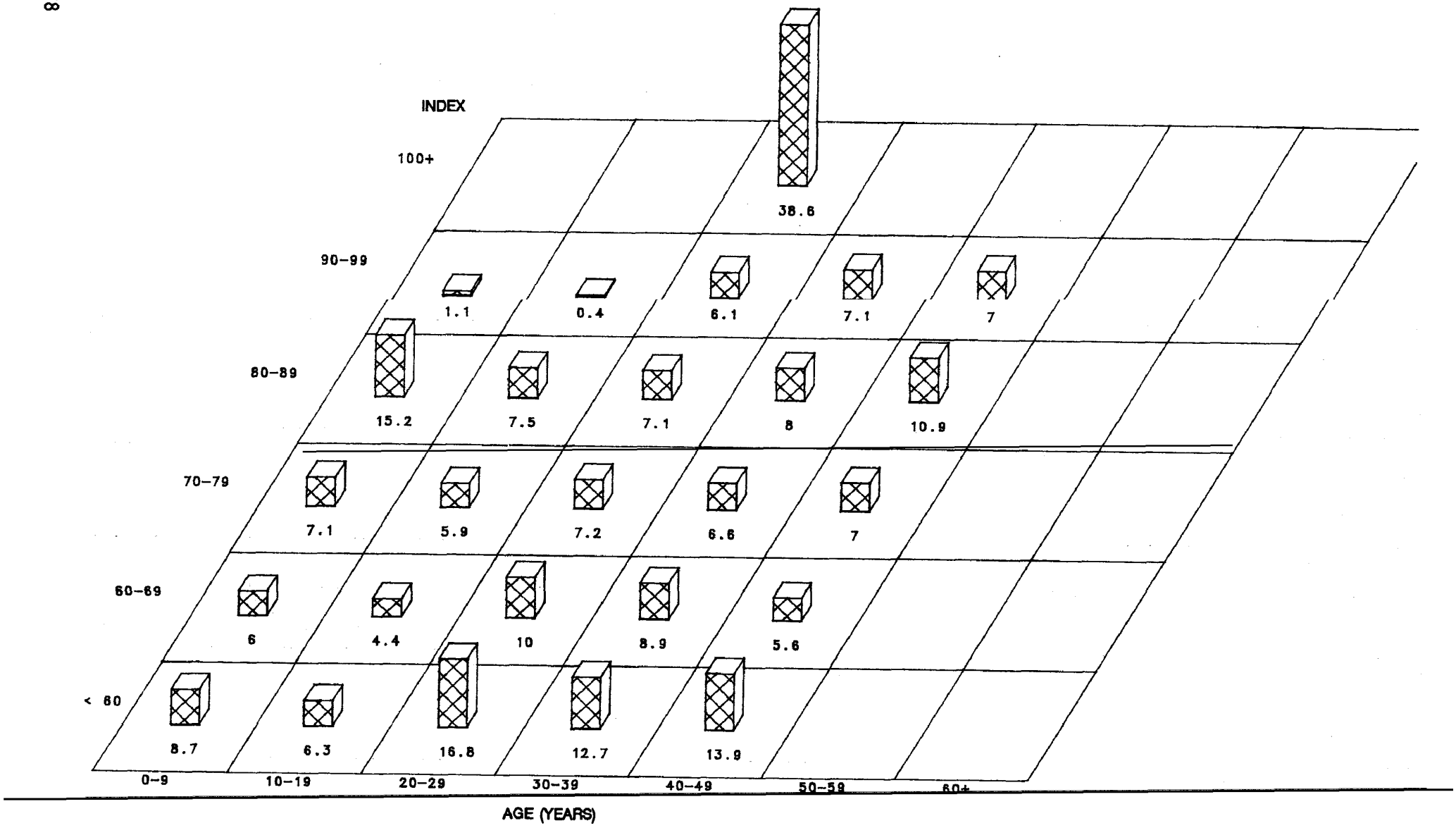


Figure 21 C.-Percentage of basal area per acre in non-yellowpine species, by site index and stand age, for planted slash pine stands in the Coastal Plain region of the Southeast. (Represents 5,619,115 acres. Georgia site index data treated as missing values.)

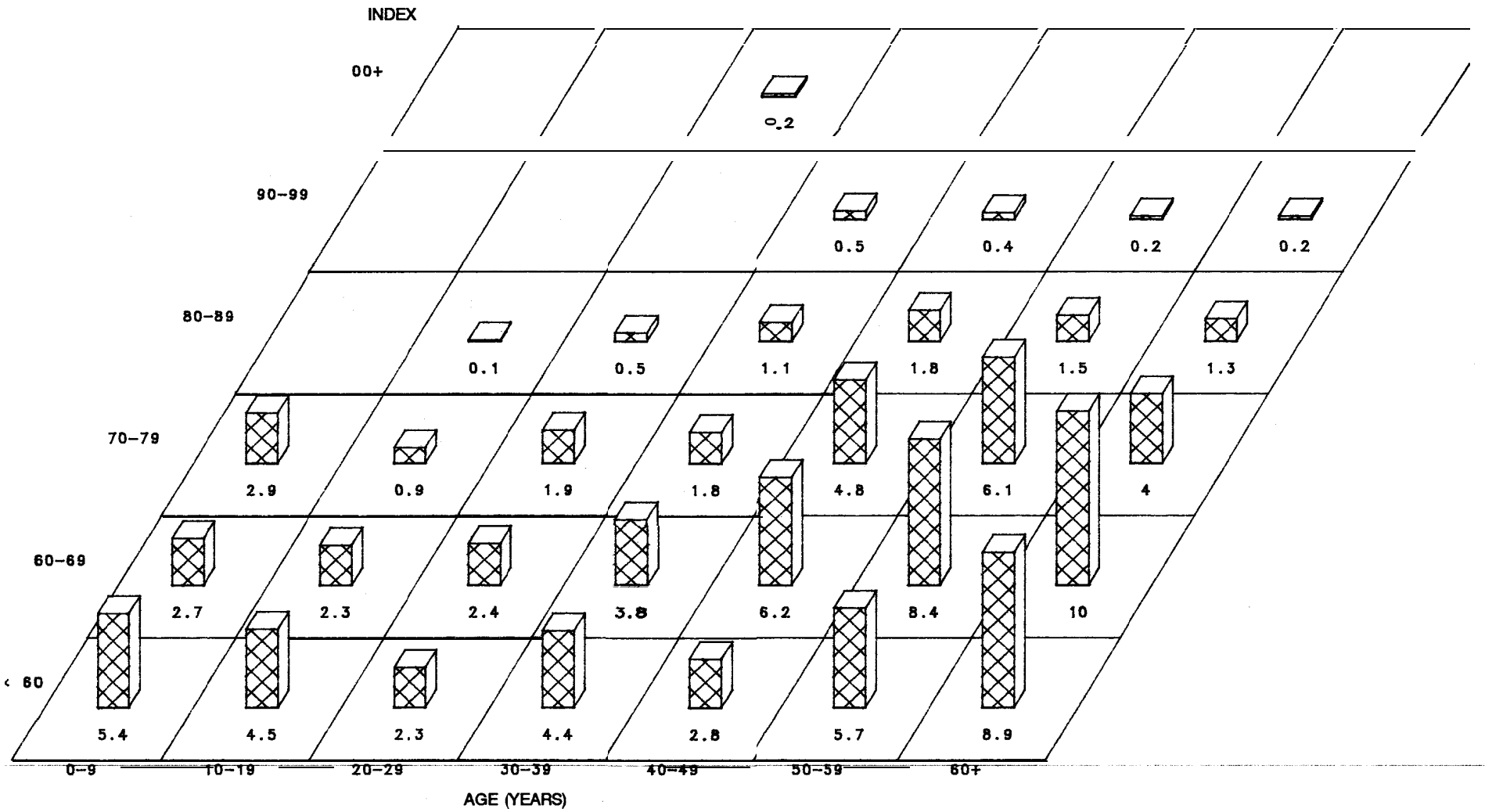
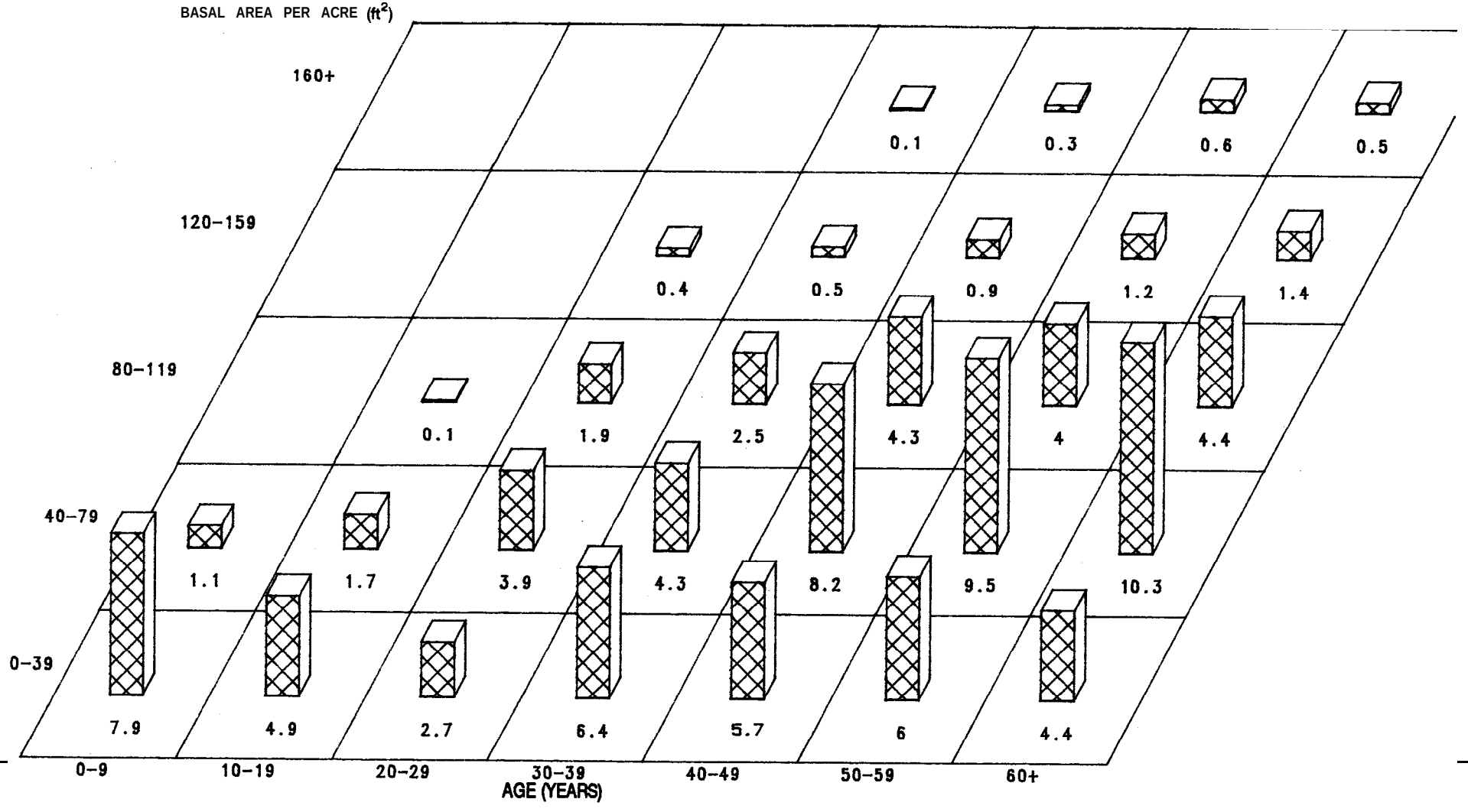


Figure 22A.--Percentage distribution of longleaf pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 2,125,067 acres of natural stands, and 183,595 acres of planted stands. Georgia site index data treated as missing values.)



Fiiure 22B.--Percentage diibution of longleaf pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 2,125,067 acres of natural stands, and 183,595 acres of planted stands.)

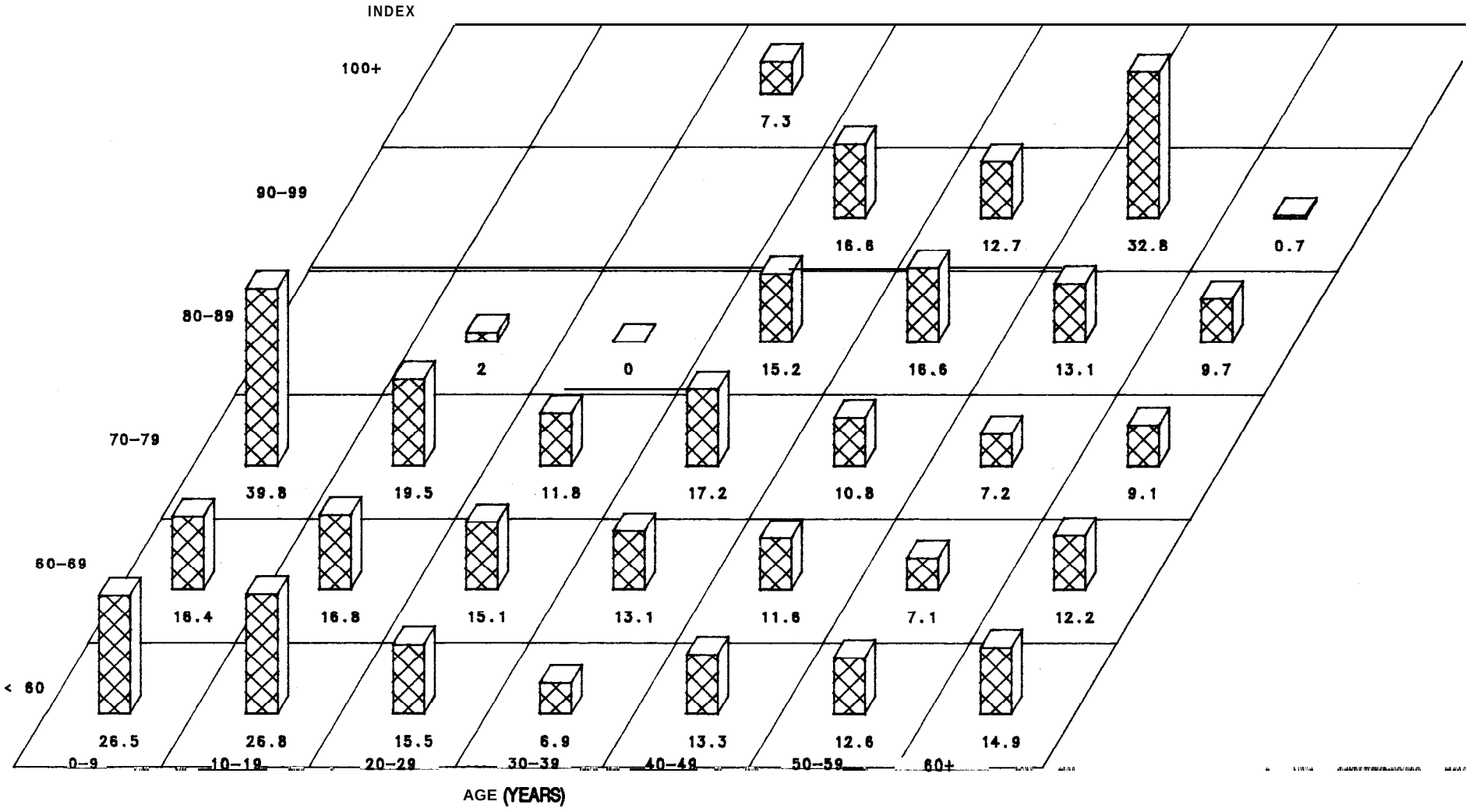


Figure 22C.–Percentage of basal area per acre in **non-yellow-pine species,** by **site** index and stand age, for **longleaf** pine stands in the **Coastal Plain region of the Southeast. (Represents 2,125,067** acres of **natural stands,** and 183,586 acres of planted stands. Georgia site **index** data treated as **missing** values.)

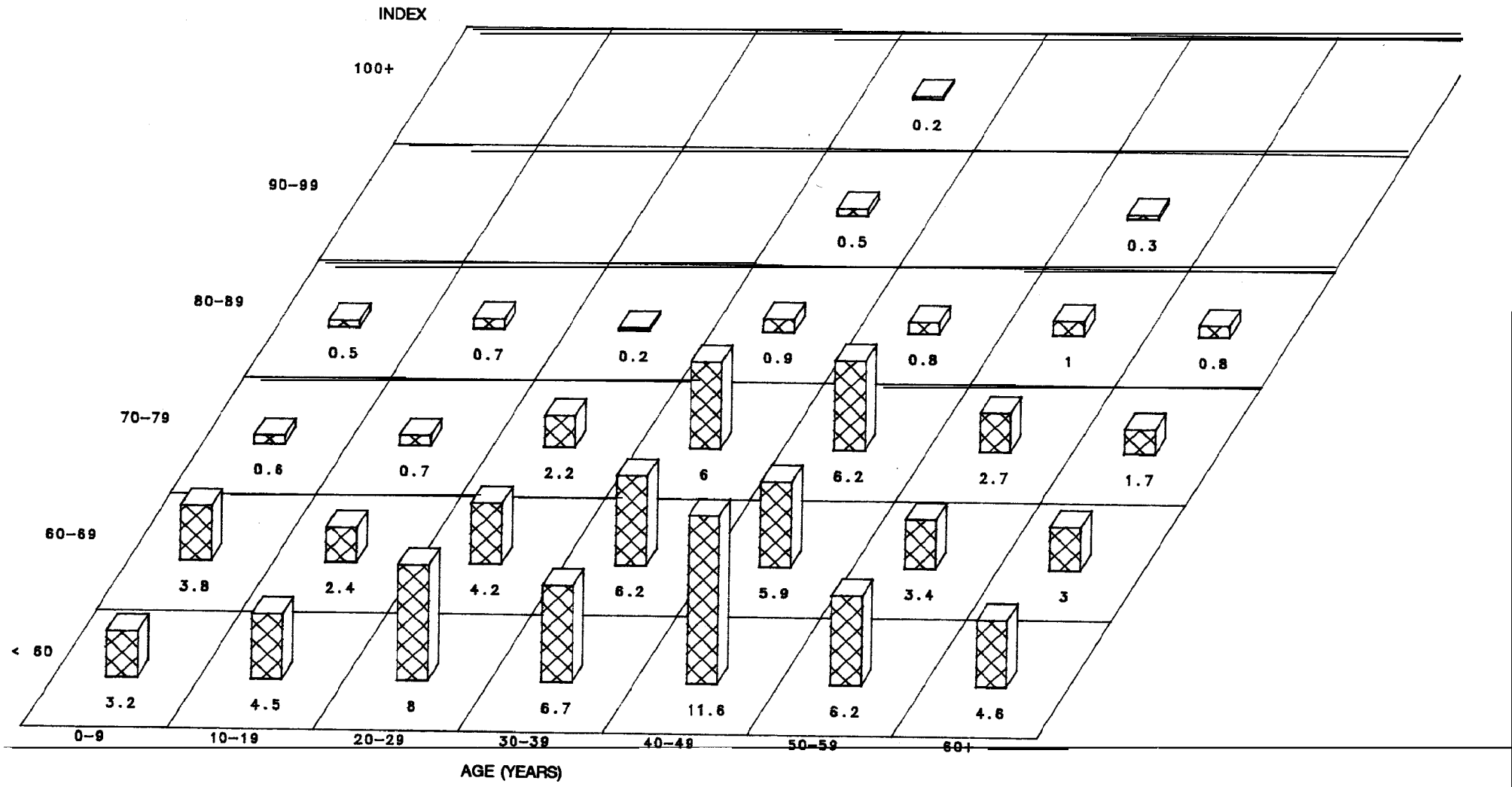


Figure 23A.--Percentage distribution of pond pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 1,228,253 acres of natural stands, and 11,046 acres of planted stands. Georgia site index data treated as missing values.)

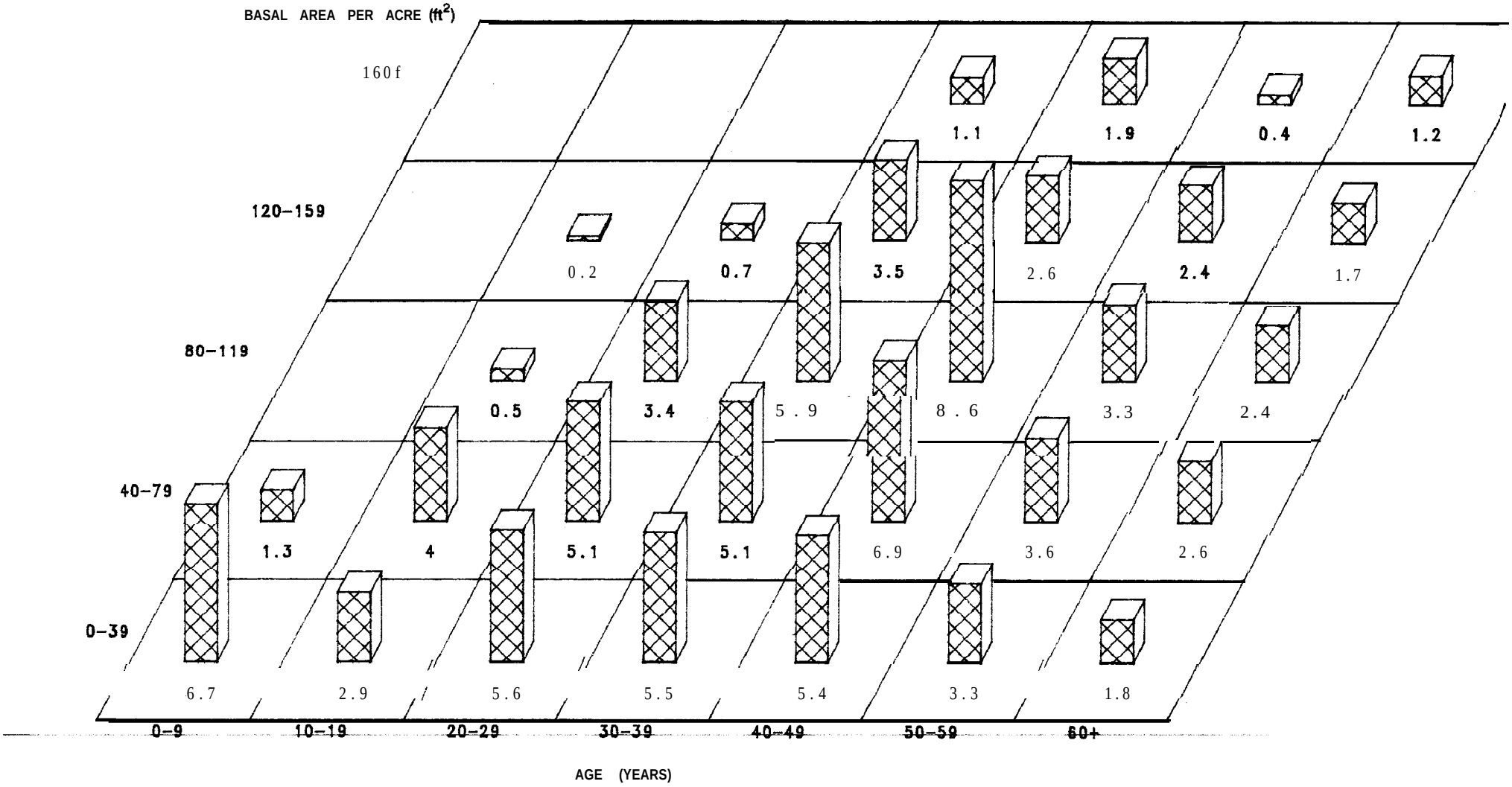


Figure 23B.--Percentage distribution of pond pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 1,228,253 acres of natural stands, and 11,046 acres of planted stands.)

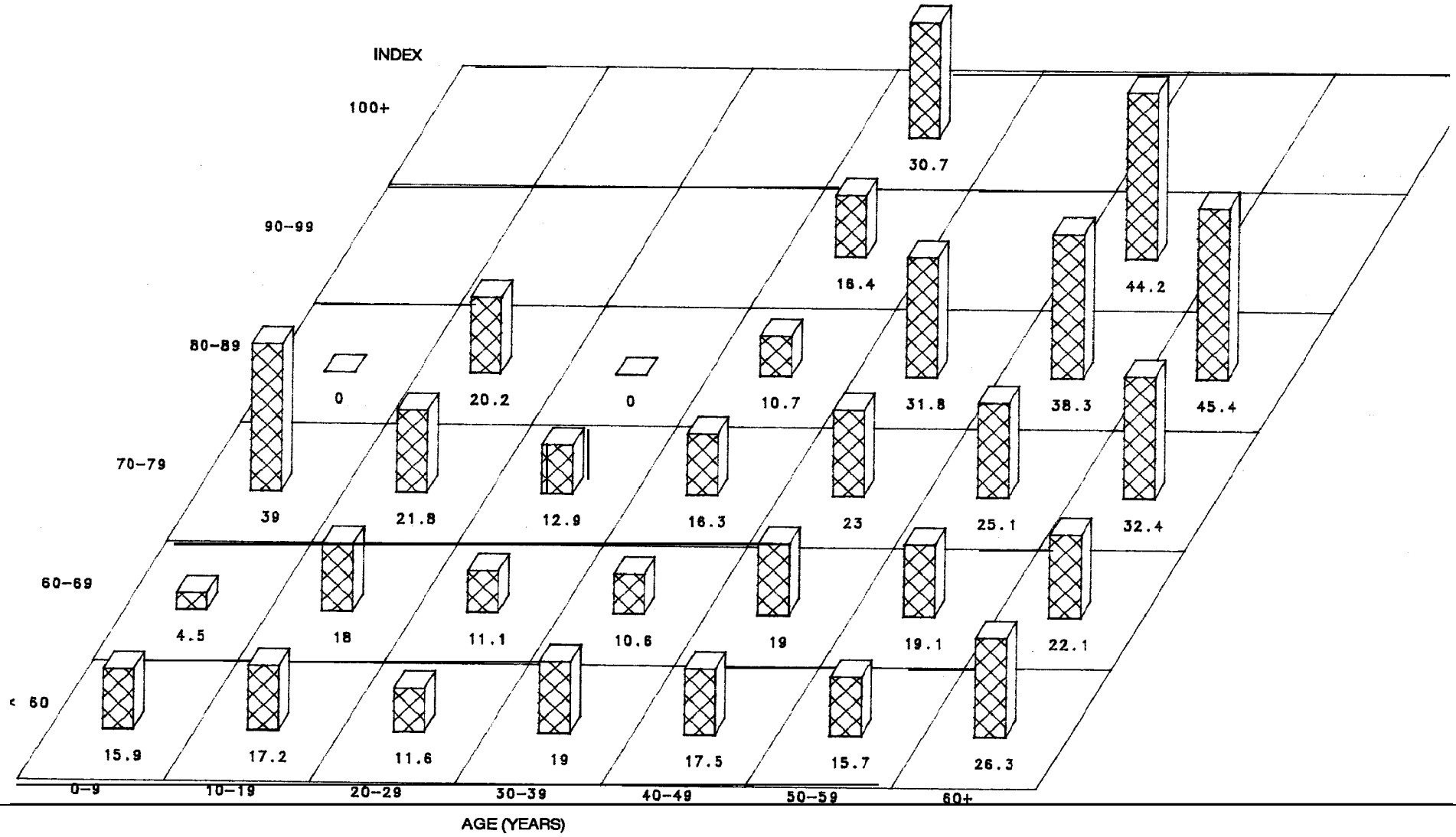


Figure 23C.--Percentage of basal area per acre in non-yellow-species, by site index and stand age, for pond pine stands in the Coastal Plain region of the Southeast. (Represents 1,228,253 acres of natural stands, and 11,046 acres of planted stands. Georgia site index data treated as missing values.)

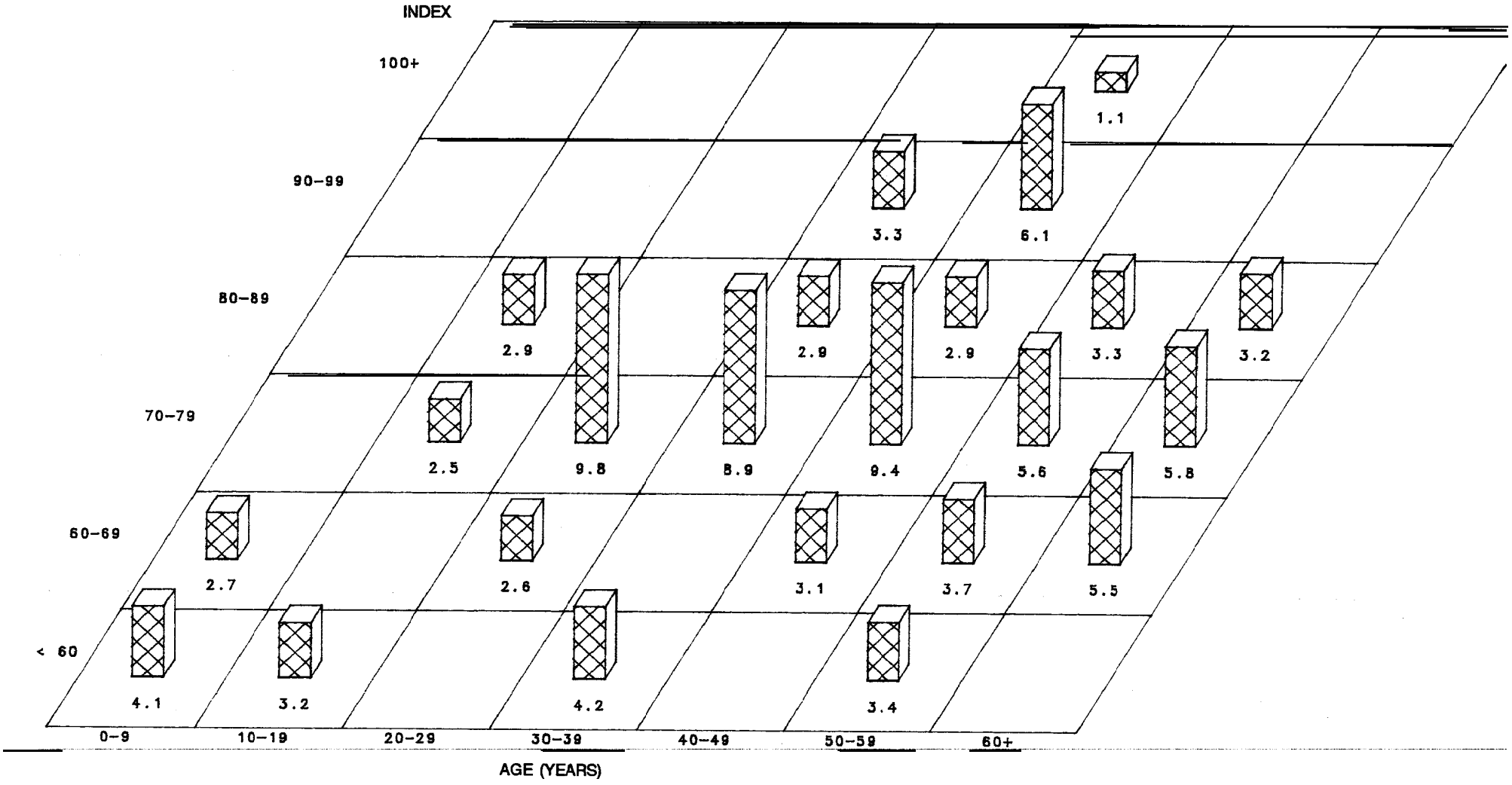


Figure 24A.–Percentage distribution of shortleaf pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 109,340 acres of natural stands, and 4,683 acres of planted stands. Georgia site index data treated as missing values.)

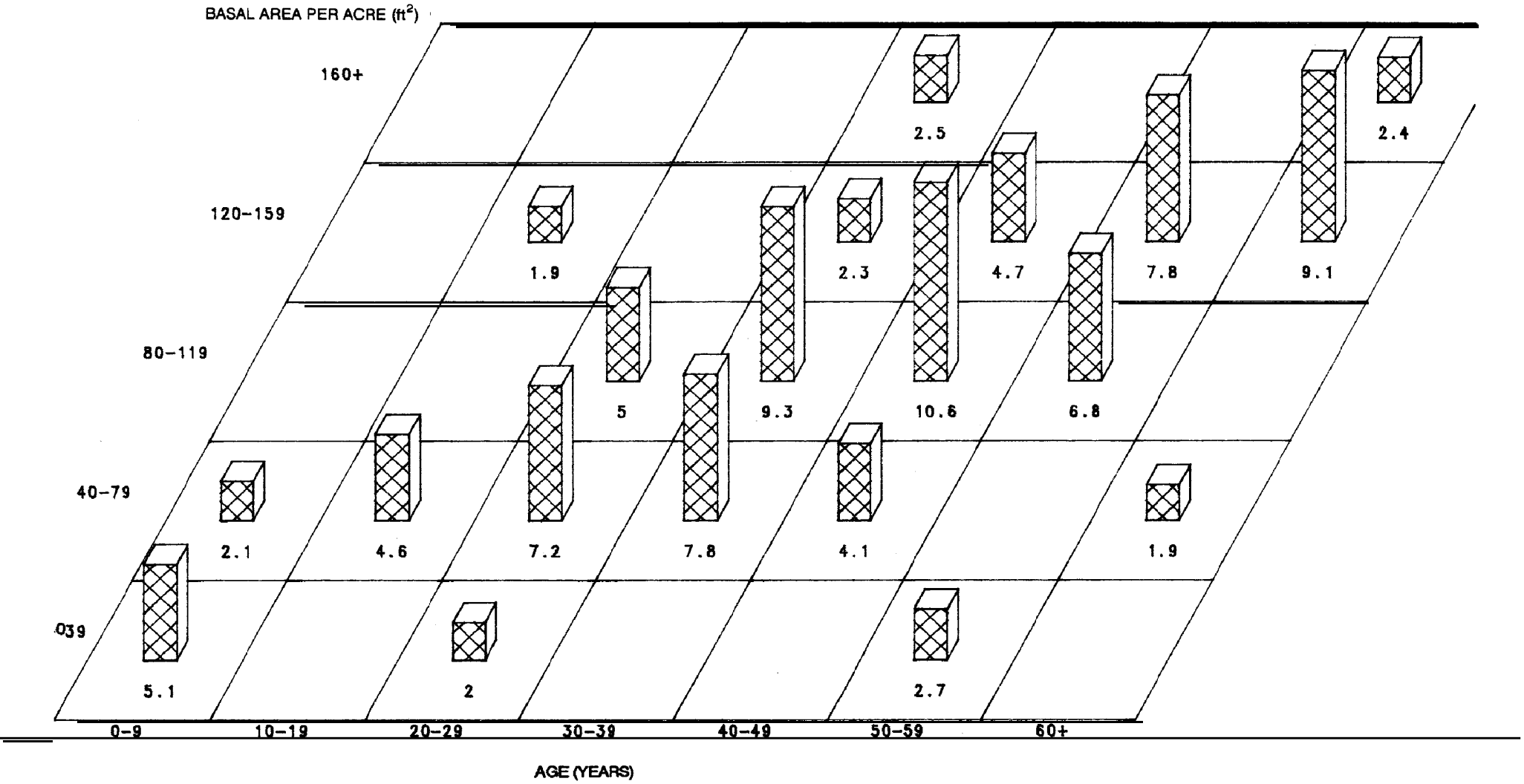


Figure 24B.--Percentage distribution of shortleaf pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 109,340 acres of natural stands, and 4,683 acres of planted stands.)

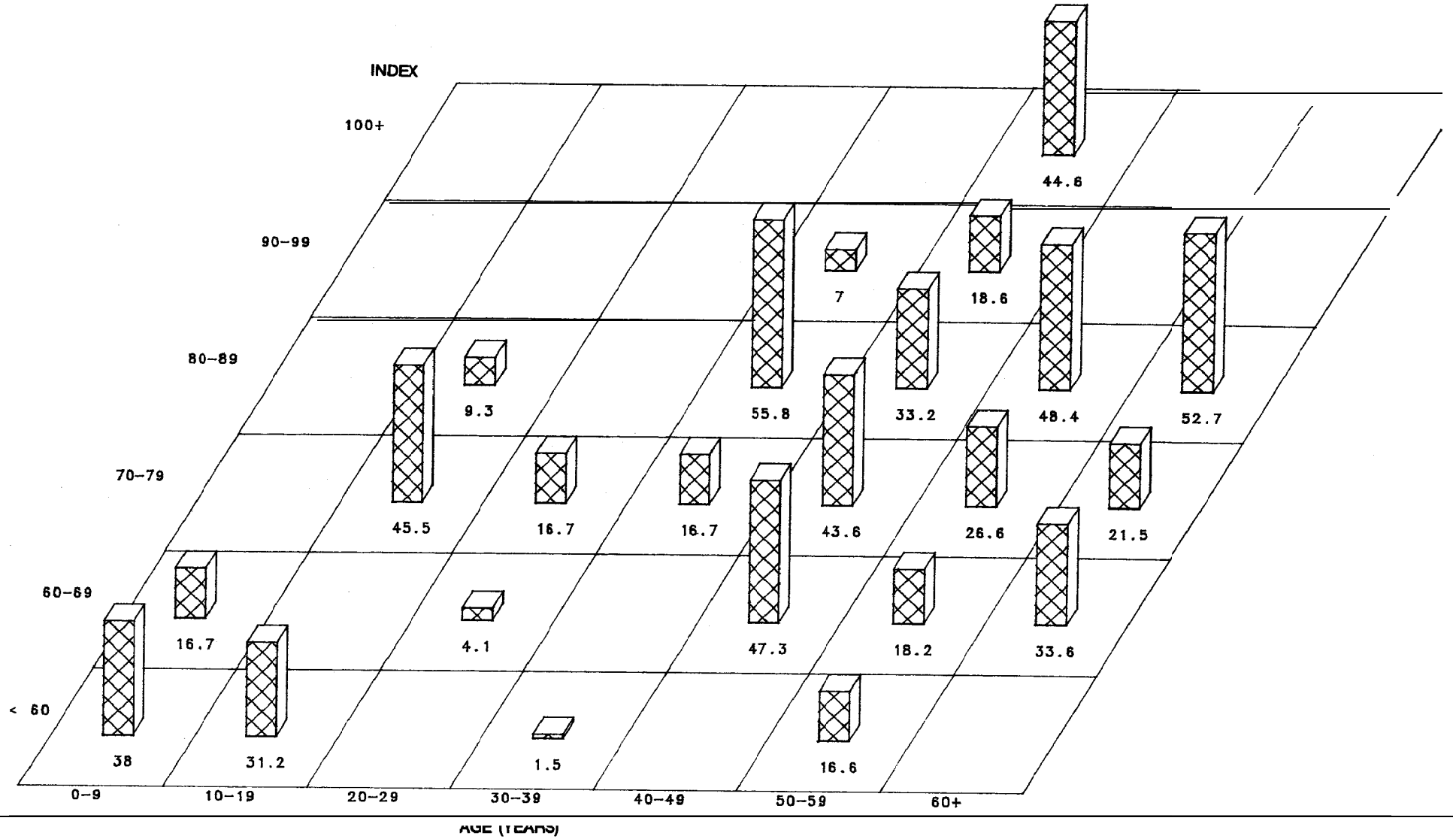


Figure 24C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for shortleaf pine stands in the Coastal Plain region of the Southeast. (Represents 109,340 acres of natural and 4,683 acres of planted stands. Georgia site index data treated as missing values.)

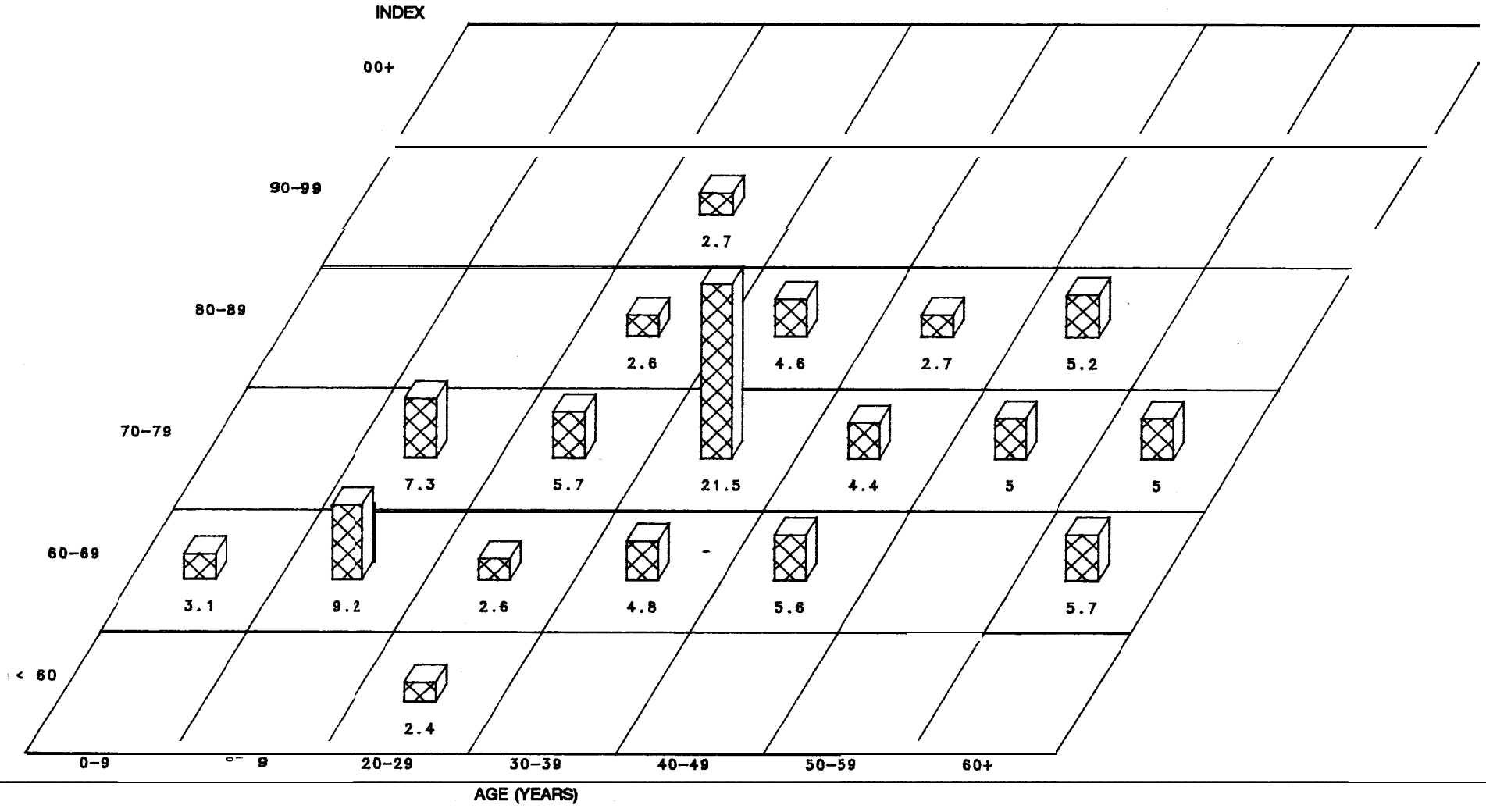


Figure 25A.–Percentage distribution of Virginia pine stands in the Coastal Plain region of the Southeast, by site index and stand age. (Represents 106,204 acres of natural stands, and 2,724 acres of planted stands. Georgia site index data treated as missing values.)

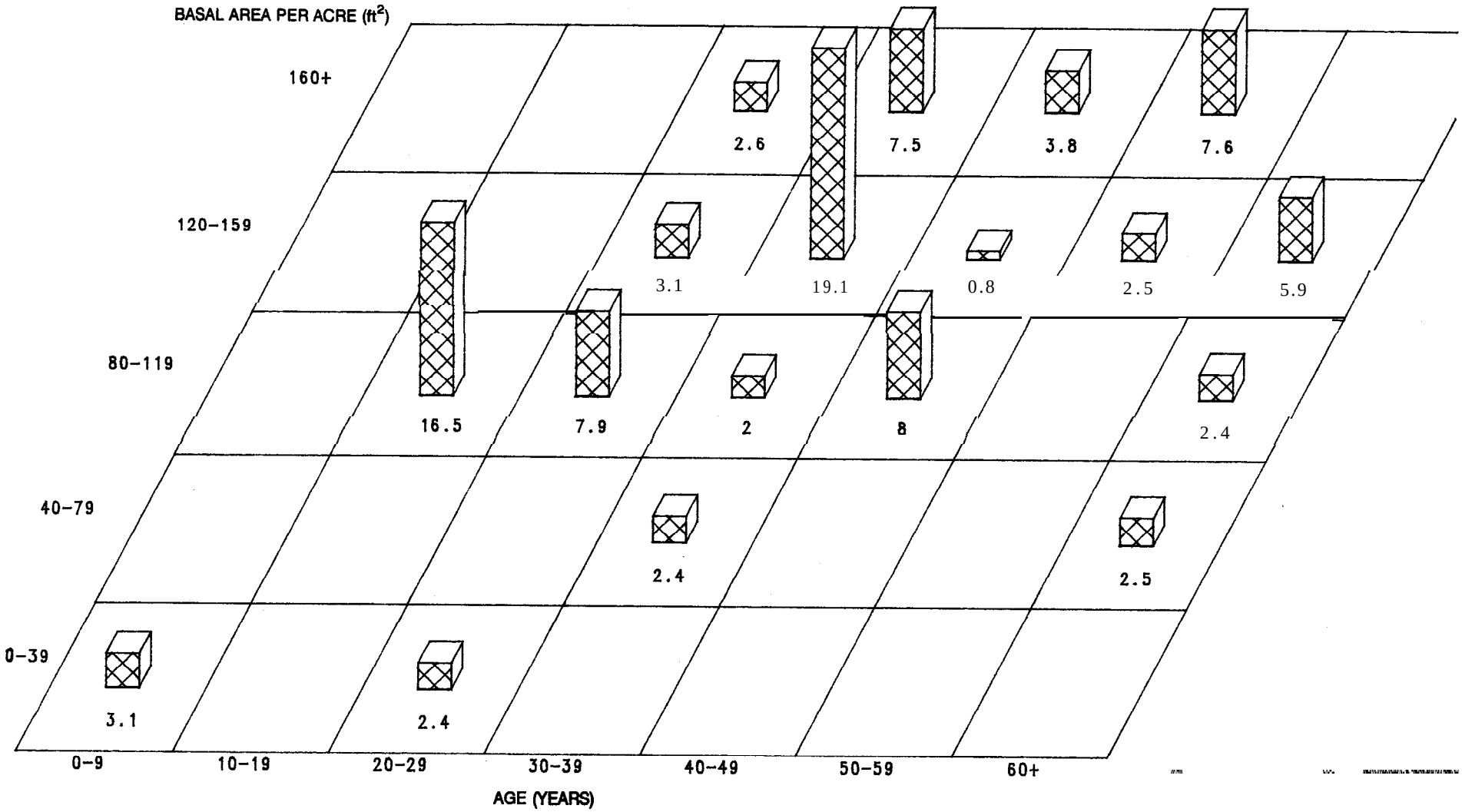


Figure 25B.--Percentage distribution of Virginia pine stands in the Coastal Plain region of the Southeast, by basal area per acre and stand age. (Represents 106,204 acres of natural stands, and 2,724 acres of planted stands.)

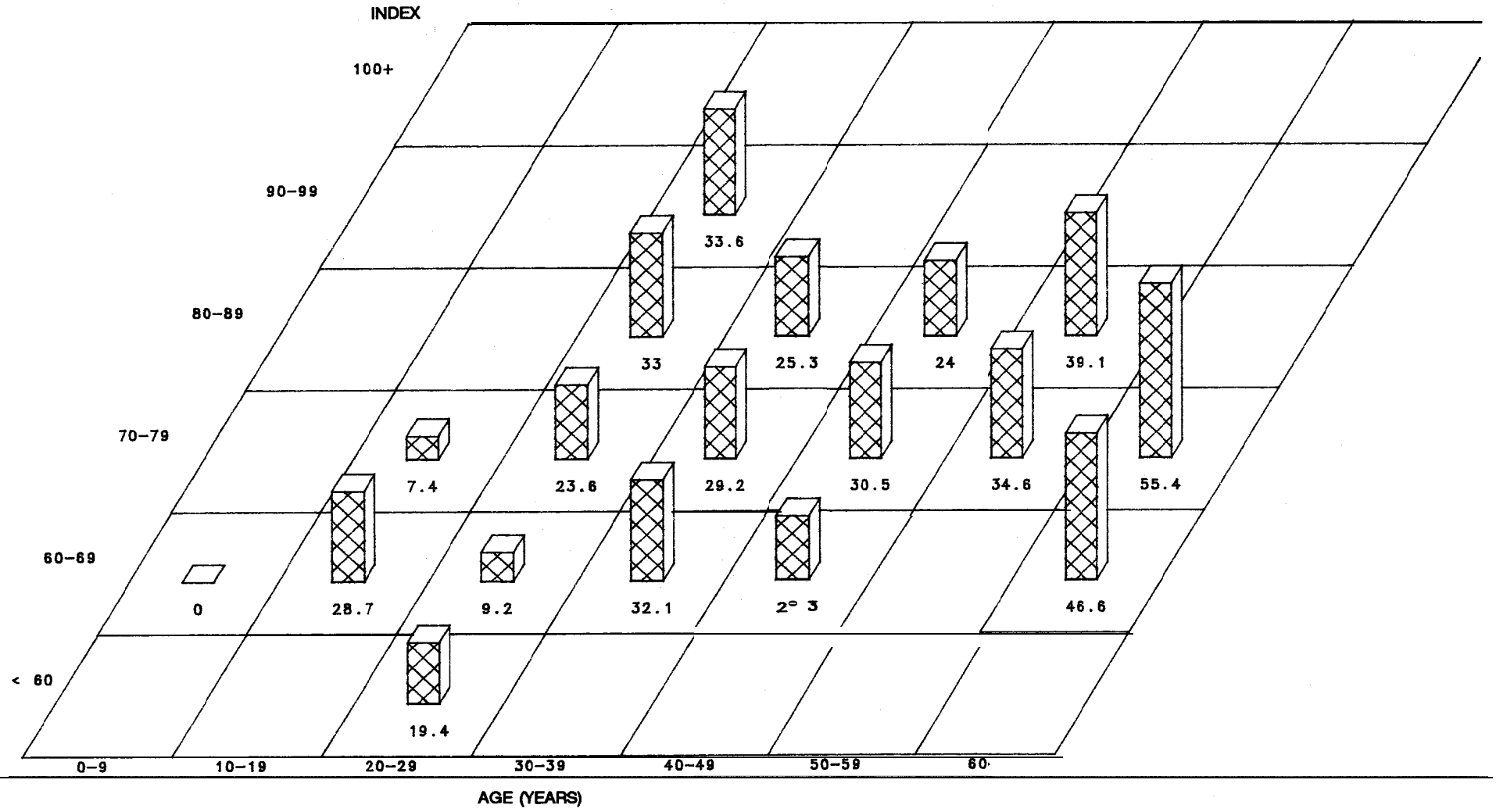


Figure 25C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for Virginia pine stands in the Coastal Plain region of the Southeast. (Represents 106,204 acres of natural stands, and 2,724 acres of planted stands. Georgia site index data treated as missing values.)

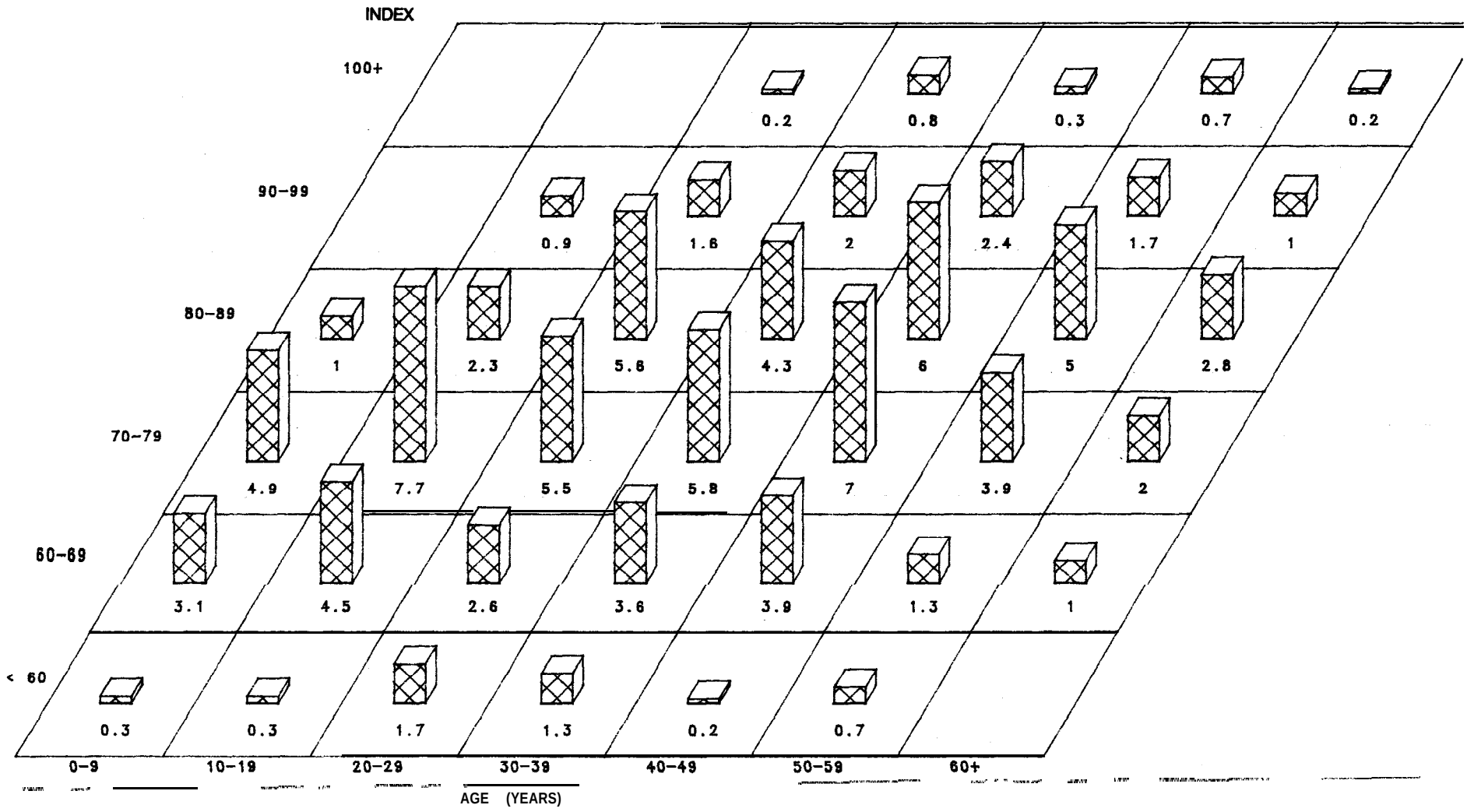


Figure 26A.--Percentage distribution of natural loblolly pine stands in the Piedmont region of the Southeast, by site index and stand age. (Represents 4,449,074 acres. Georgia site index data treated as missing values.)

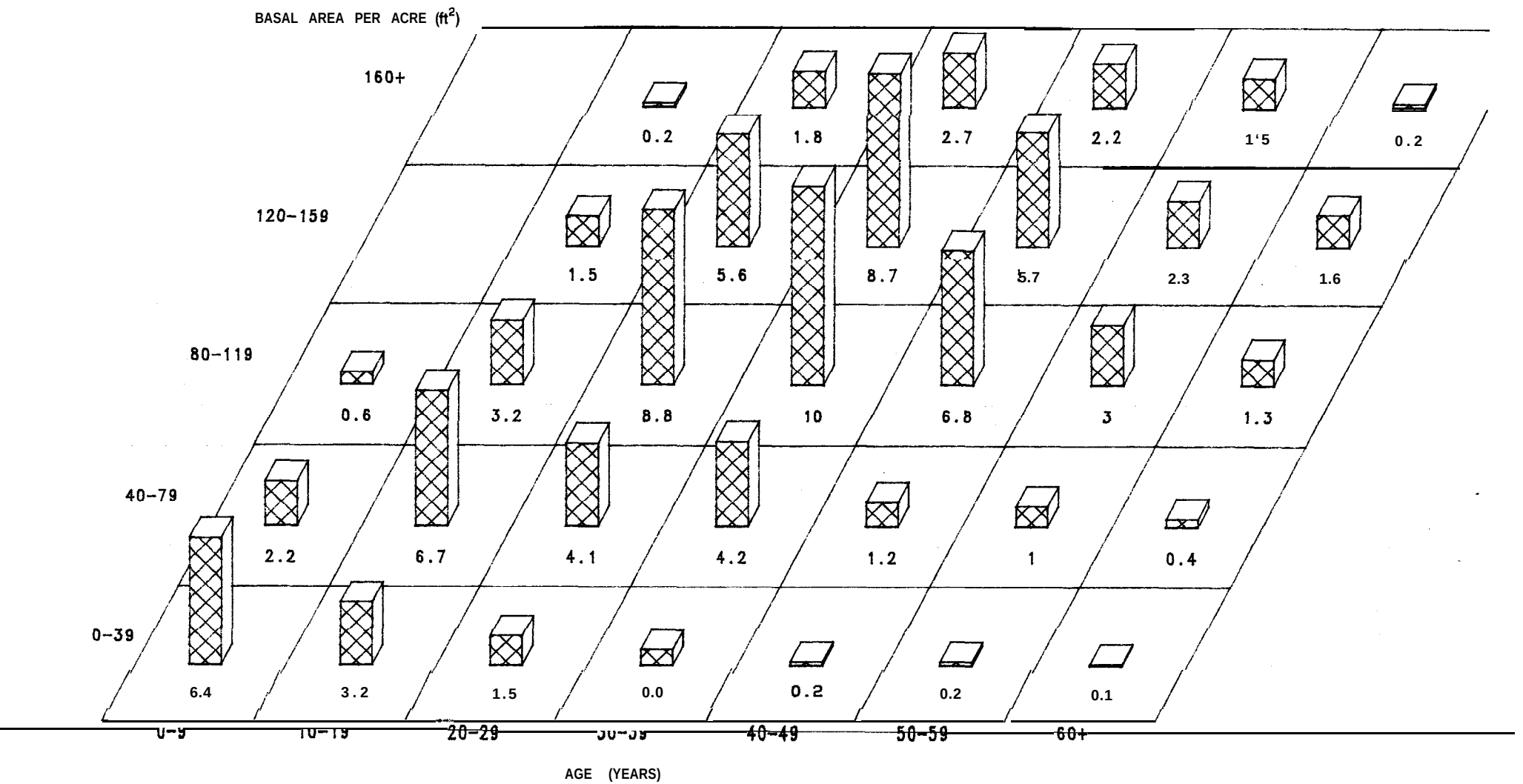


Figure 26B.–Percentage distribution of natural loblolly pine stands in the Piedmont region of the Southeast, by basal area per acre and stand age. (Represents 4,449,074 acres.)

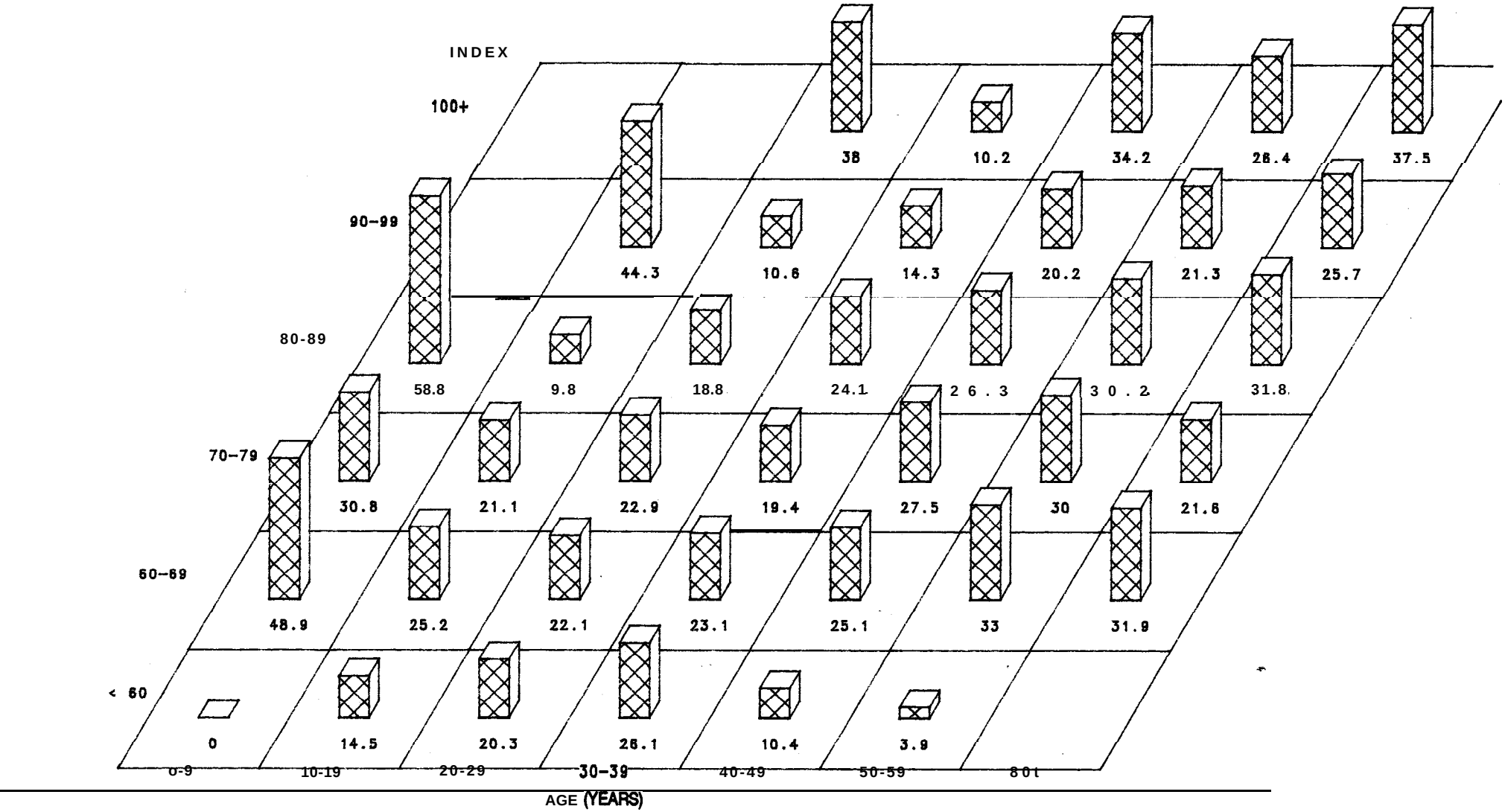


Figure 26C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for natural pine stands in the Piedmont region of the Southeast (Represents 4,449,074 acres. Georgia site index data treated as missing values.)

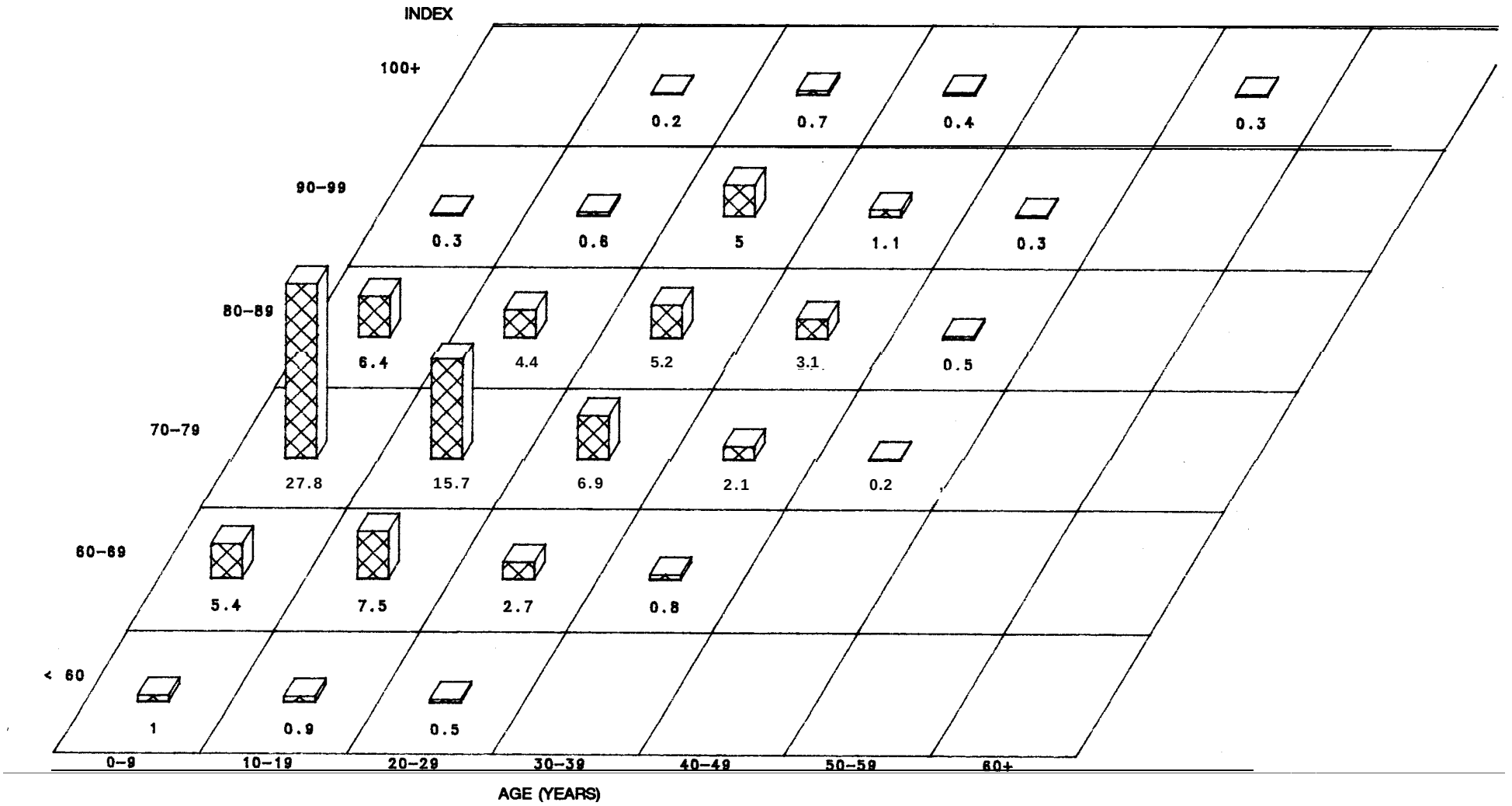


Figure 27A.--Percentage distribution of planted loblolly pine stands in the Piedmont region of the Southeast, by site index and stand age. (Represents 2,403,540 acres. Georgia site index data treated as missing values.)

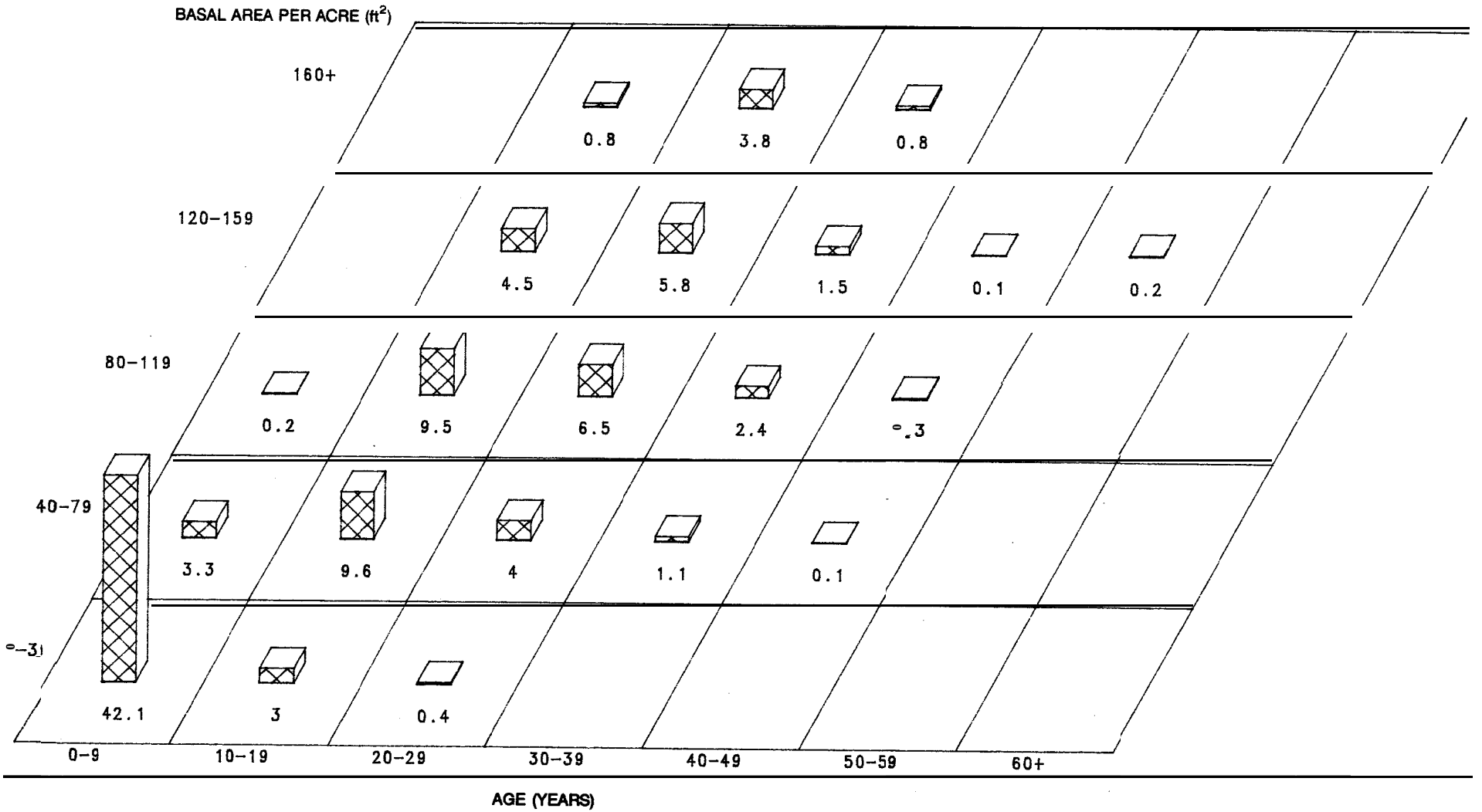


Figure 27B.--Percentage distribution of planted loblolly pine stands in the Piedmont region of the Southeast, by basal area per acre and stand age. (Represents 2,403,540 acres.)

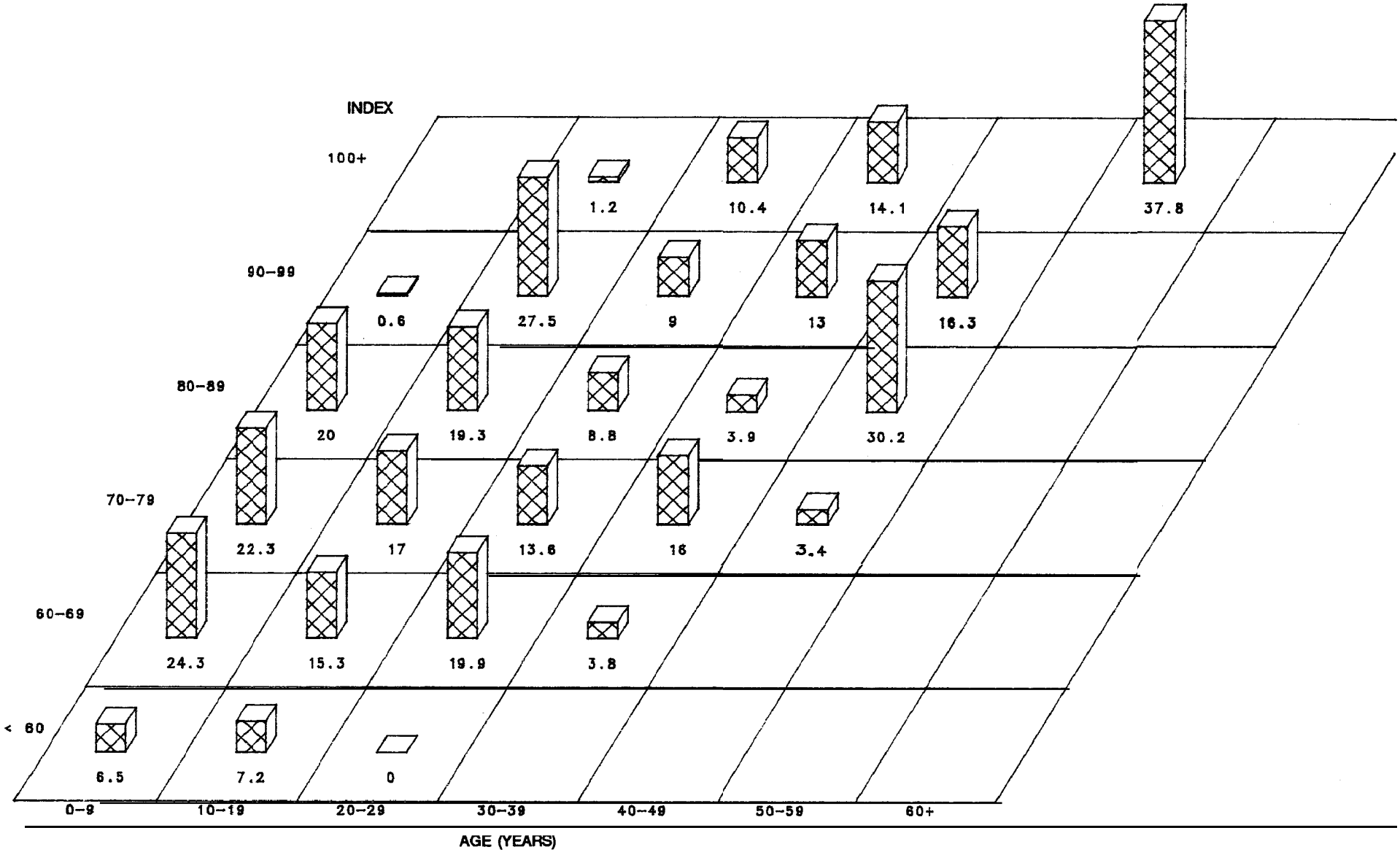


Figure 27C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted loblolly pine stands in the Piedmont region of the Southeast. (Represents 2,403,540 acres. Georgia site index data treated as missing values.)

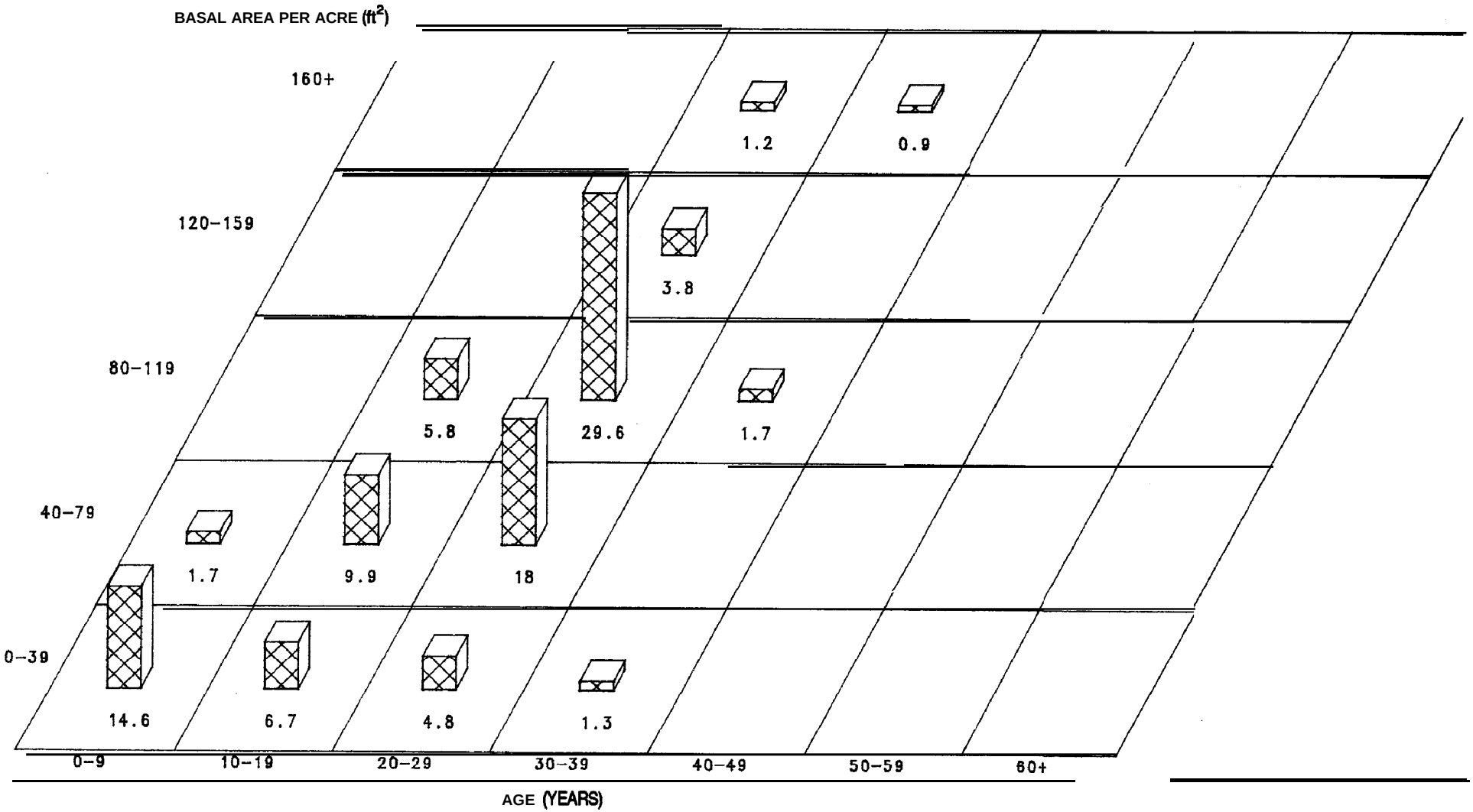


Figure 28.–Percentage distribution of planted slash pine stands in the Piedmont region of the Southeast, by basal area per acre and stand age. (Represents 337,408 acres. Entire sample located in Georgia.)

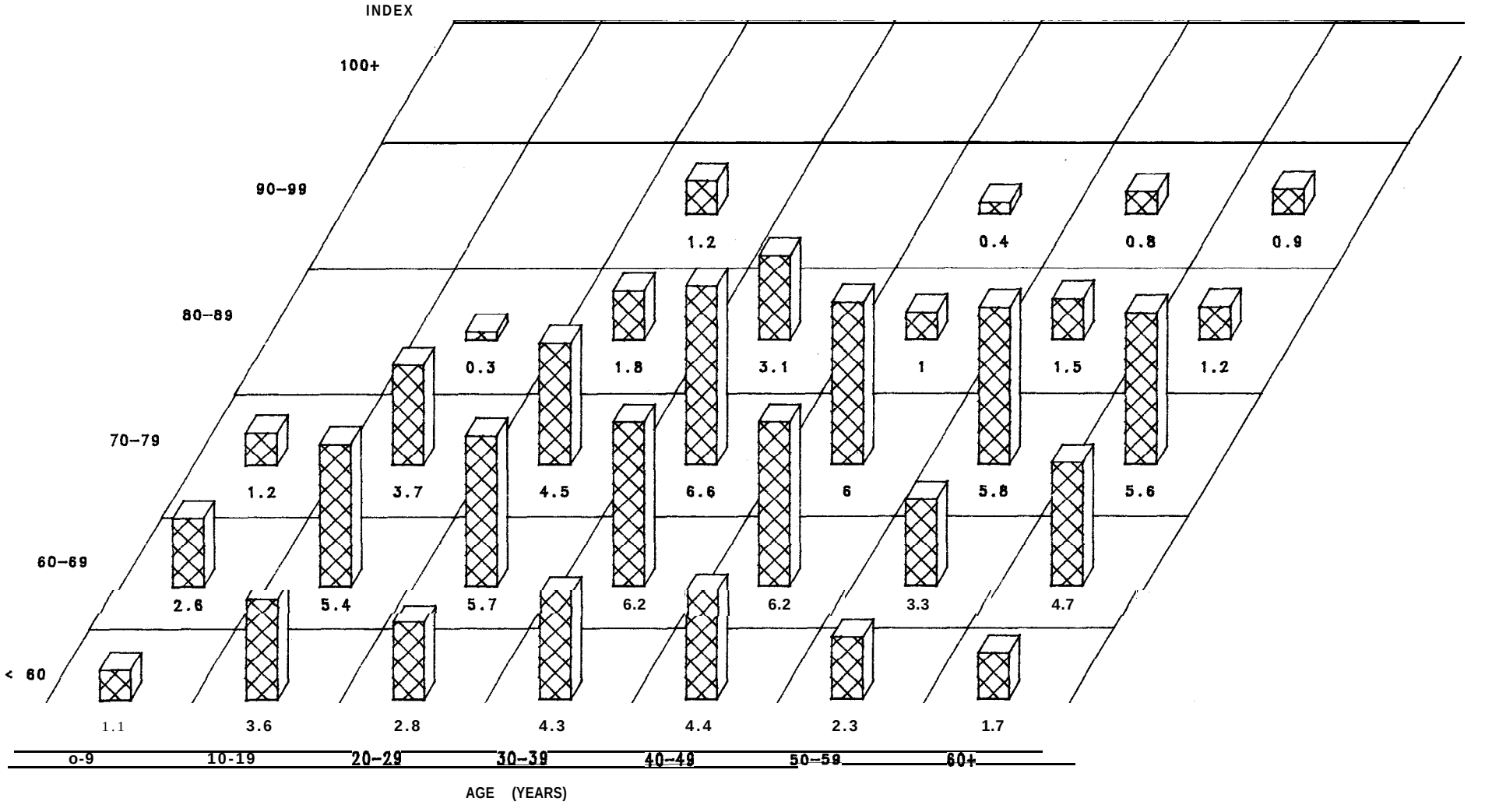


Figure 29A.--Percentage distribution of shortleaf pine stands in the Piedmont region of the Southeast, by site index and stand age. (Represents 1,522,226 acres of natural stands, and 12,290 acres of planted stands. Georgia site index data treated as missing values.)

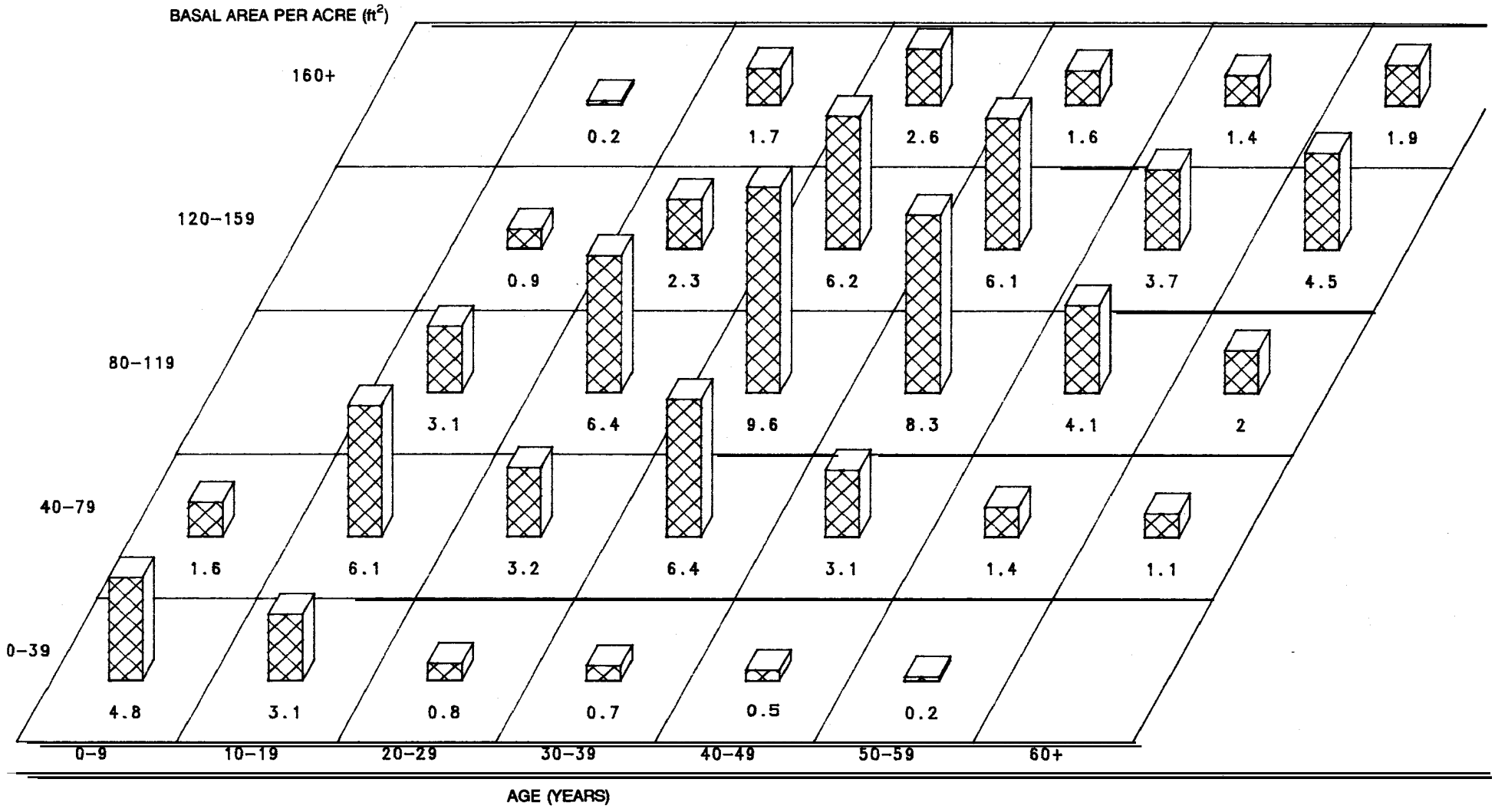


Figure 29B.–Percentage distribution of shortleaf pine stands in the Piedmont region of the Southeast, by basal area per acre and stand age. (Represents 1,522,226 acres of natural stands, and 12,290 acres of planted stands.)

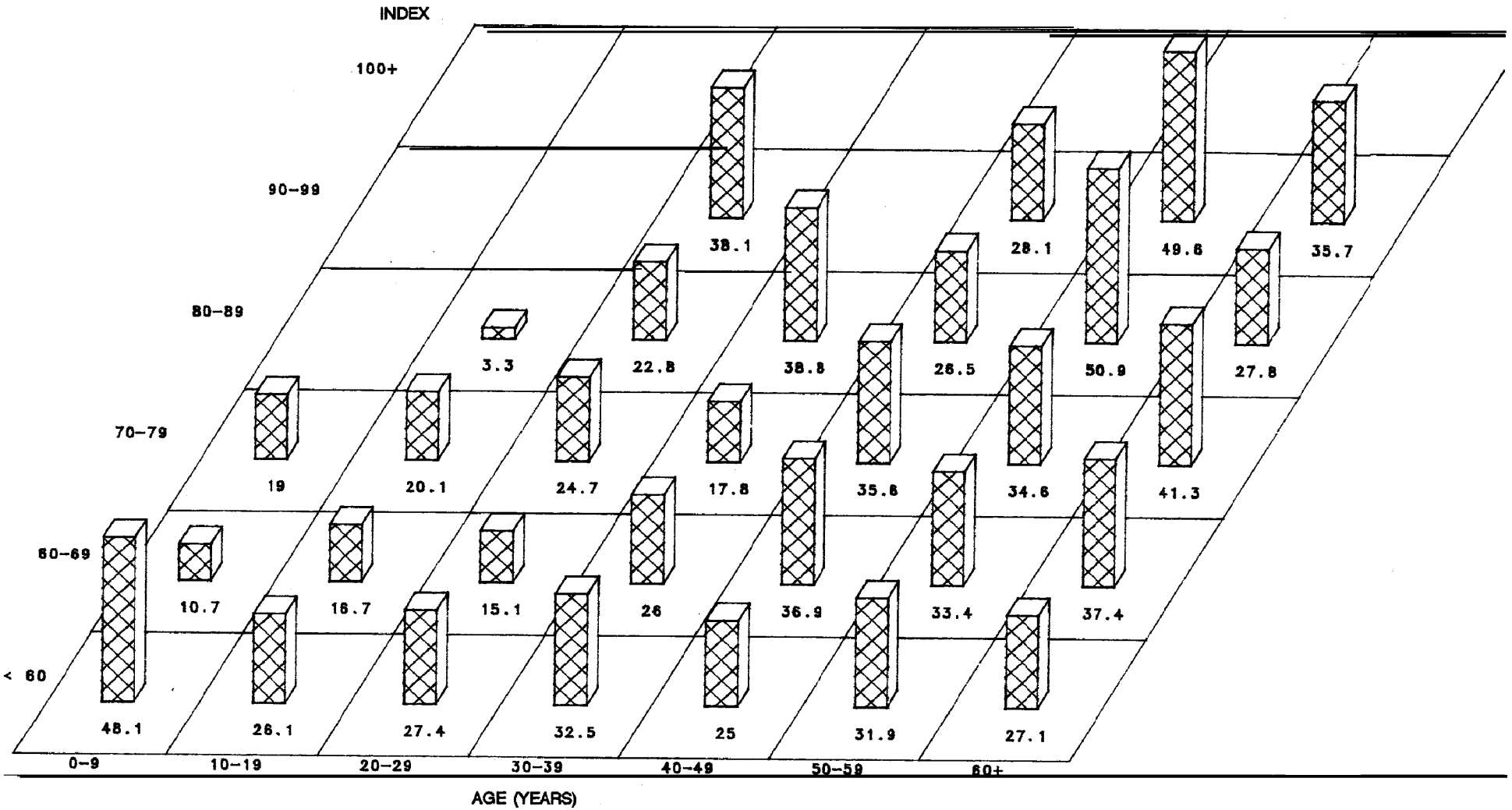


Figure 29C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for shortleaf pine stands in the Piedmont region of the Southeast. (Represents 1,522,226 acres of natural stands, and 12,290 acres of planted stands. Georgia site index data treated as missing values.)

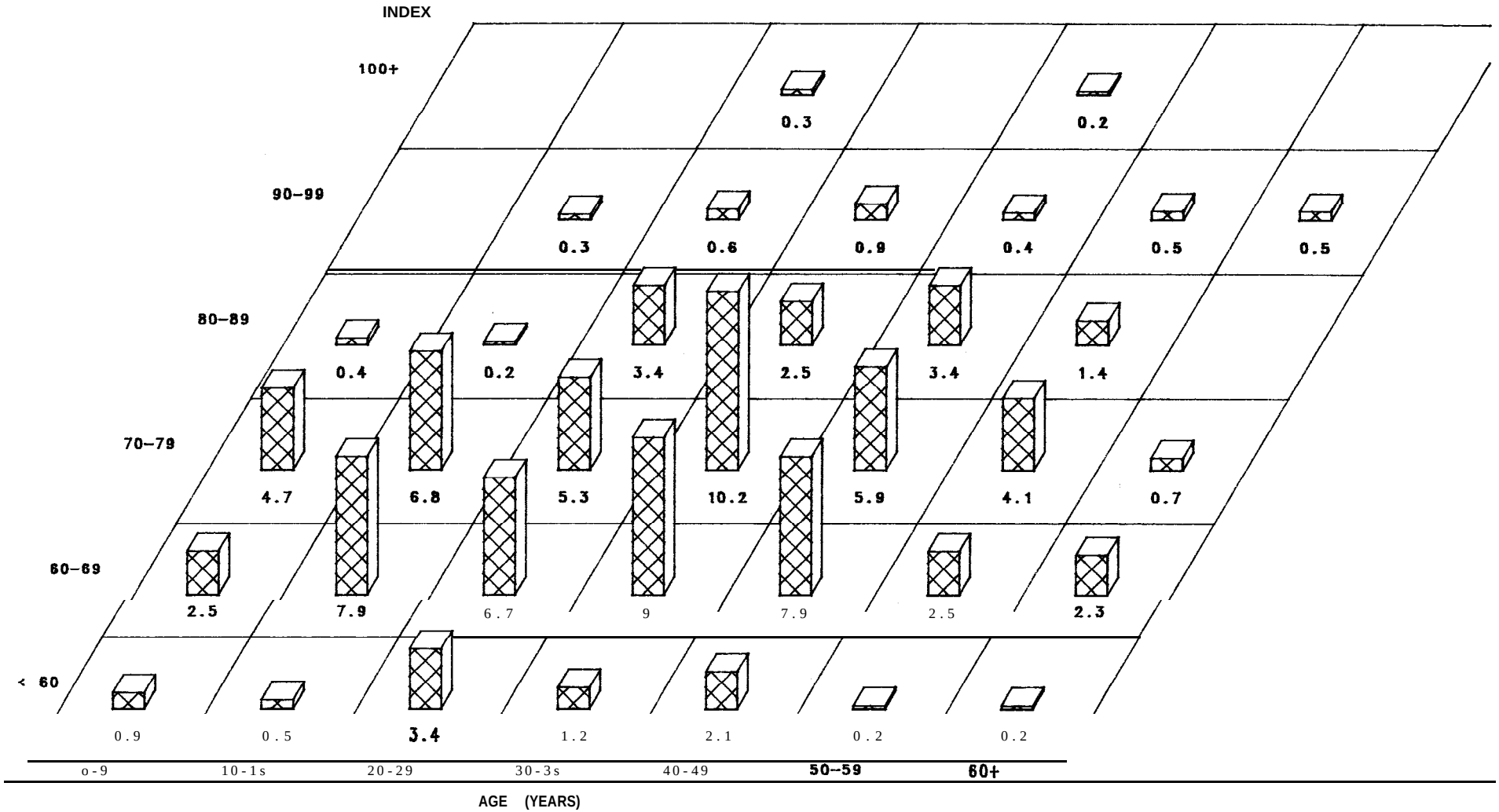


Figure 30A.--Percentage distribution of Virginia pine stands in the Piedmont region of the Southeast, by site index and stand age. (Represents 1,543,863 acres of natural stands, and 27,425 acres of planted stands. Georgia site index data treated as missing values.)

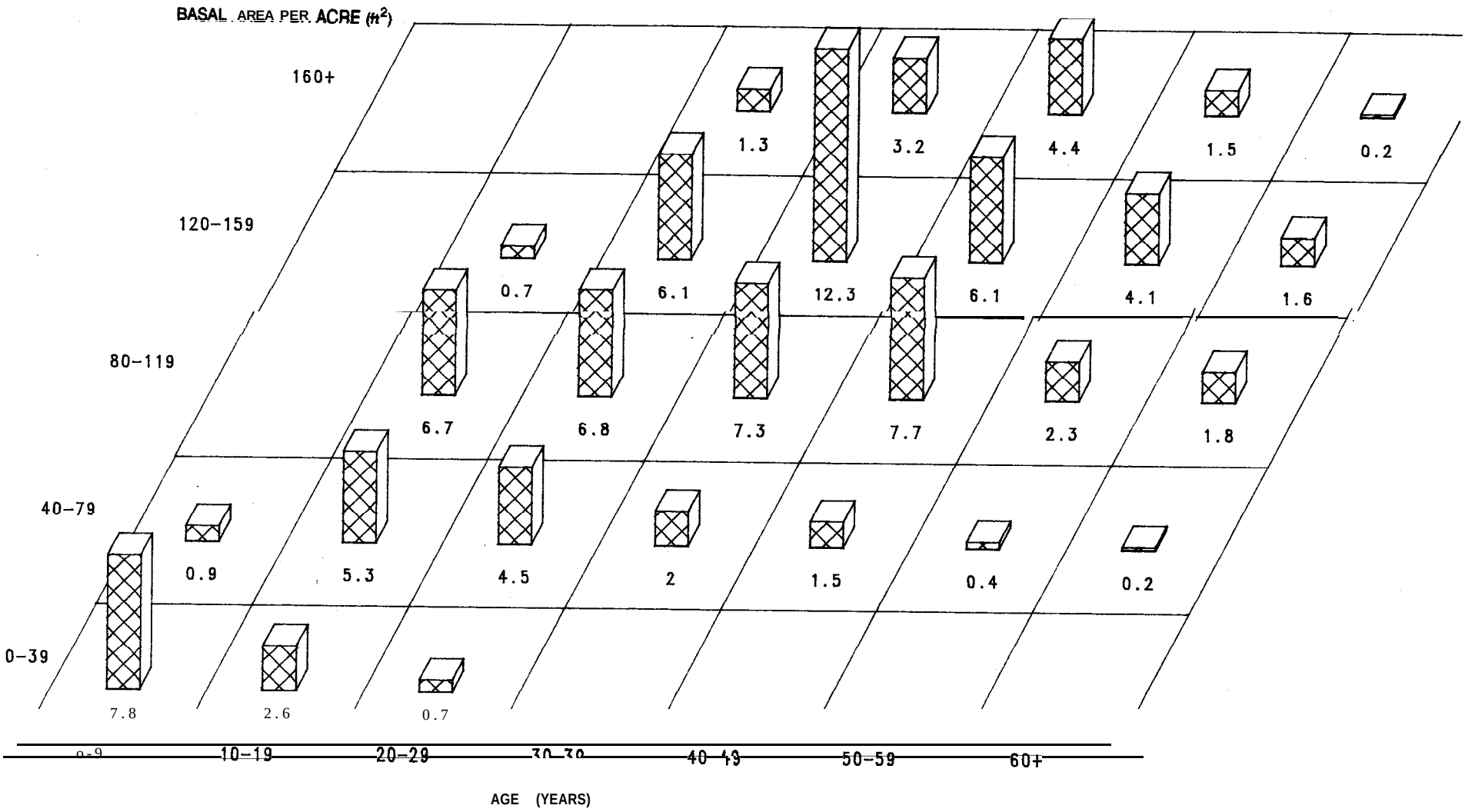


Figure 30B.--Percentage distribution of Virginia pine stands in the Piedmont region of the Southeast by basal area per acre and stand age. (Represents 1,543,863 acres of natural stands, and 27,425 acres of planted stands.)

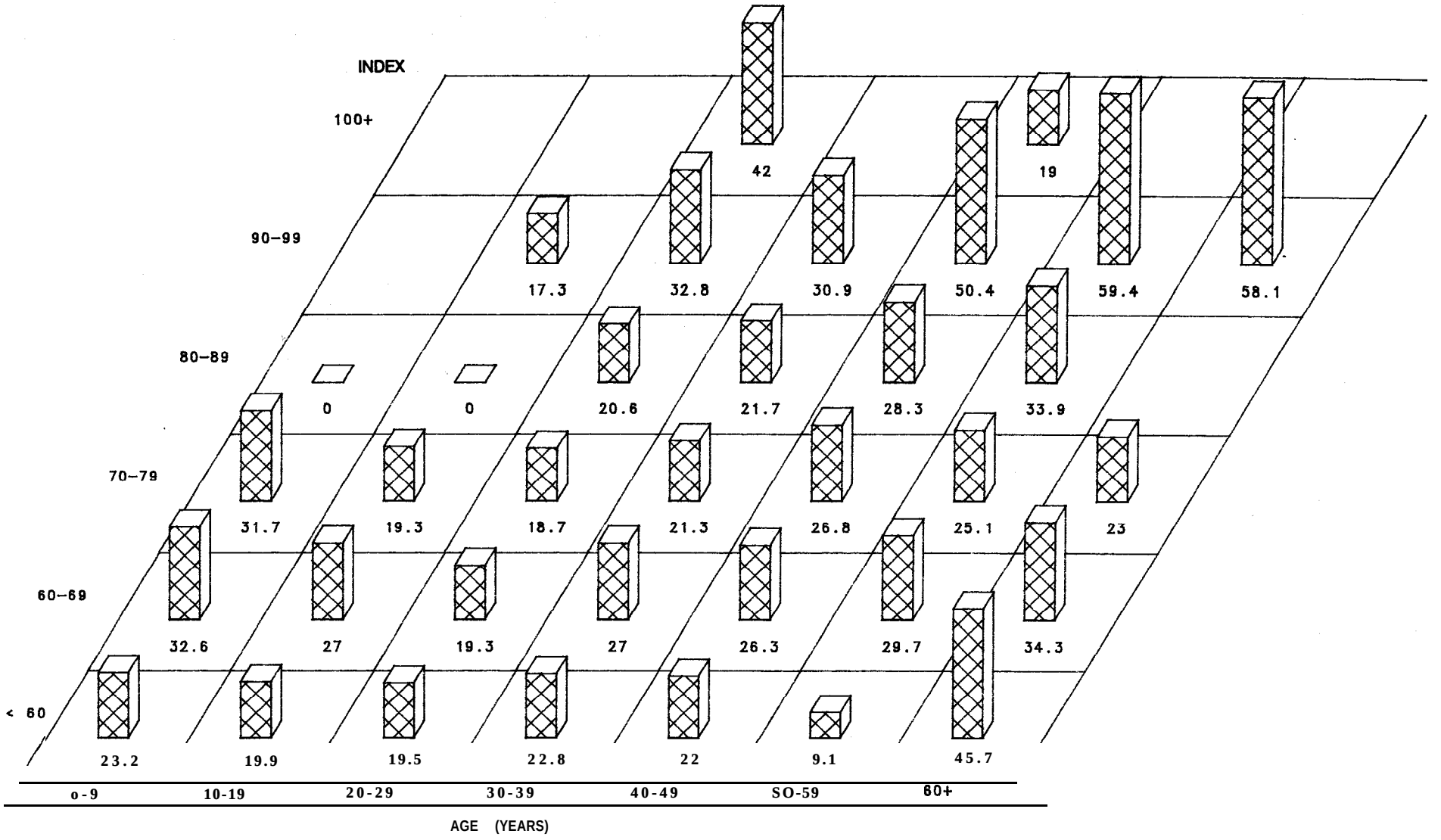


Figure 30C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for Virginia pine stands in the Piedmont region of the Southeast. (Represents 1,543,863 acres of natural stands, and 27,425 acres of planted stands. Georgia site index data treated as missing values.)

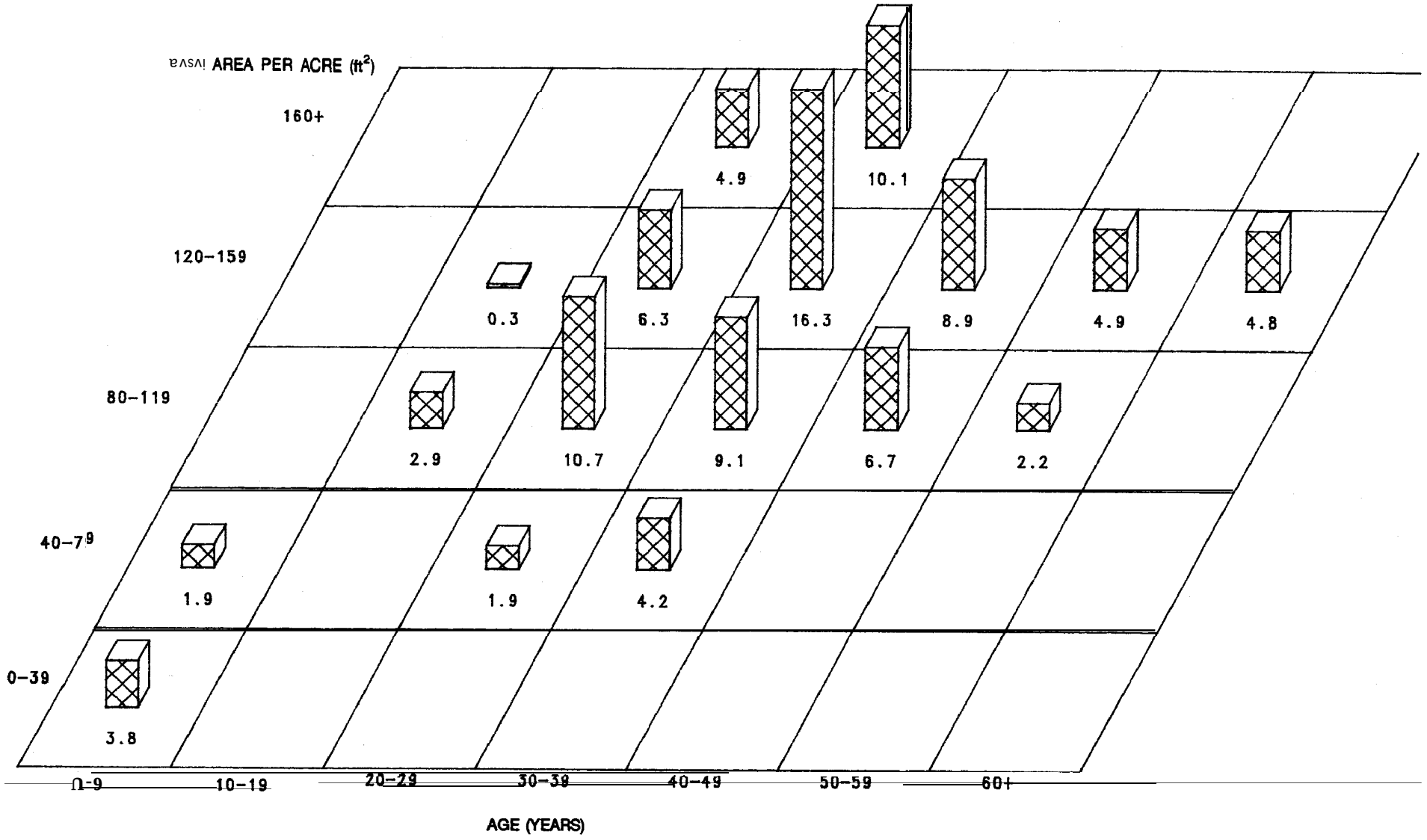


Figure 32.–Percentage distribution of shortleaf pine stands in the Mountain region of the Southeast, by basal area per acre and stand age. (Represents 309,929 acres of natural stands, and 3,008 acres of planted stands. Most of sample located in Georgia.)

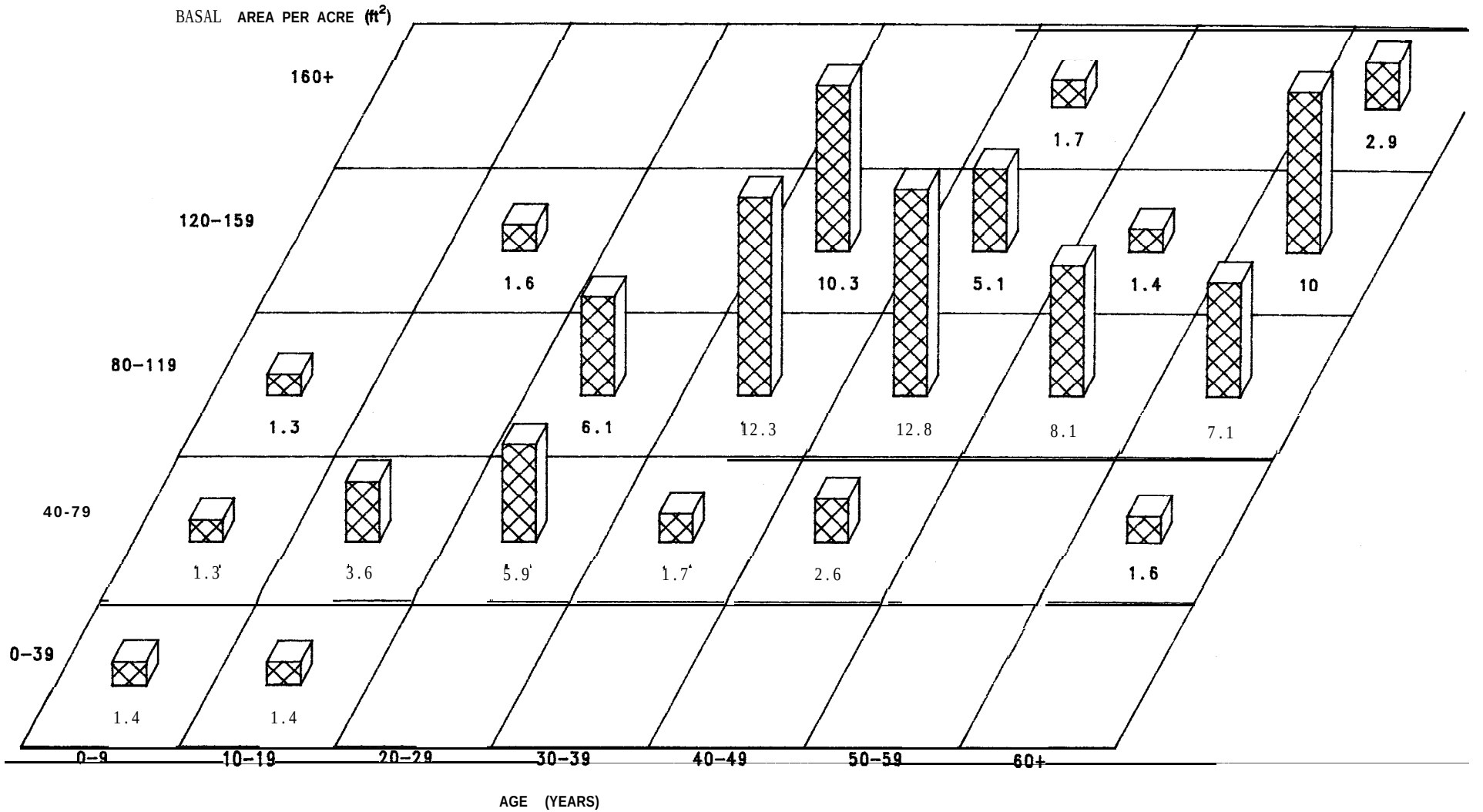


Figure 32.-Percentage diibution of shortleaf pine stands in the Mountain region of the Southeast, by basal area per acre and stand age. (Represents 309,929 acres of natural stands, and 3,008 acres of planted stands. Most of sample located in Georgia)

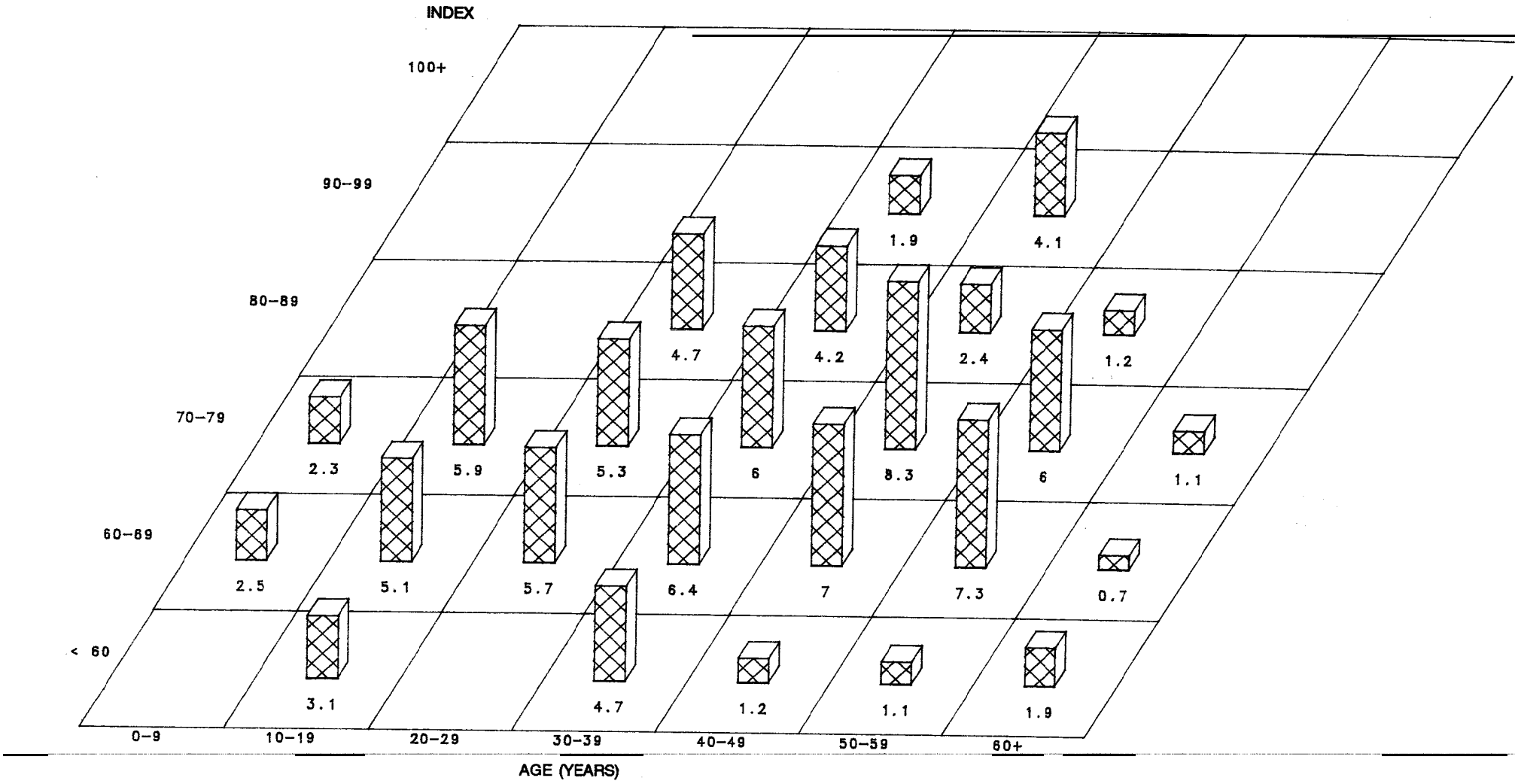


Figure 33A.–Percentage distribution of Virginia pine stands in the Mountain region of the Southeast, by site index and stand age. (Represents 679,170 acres of natural stands, and 22,589 acres of planted stands. Georgia site index data treated as missing values.)

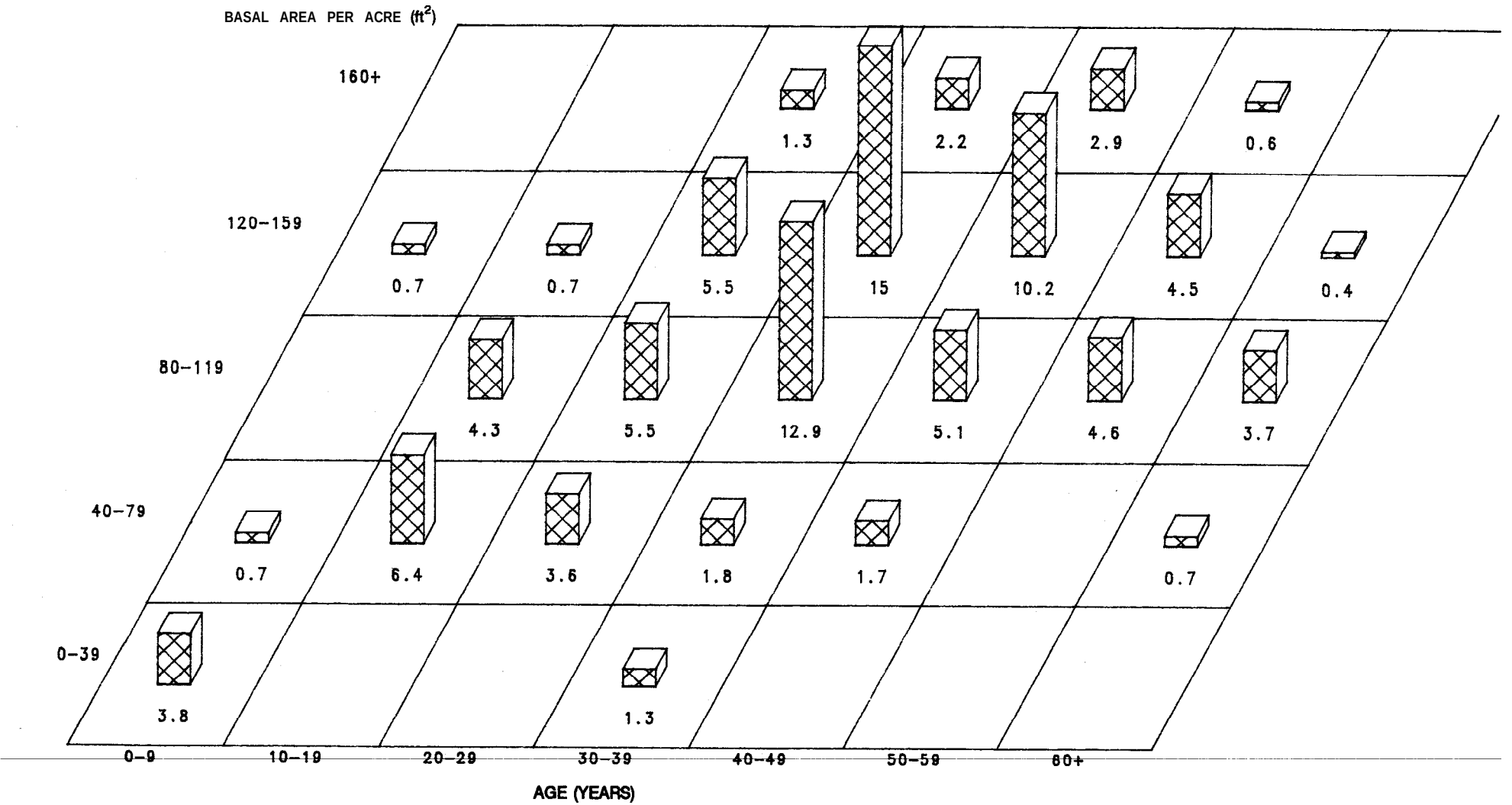


Figure 33B.--Percentage distribution of Virginia pine stands in the Mountain region of the Southeast, by basal area per acre and stand age. **(Represents 679,170 acres** of natural **stands,** end 22,589 **acres** of planted **stands.)**

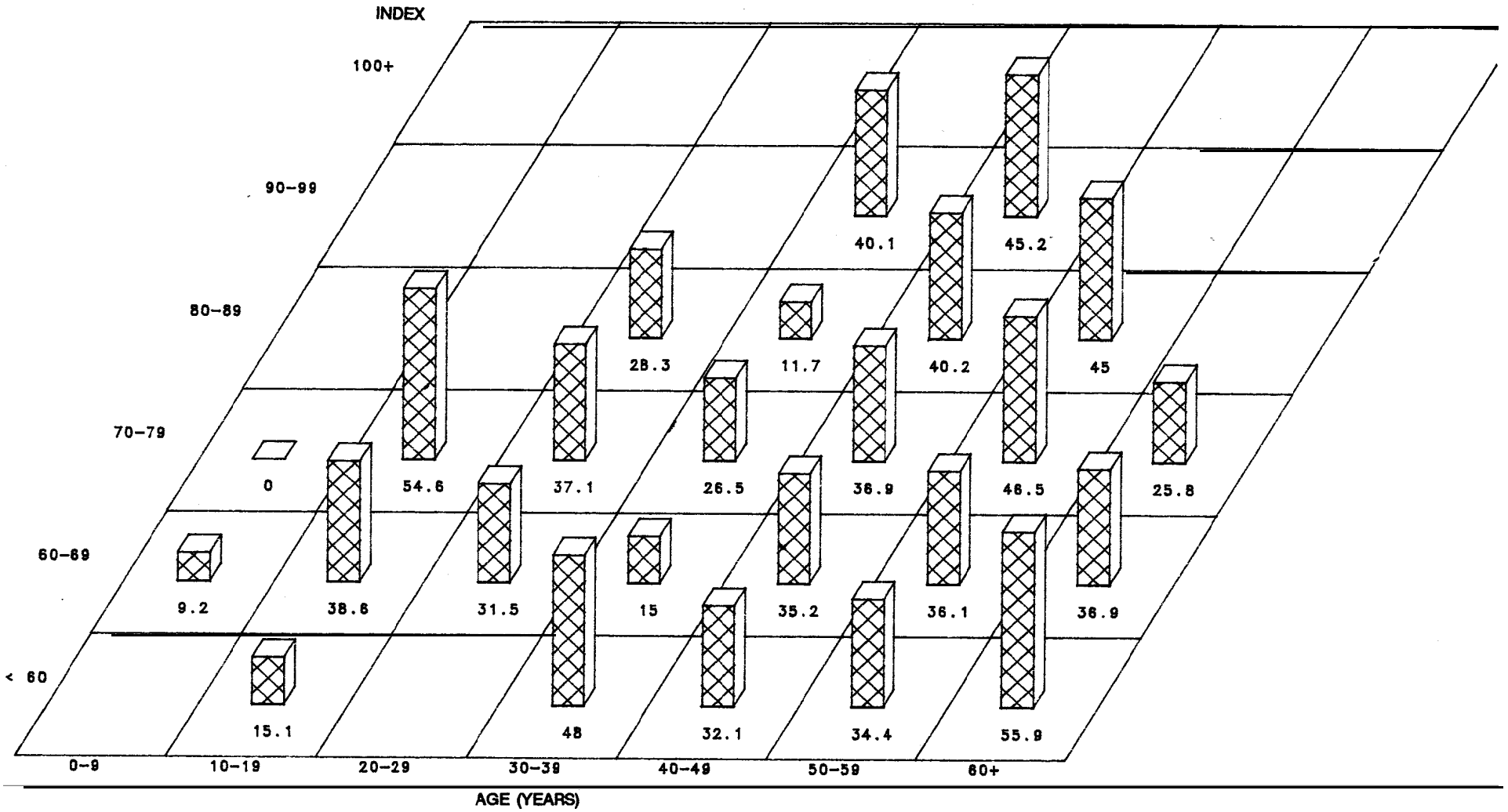


Figure 33C.–Percentage of basal area per acre in non-yellow-species, by site index and stand age, for Virginia pine stands in the Mountain region of the Southeast. (Represents 679,170 acres of natural stands, and 22,589 acres of planted stands. Georgia site index data treated as missing values.)

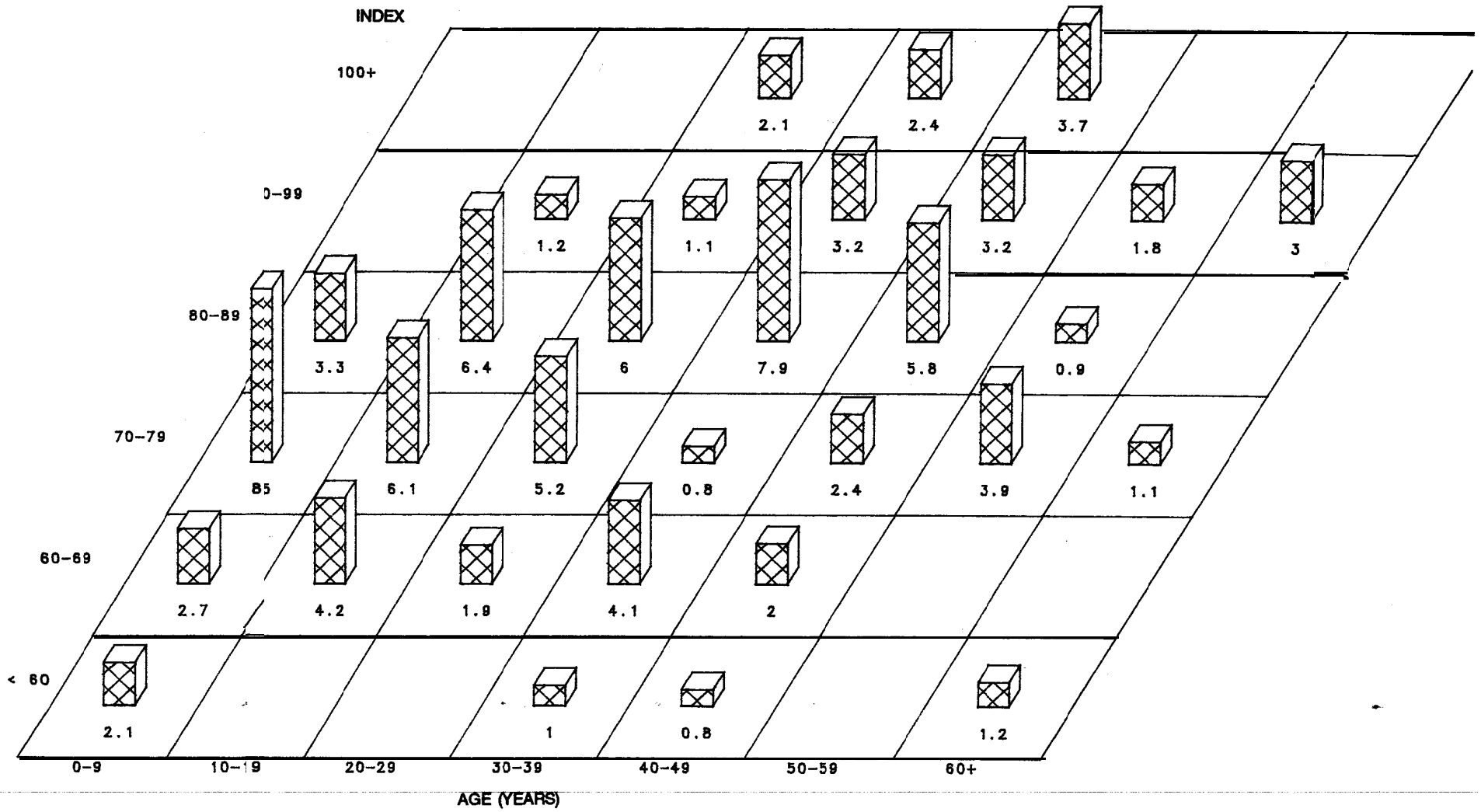
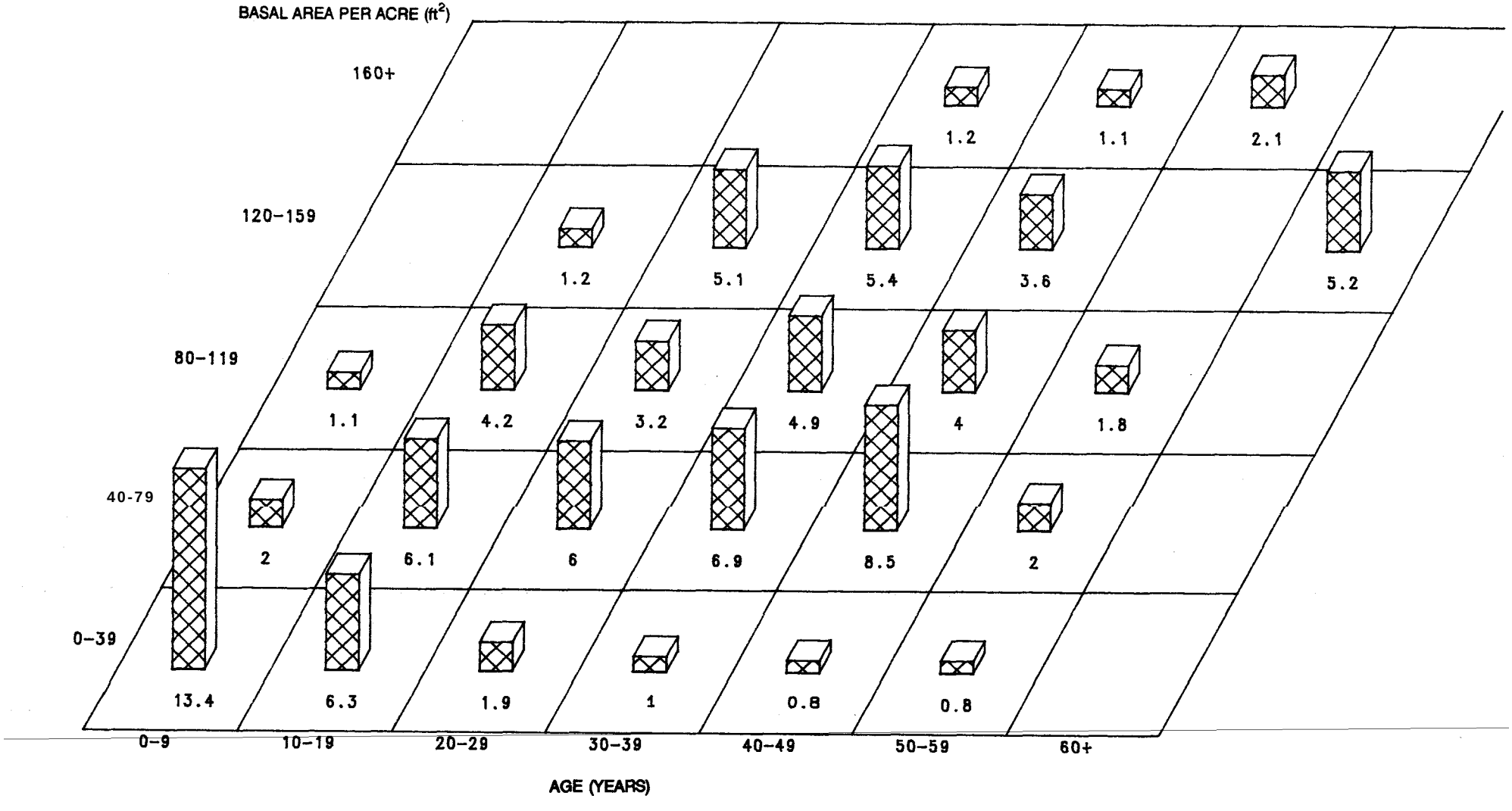


Figure 34A.--Percentage distribution of natural loblolly pine stands in Florida, by site index and stand age. (Represents 261,378 acres.)



Fiiure 34B.–Percentage diibution of natural loblolly pine stands in Florida, by basal area per acre and stand age. (Represents 261,378 acres.)

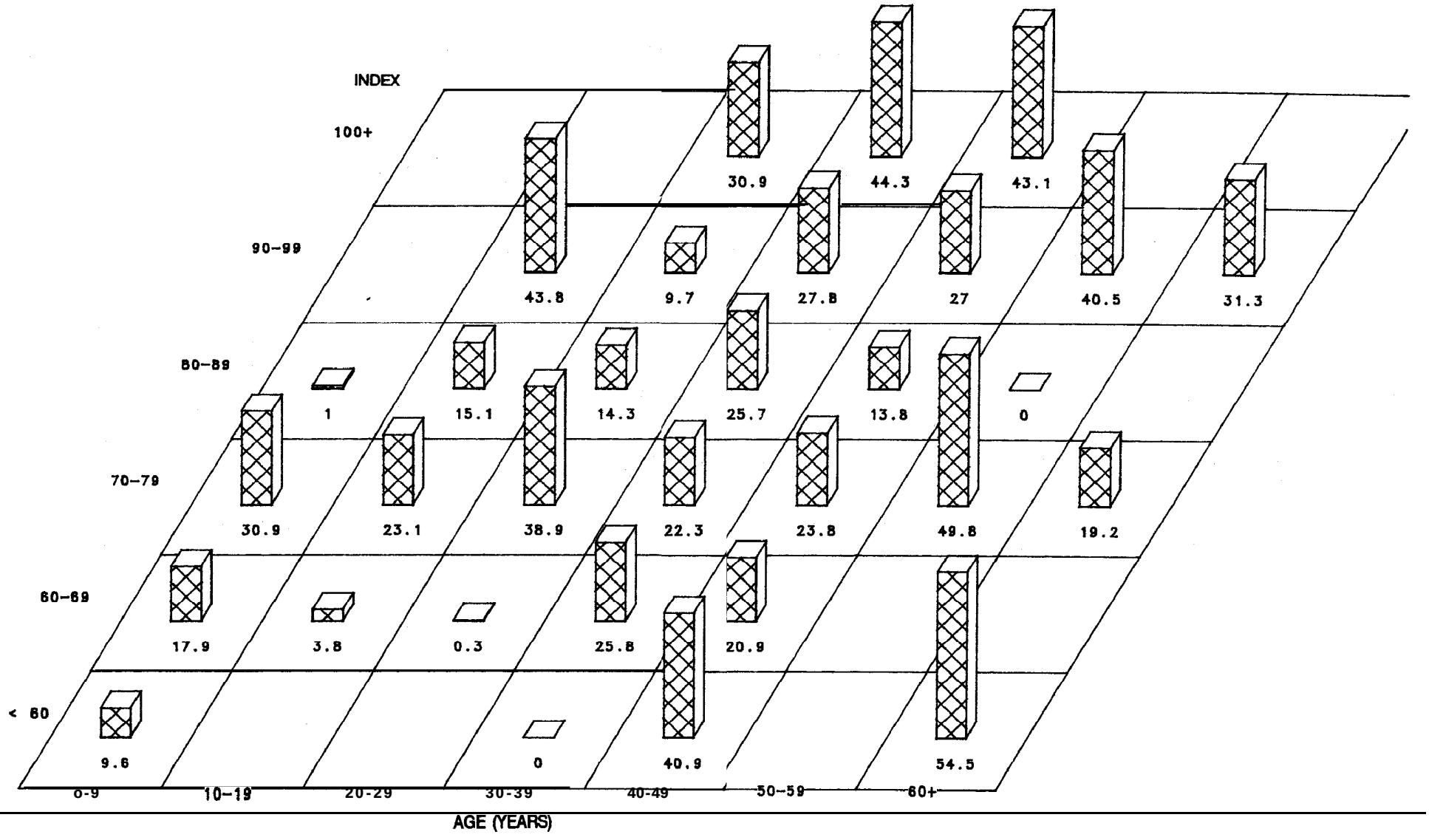


Figure 34C.–Percentage of basal area per acre in non-yellowpine species, by site index and stand age, for natural loblolly pine stands in Florida (Represents 261,378 acres.)

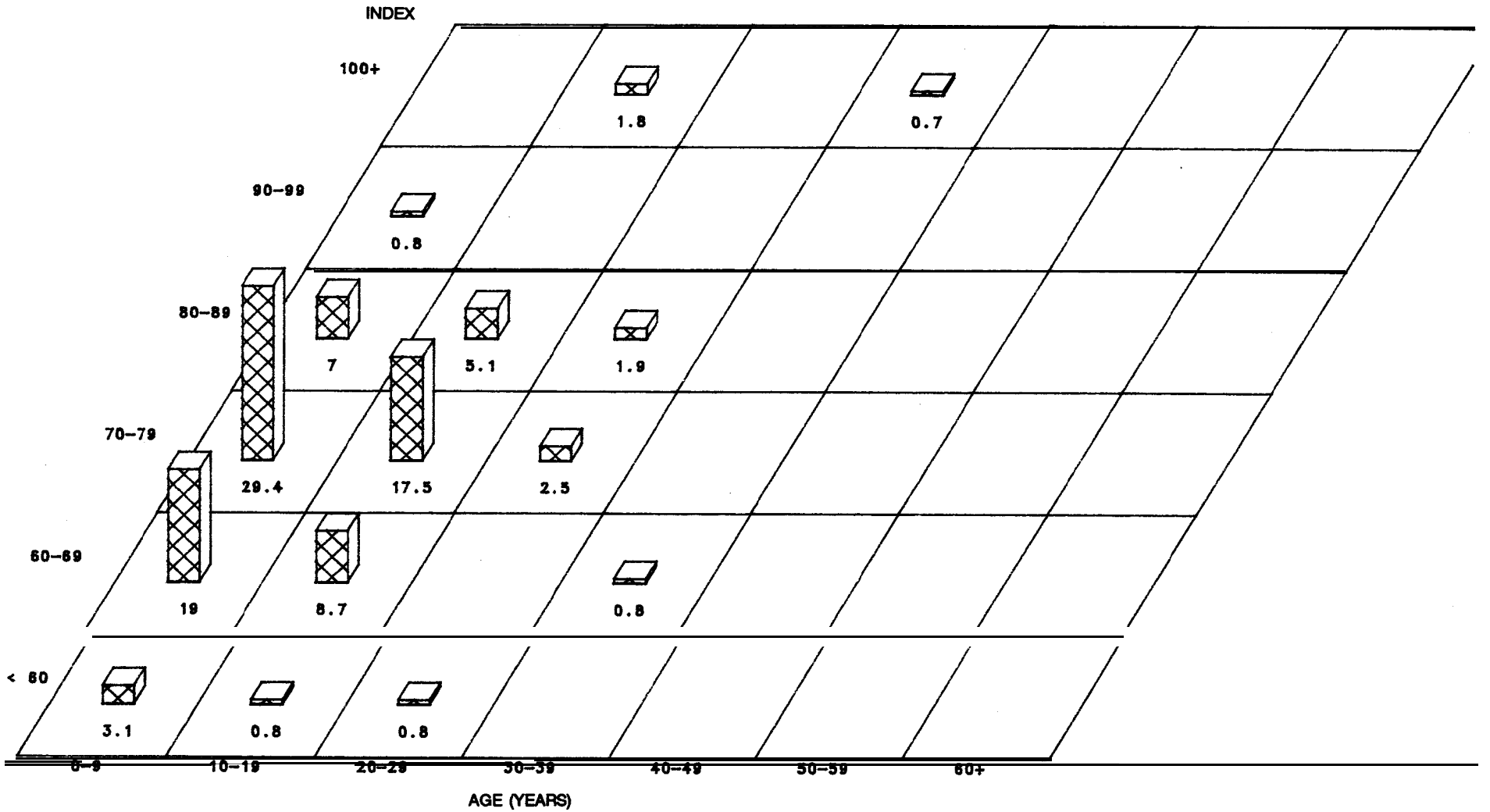


Figure 35A.–Percentage distribution of planted loblolly pine stands in Florida, by site index and stand age. (Represents 317,094 acres.)

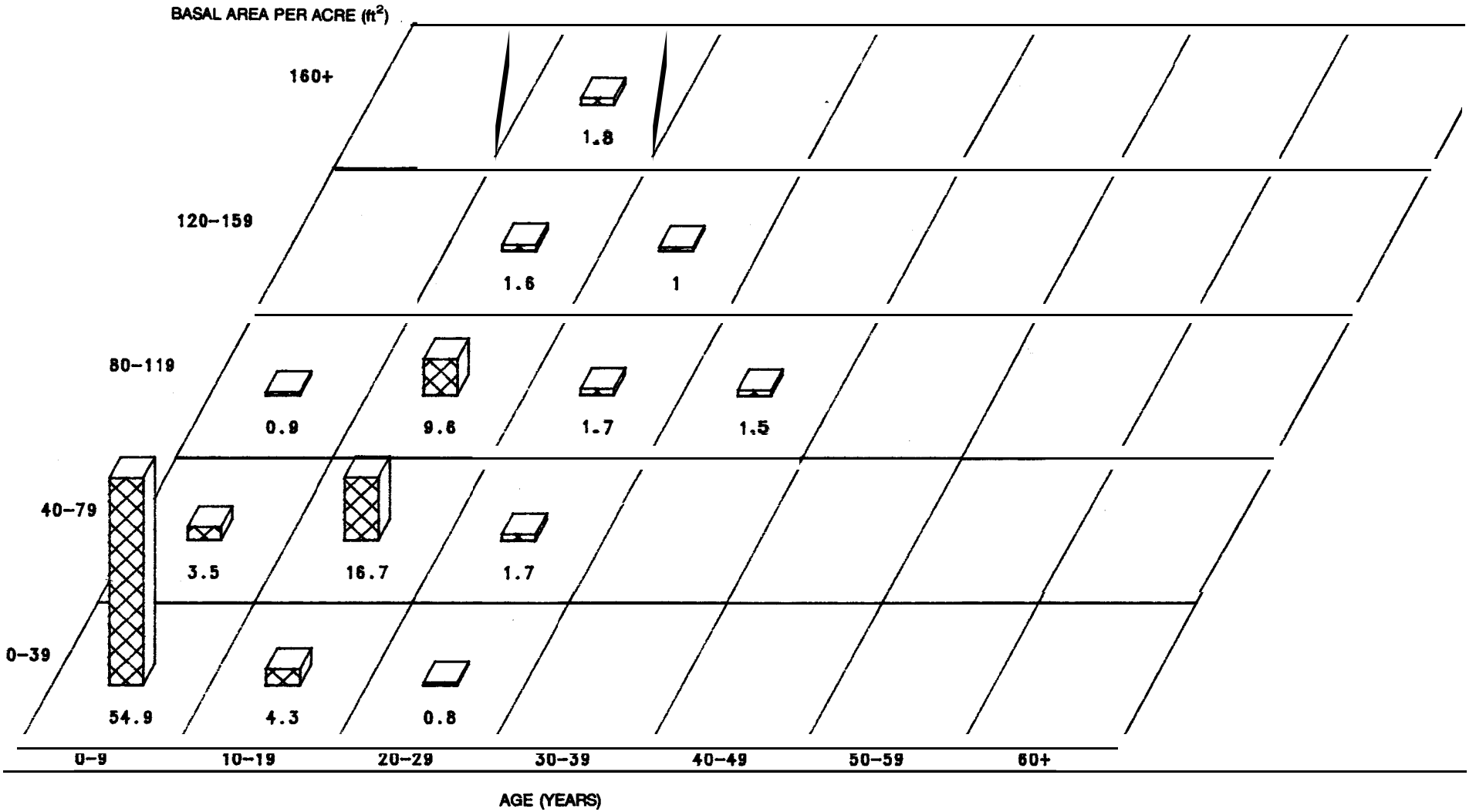


Fig 35B ercentage distribution of planted loblolly pine stands in Florida, by basal area per acre and stand age. (Represents 317,094 acres.)

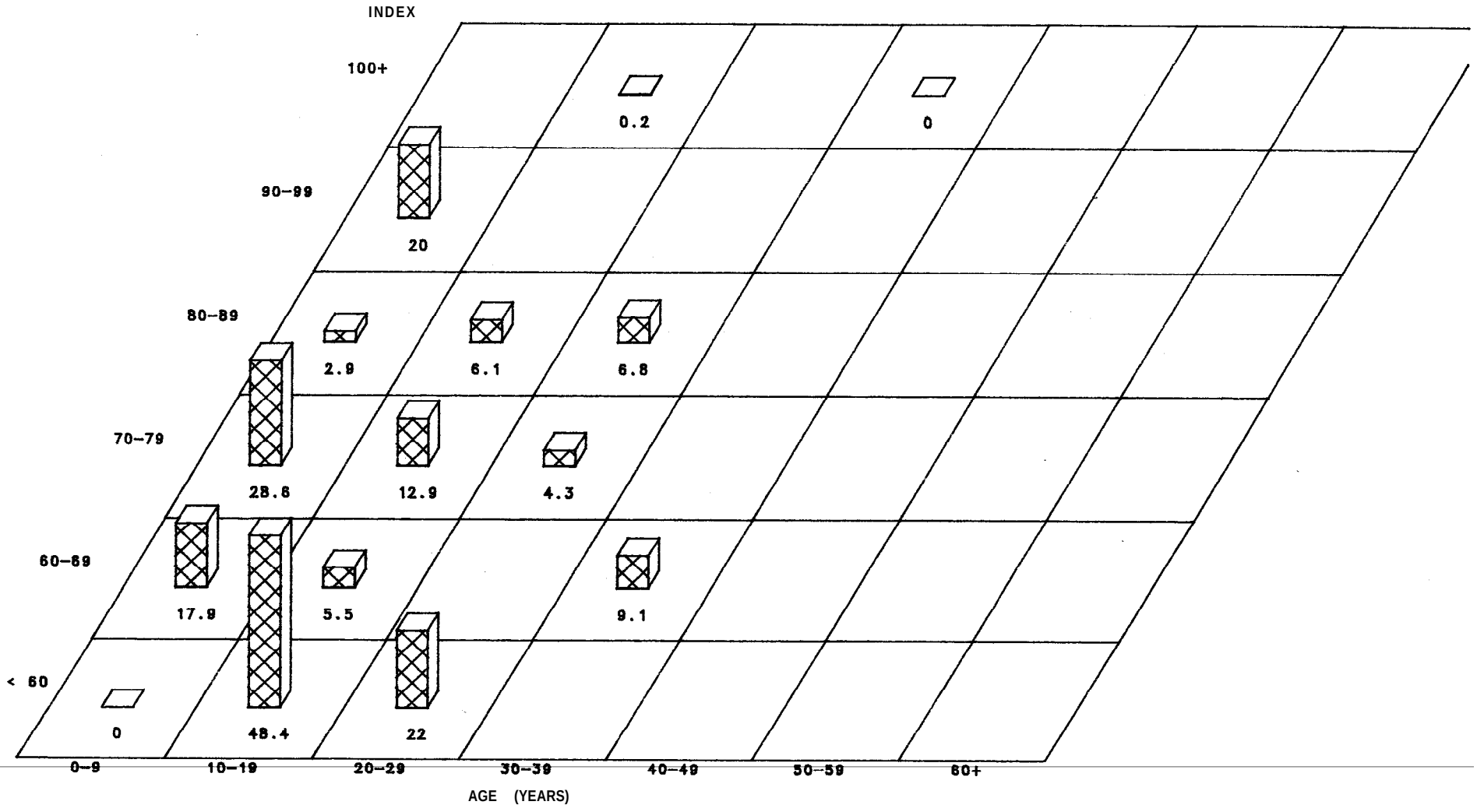


Figure 35C.–Percentage of basal area per acre in non-yellowpine species, by site index and stand age, for planted **loblolly** pine stands in Florida. (Represents **317,094** acres.)

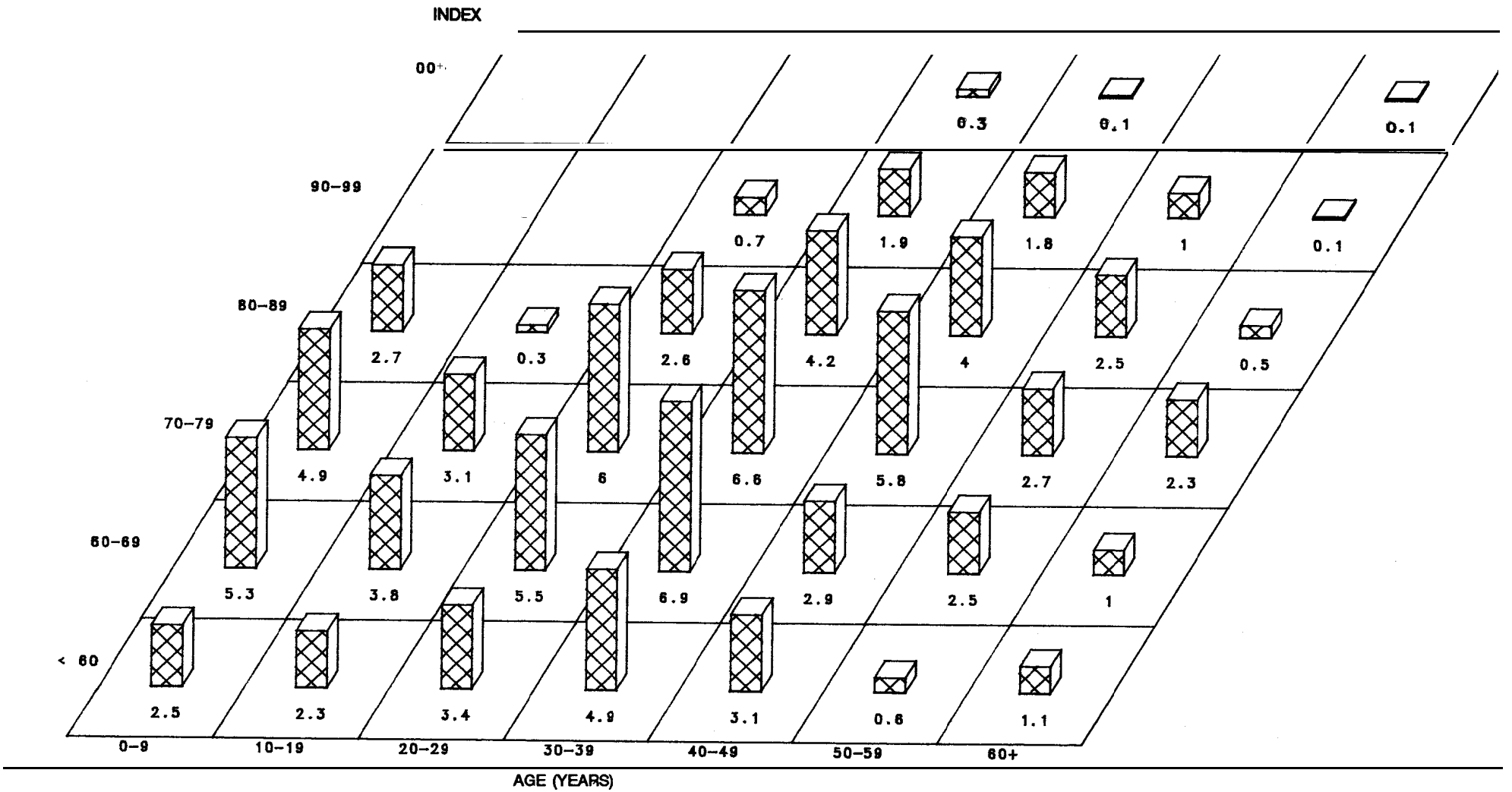


Figure 36A.--Percentage distribution of natural slash pine stands in Florida, by site index and stand age. (Represents 1,903,105 acres.)

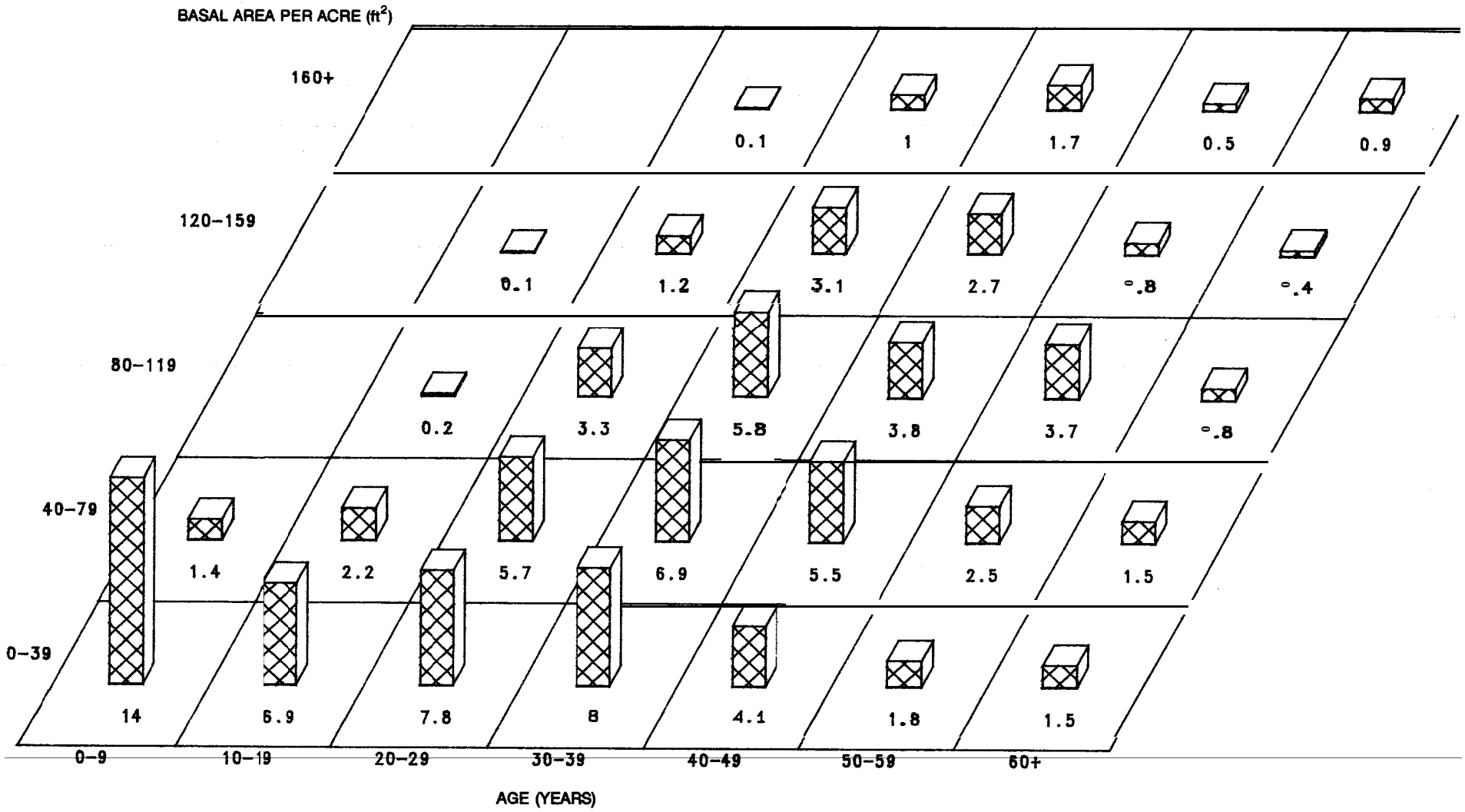


Figure 36B.--Percentage distribution of natural slash pine stands in Florida, by basal area per acre and stand age. (Represents 1,903,105 acres.)

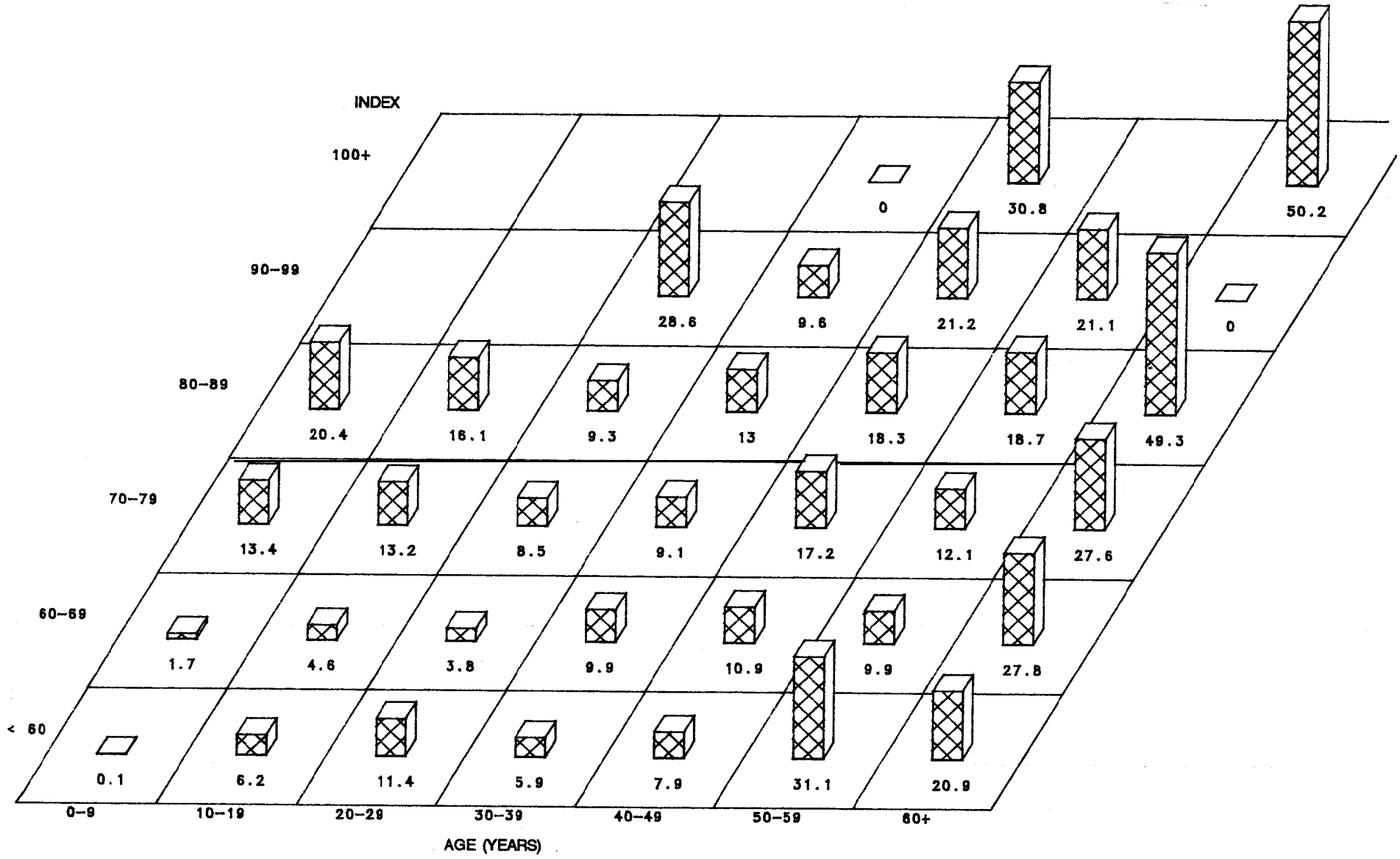


Figure 36C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, natural slash pine stands in Florida. (Represents 1,903,105 acres.)

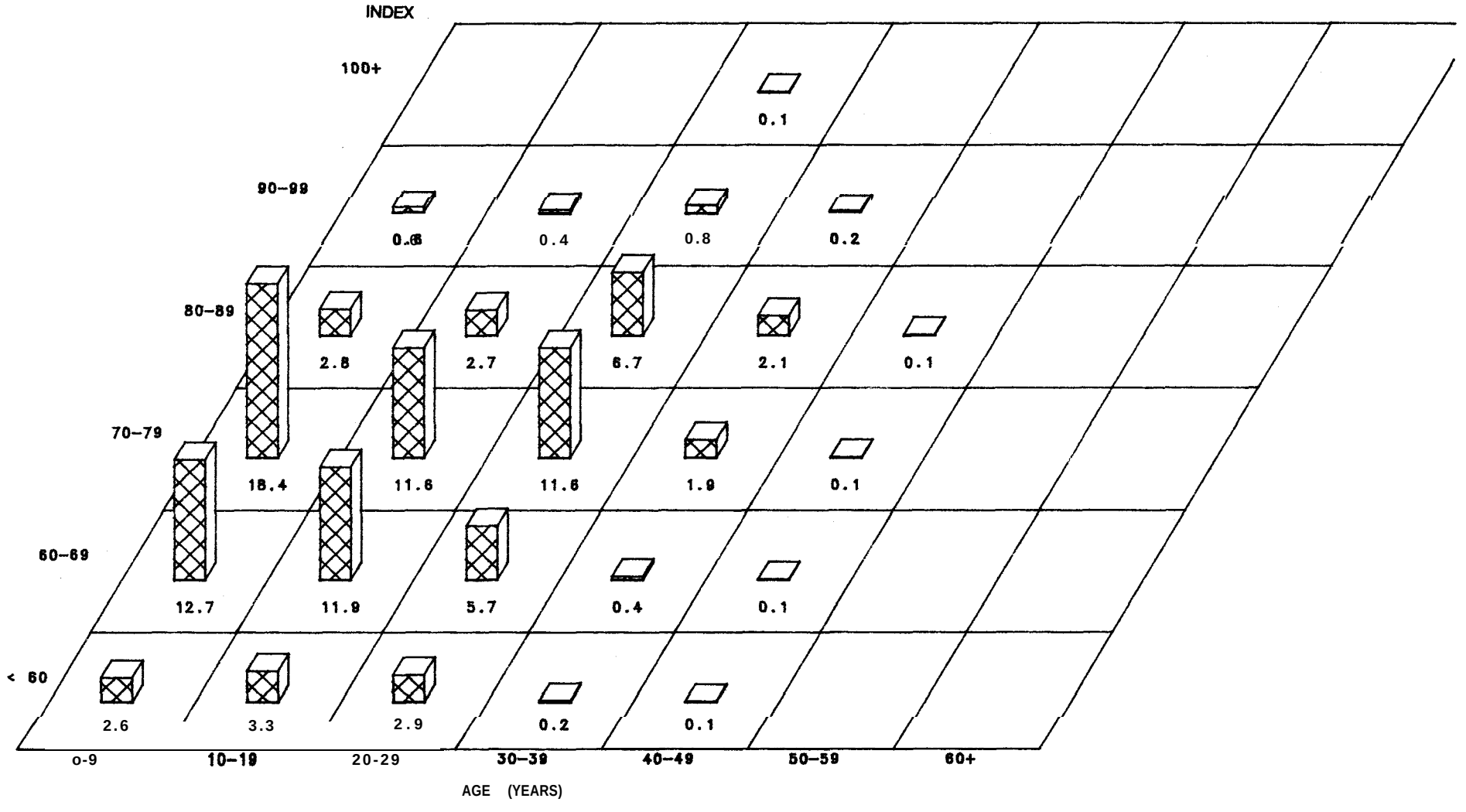


Figure 37A.–Percentage distribution of planted slash pine stands in Florida, by site index and stand age. (Represents 3,295,873 acres.)

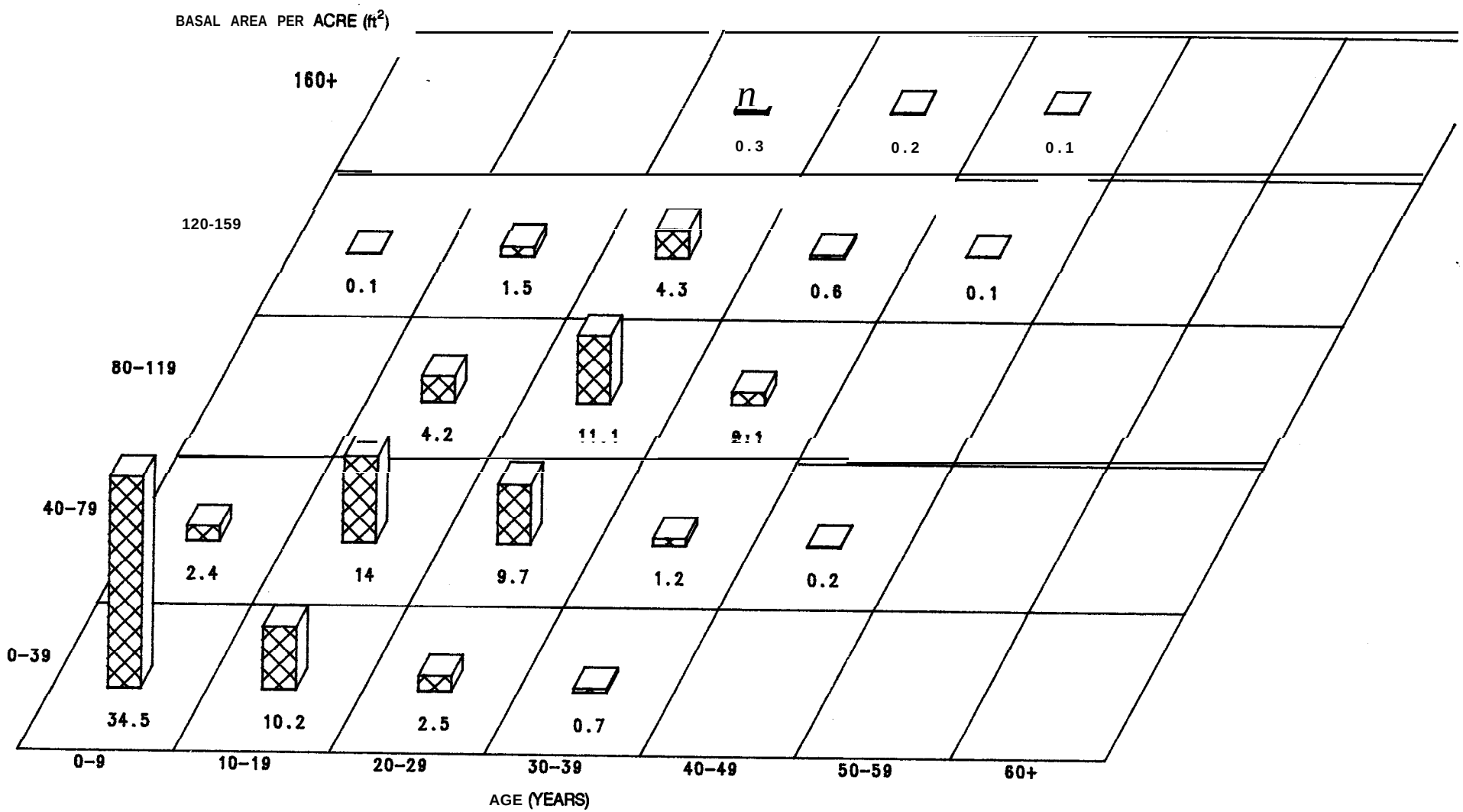


Figure 37B.--Percentage distribution of planted slash pine stands in Florida, by basal area per acre and stand age. (Represents 3,295,873 acres.)

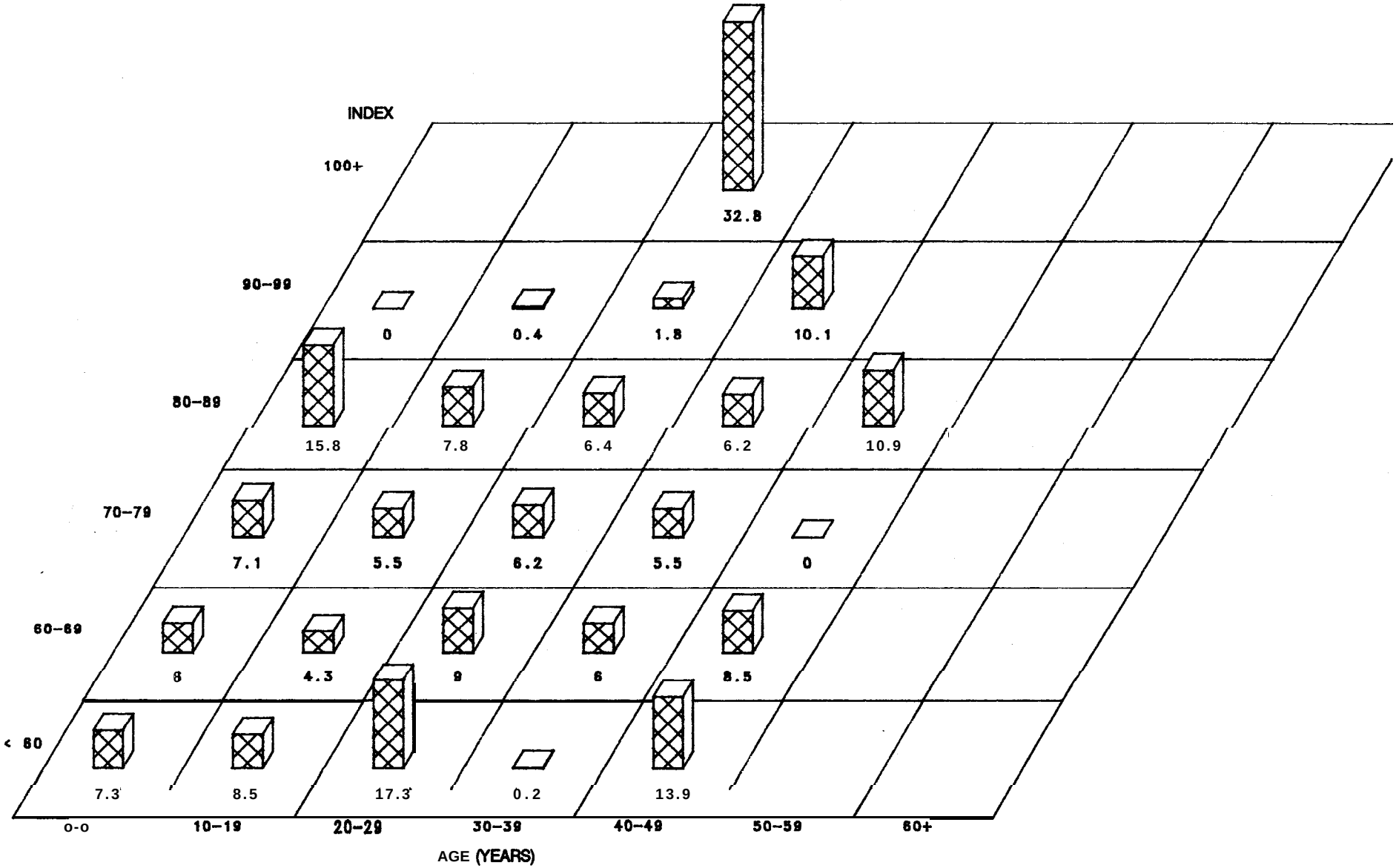


Figure 37C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted slash pine stands in Florida (Represents 3,295,873 acres.)

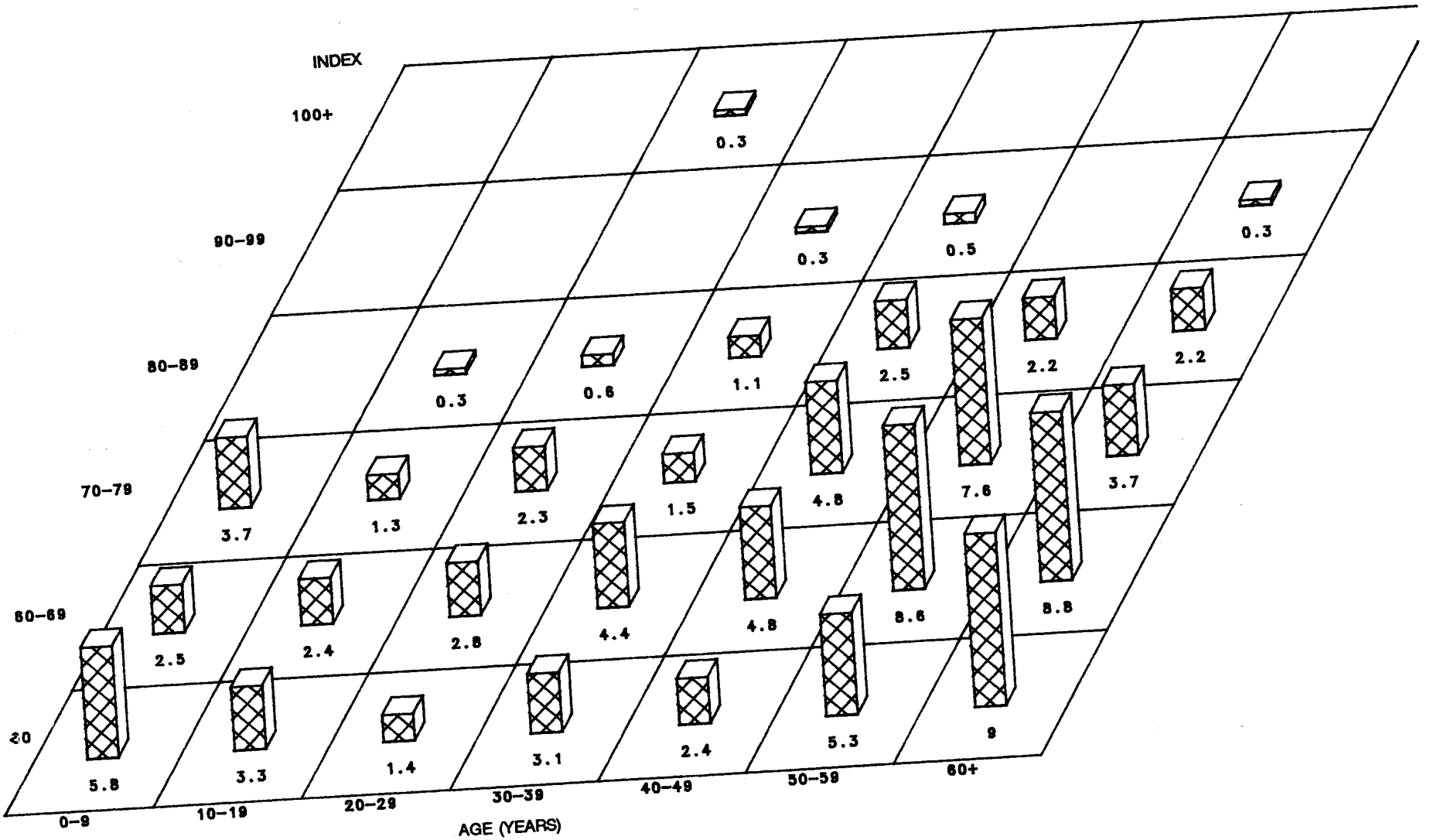


Figure 38A.–Percentage distribution of longleaf pine stands in Florida, by site index and stand age. (Represents 861,368 acres of natural stands, and 89,578 acres of planted stands.)

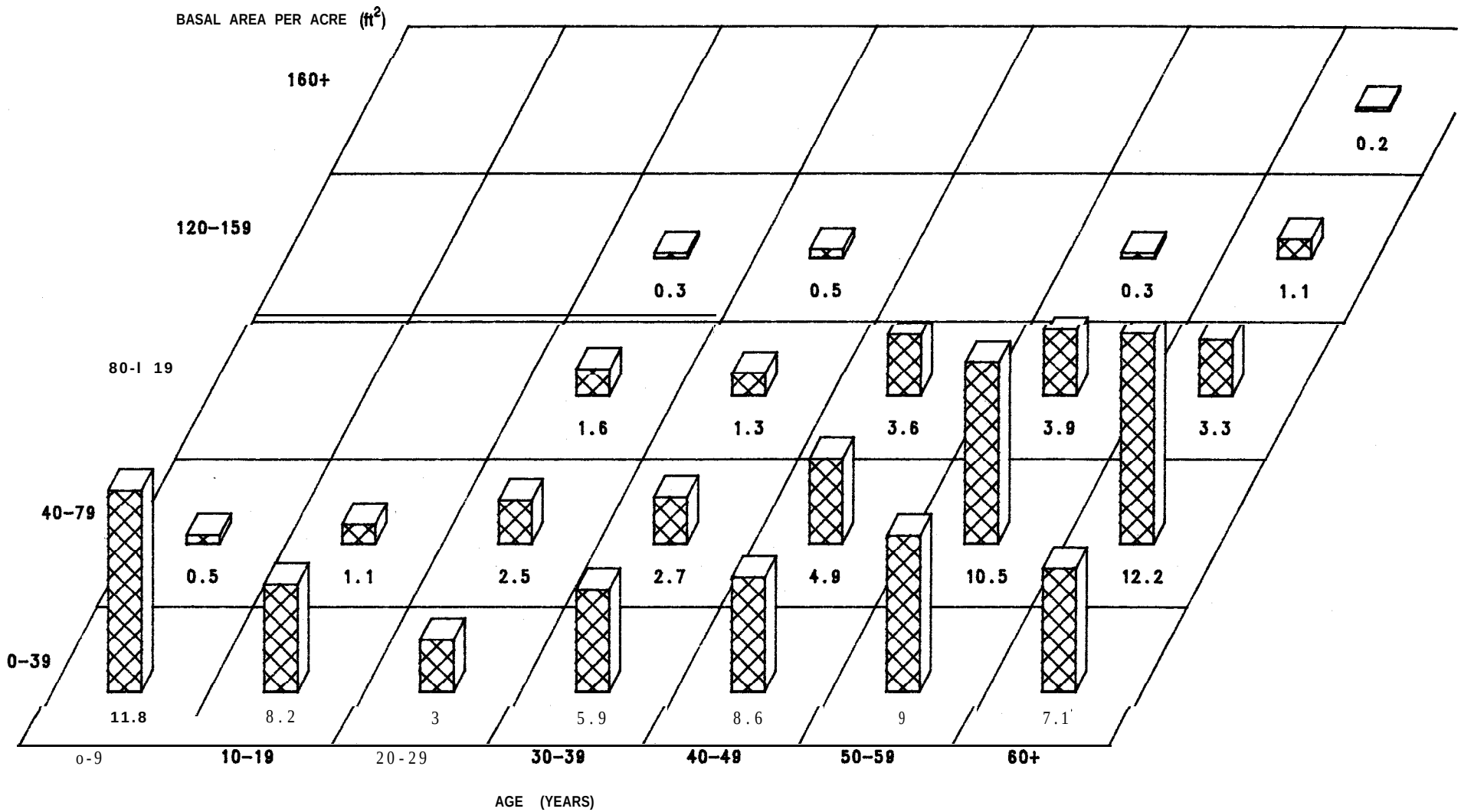


Figure 38B.–Percentage distribution of longleaf pine stands in Florida, by basal area per acre and stand age. (Represents 861,368 acres of natural stands, 89,578 acres of planted stands.)

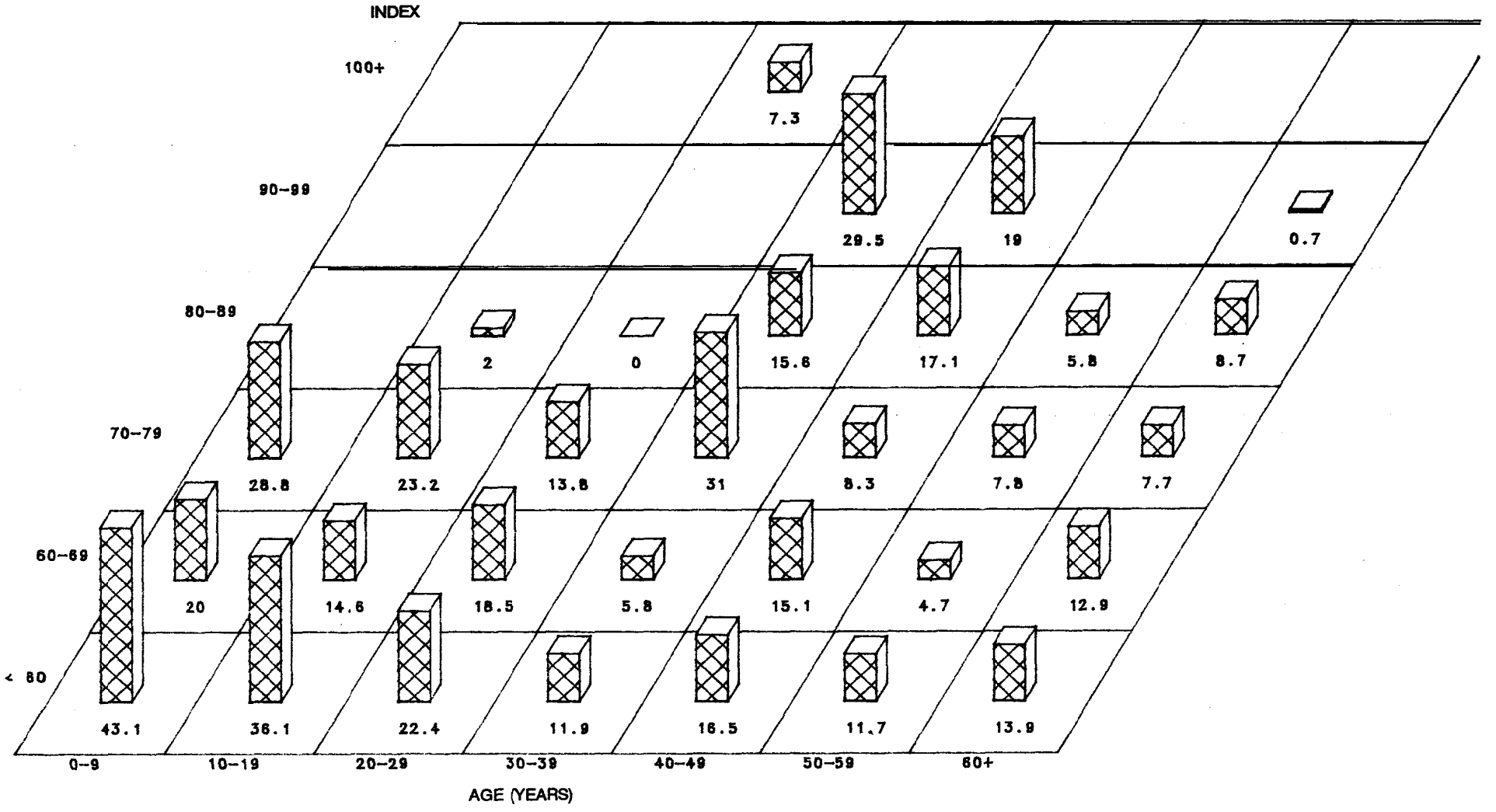


Figure 38C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for longleaf pine stands in Florida. (Represents 861,368 acres of natural stands, and 89,578 acres of planted stands.)

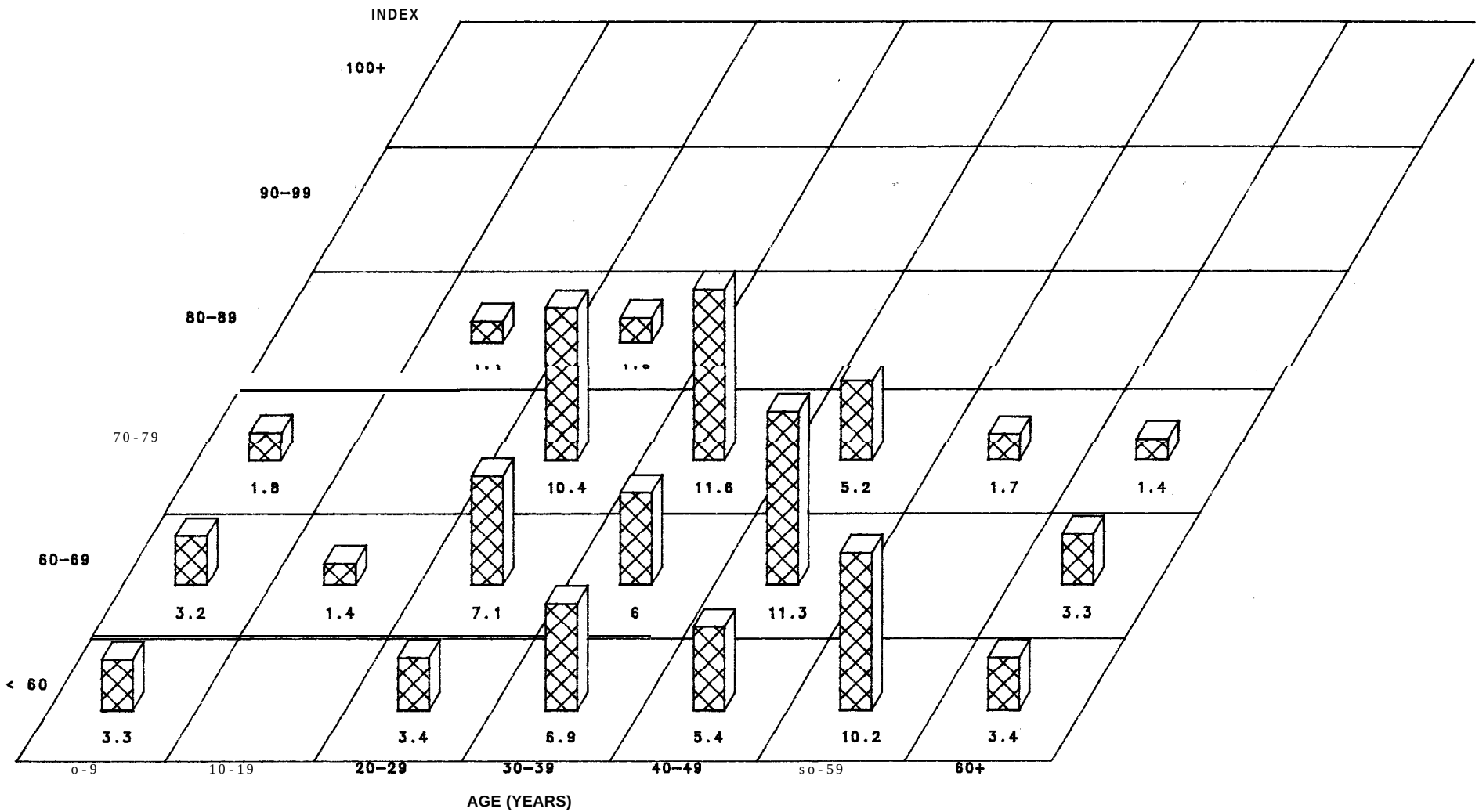


Figure 39A.–Percentage distribution of pond pine stands in Florida, by site index and stand age. (Represents 157,533 acres of natural stands.)

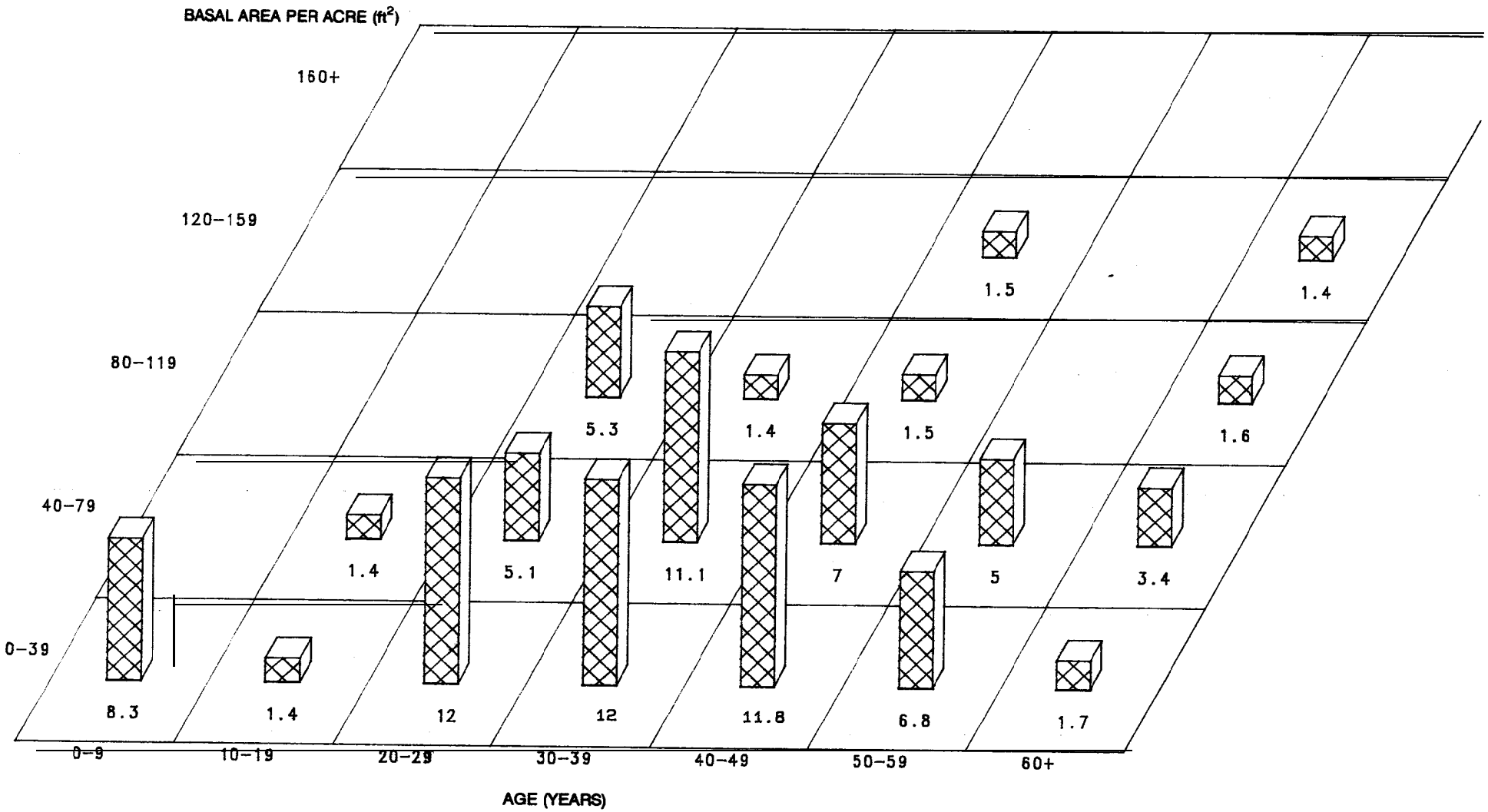


Figure 39B.--Percentage distribution of pond pine stands in Florida, by basal area per acre and stand age. (Represents 157,833 acres of natural stands.)

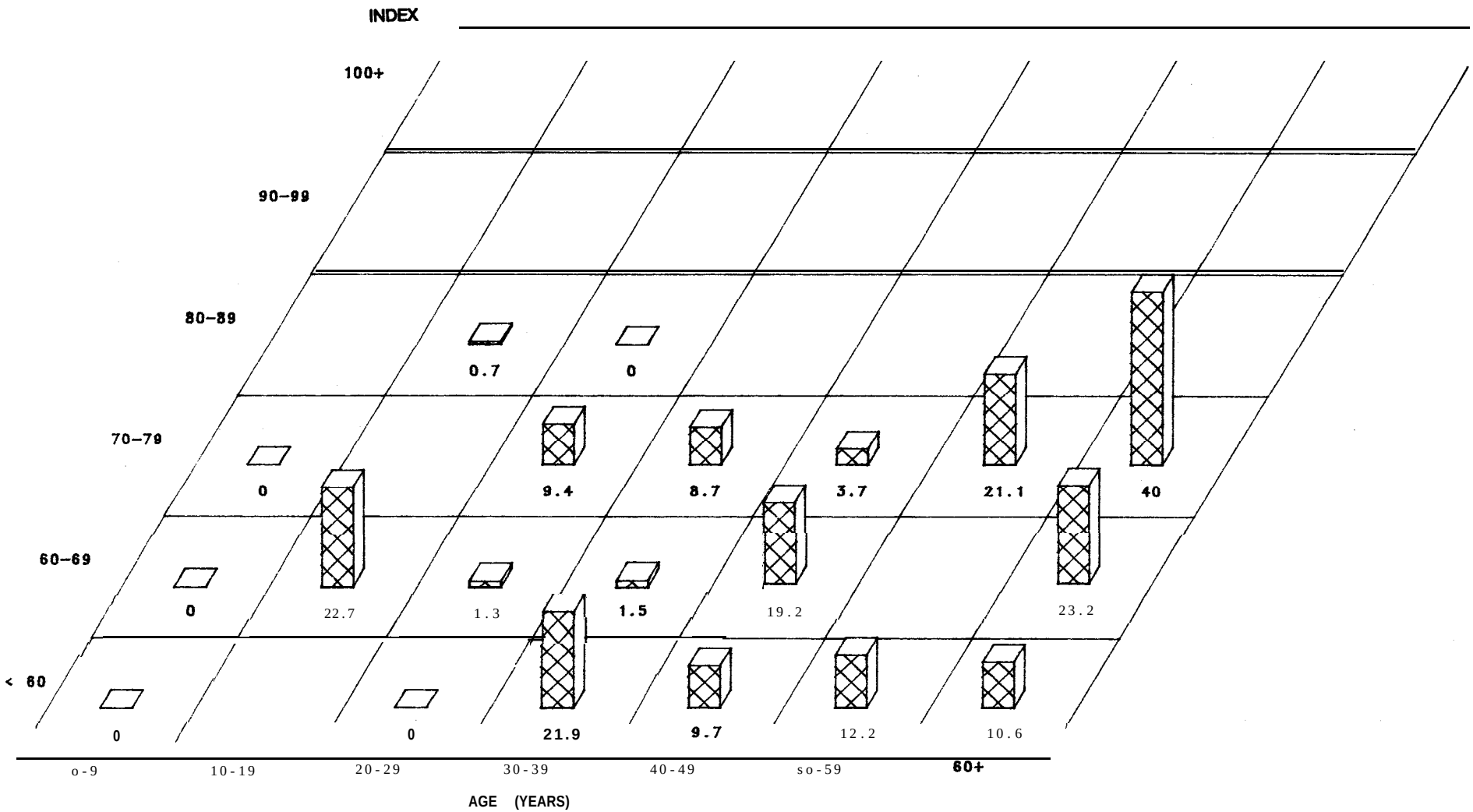


Figure 39C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for pond pine stands in Florida. (Represents 157,833 acres of natural stands.)

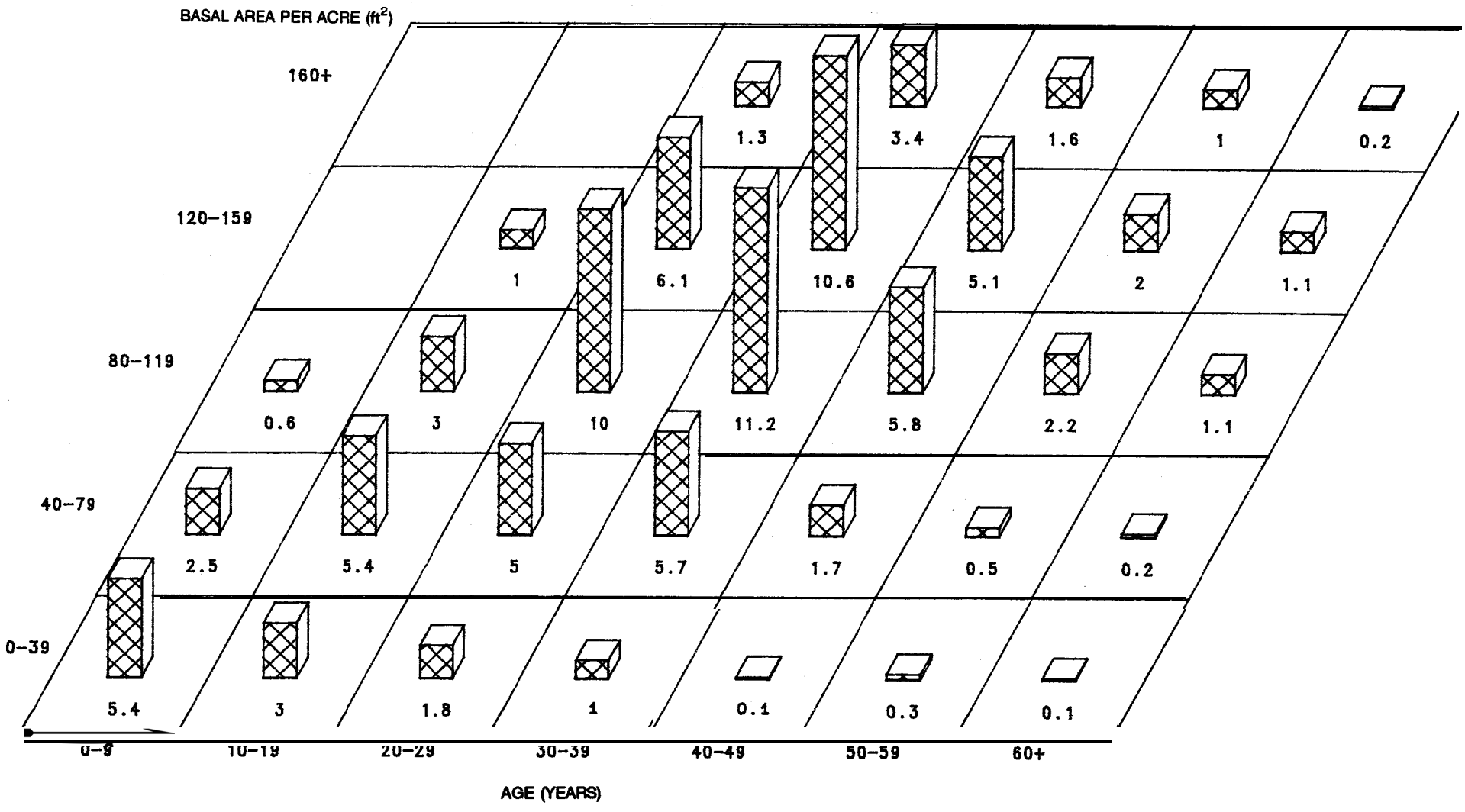


Figure 40.–Percentage distribution of natural loblolly pine stands in Georgia, by basal area per acre and stand age. (Represents 3,757,124 acres.)

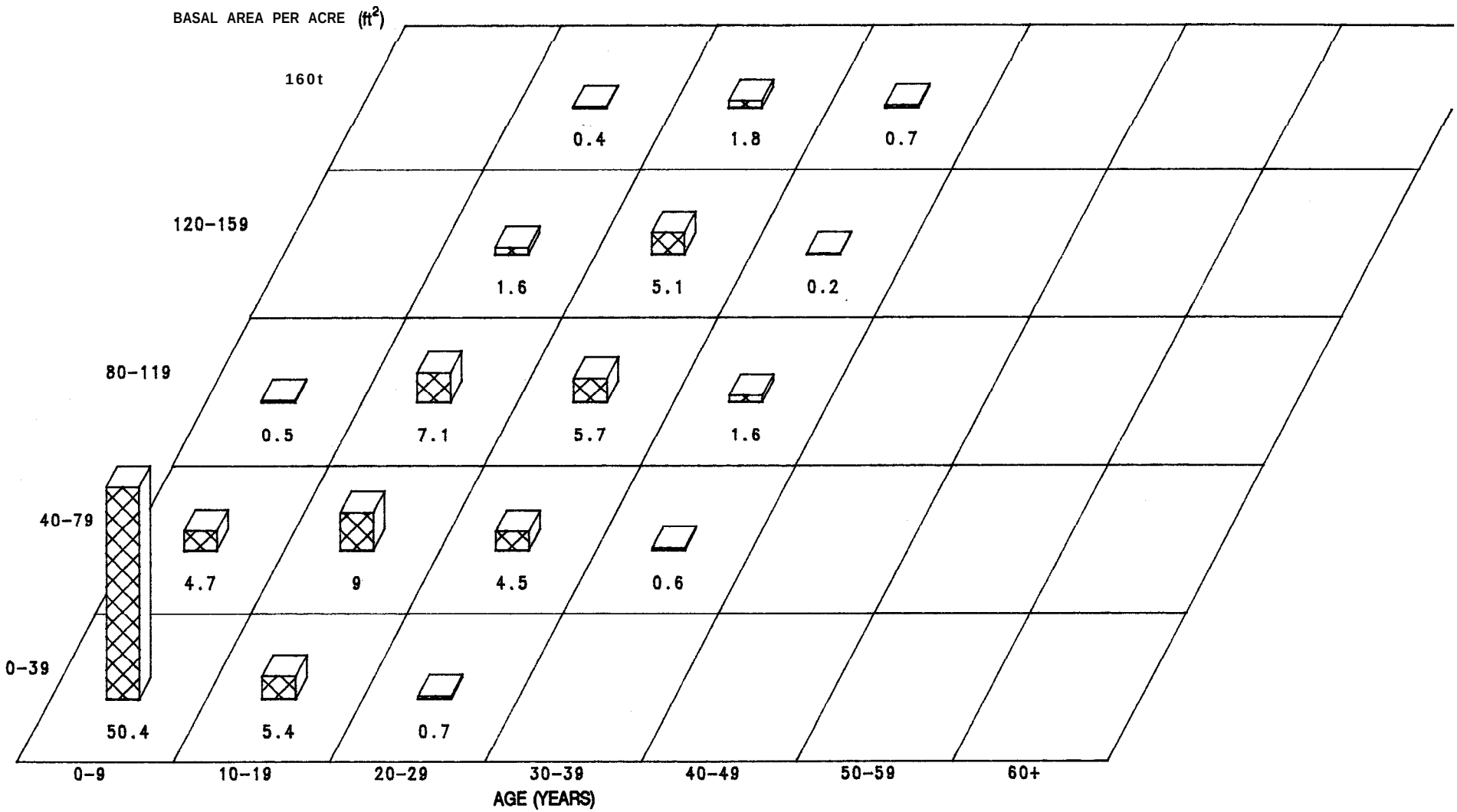


Figure 41.-Percentage diibution of planted loblolly pine stands in Georgia, by basal area per acre and stand age. (Represents 1373,109 acres.)

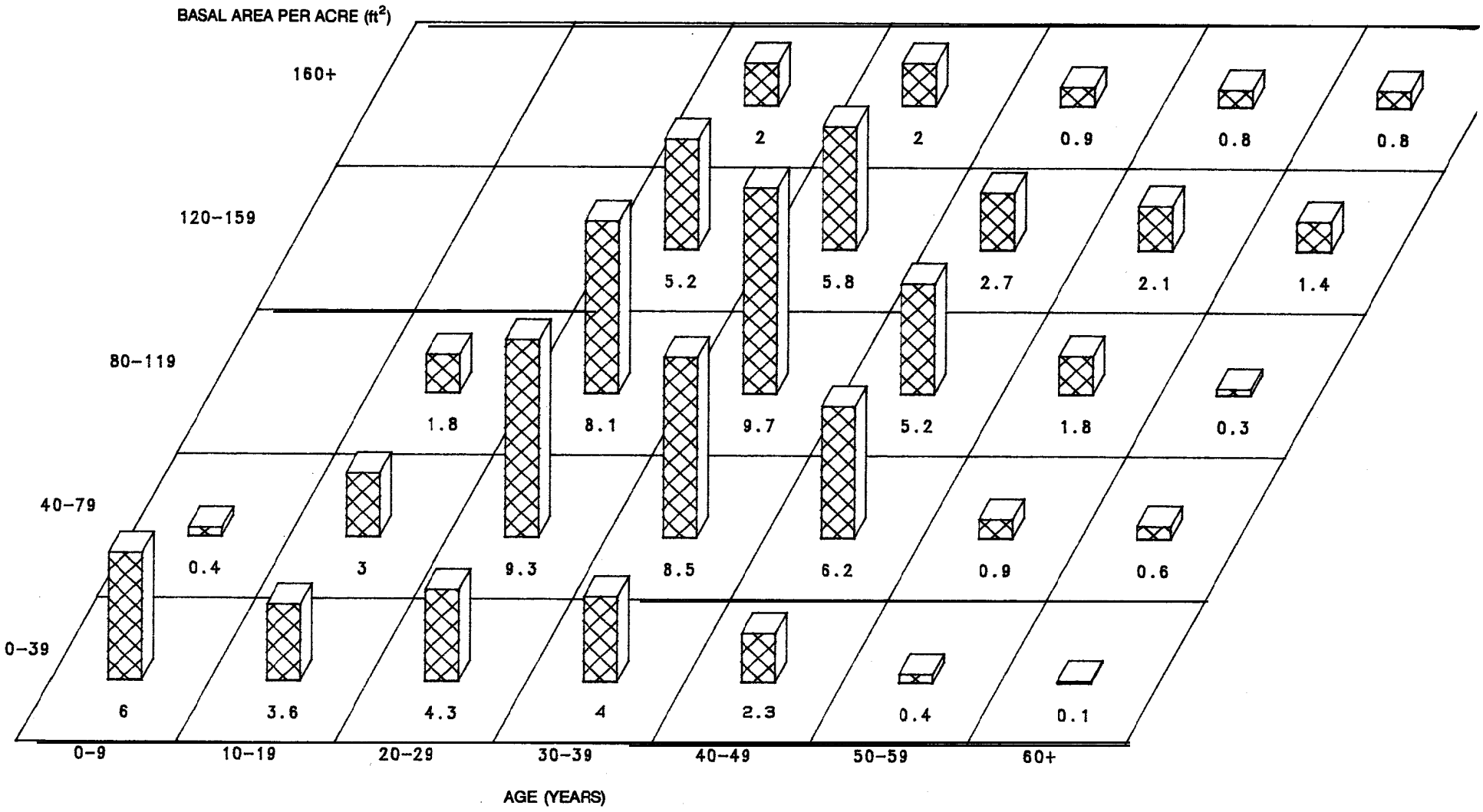


Figure 42.--Percentage distribution of natural slash pine stands in Georgia, by basal area per acre and stand age. (Represents 1,897,060 acres.)

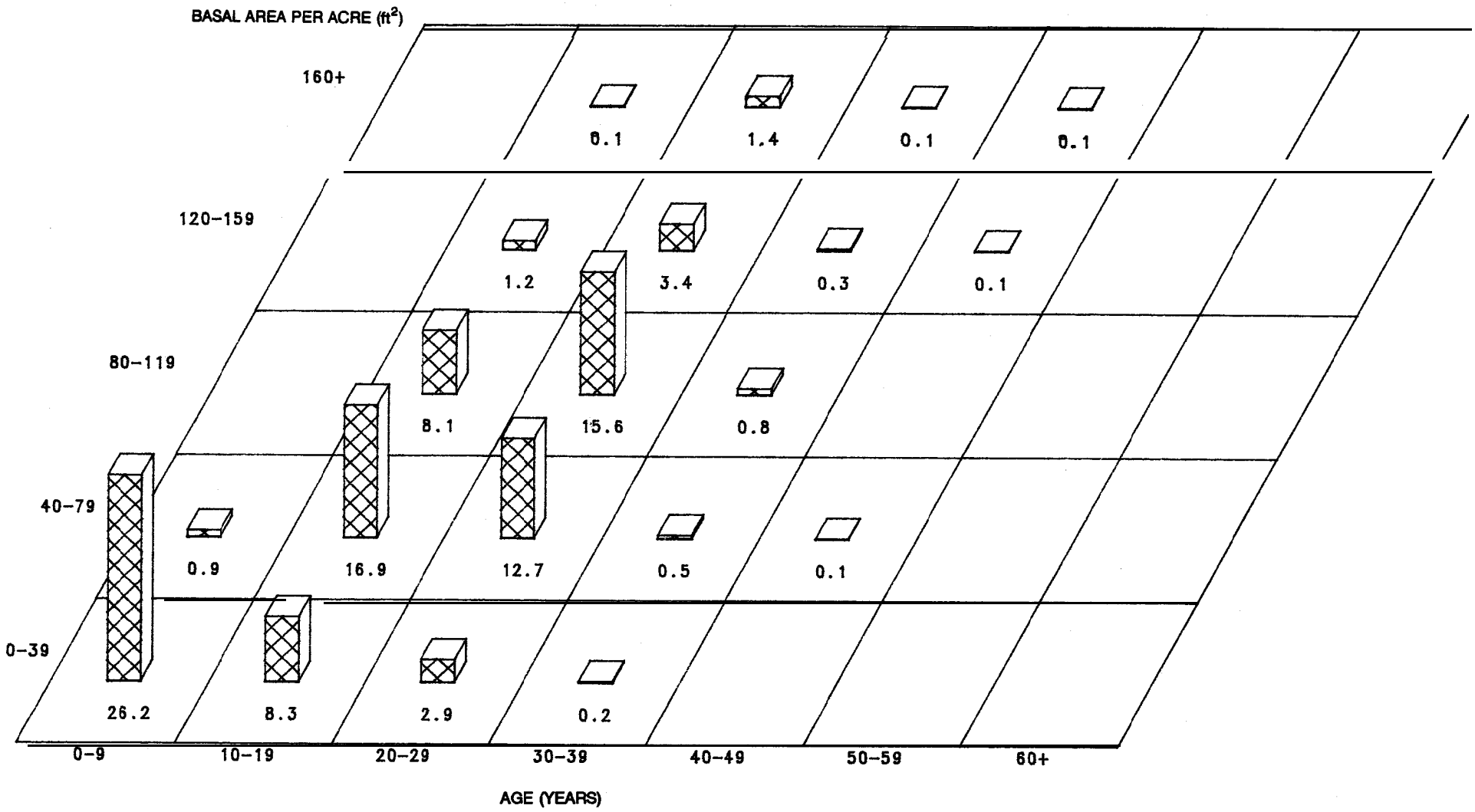


Figure 43.--Percentage distribution of planted slash pine stands in Georgia, by basal area per acre and stand age. (Represents 2,160,706 acres.)

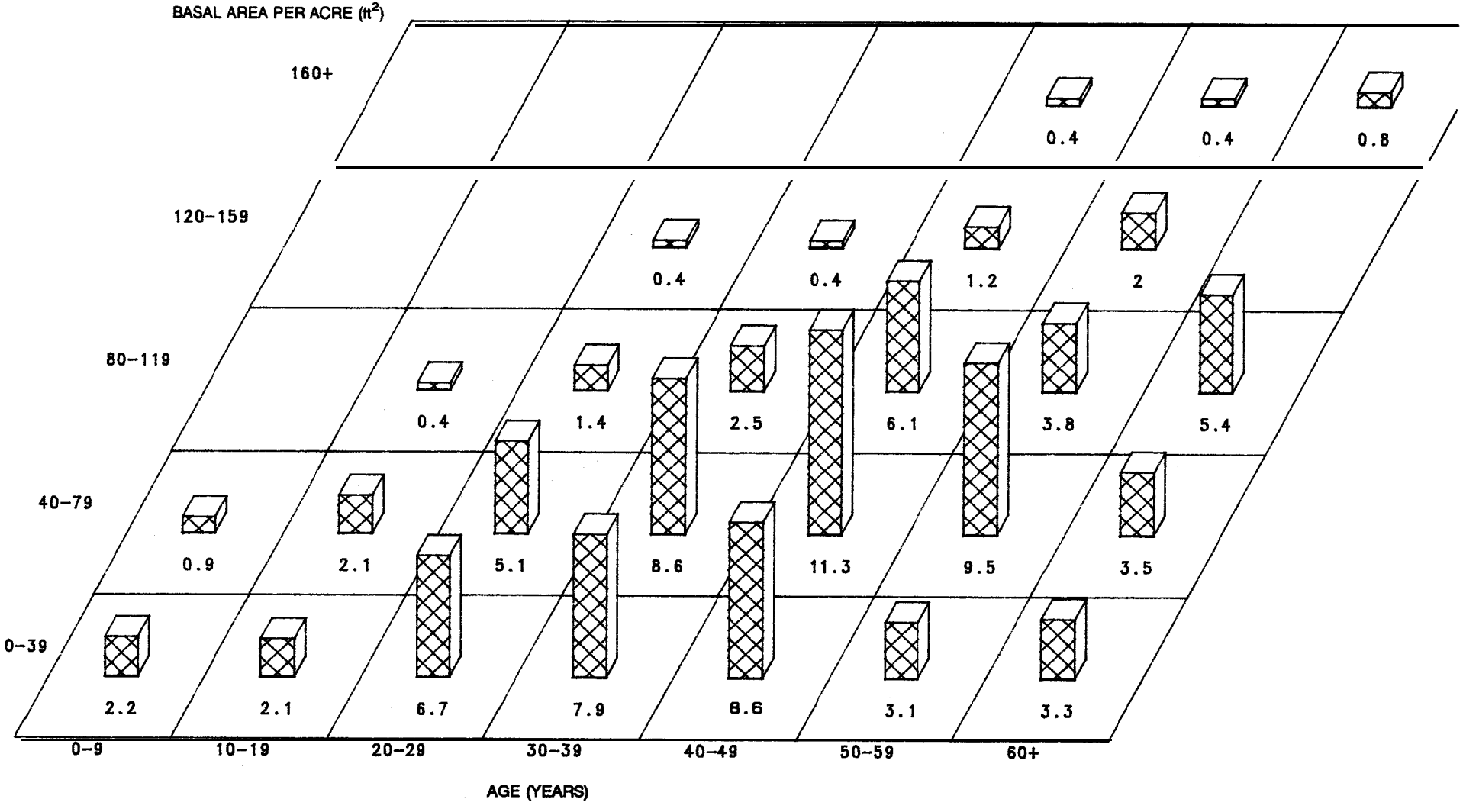


Figure 44.--Percentage distribution of longleaf pine stands in Georgia, by basal area and stand age. (Represents 665,371 acres of natural stands, and 11,073 acres of planted stands.)

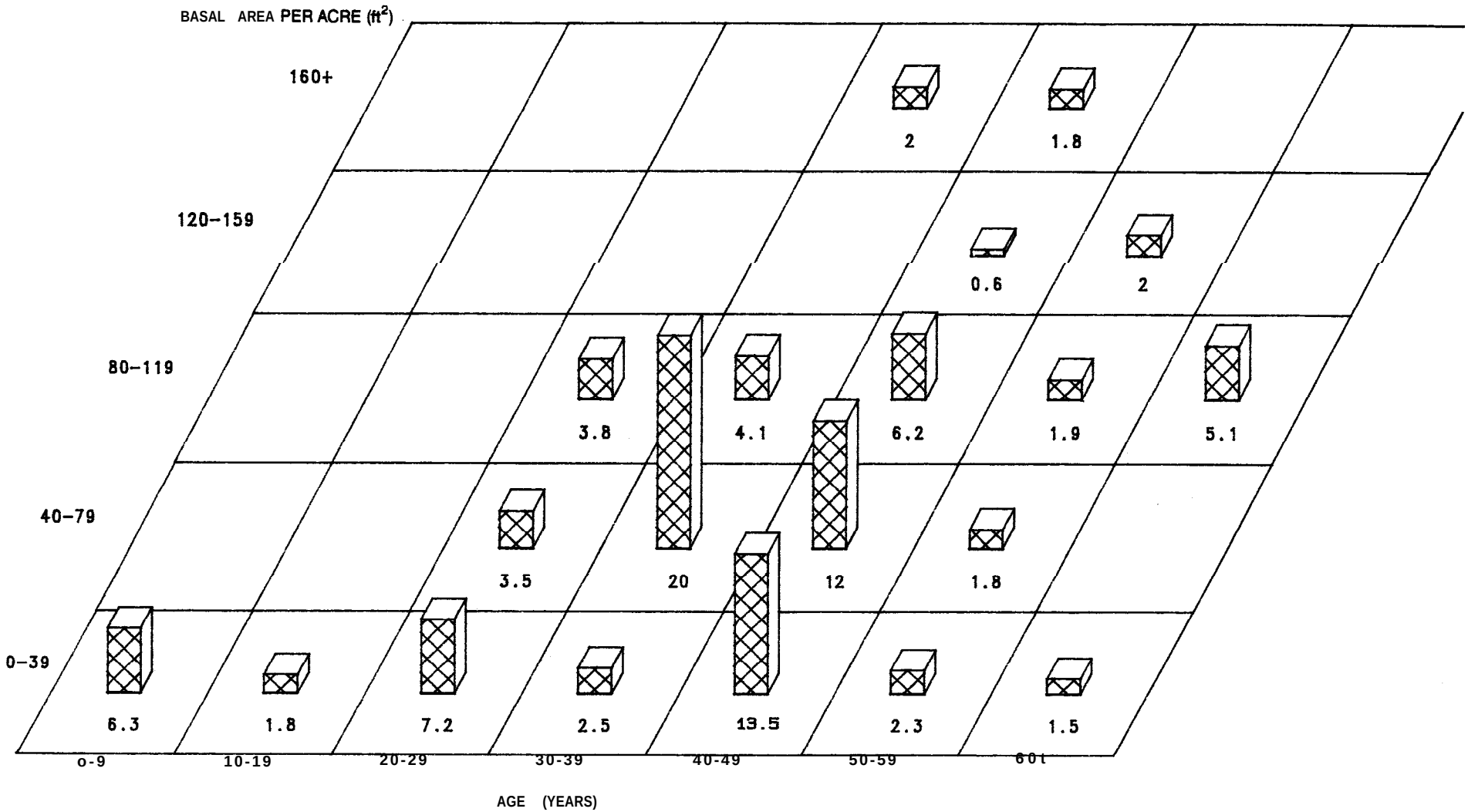


Figure 45.--Percentage distribution of pond pine stands in Georgia, by basal area per acre and stand age. (Represents 138,673 acres of natural stands, and 2,575 acres of planted stands.)

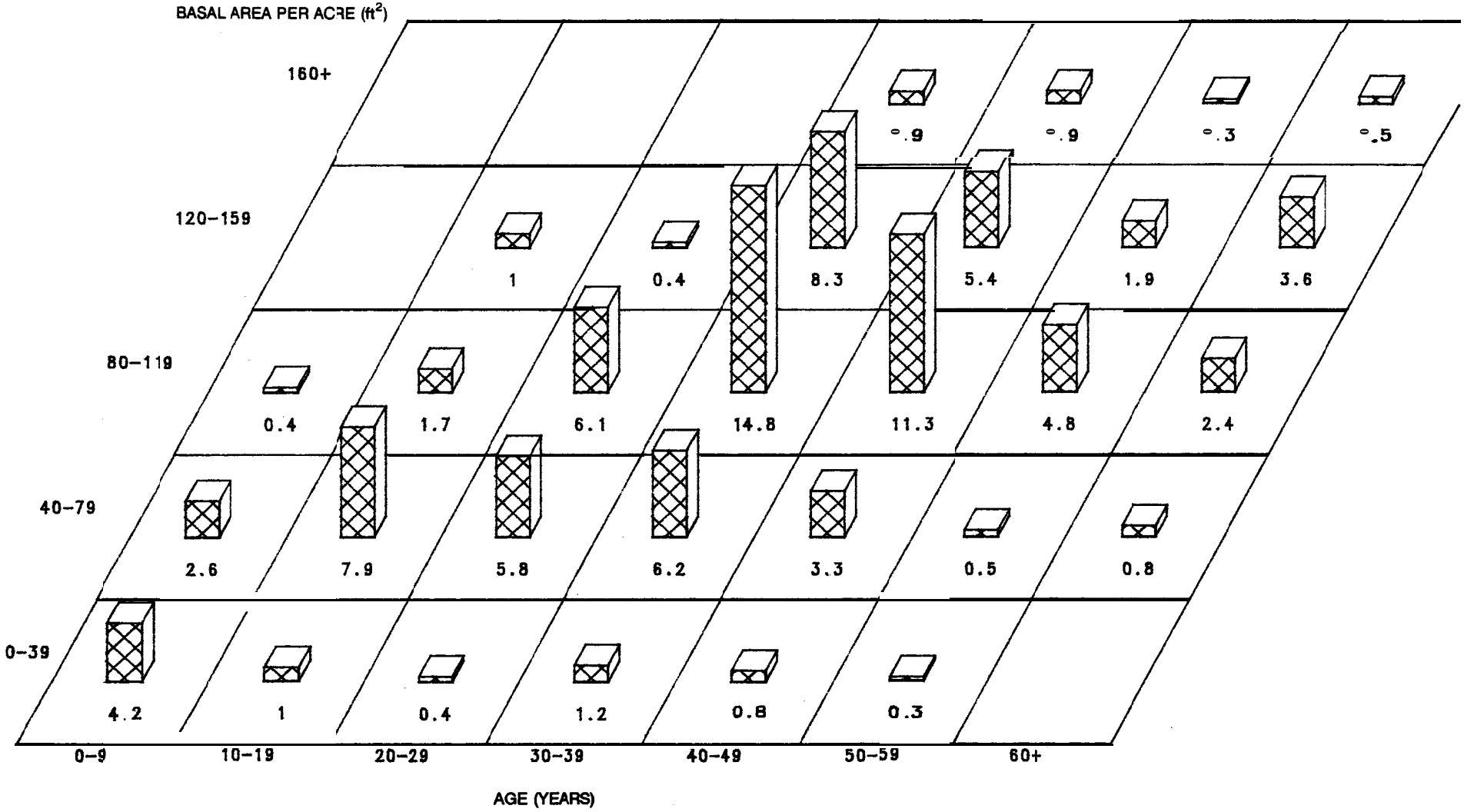


Figure 46.--Percentage distribution of shortleaf pine stands in Georgia, by basal area per acre and stand age. (Represents 909,258 acres of natural stands, and 5,446 acres of planted stands.)

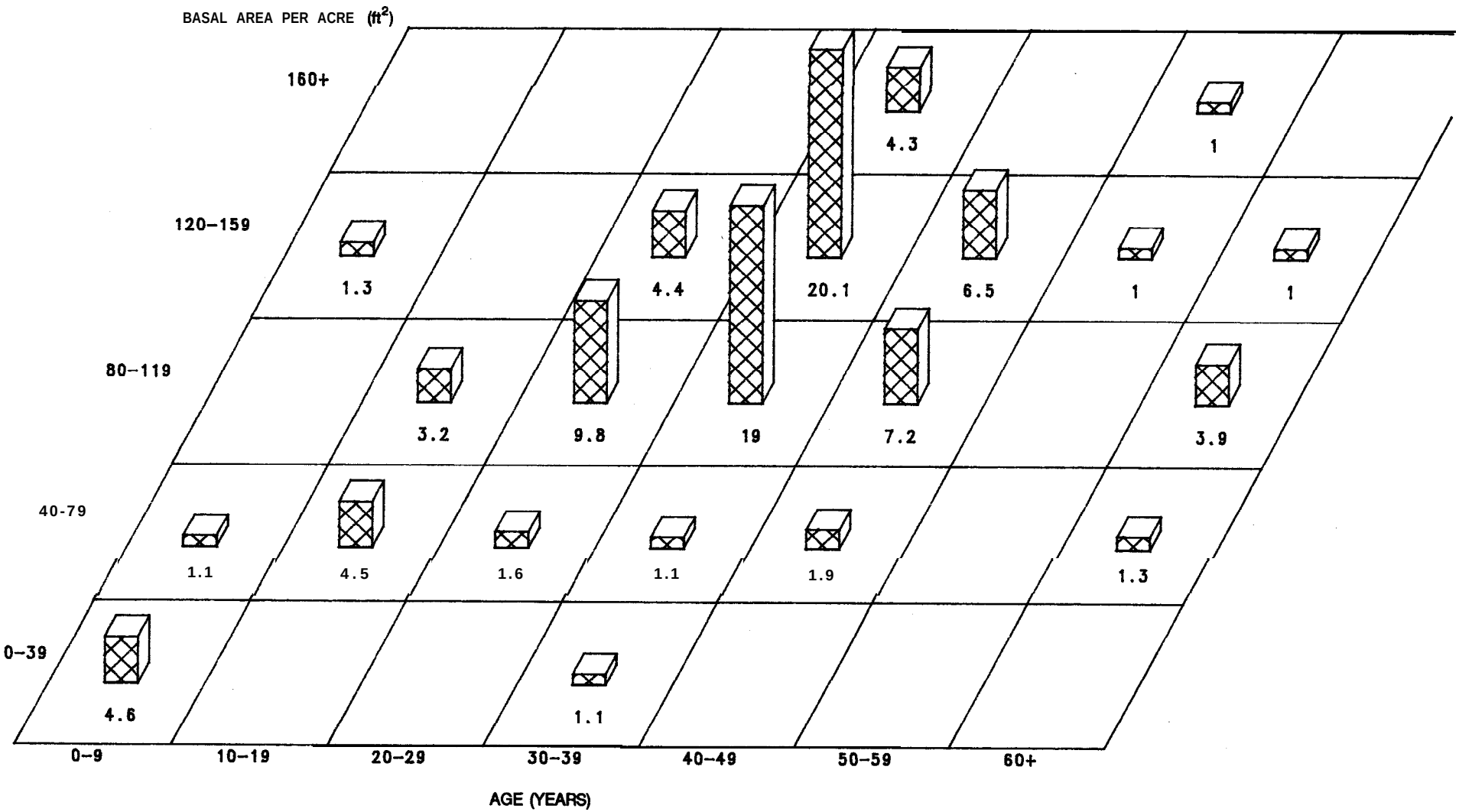


Figure 47.-Percentage distribution of Virginia pine stands in Georgia, by basal area per acre and stand age. (Represents 367,497 acres of natural stands, and 13,456 acres of planted stands.)

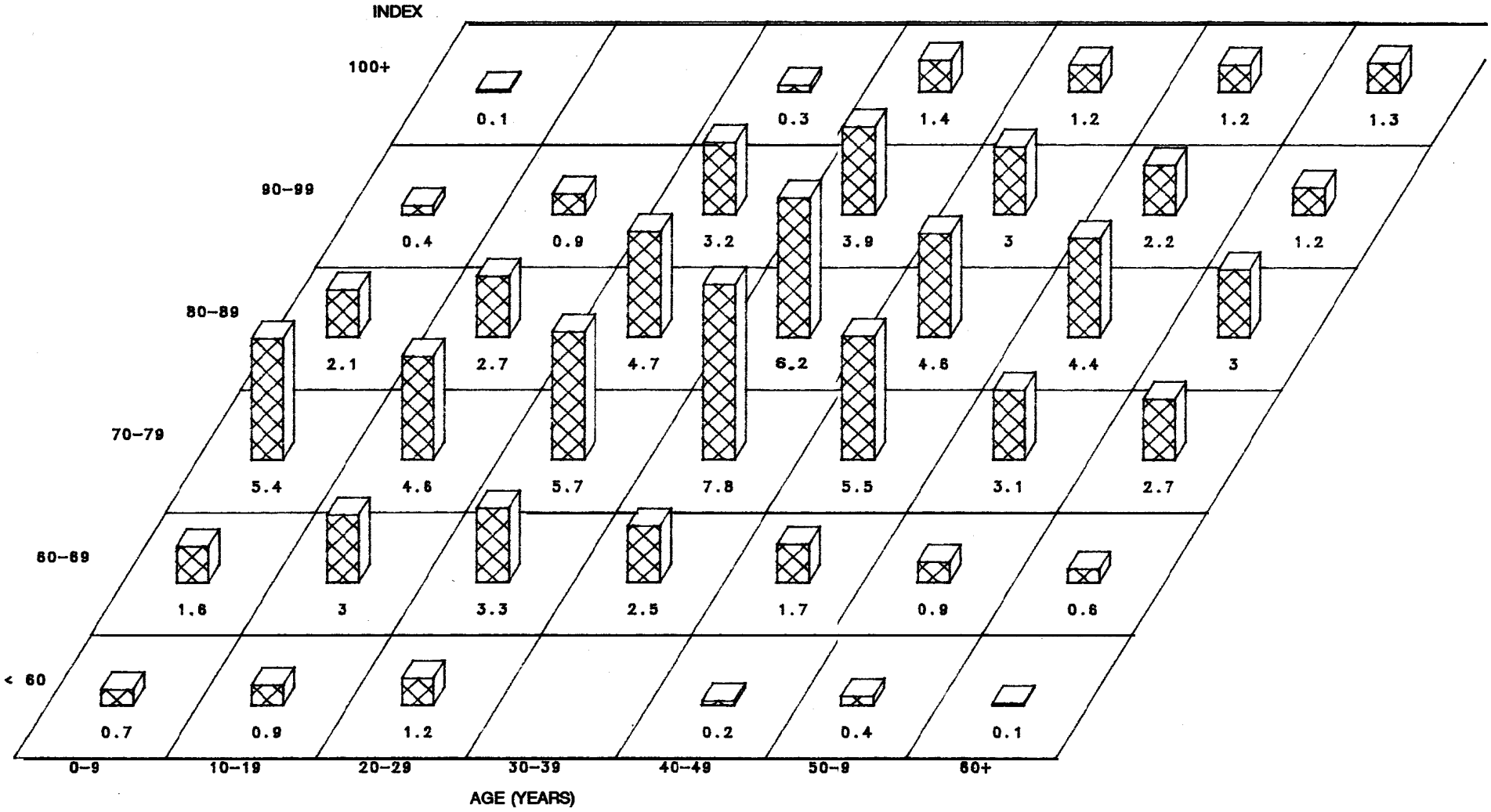


Figure 48A.–Percentage distribution of natural loblolly pine stands in North Carolina, by site index and stand age. (Represents 2,075,586 acres.)

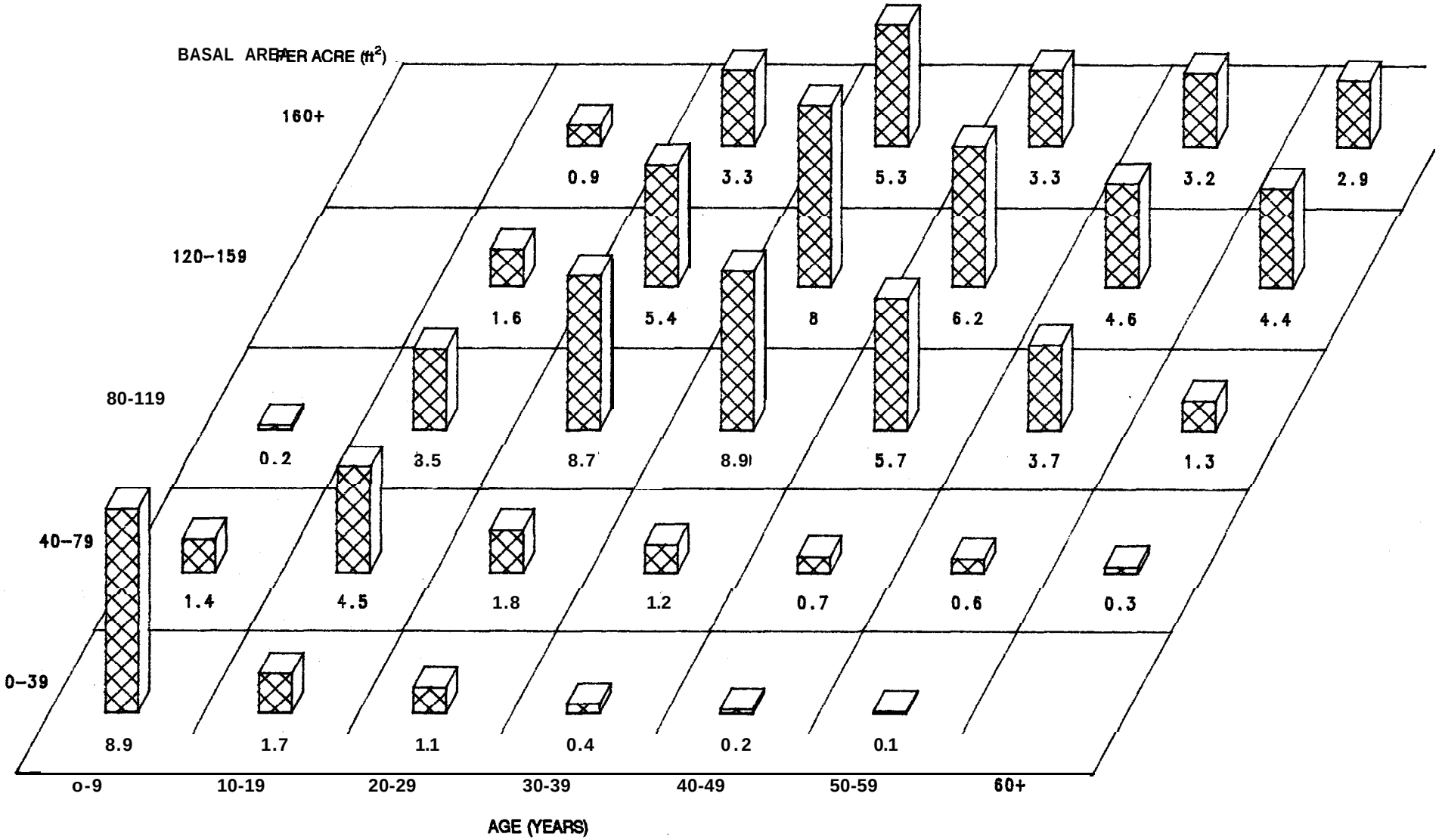


Figure 48B.--Percentage distribution of natural **loblolly** pine stands in North Carolina, by basal area per acre and stand age. (Represents **2,075,586 acres.)**

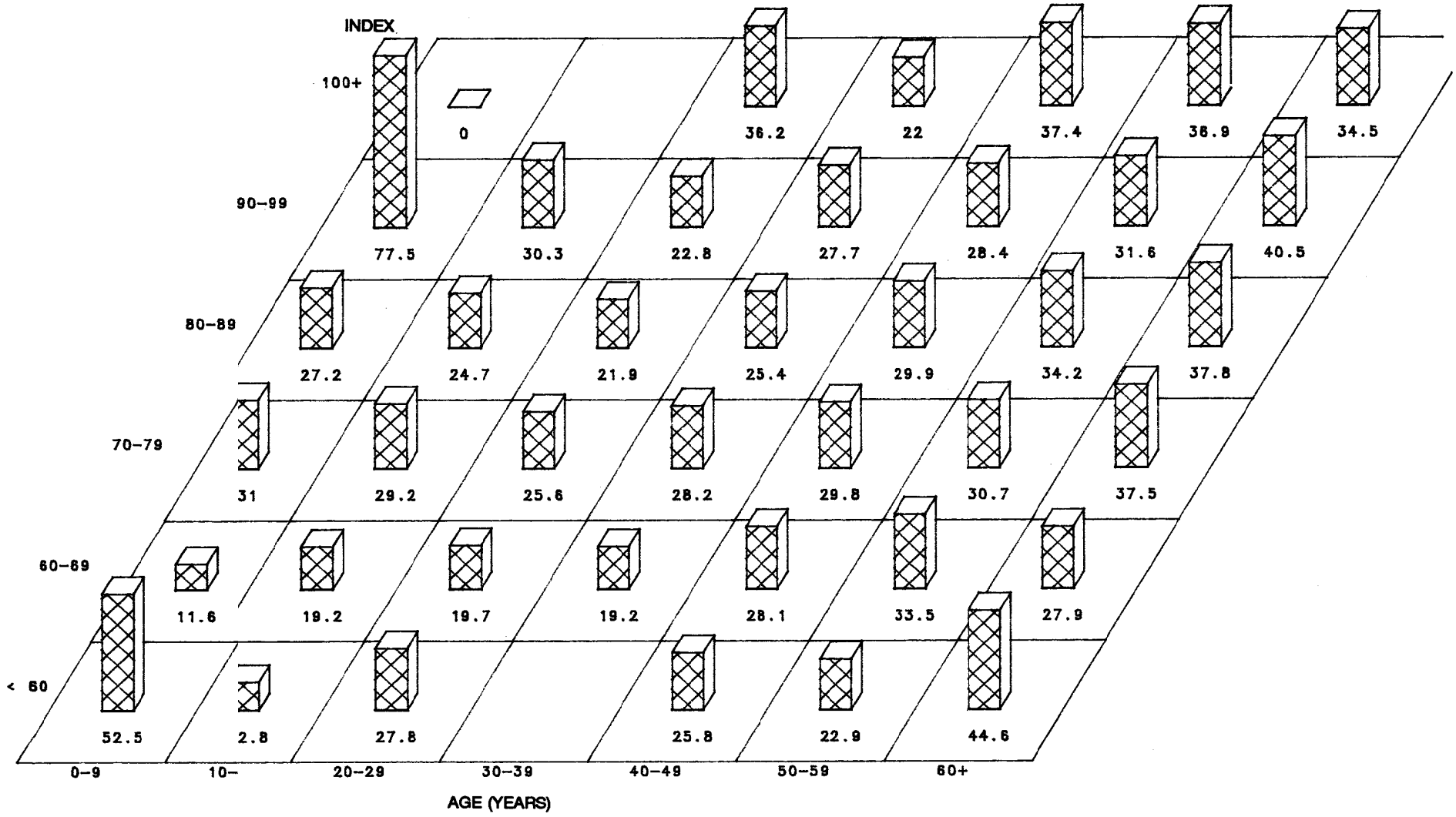


Figure 48C.--Percentage of ba area per acre in non-yellow-pine species, by site index and stand age, for natural loblolly pine stands in North Carolina. (Represent,075,586 acres.)

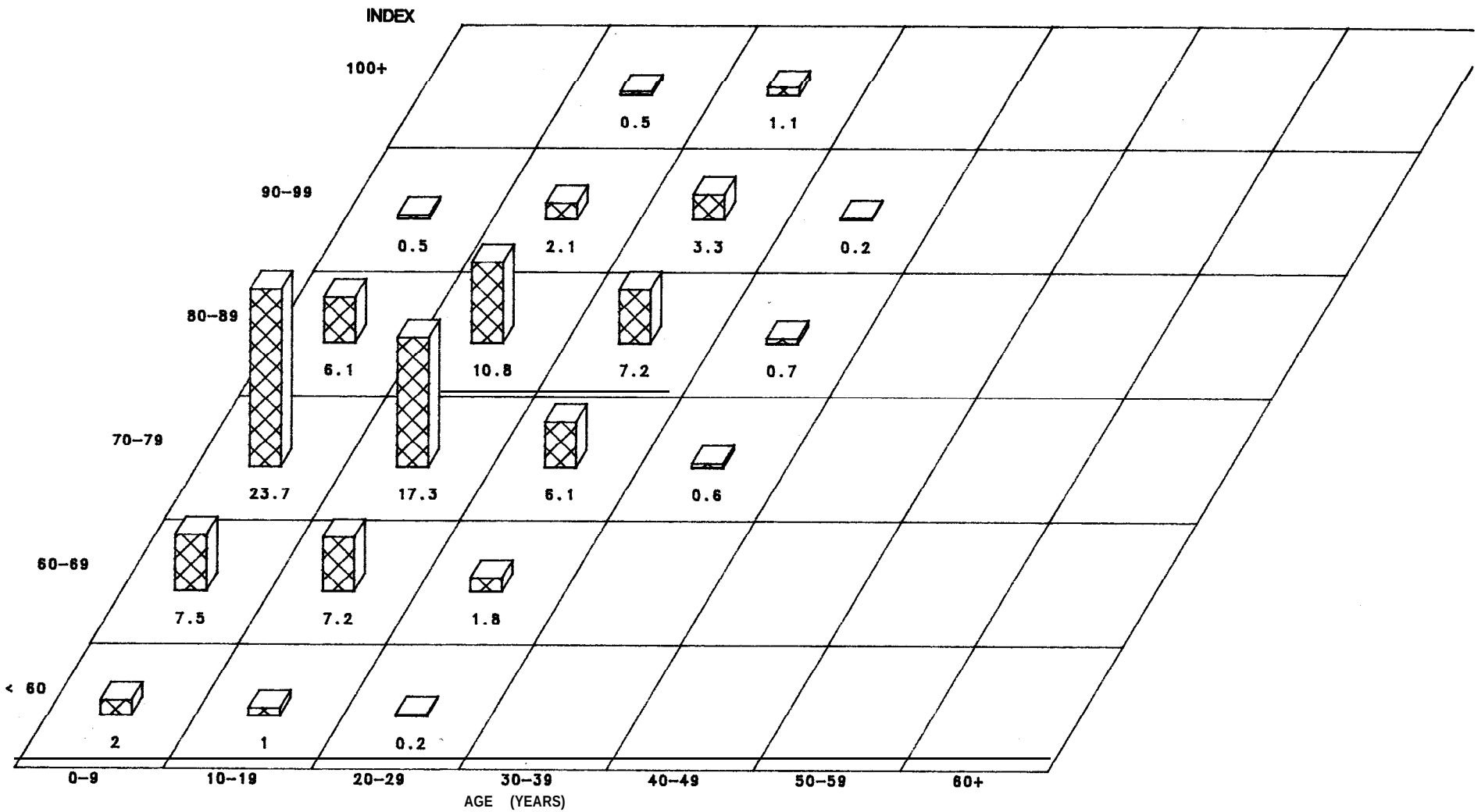


Figure 49A.--Percentage distribution of planted loblolly pine stands in North Carolina, by site index and stand age. (Represents 1333,621 acres.)

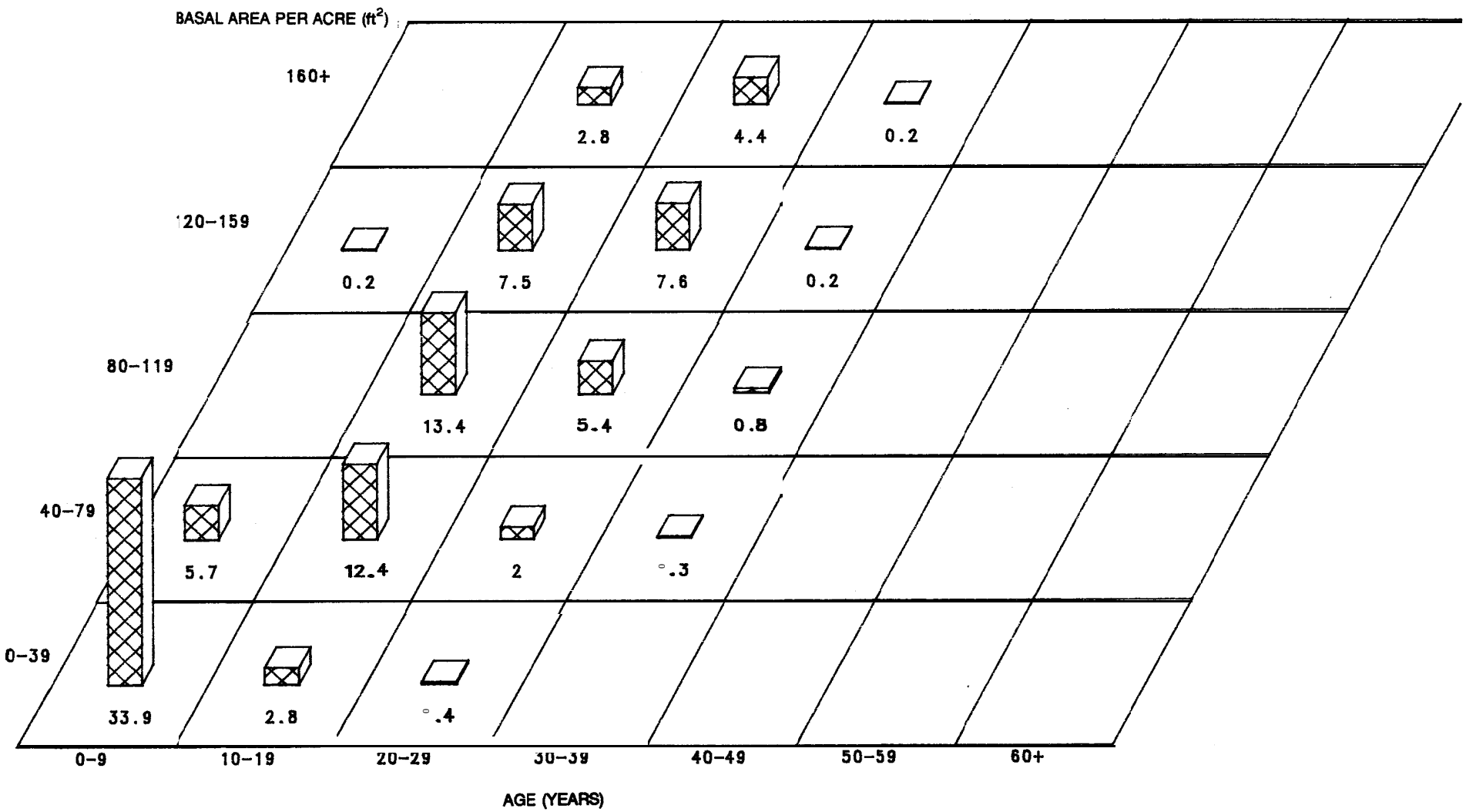


Figure 49B.–Percentage distribution of planted loblolly pine stands in North Carolina, by basal area per acre and stand age. (Represents 1,331,621 acres.)

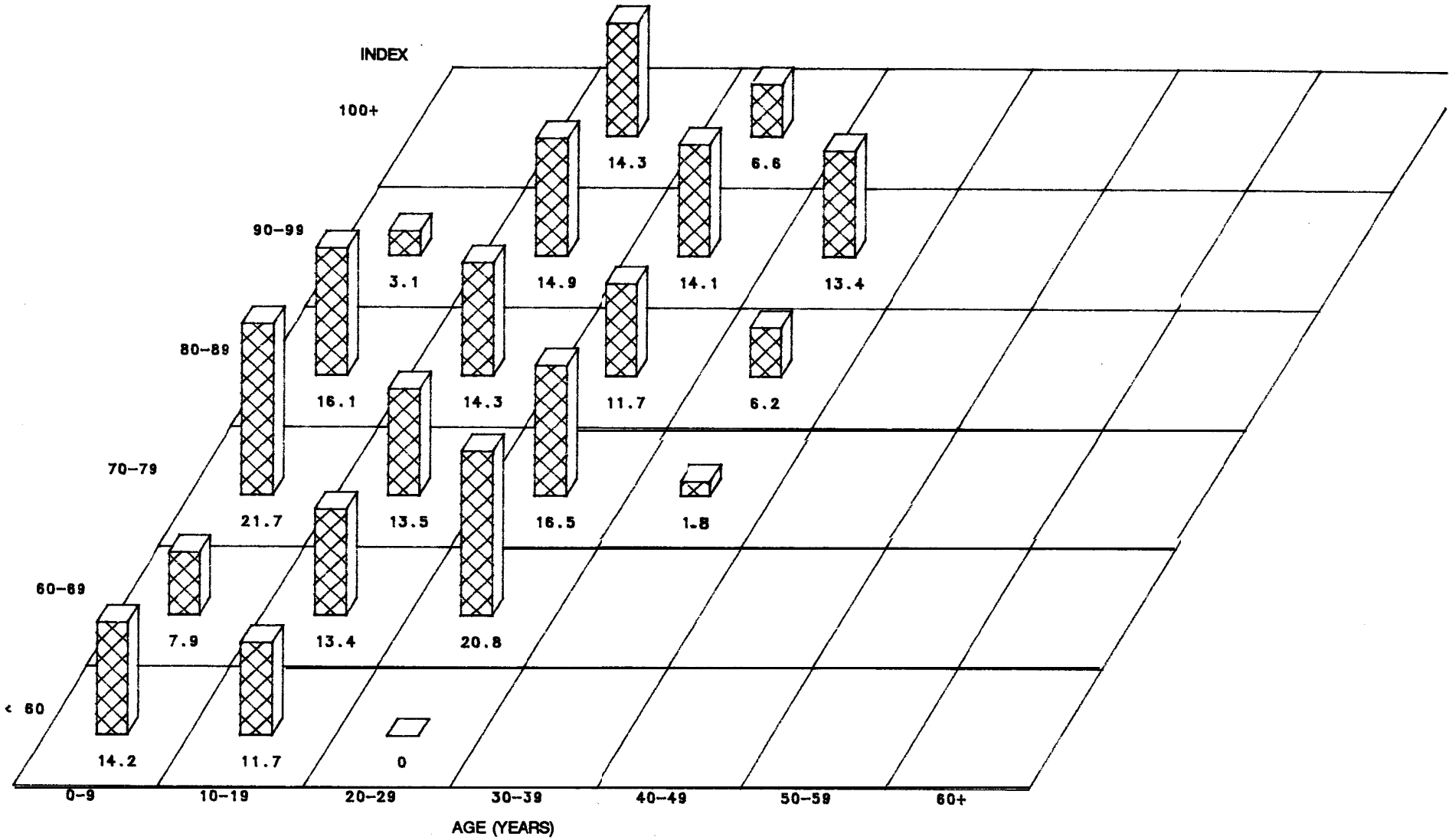


Figure 49C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted loblolly pine stands in North Carolina. (Represents 1,331,621 acres.)

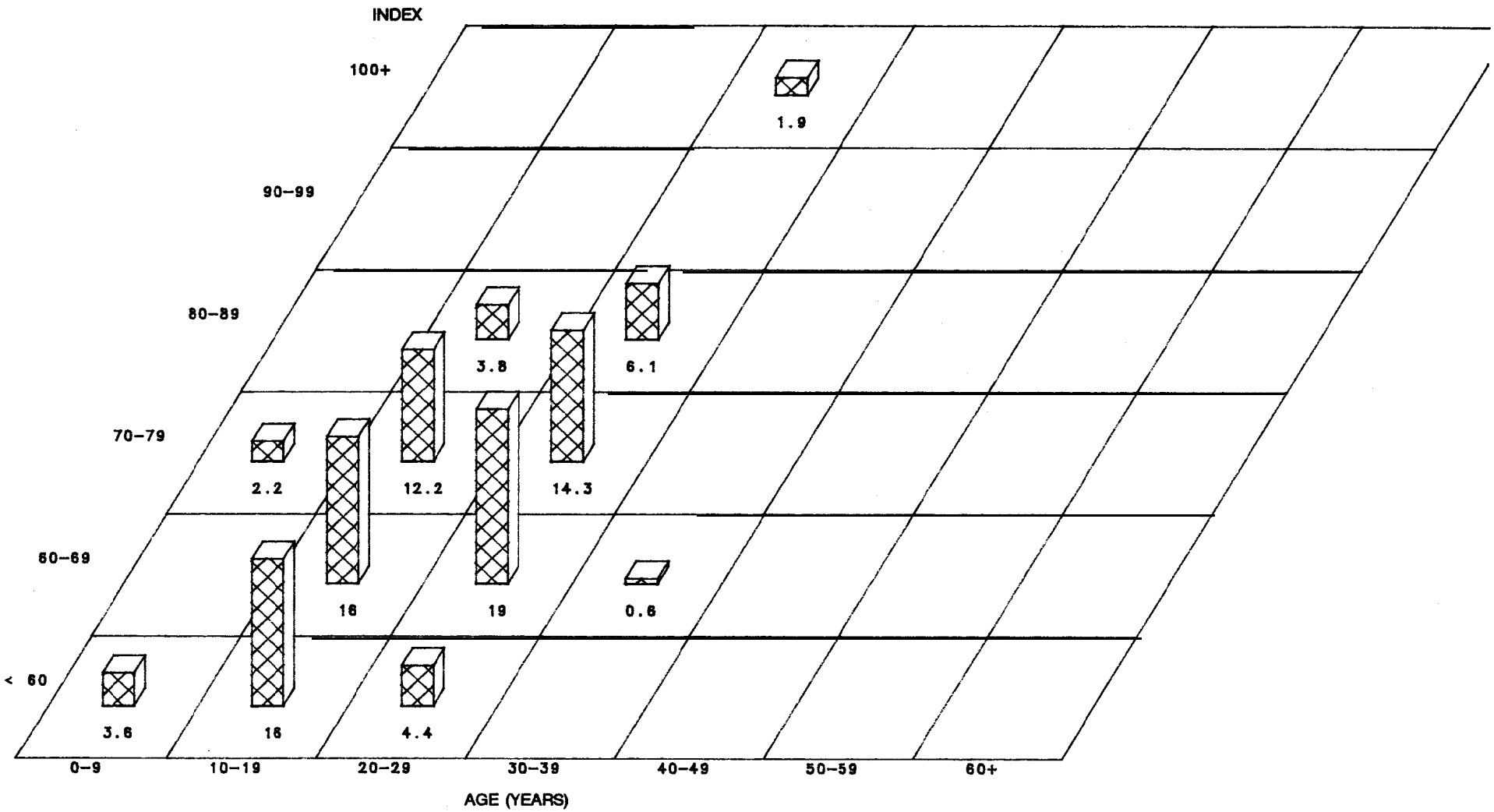


Figure 50A.--Percentage distribution of planted slash pine stands in North Carolina, by site index and stand age. (Represents 195,365 acres.)

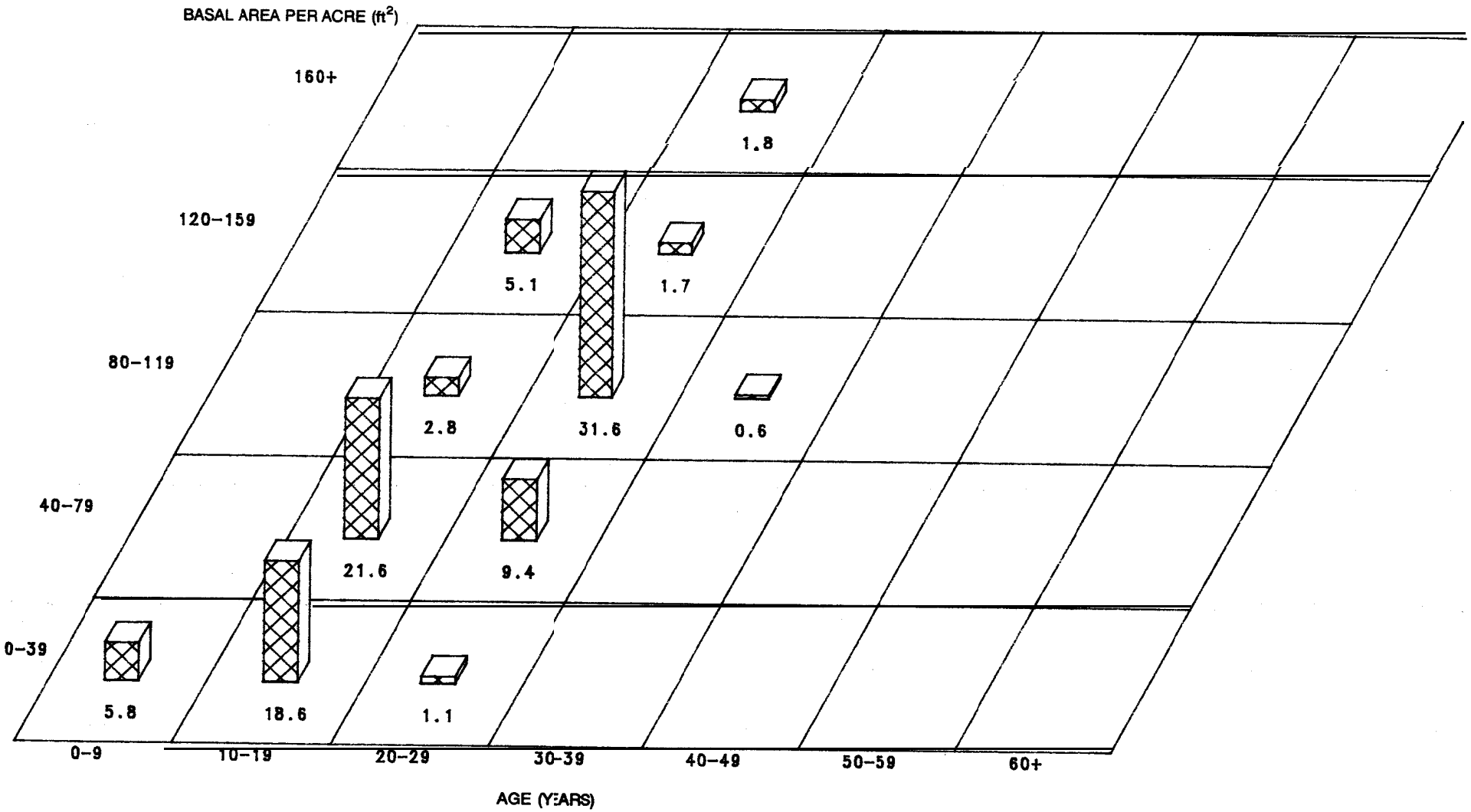


Figure 50B.–Percentage distribution of planted slash pine stands in North Carolina, by basal area per acre and stand age. (Represents 195,365 acres.)

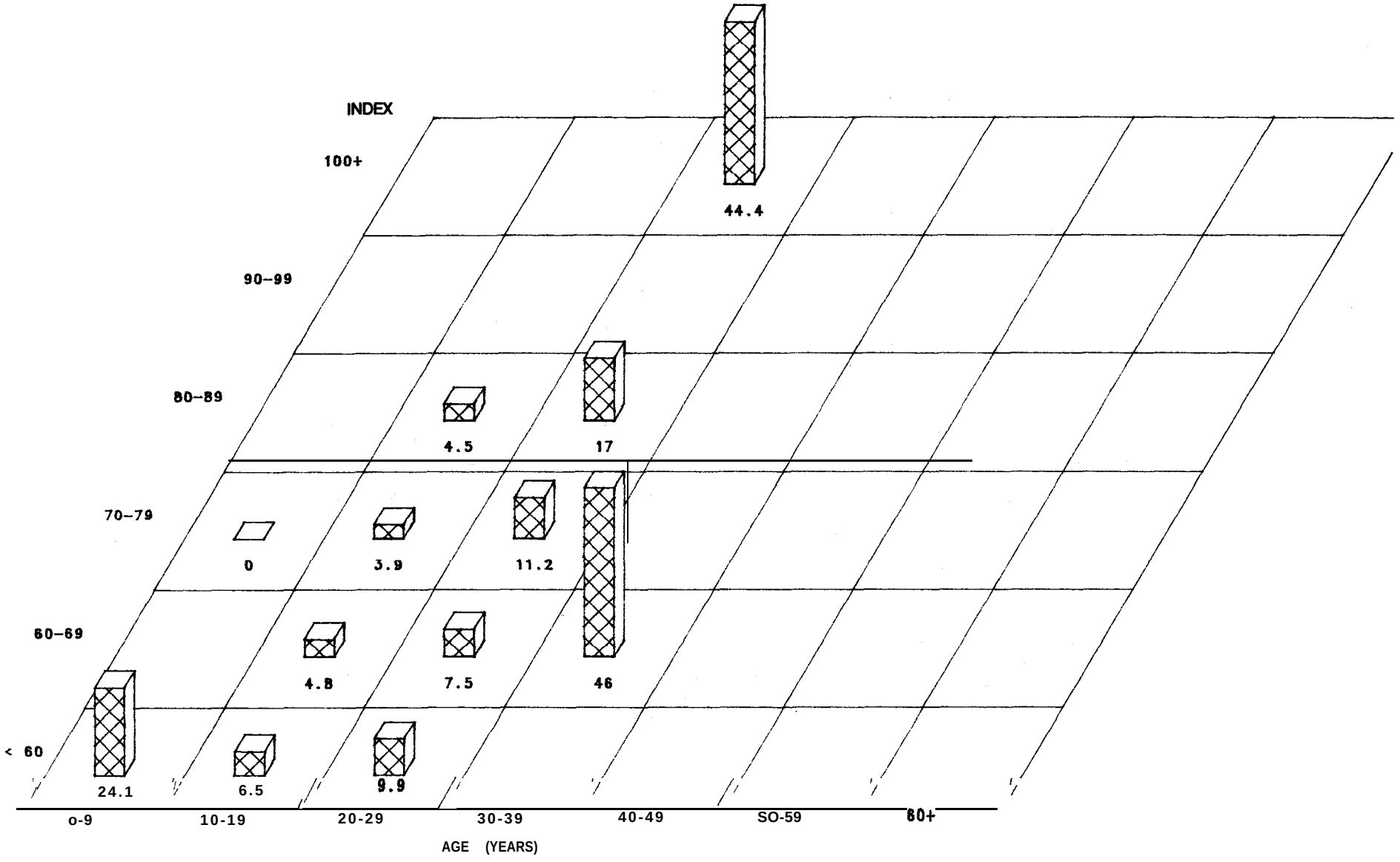


Figure 50C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted slash pine stands in North Carolina (Represents 195,365 acres.)

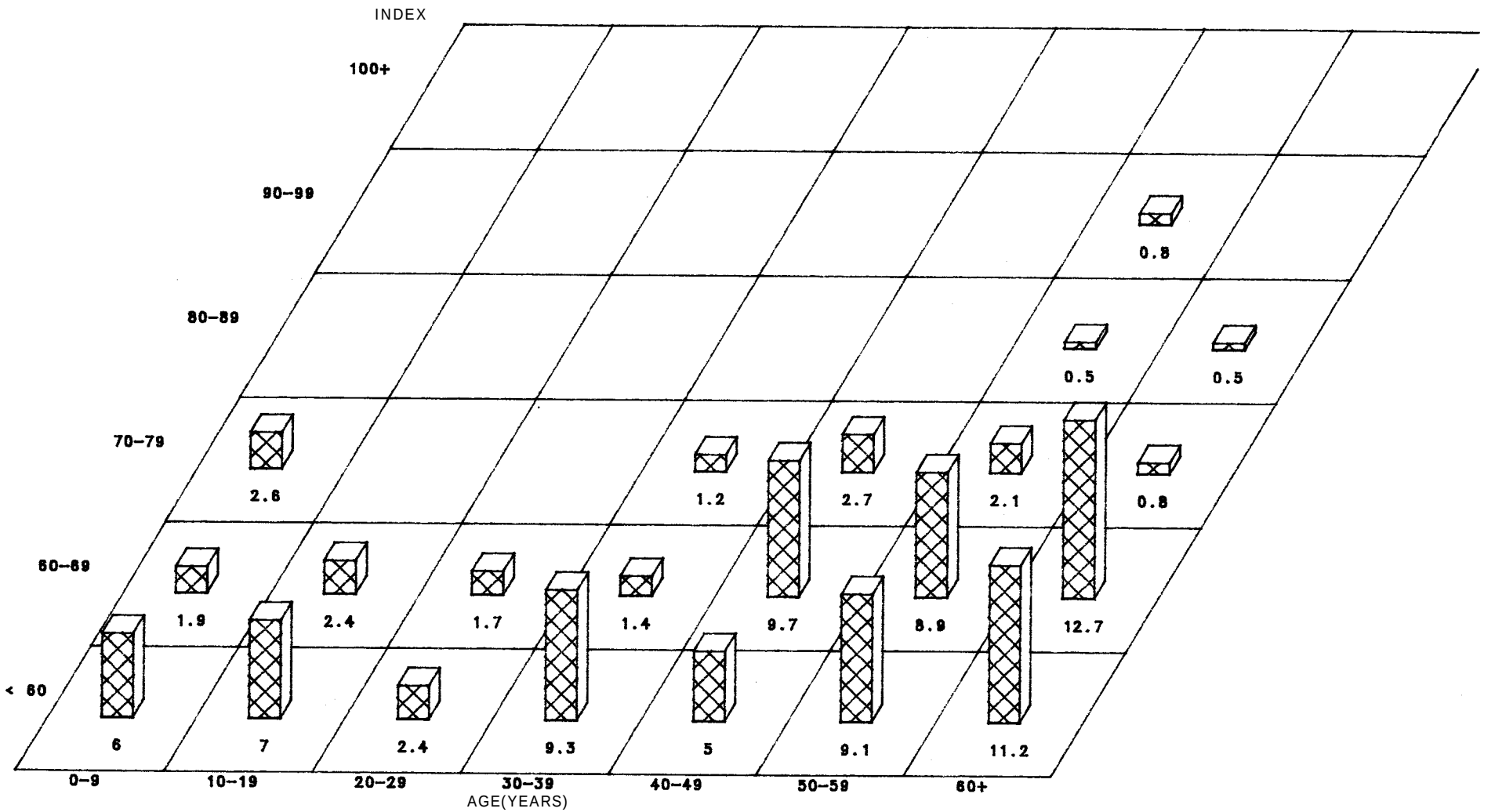


Figure 51A.--Percentage diibution of longleaf pine stands in North Carolina, by site index and stand age. (Represents 357,395 acres of natural stands, and 31,618 acres of planted stands.)

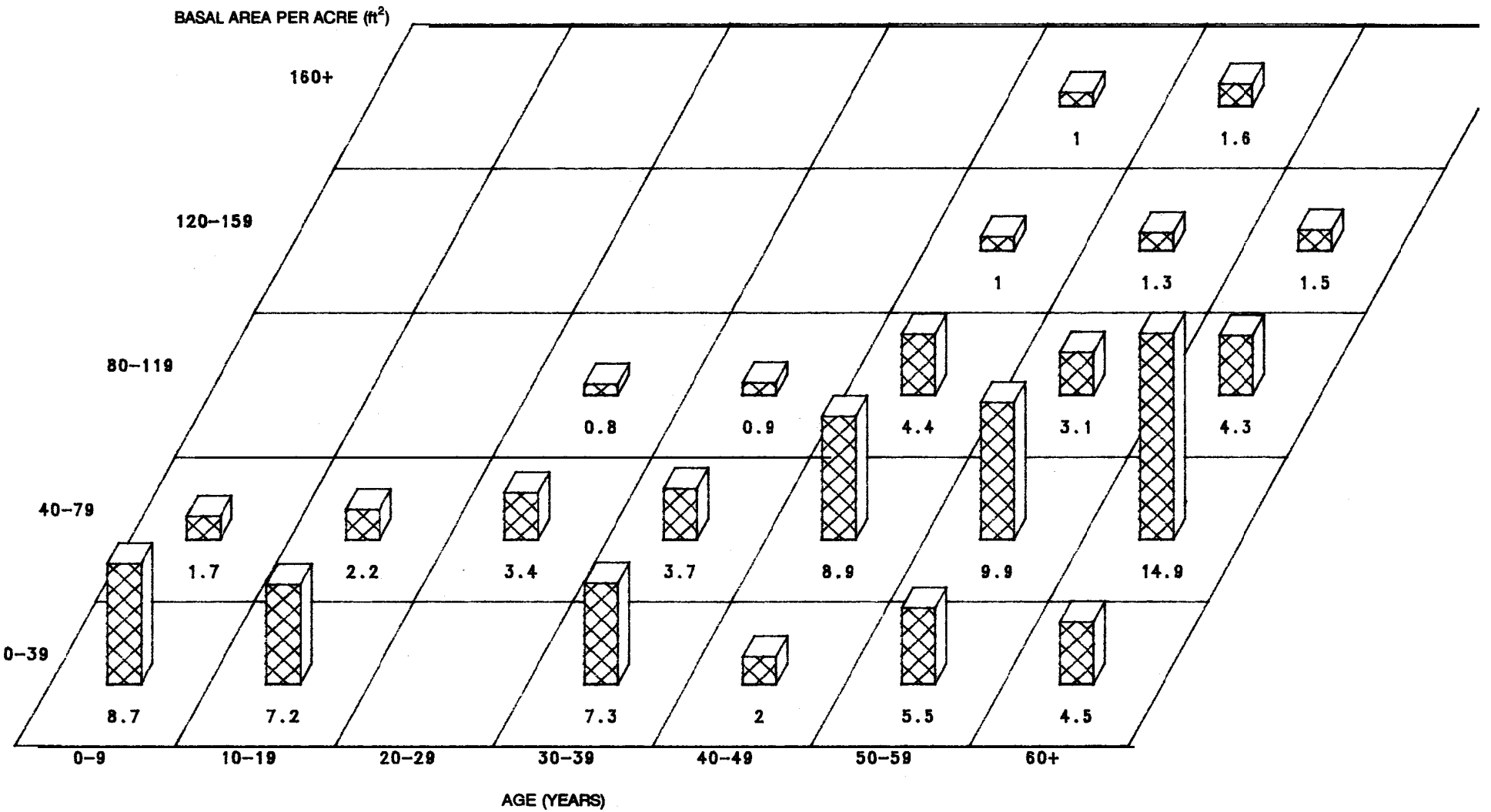


Figure 51B.--Percentage distribution of longleaf pine stands in North Carolina, by basal area per acre and stand age. (Represents 357,395 acres of natural stands, and 31,618 acres of planted stands.)

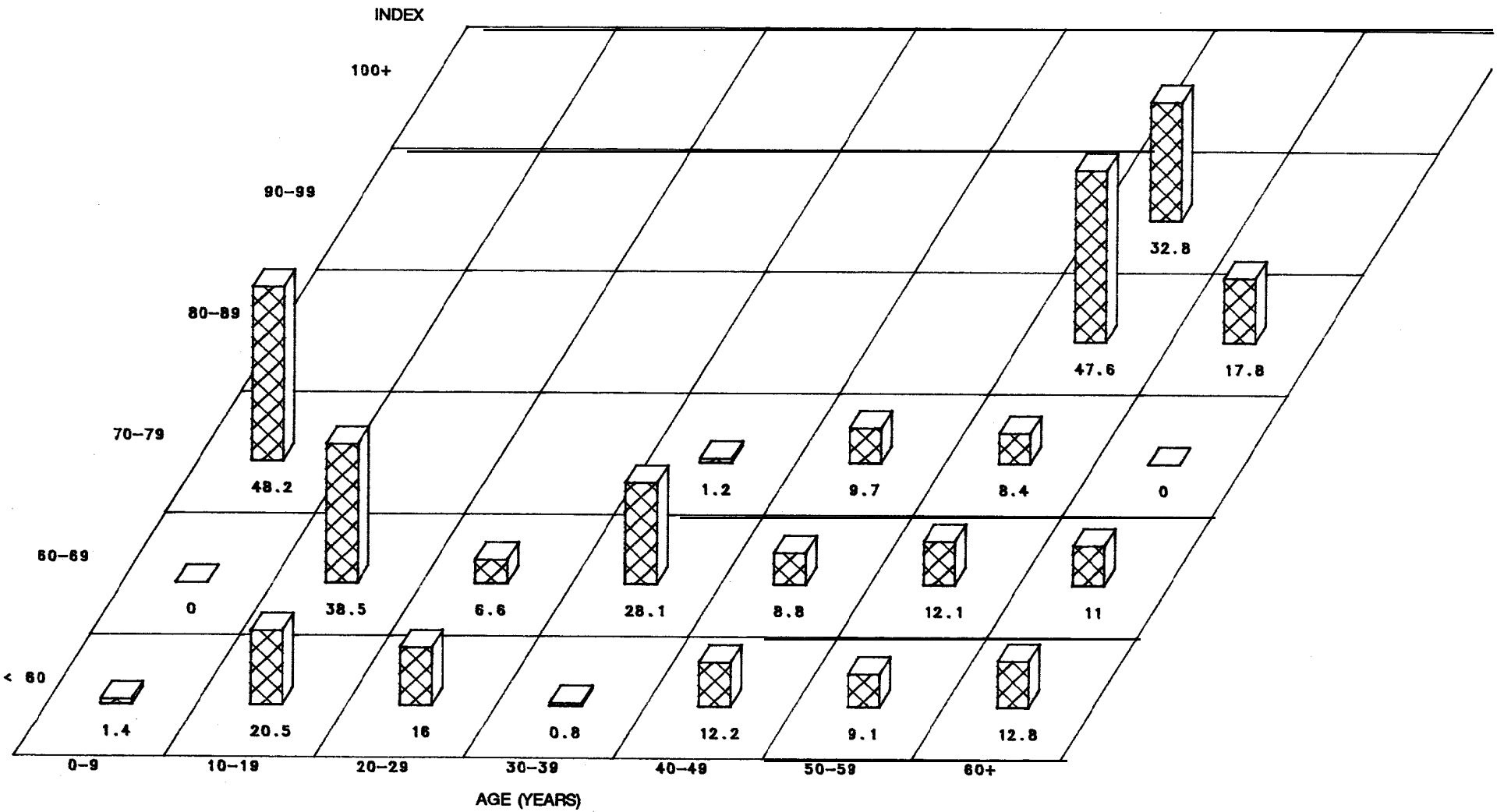


Figure 51C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for longleaf pine stands in North Carolina. (Represents 357,395 acres of natural stands, and 31,618 acres of planted stands.)

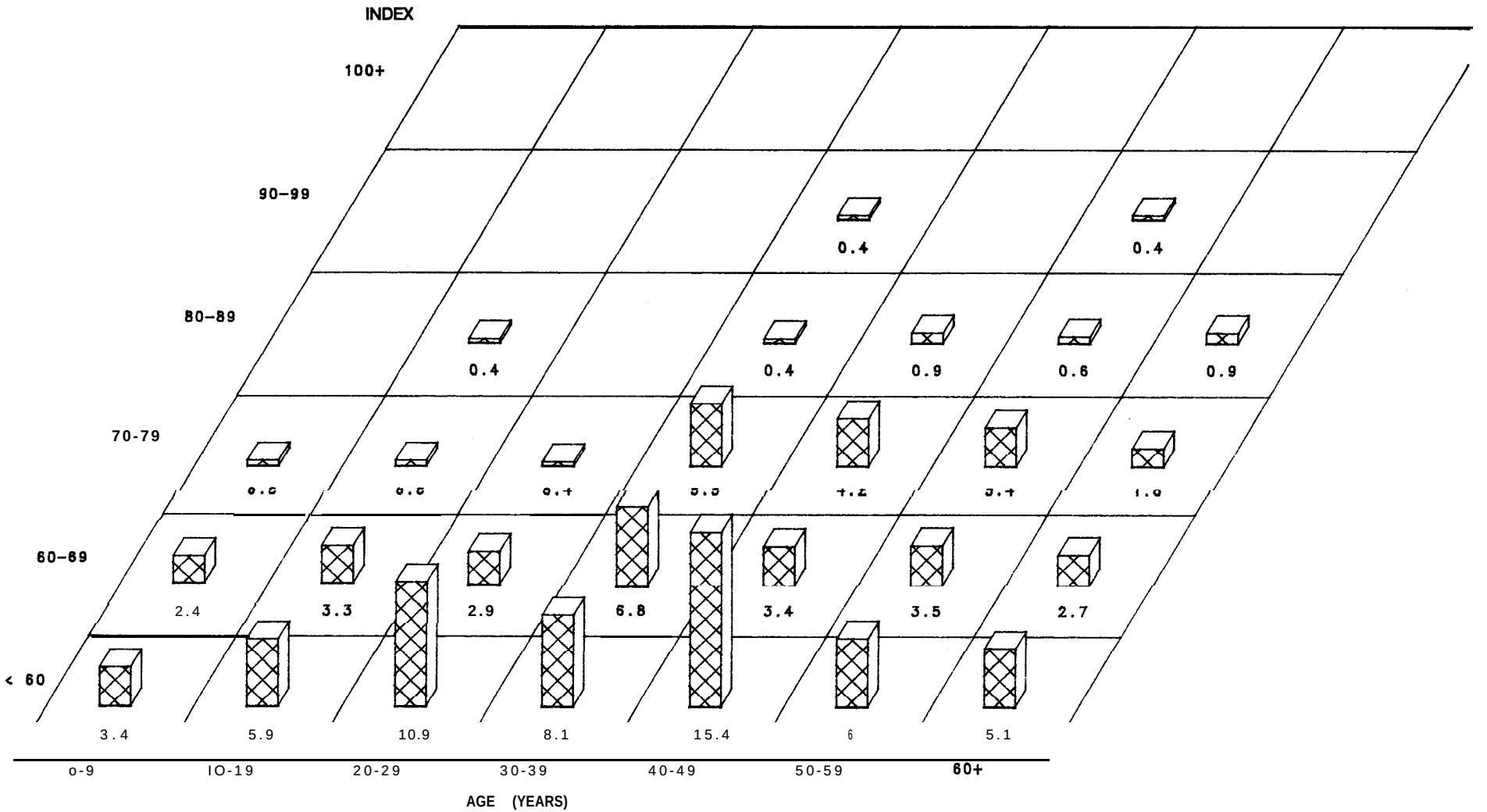


Figure 52A.–Percentage distribution of pond pine stands in North Carolina, by site index and stand age. (Represents 739,194 acres of natural stands, and 3,656 acres of planted stands.)

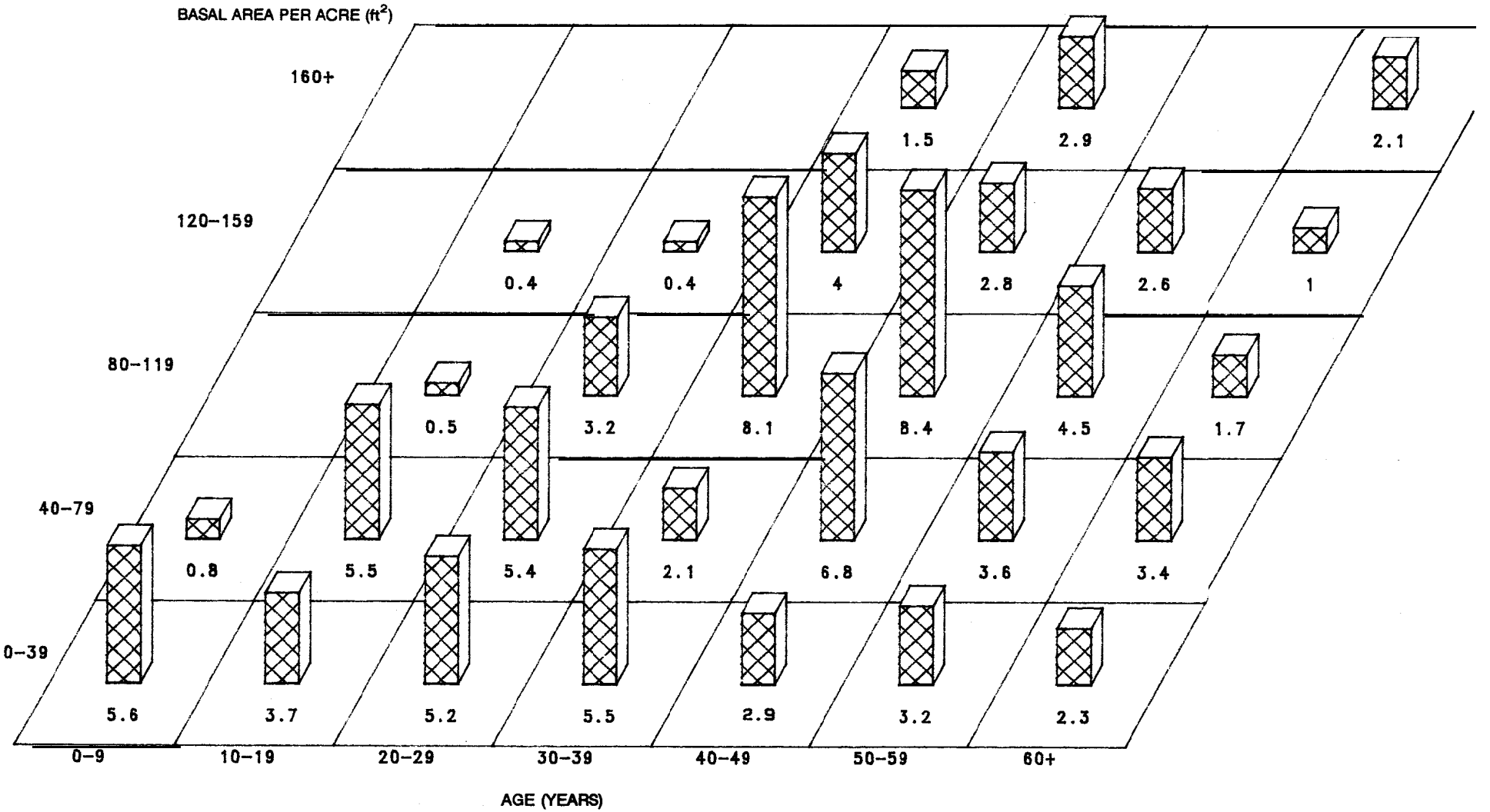


Figure 52B.–Percentage distribution of pond pine stands in North Carolina, by basal area per acre and stand age. (Represents 739,194 acres of natural stands, 3,656 acres of planted stands.)

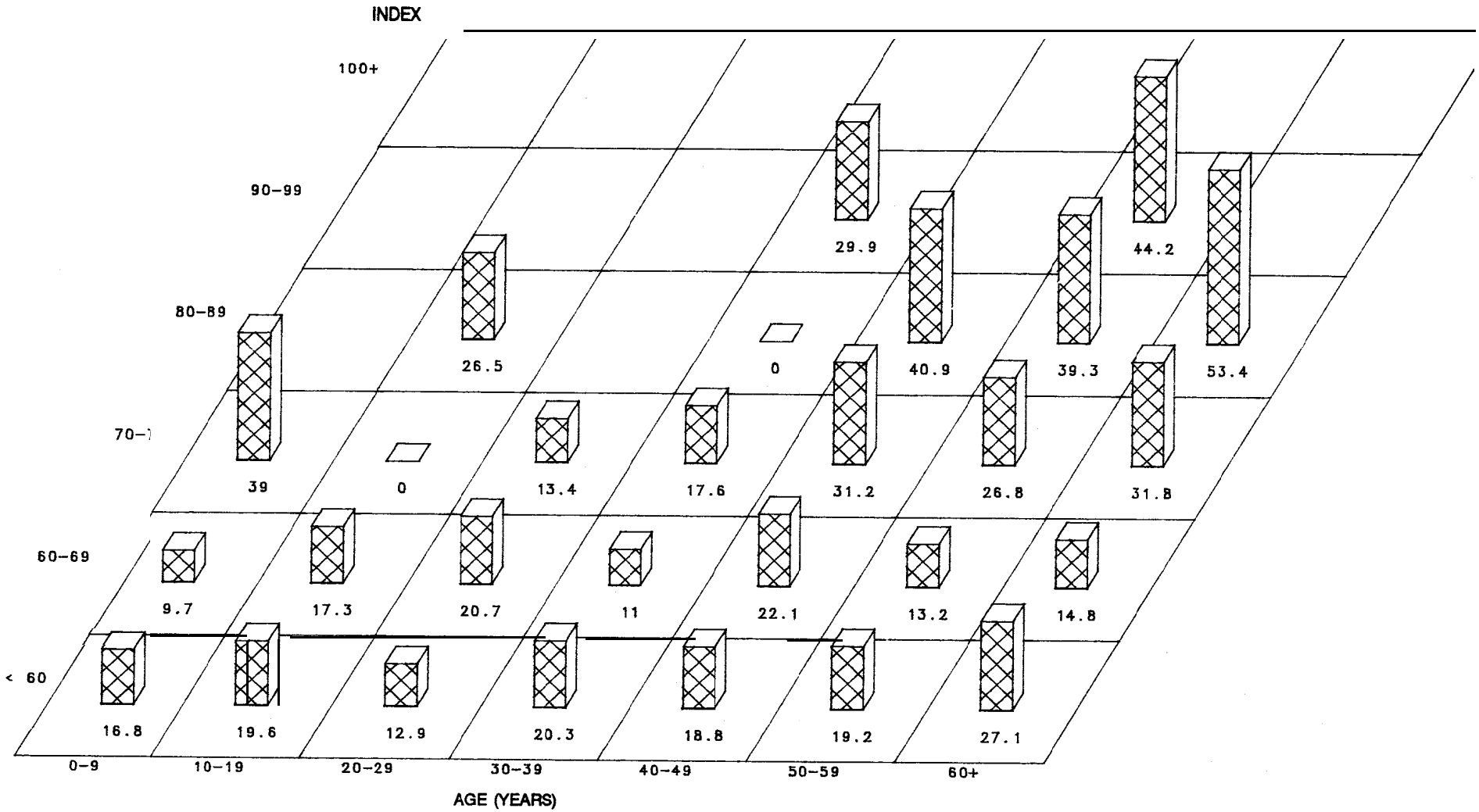


Figure 52C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for pond pine stands in North Carolina. (Represents 739,194 acres of natural stands, and 3,656 acres of planted stands.)

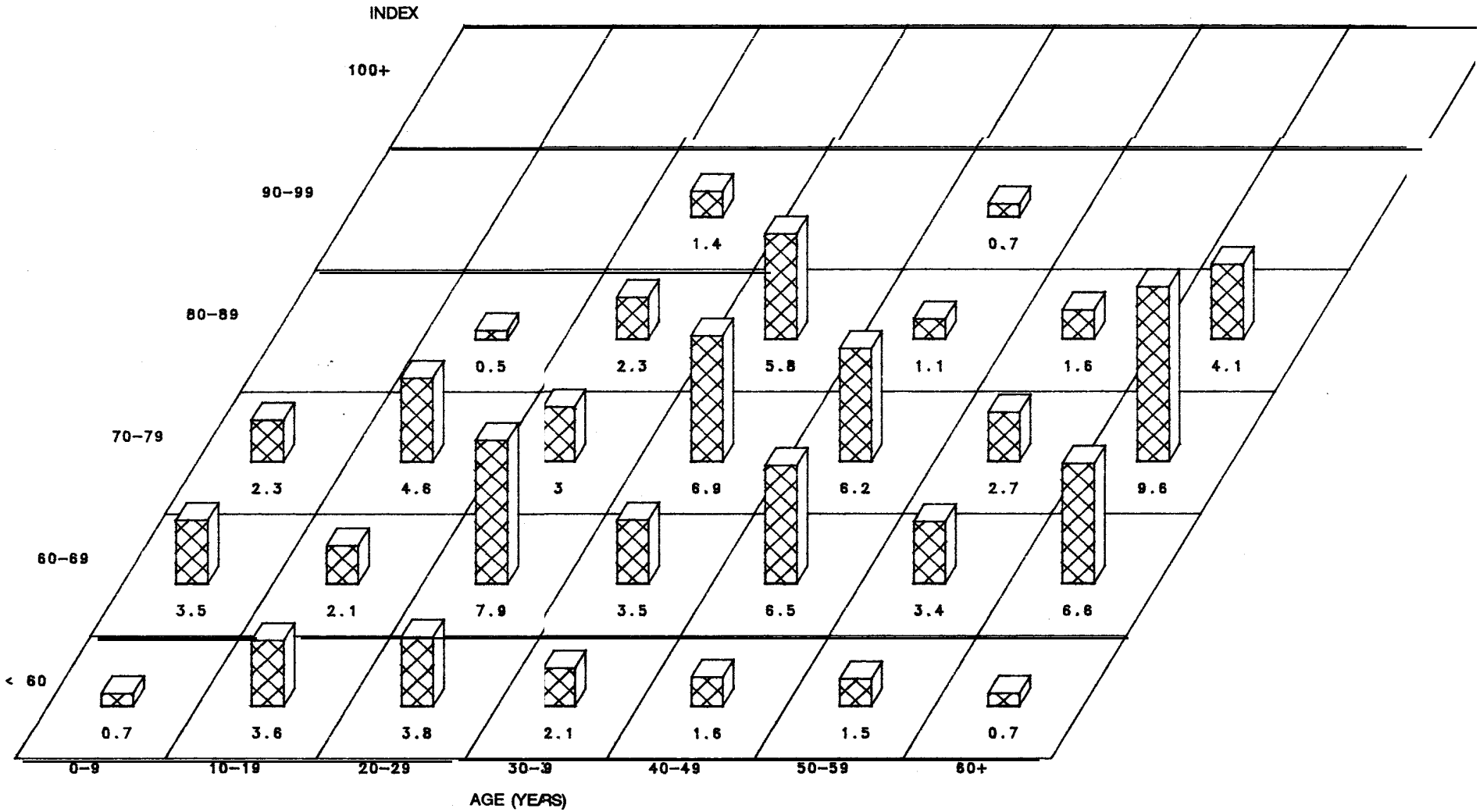


Figure 53A.–Percentage distribution of shortleaf pine stands in North Carolina, by site index and stand age. (Represents 494,410 acres of natural stands, 8,491 acres of planted stands.)

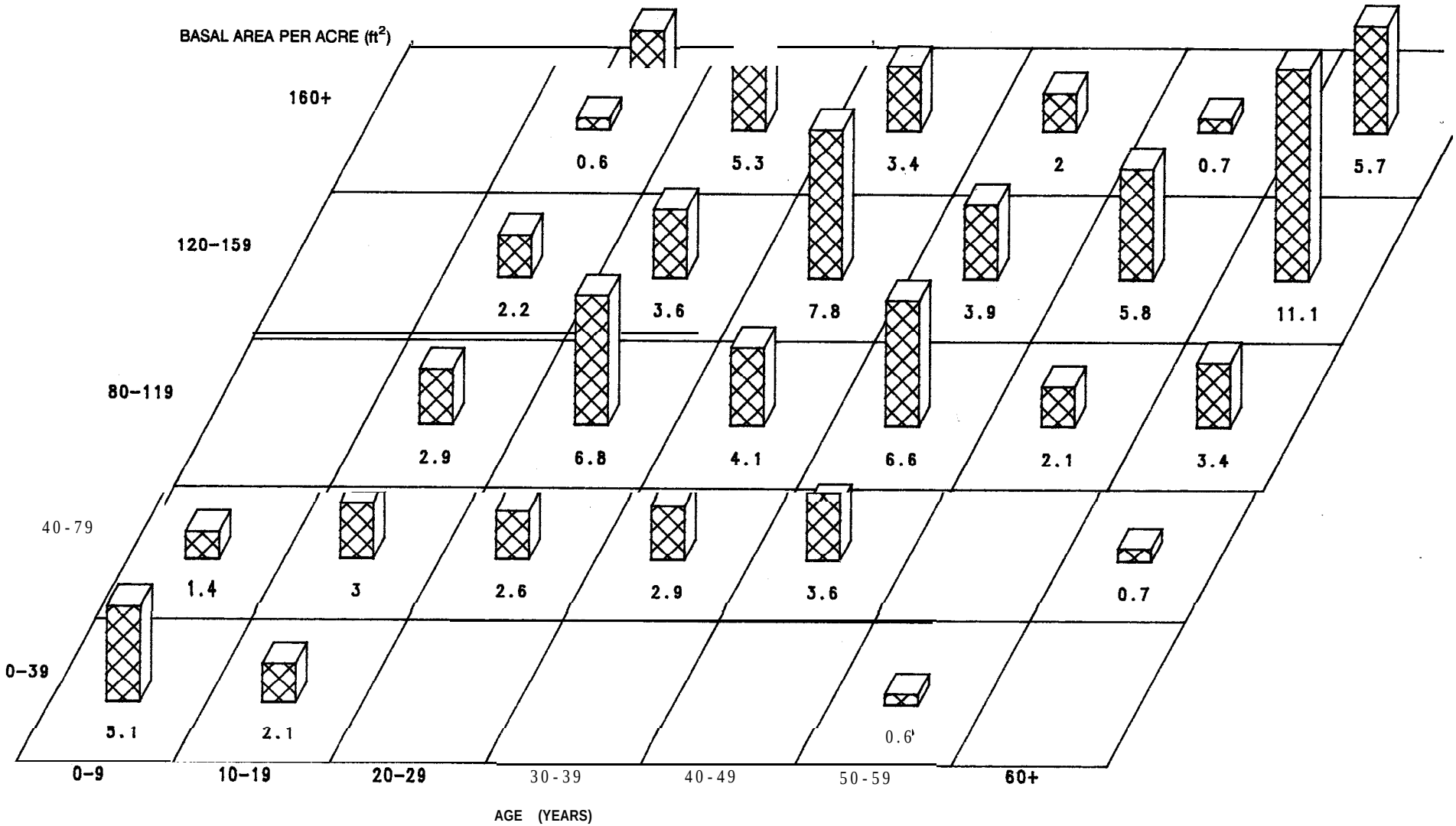


Figure 53B.--Percentage distribution of shortleaf pine stands in North Carolina, by basal area per acre and stand age. (Represents 494,410 acres of natural stands, and 8,481 acres of planted stands.)

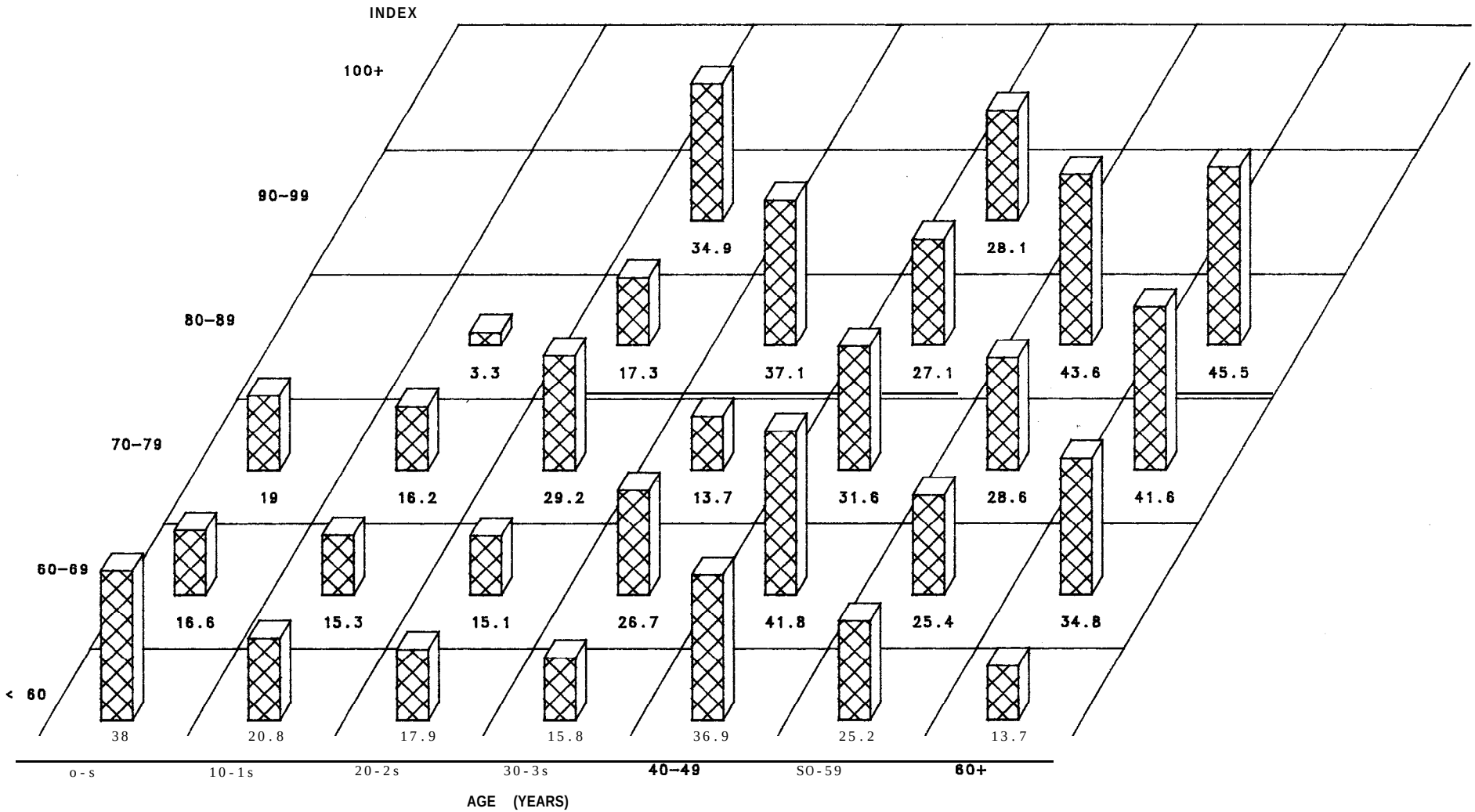


Figure 53C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for shortleaf pine stands in North Carolina (Represents 494,410 acres of natural stands, and 8,491 acres of planted stands.)

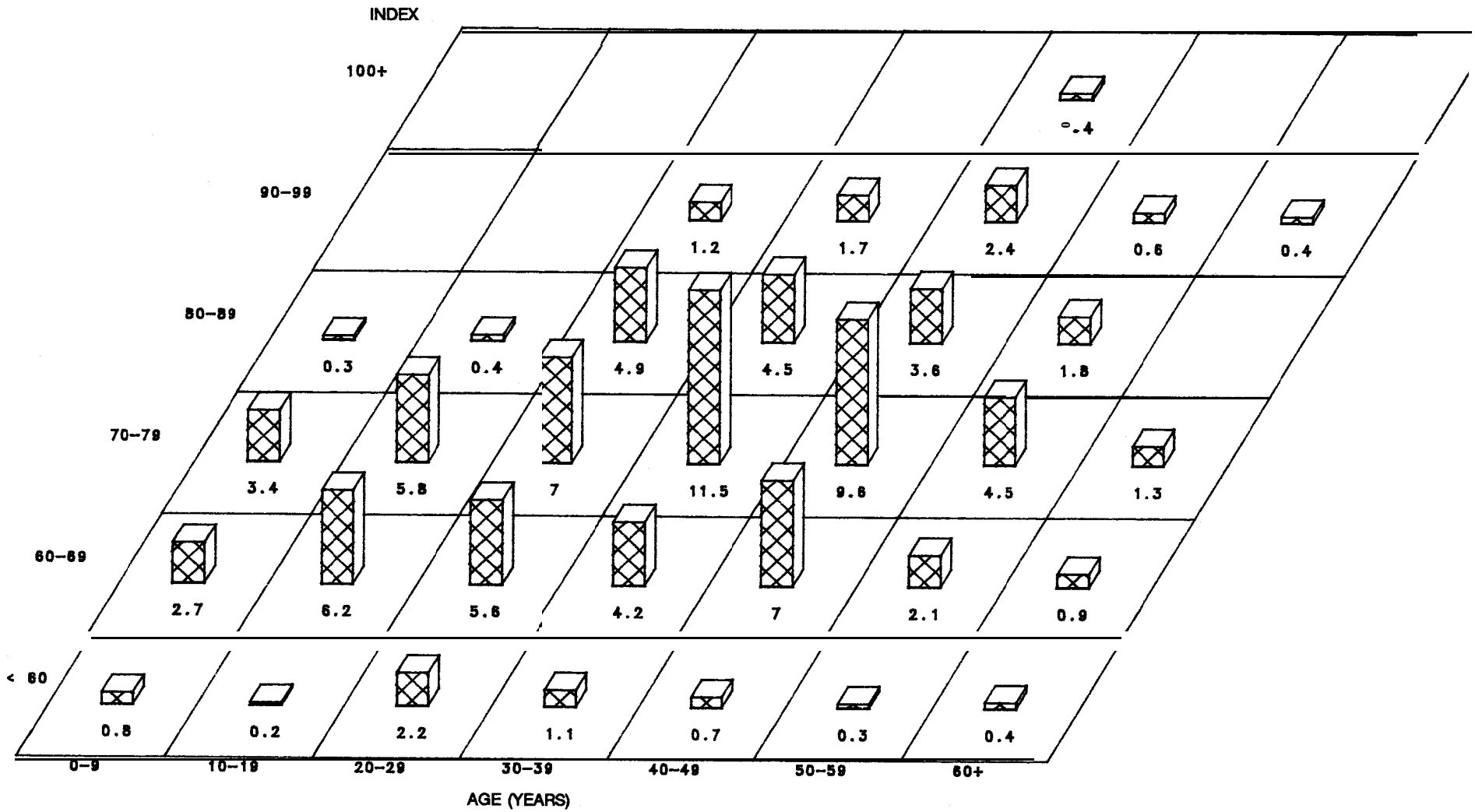


Figure 54A.–Percentage distribution of Virginia pine stands in North Carolina, by site index and stand age. (Represents 779,881 acres of natural stands, and 136 acres of planted stands.)

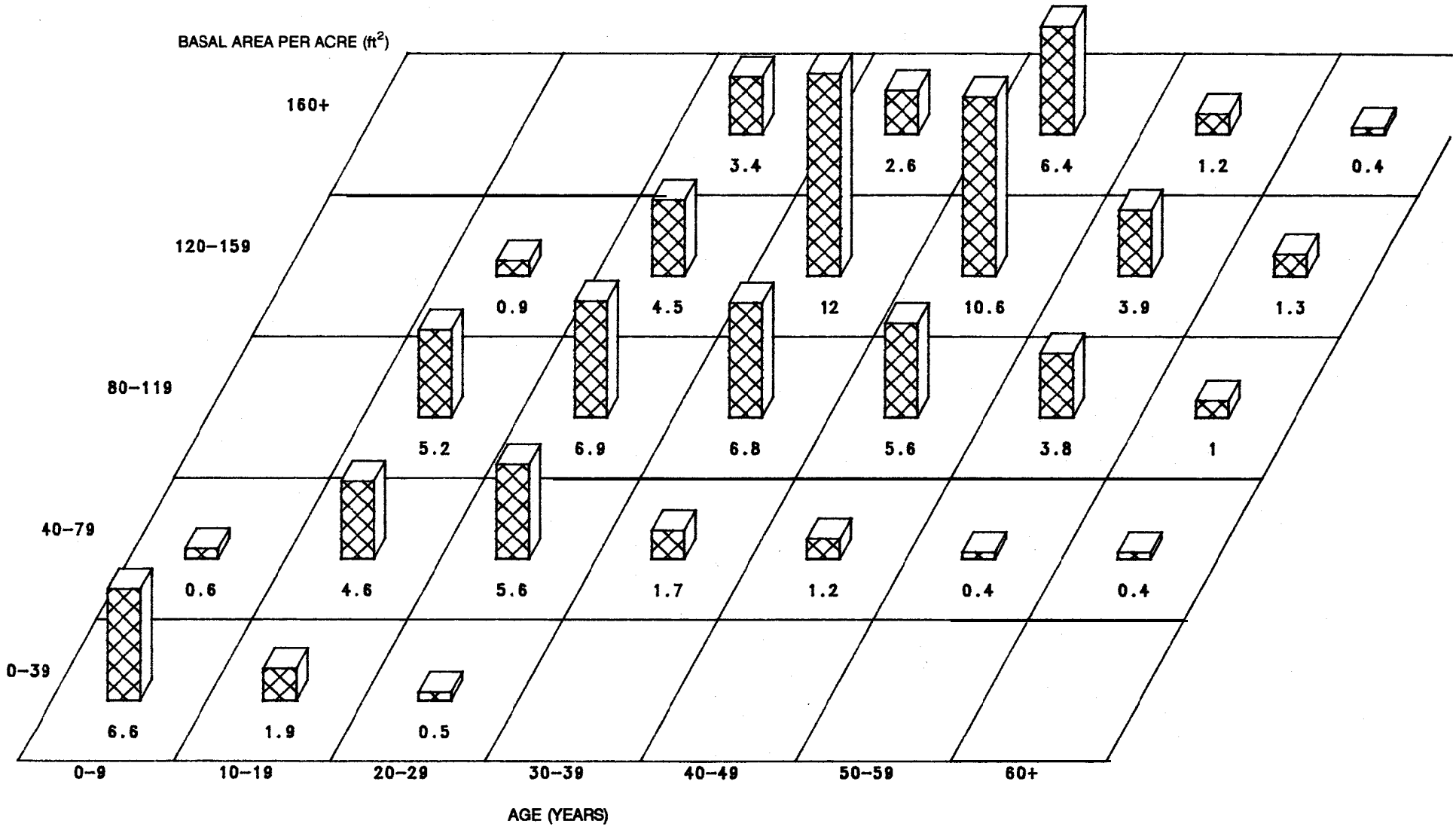


Figure 54B.--Percentage distribution of Virginia pine stands in North Carolina, by basal area per acre and stand age. (Represents 779,881 acres of natural stands, and 136 acres of planted stands.)

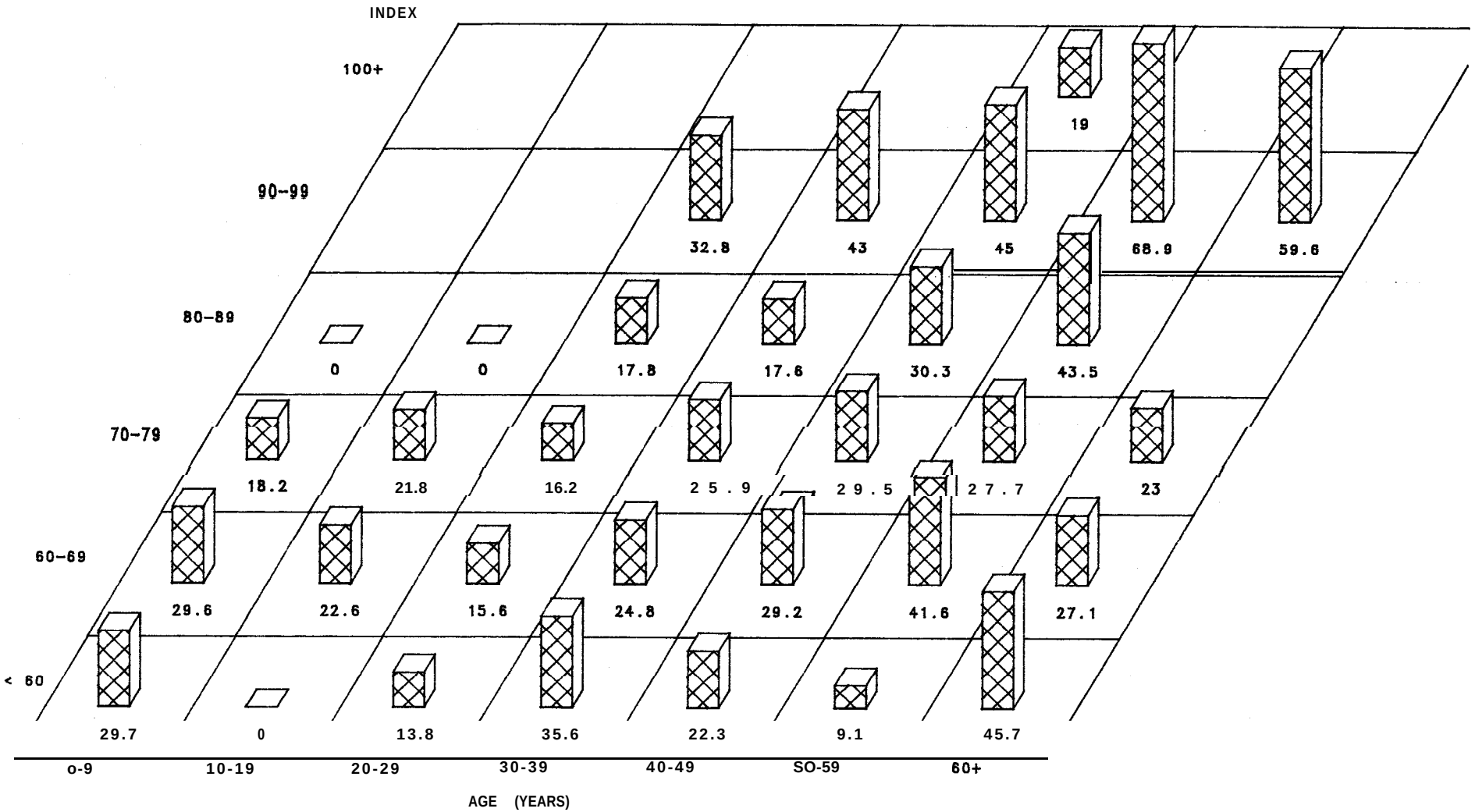


Figure 54C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for Virginia pine stands in North Carolina. (Represents 779,881 acres of natural stands, and 136 acres of planted stands.)

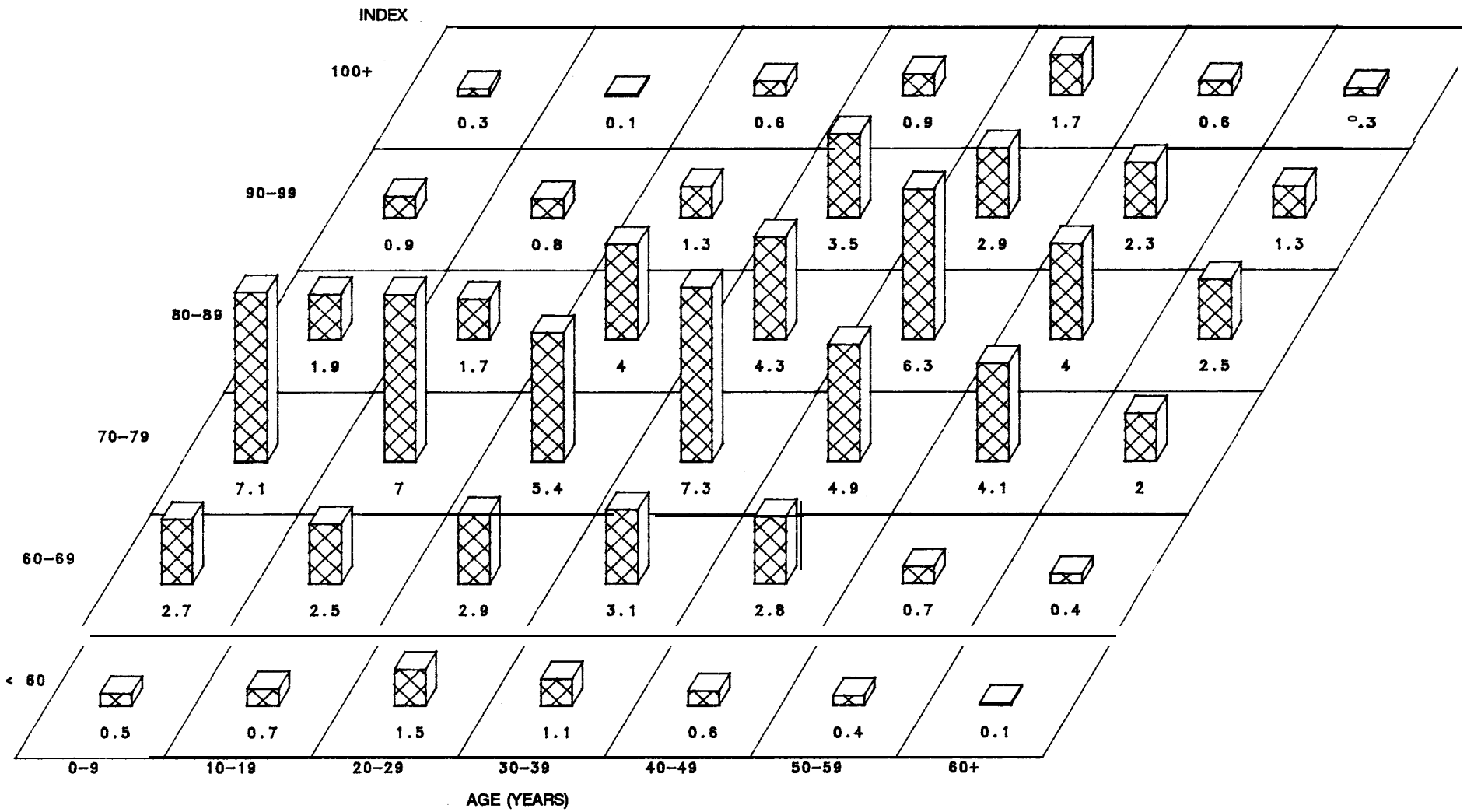


Figure 55A.--Percentage distribution of natural loblolly pine stands in South Carolina, by site index and stand age. (Represents 2,234,714 acres.)

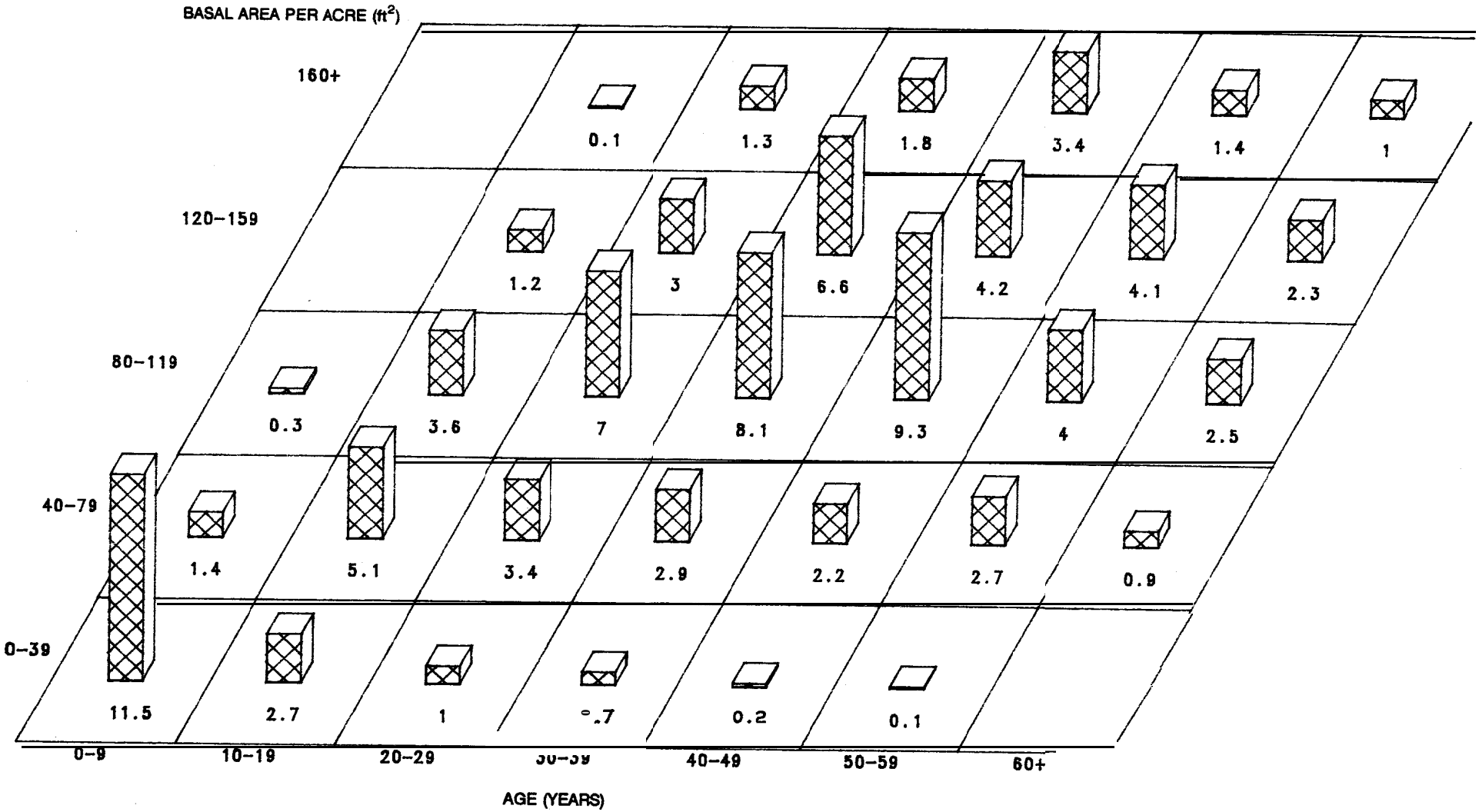


Figure 55B.--Percentage distribution of natural loblolly pine stands in South Carolina, by basal area per acre and stand age. (Represents 2,234,714 acres.)

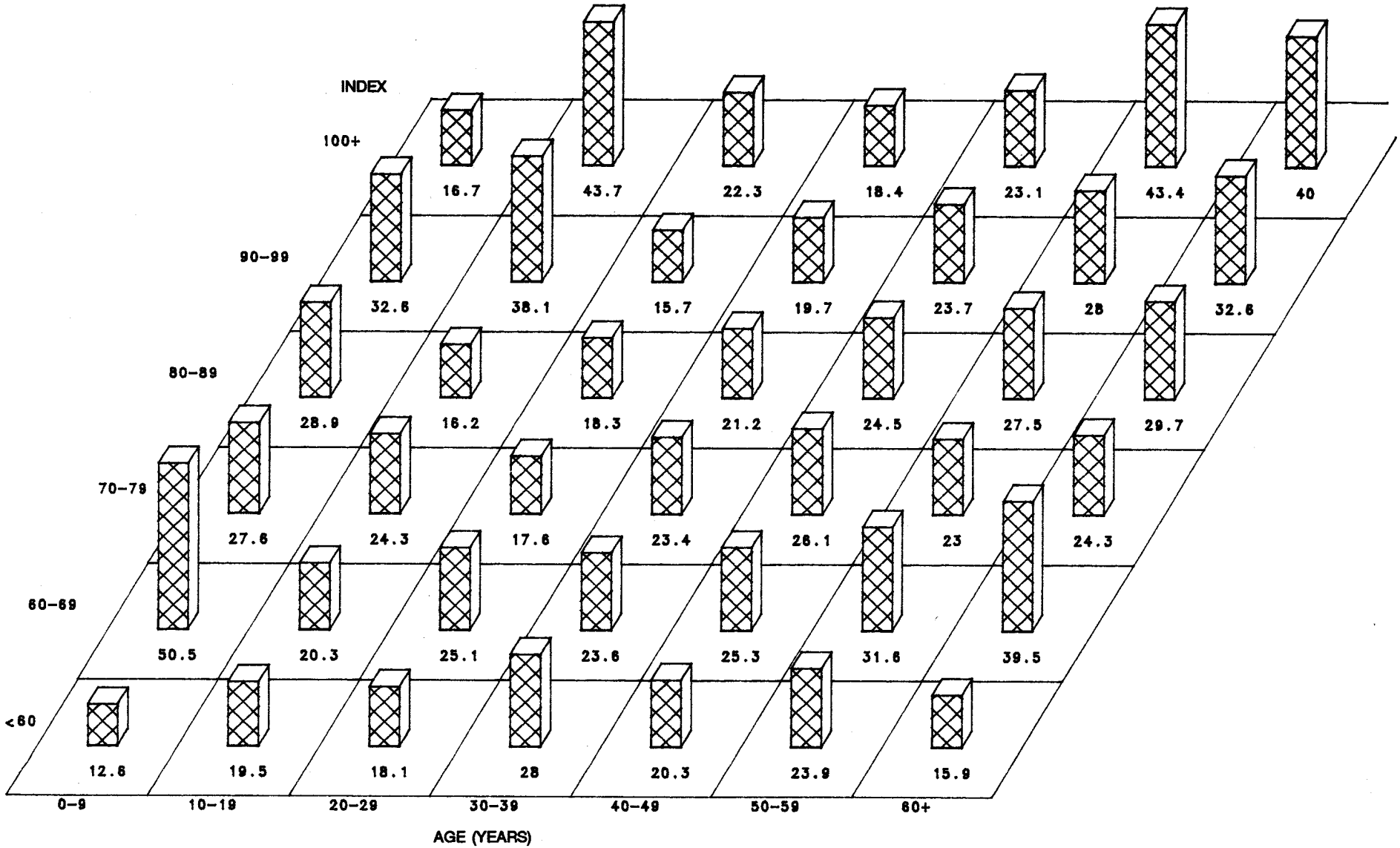


Figure 55C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for natural loblolly pine stands in South Carolina. (Represents 2,234,714 acres.)

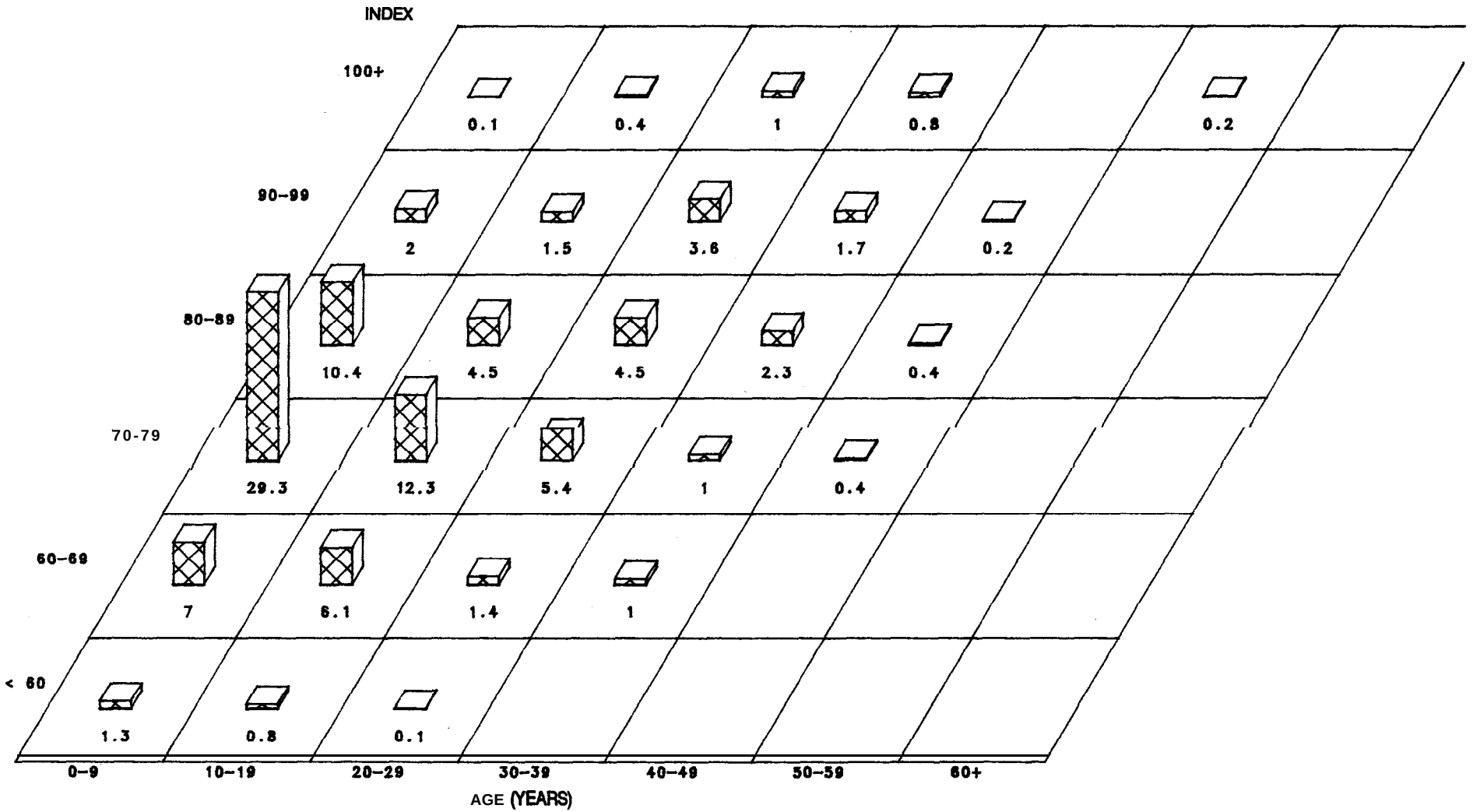


Figure ~-Percentage diibulion of planted loblolly pine stands in South Carolina, by site index and stand age. (Represents 1,635,752 acres.)

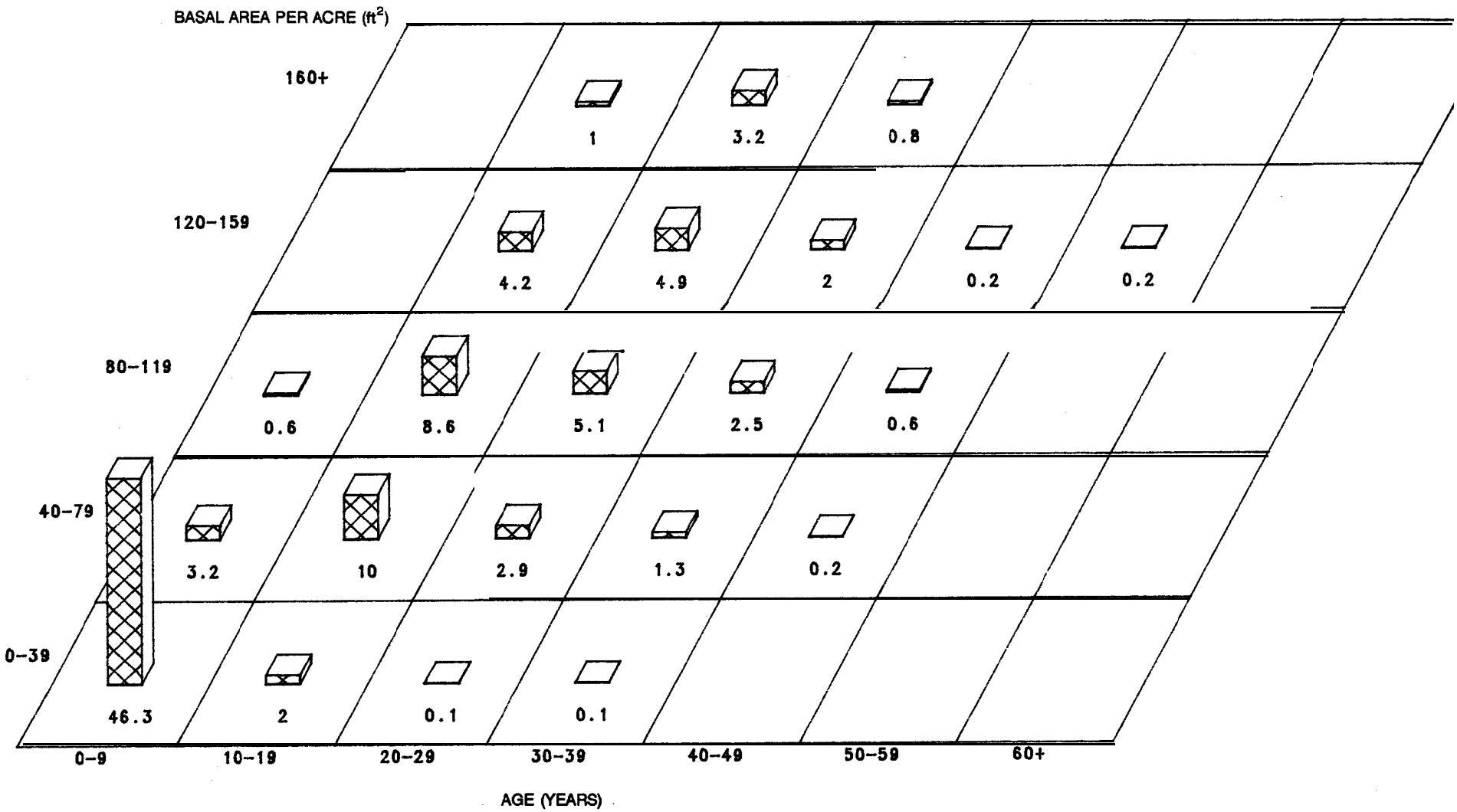


Figure 56B.–Percentage distribution of planted loblolly pine stands in South Carolina, by basal area per acre and stand age. (Represents 1,635,752 acres.)

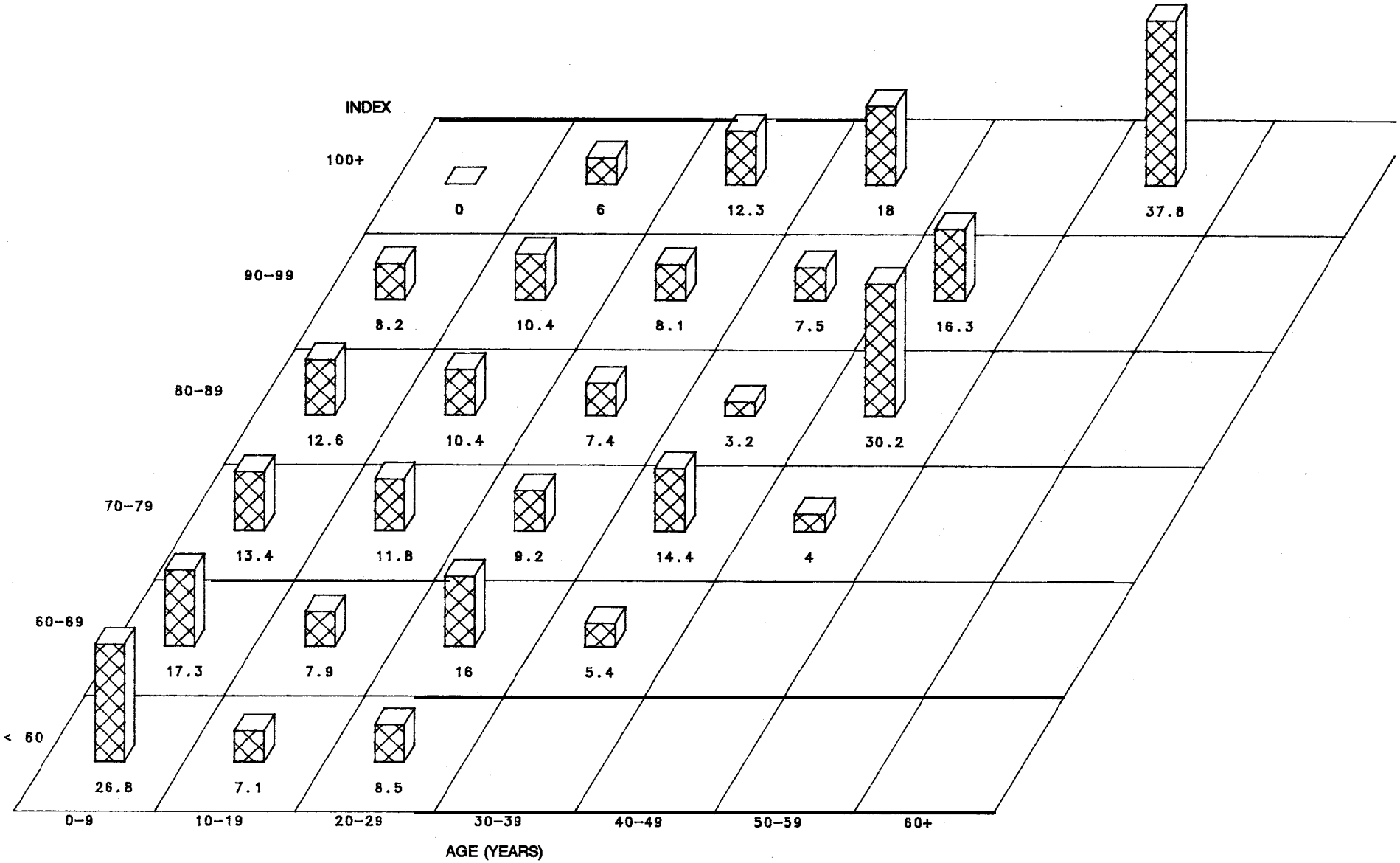


Figure 56C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted loblolly pine stands in South Carolina. (Represents 1,635,752 acres.)

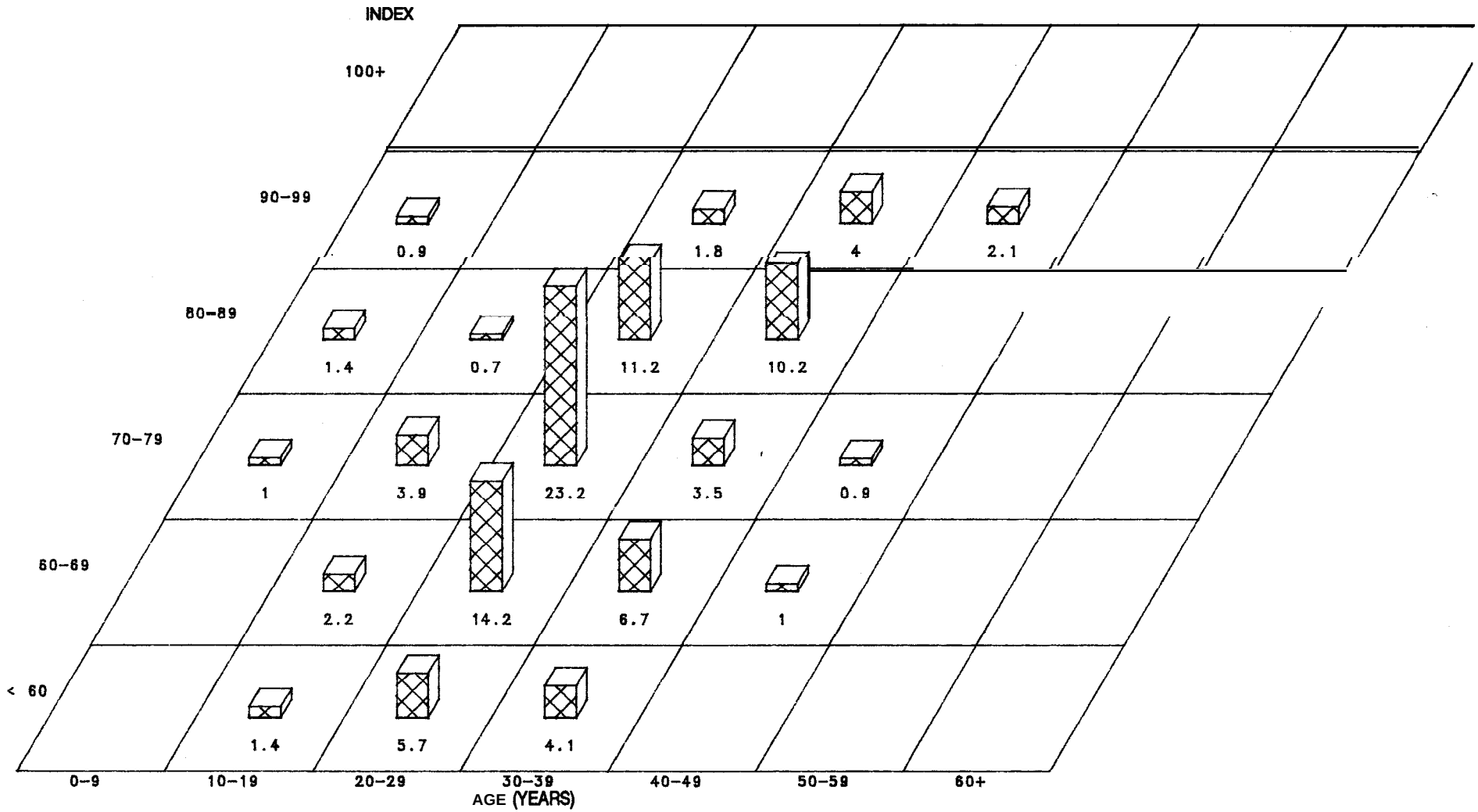


Figure 57A.--Percentage distribution of planted slash pine stands in South Carolina, by site index and stand age. (Represents 304,579 acres.)

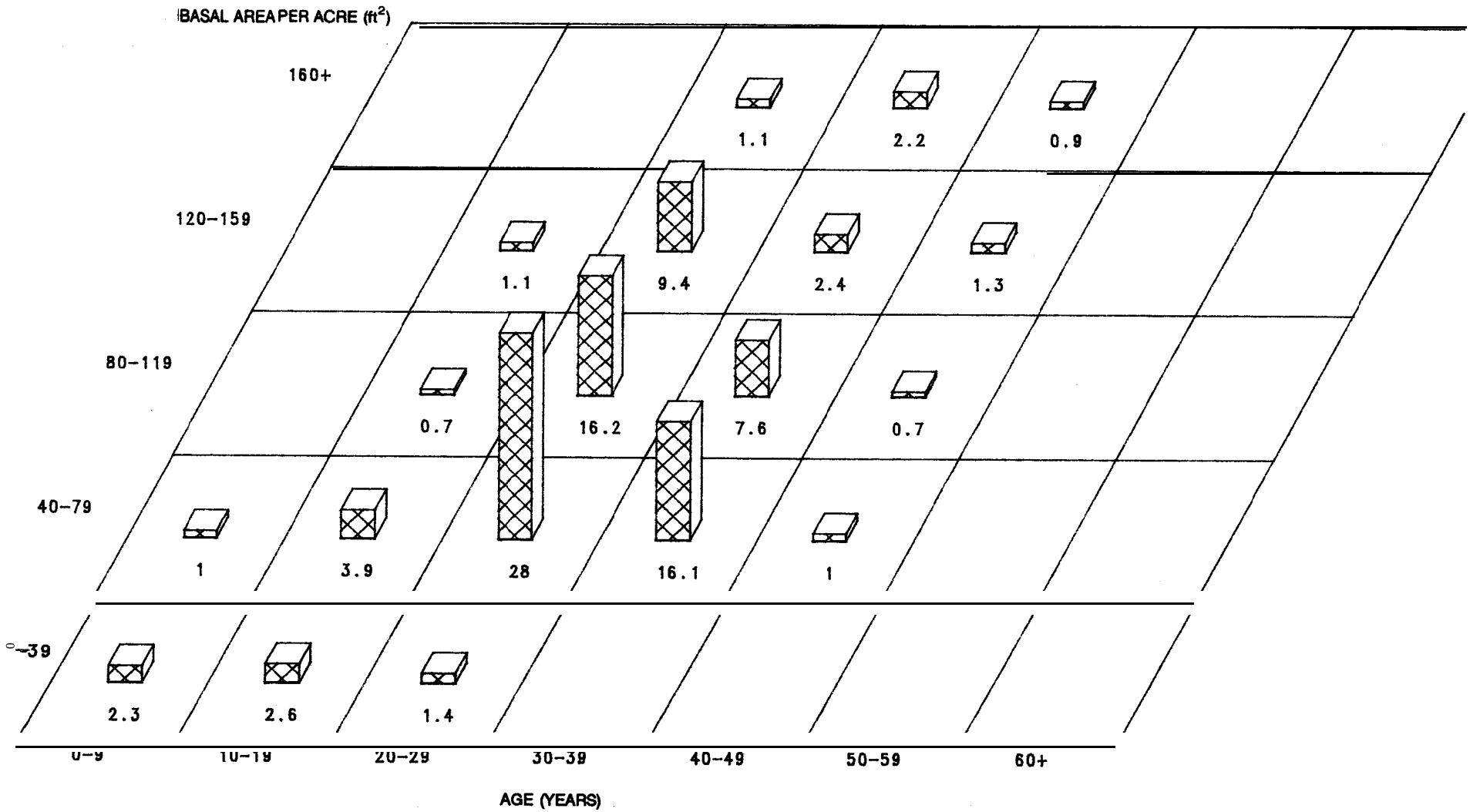


Figure 57B.--Percentage distribution of planted slash pine stands in South Carolina, by basal area per acre and stand age. (Represents 304,579 acres.)

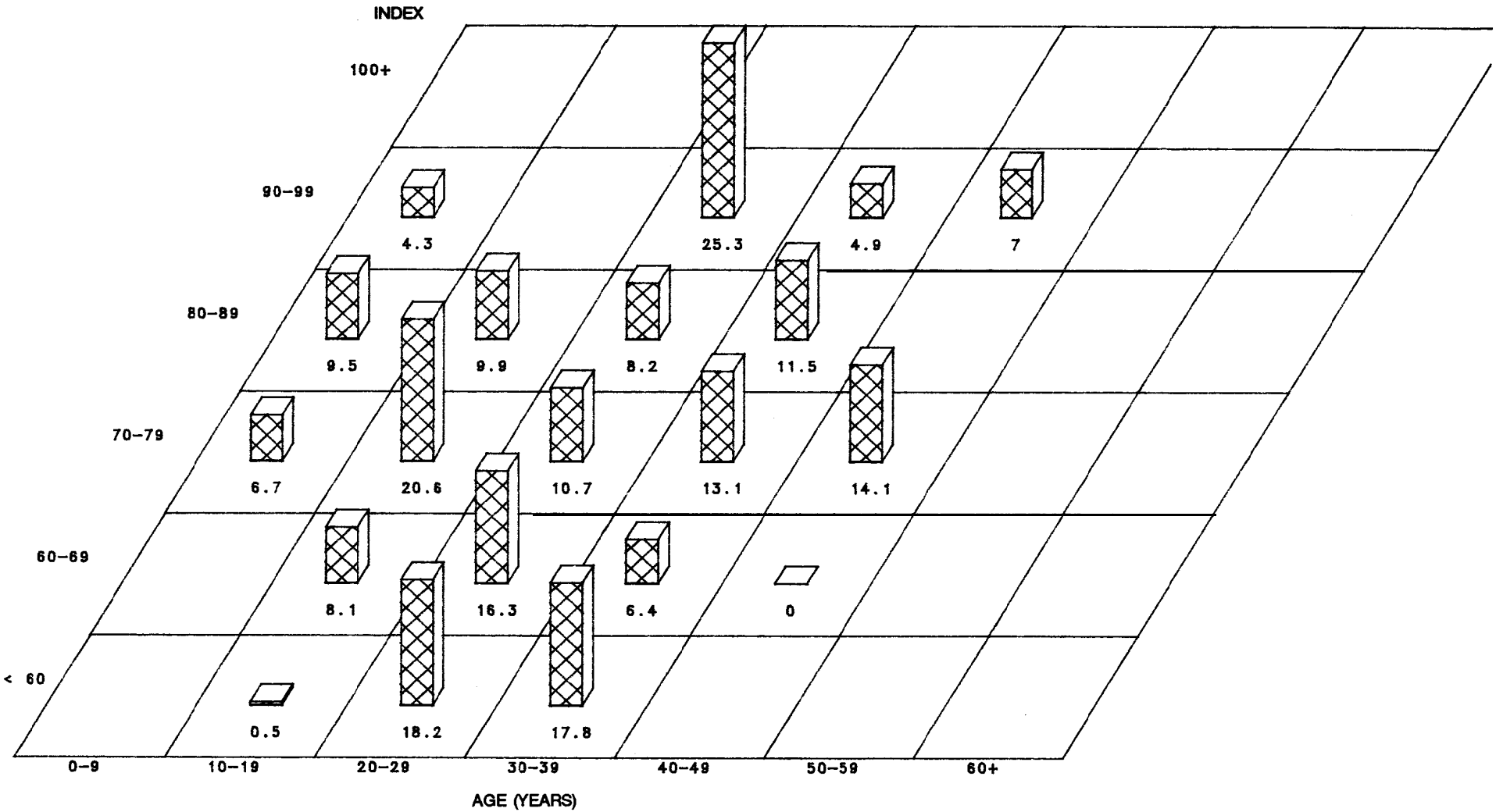


Figure 57C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted slash pine stands in South Carolina. (Represents 304,579 acres.)

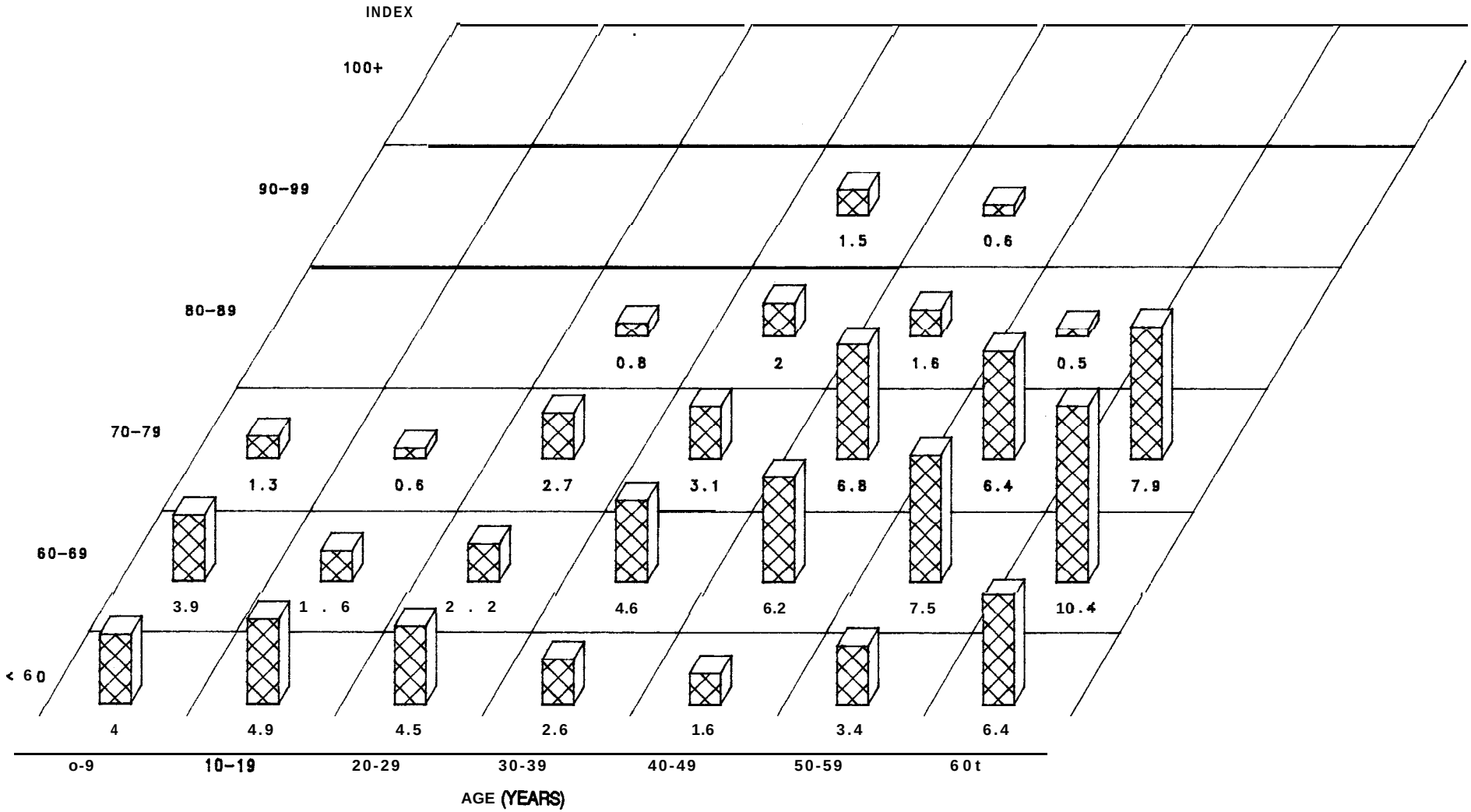


Figure 58A.--Percentage diibution of longleaf pine stands in South Carolina, by site index and stand age. (Represents 345,145 acres of natural stands, and 51,326 acres of planted stands.)

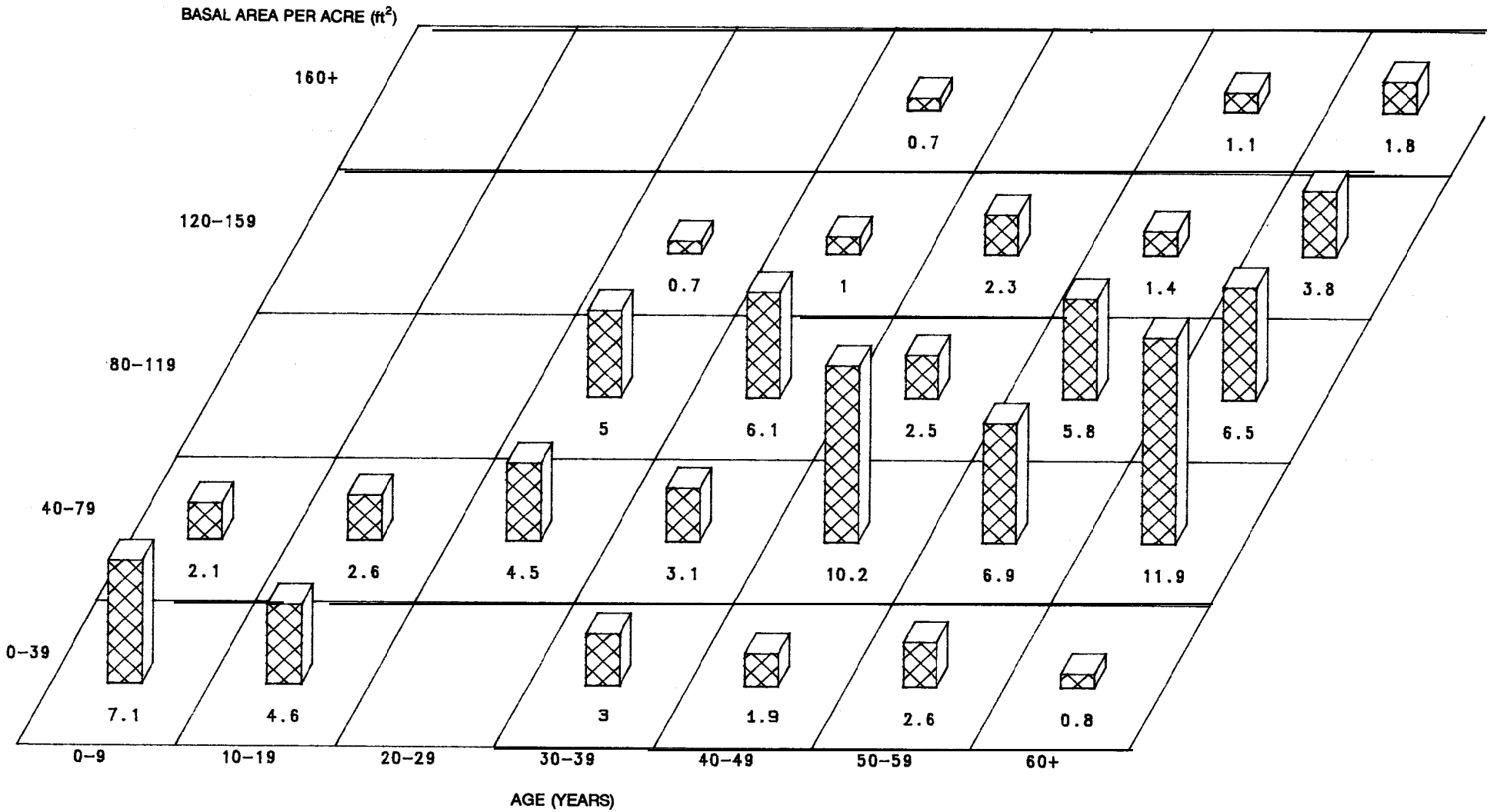


Figure 58B.--Percentage distribution of longleaf pine stands in South Carolina, by basal area per acre and stand age. (Represents 345,145 acres of natural stands, and 51,326 acres of planted stands.)

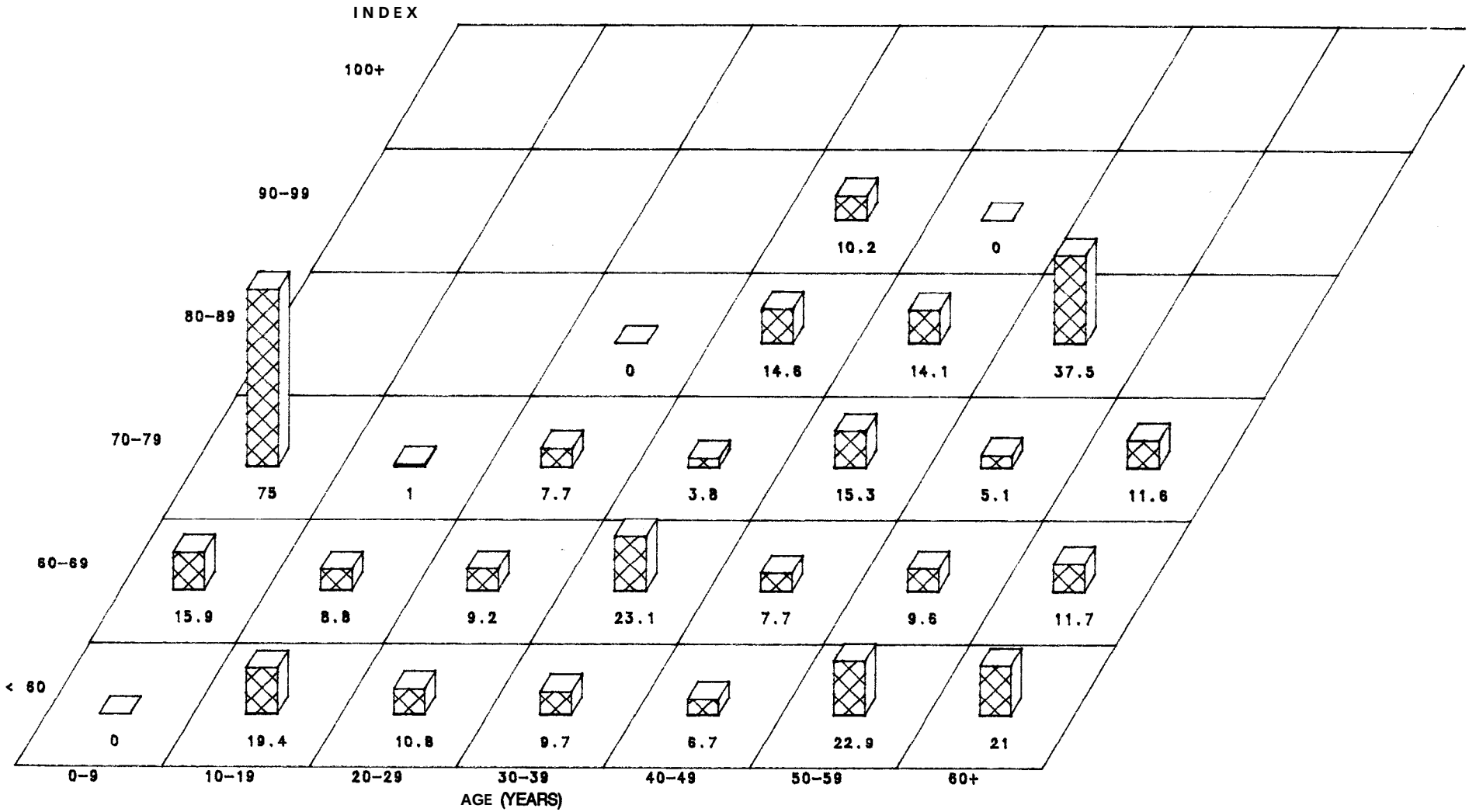


Figure 58C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for longleaf pine stands in South Carolina (Represents 345,145 acres of natural stands, and 51,326 acres of planted stands.)

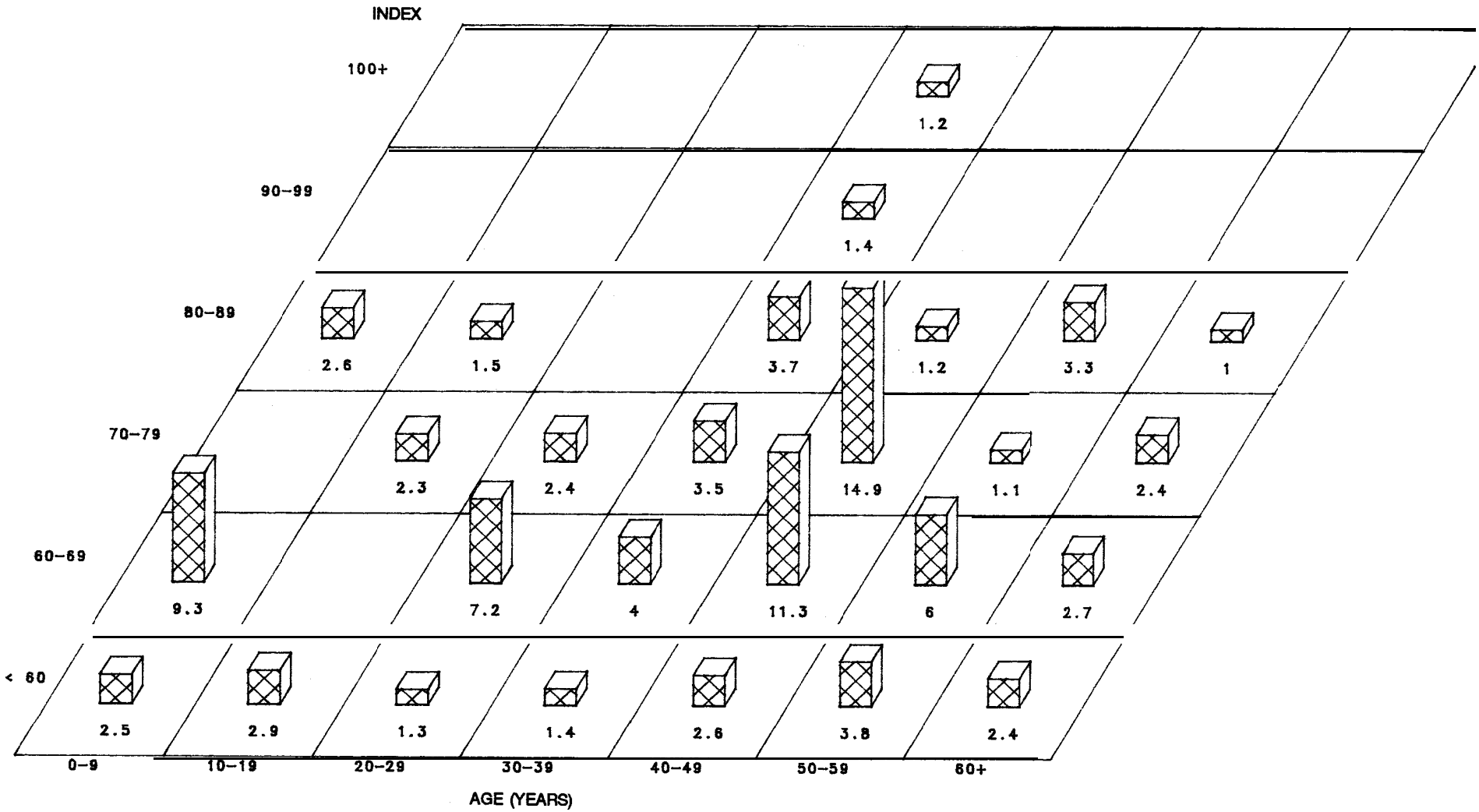


Figure 59A.--Percentage distribution of pond pine stands in South Carolina, by site index and stand age. (Represents 196,335 acres of natural stands, and 4,815 acres of planted stands.)

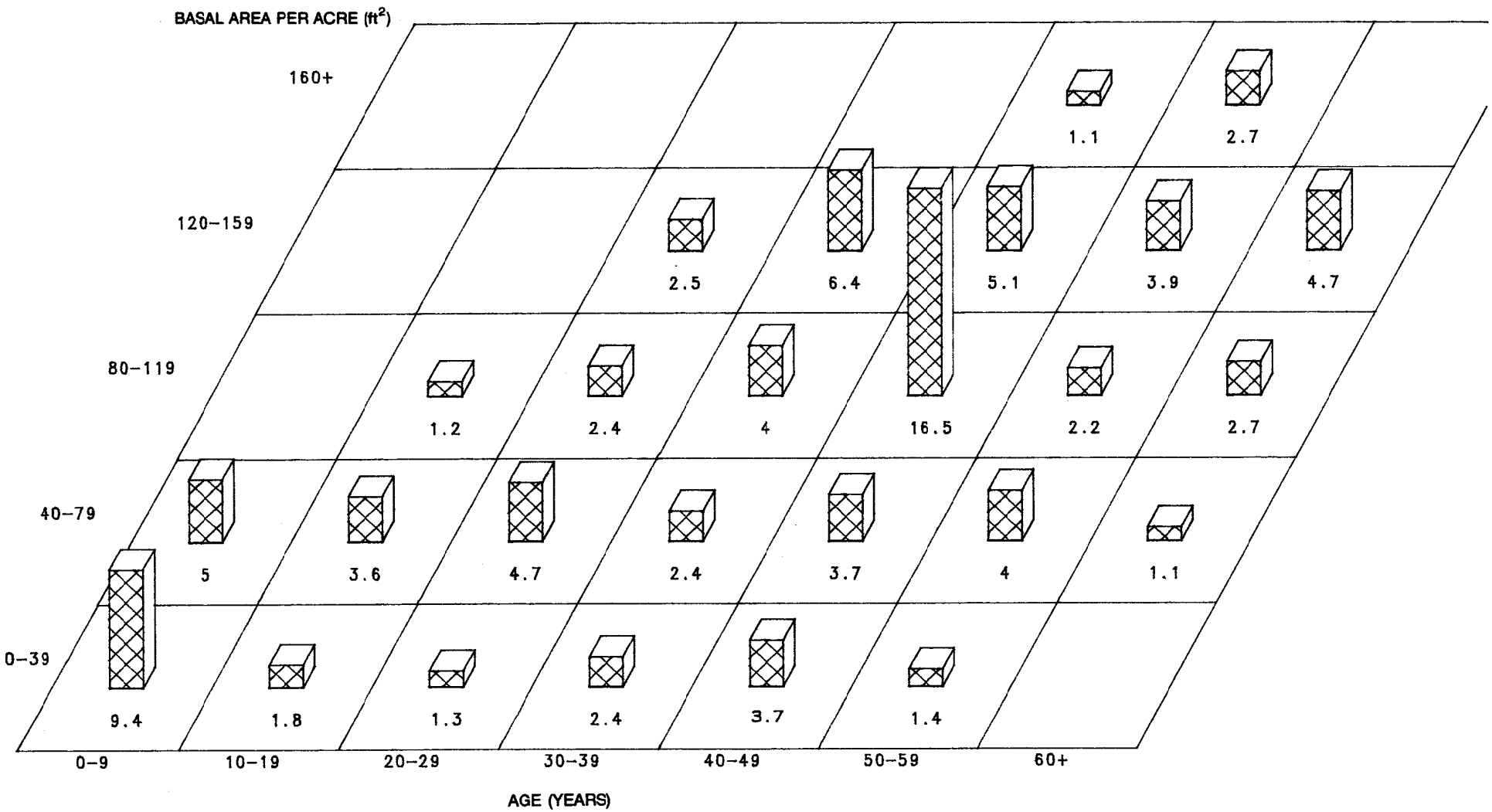


Figure 59B.–Percentage distribution of pond pine stands in South Carolina, by basal area and stand age. (Represents 196,335 acres of natural stands, and 4,815 acres of planted stands.)

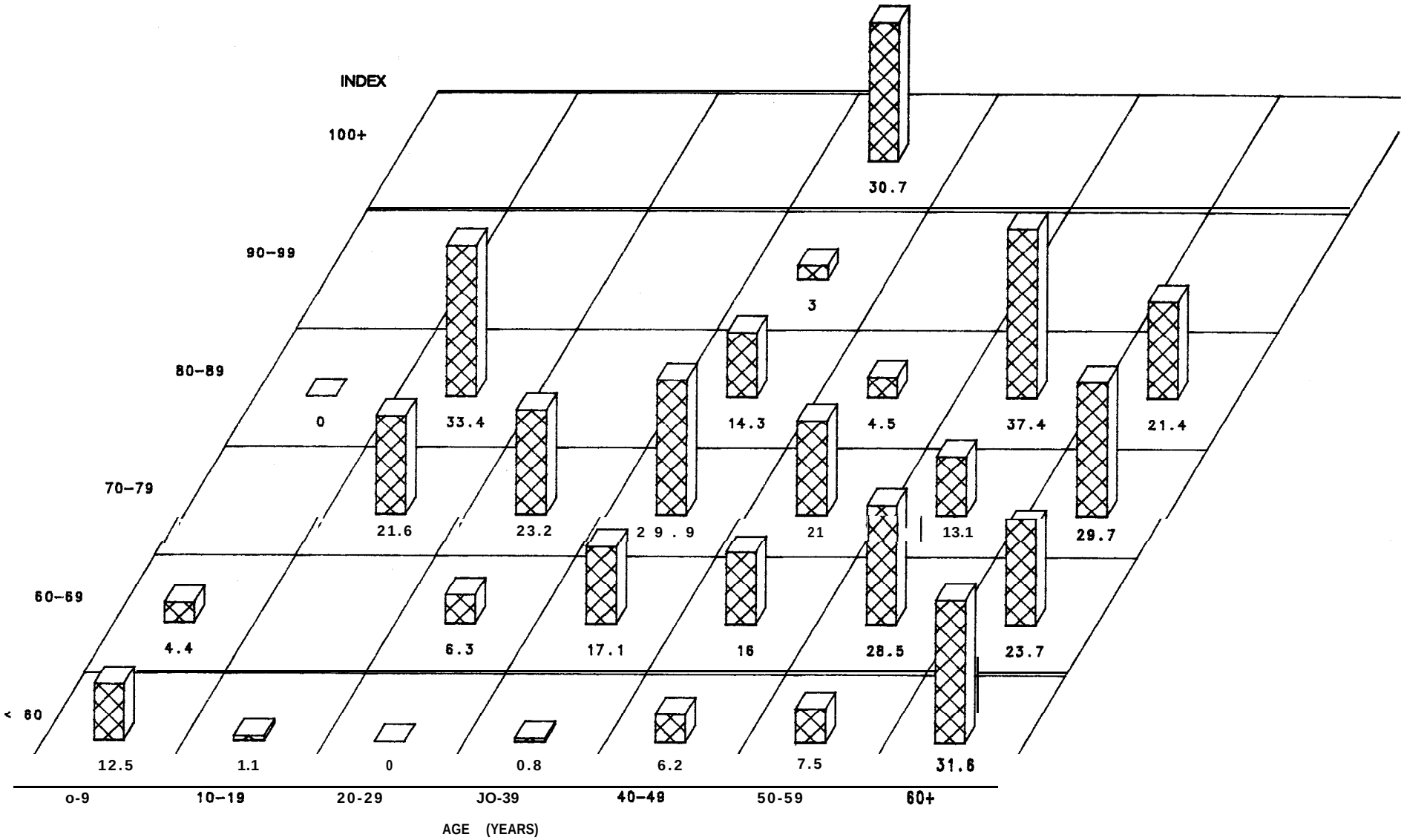


Figure 59C.–Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for pond pine stands in South Carolina. (Represents 196,335 acres of natural stands, and 4,815 acres of planted stands.)

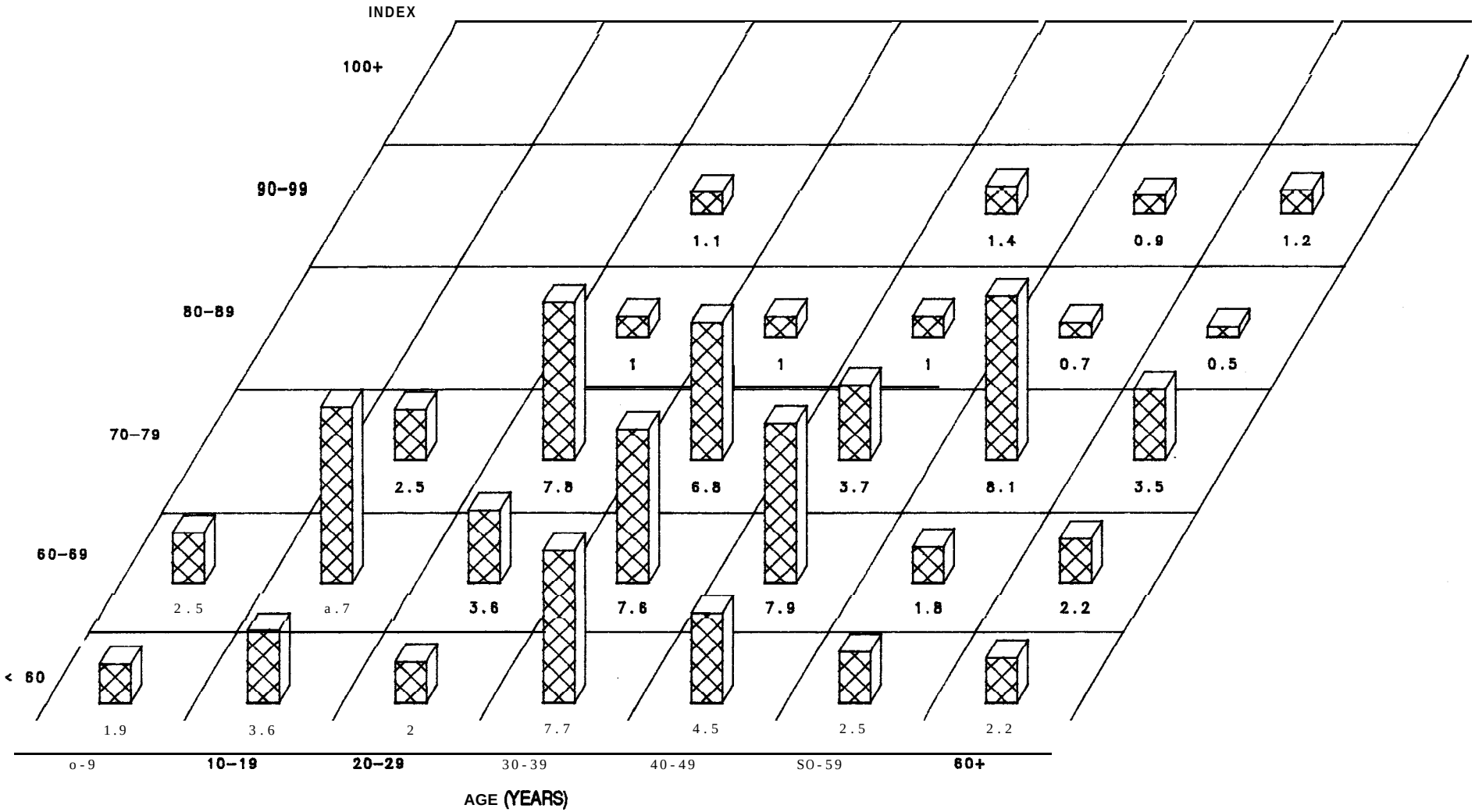


Figure 60A.--Percentage distribution of shortleaf pine stands in South Carolina, by site index and stand age. (Represents 361,193 acres of natural stands, and 6,044 acres of planted stands.)

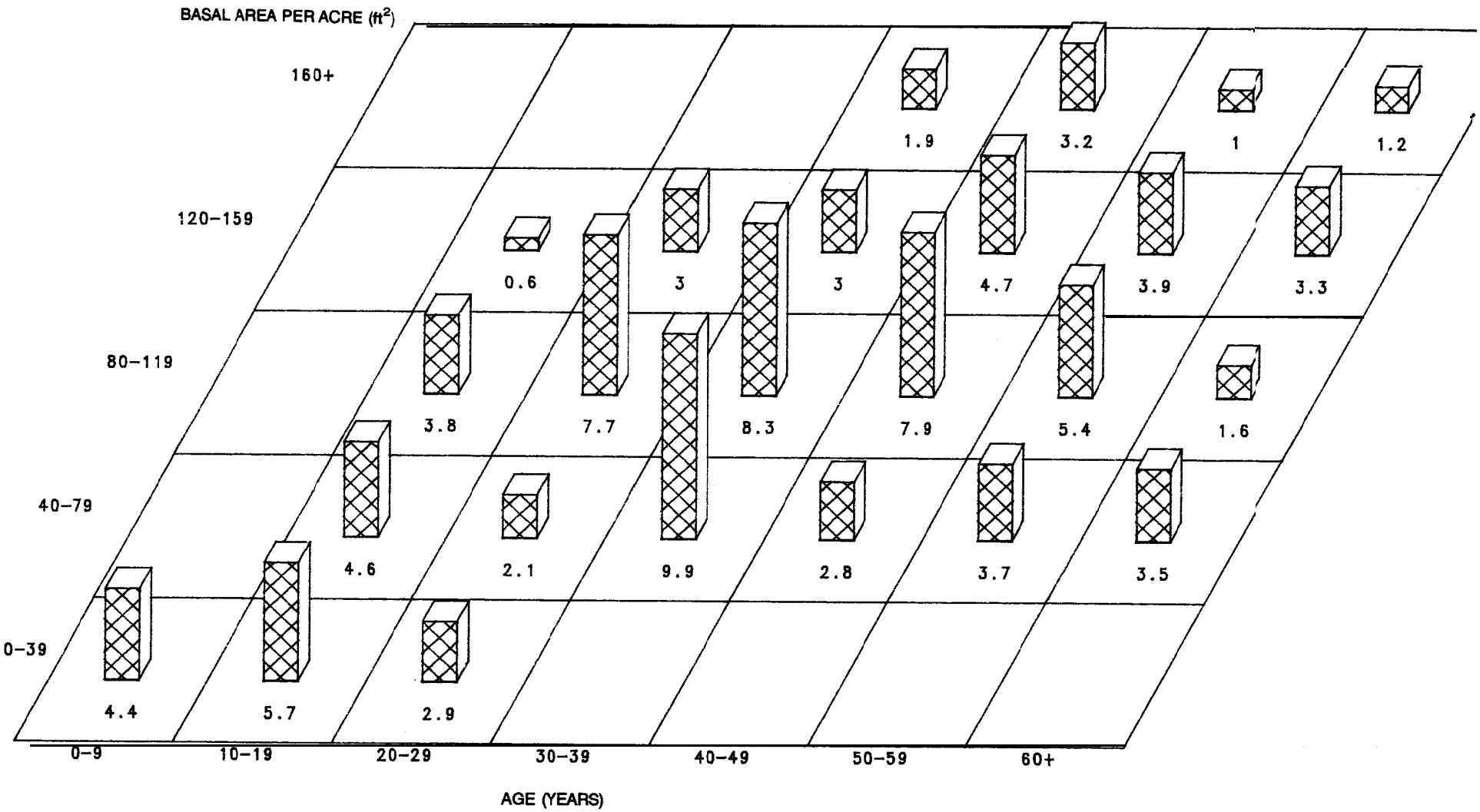


Figure 60B.–Percentage distribution of shortleaf pine stands in South Carolina, by basal area per acre and stand age. (Represents 361,193 acres of natural stands, and 6,044 acres of planted stands.)

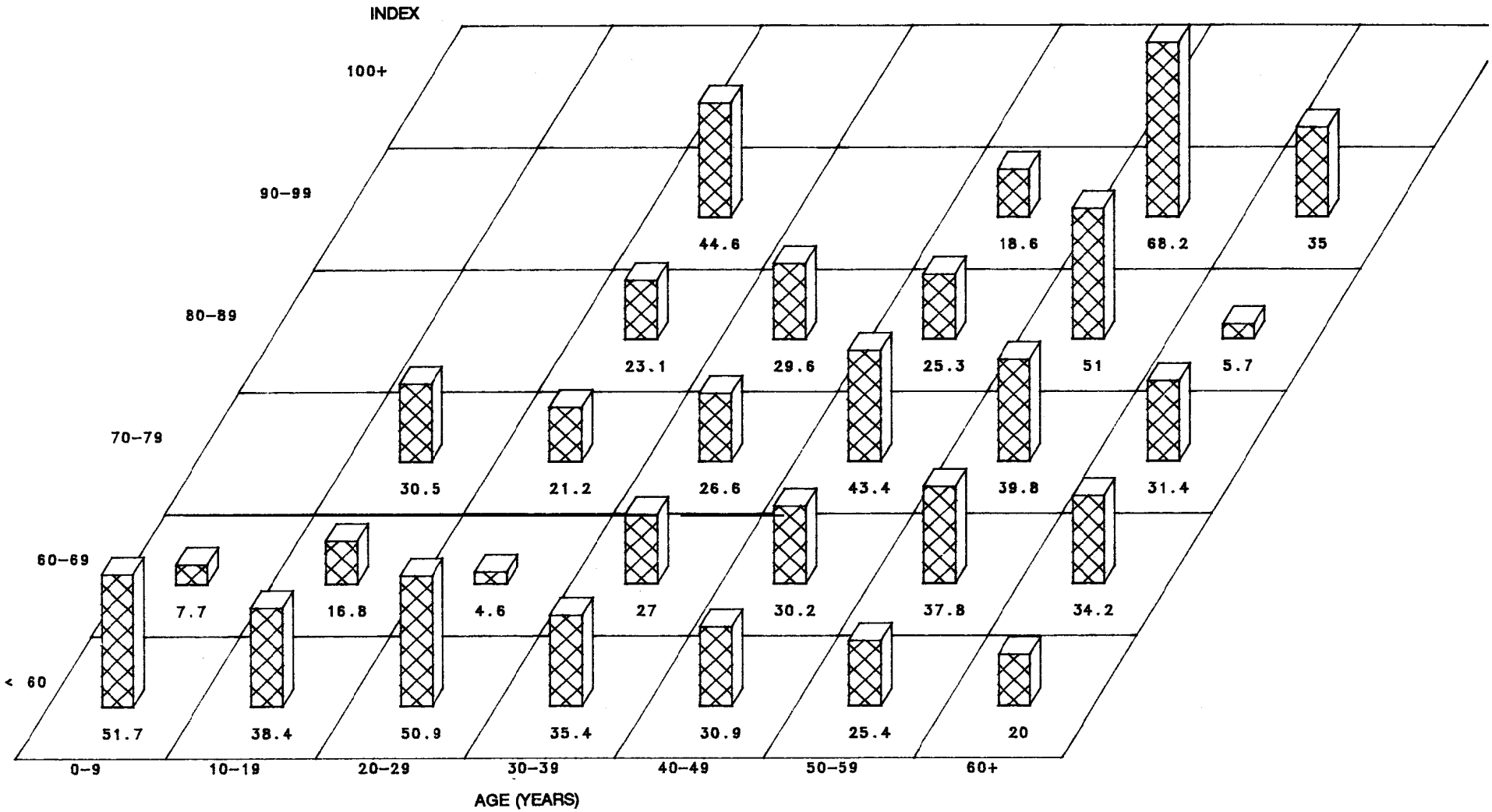


Figure 60C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for shortleaf pine stands in South Carolina. (Represents 361,193 acres of natural stands, and 6,044 acres of planted stands.)

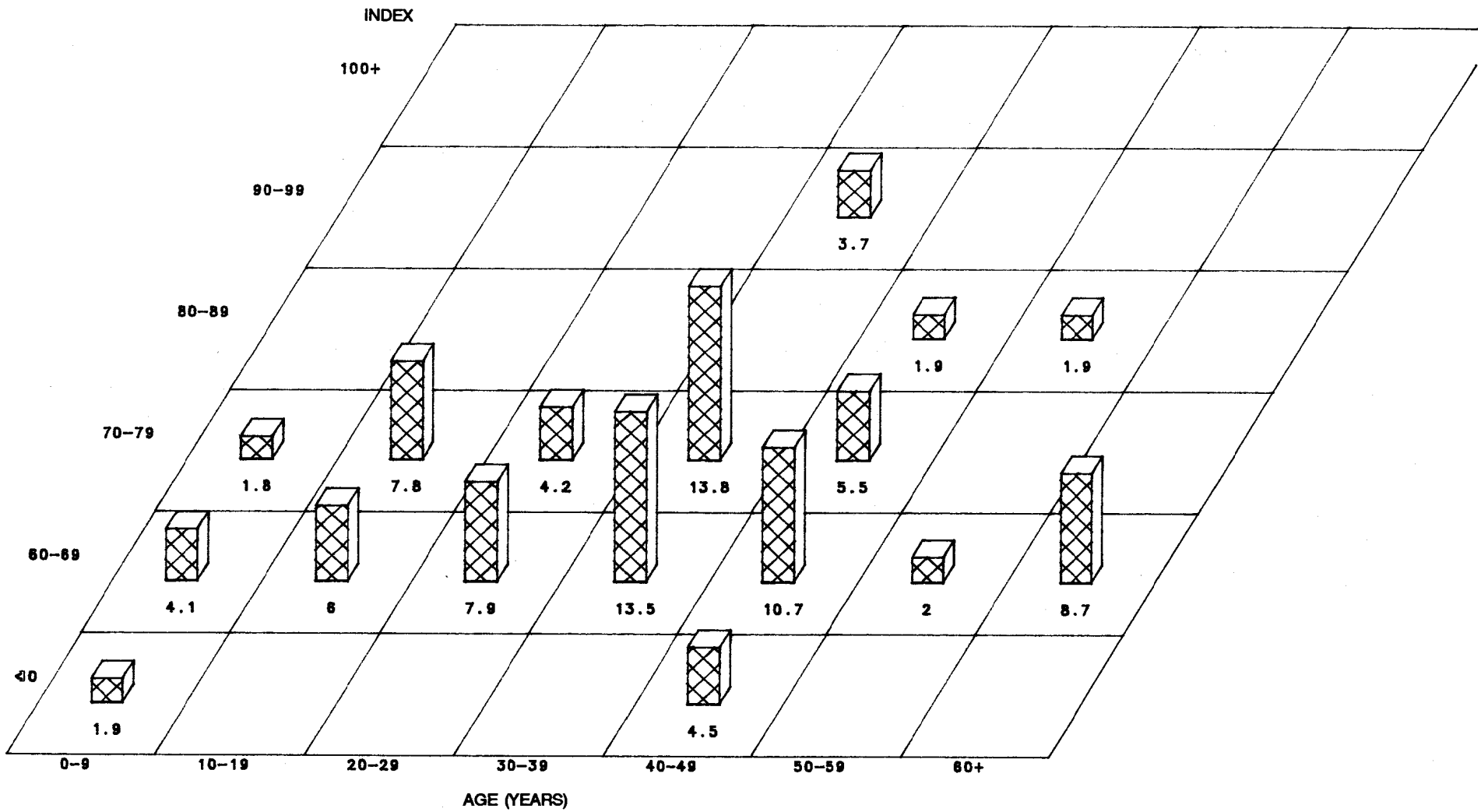


Figure 61A.--Percentage distribution of Virginia pine stands in South Carolina, by site index and stand age. (Represents 187,143 acres of natural stands, and 4,116 acres of planted stands.)

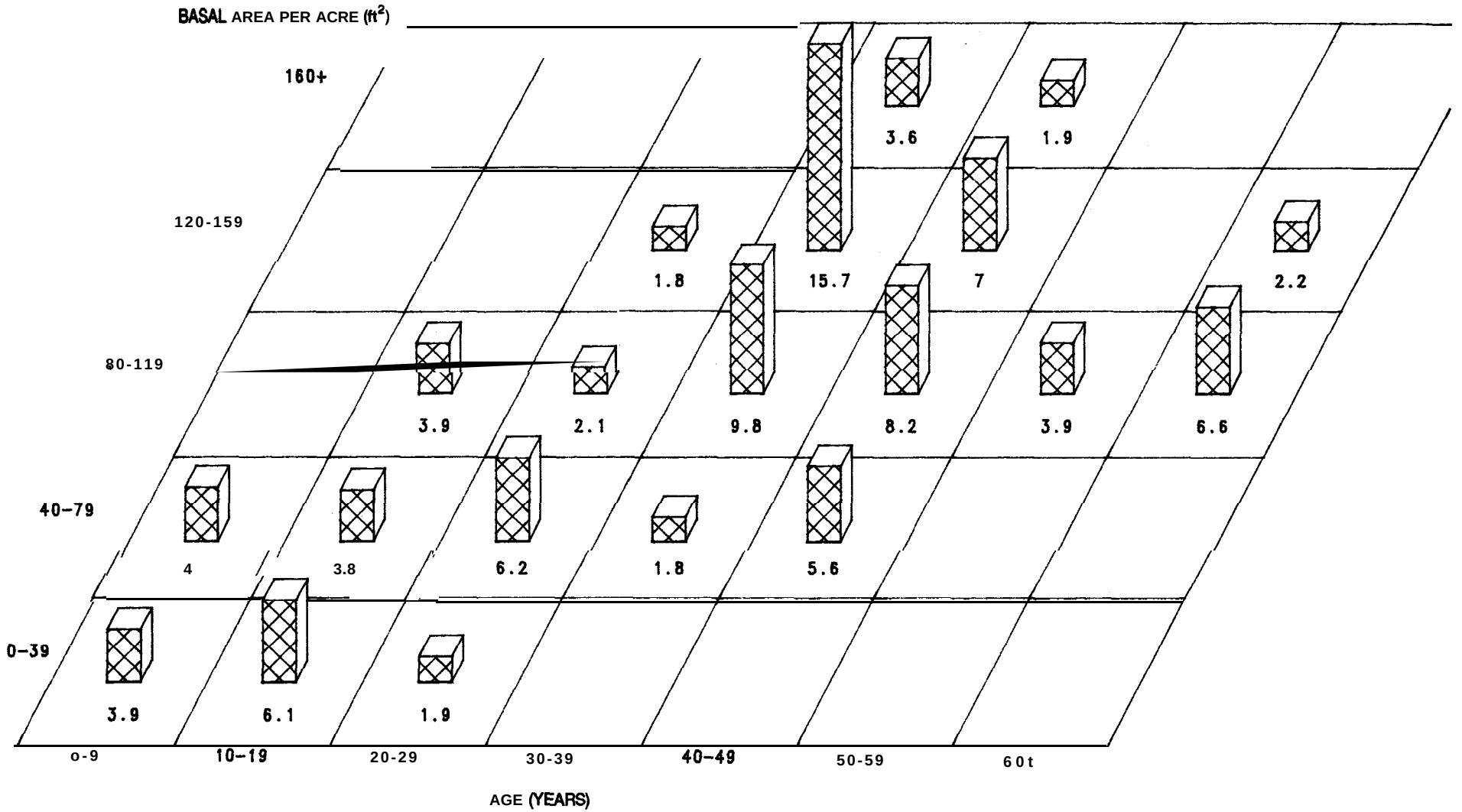


Figure 61 B.-Percentage distribution of Virginia pine stands in South Carolina, by basal area per acre and stand age. (Represents 187,143 acres of natural stands, and 4,1 16 acres of planted stands.)

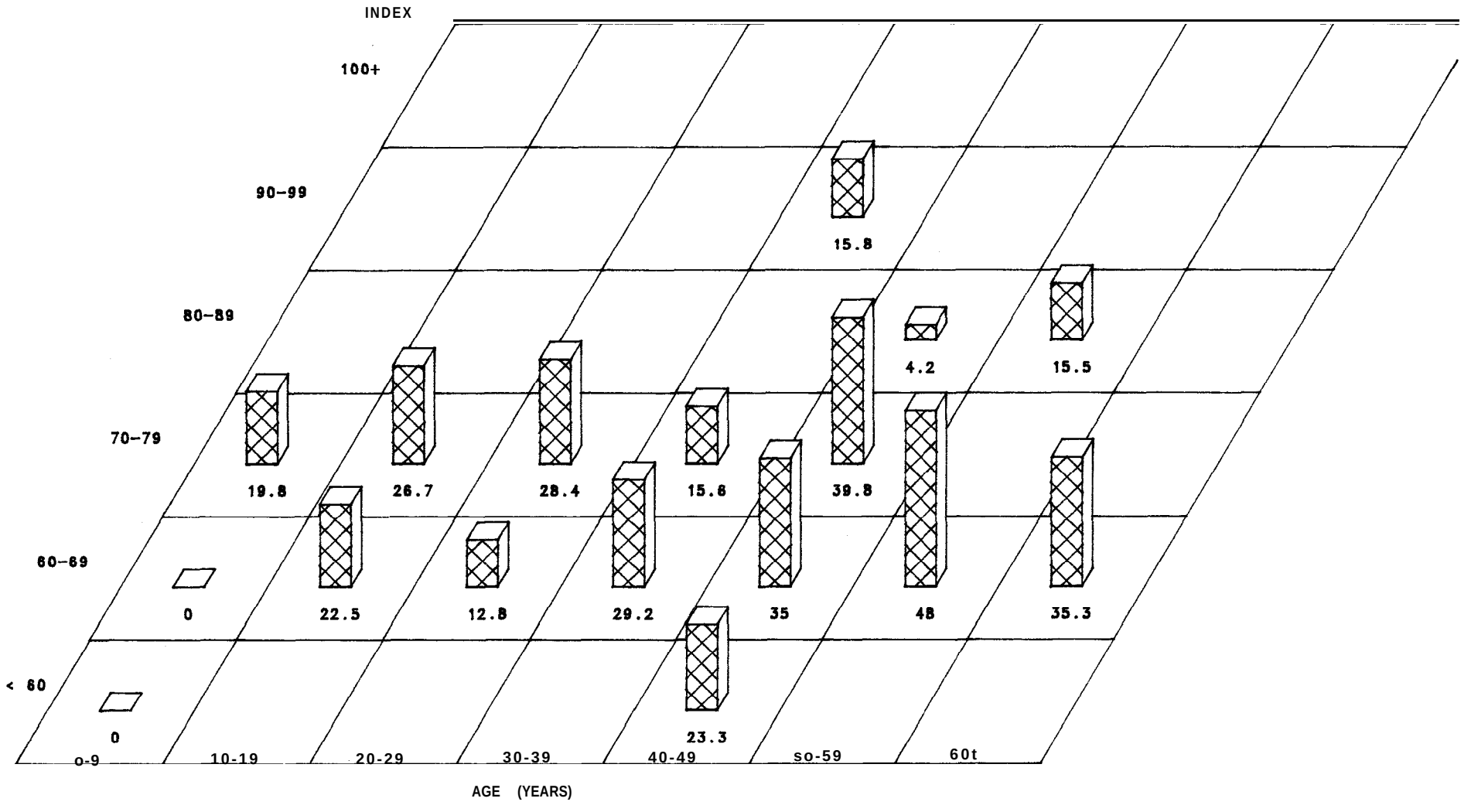


Figure 61C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for Virginia pine stands in South Carolina. (Represents 167,143 acres of natural stands, and 4,116 acres of planted stands.)

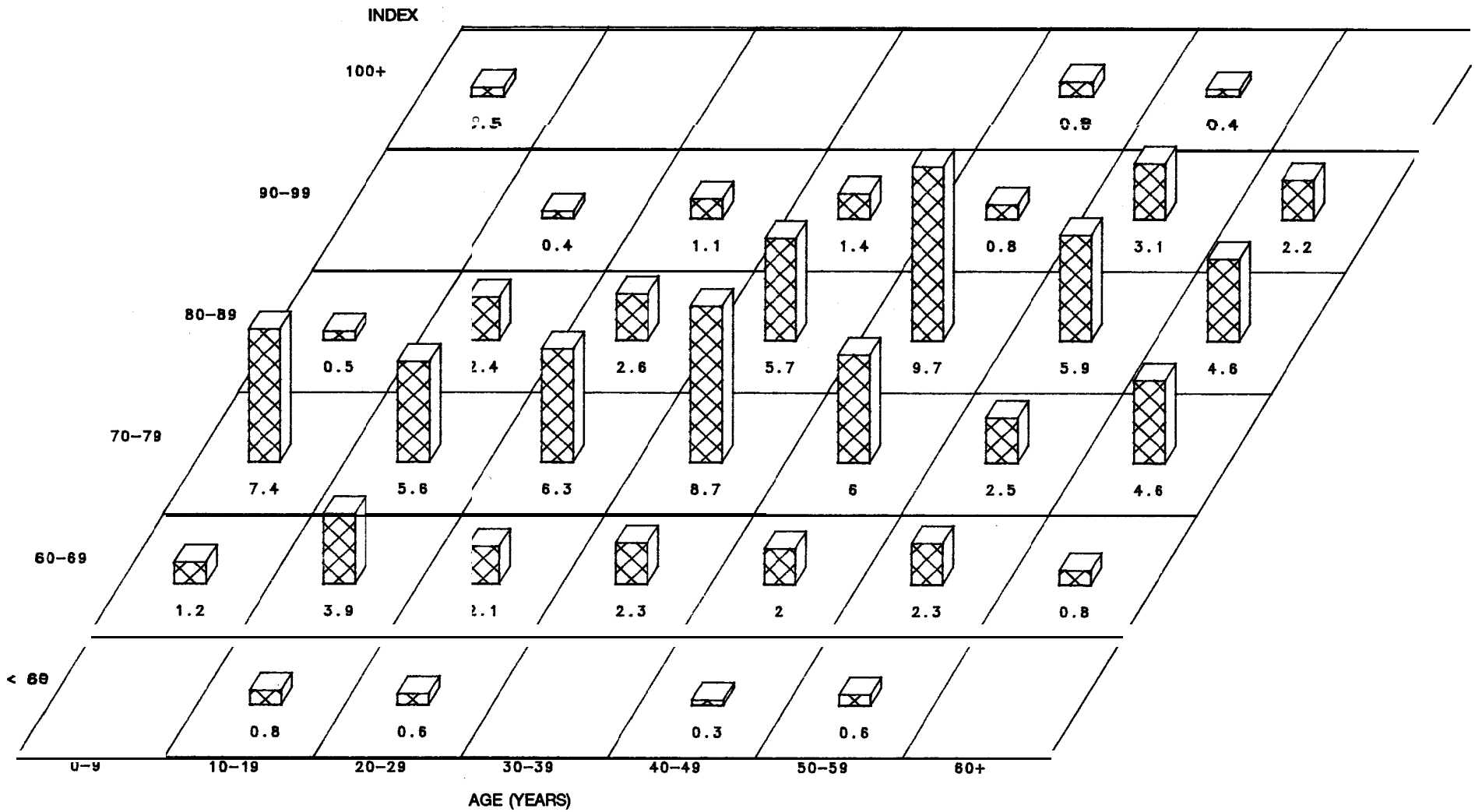


Figure 62A.--Percentage distribution of natural loblolly pine stands in Virginia, by site index and stand age. (Represents 683,082 acres.)

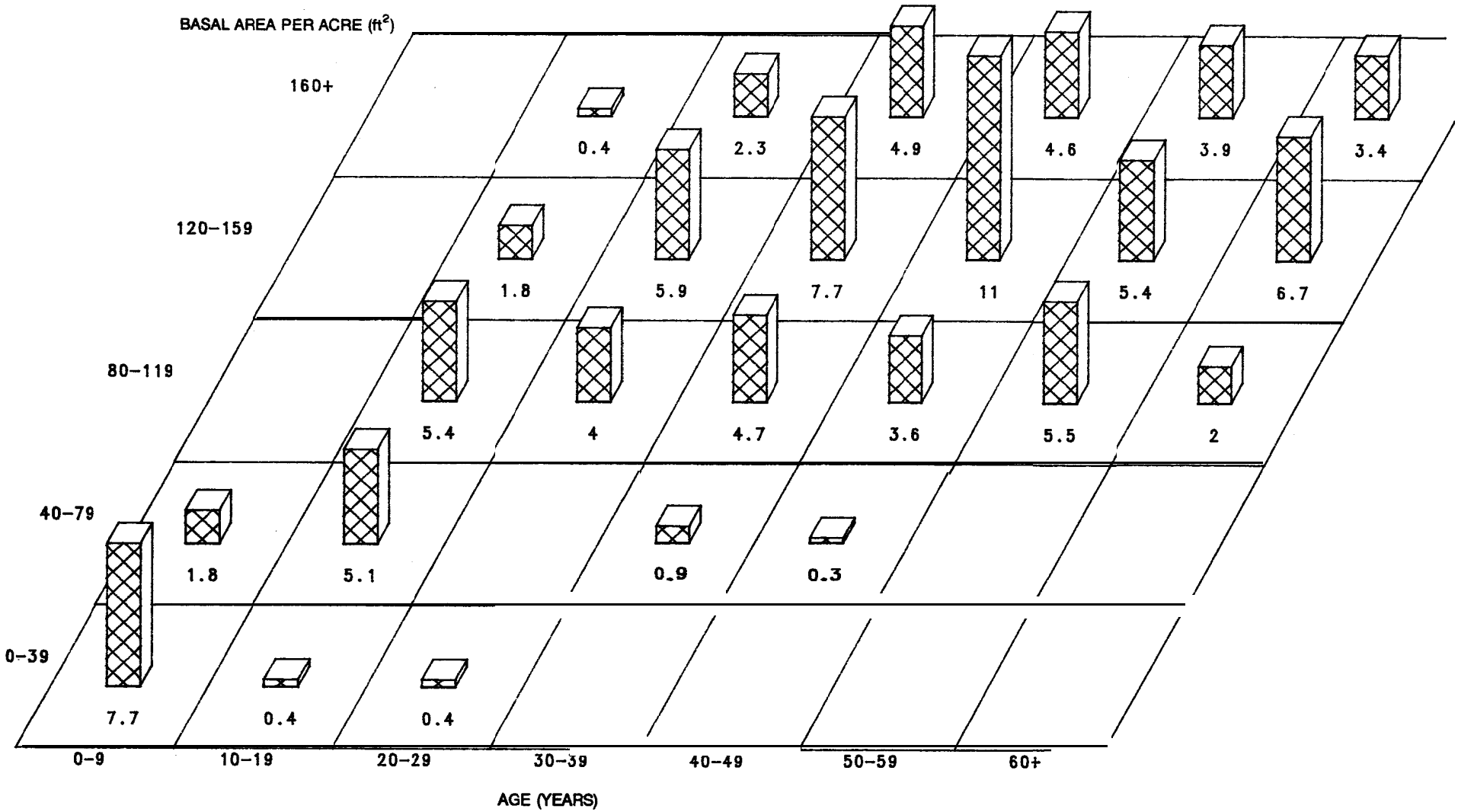


Figure 62B.–Percentage distributi natural pine stands in Virginia, by basal area per acre and stand age. (Represents 683,082 acres.)

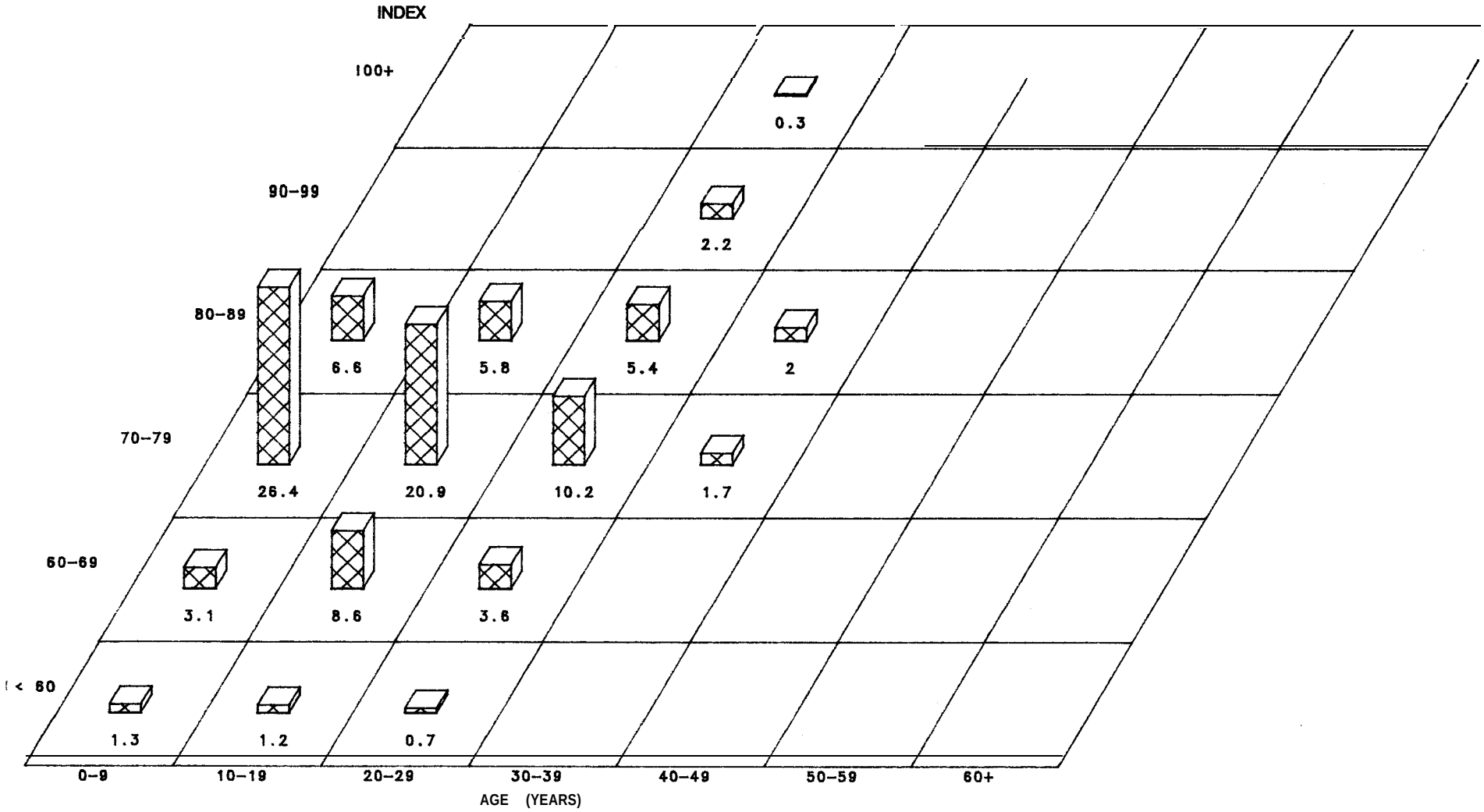


Figure 62C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for natural loblolly pine stands in Virginia (Represents 683,082 acres.)

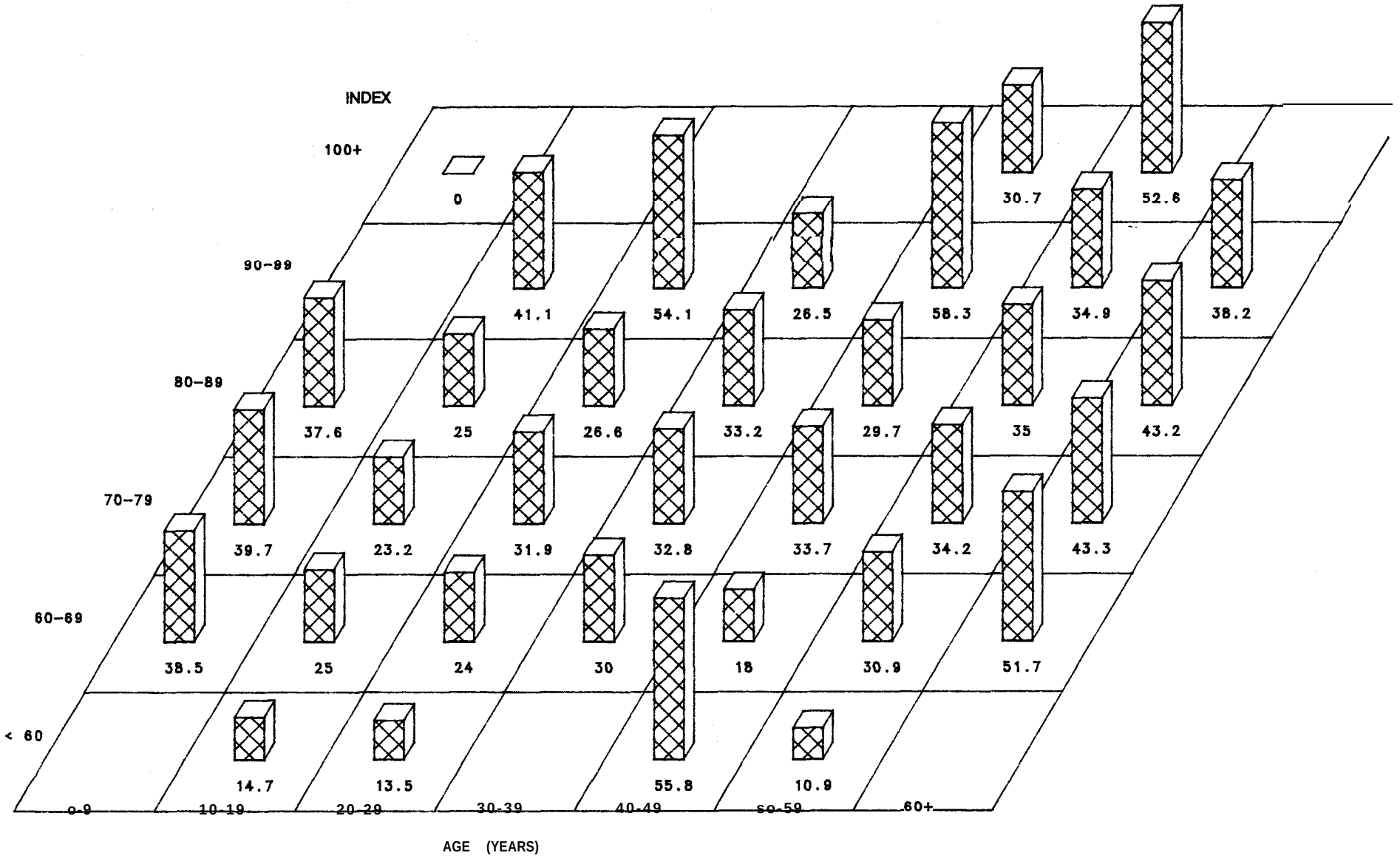


Figure 63A.--Percentage distribution of planted loblolly pine stands in Virginia, by site index and stand age. (Represents 1,089,548 acres.)

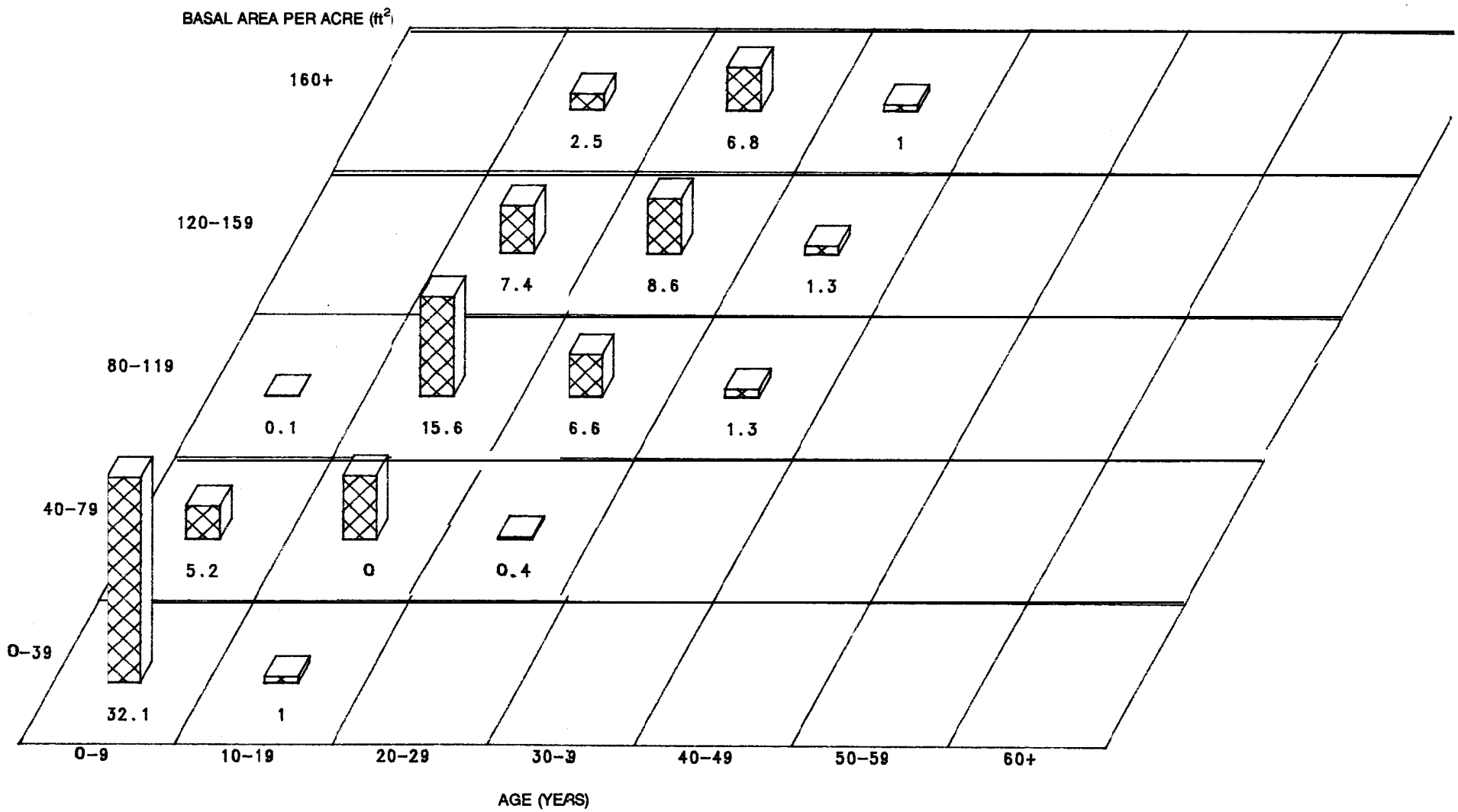


Figure 63B.–Percentage distribution of planted loblolly pine stands in Virginia, by basal area per acre and stand age. (Represents 1,089,548 acres.)

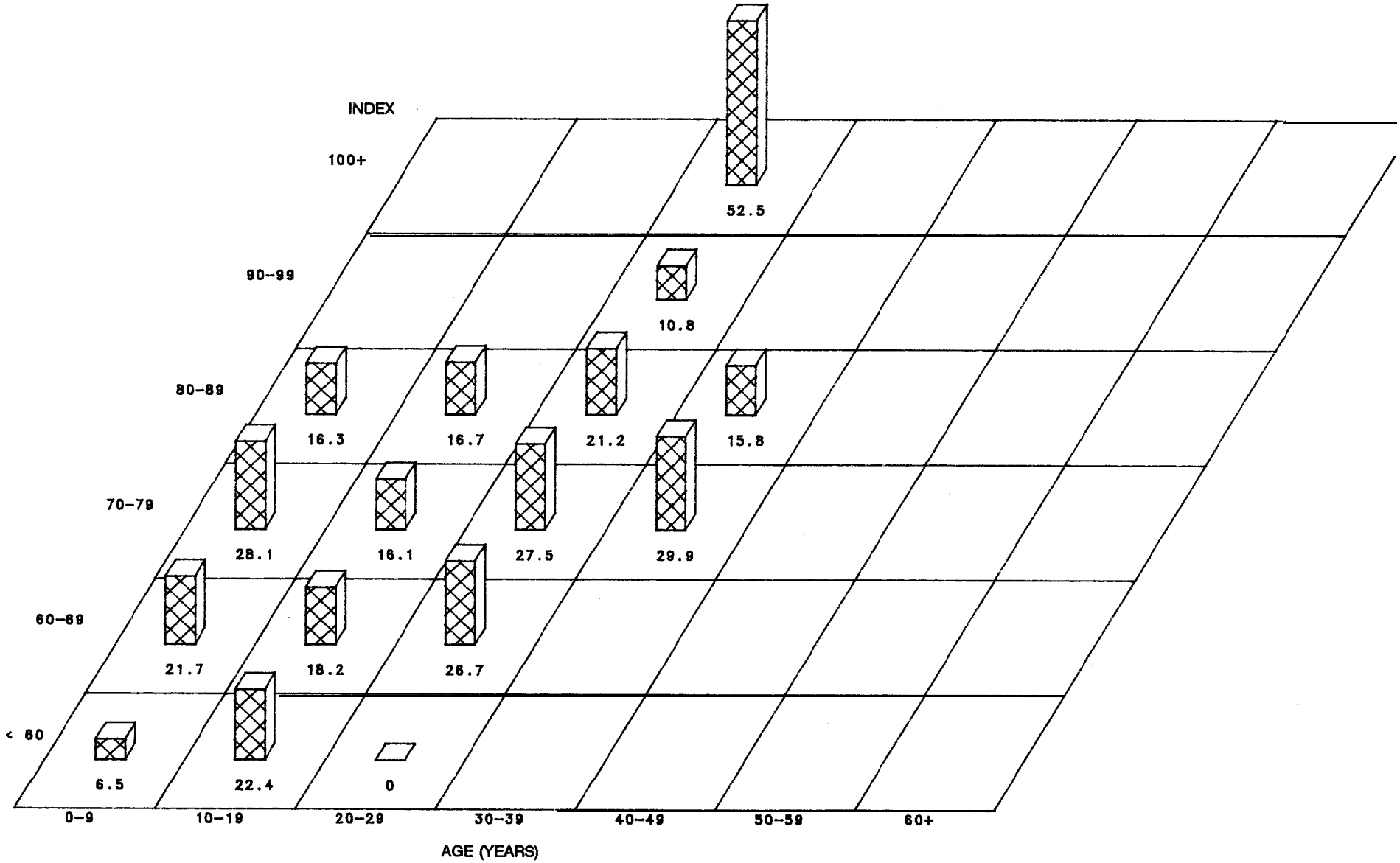


Figure 63C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for planted loblolly pine stands in Virginia. (Represents 1,089,548 acres.)

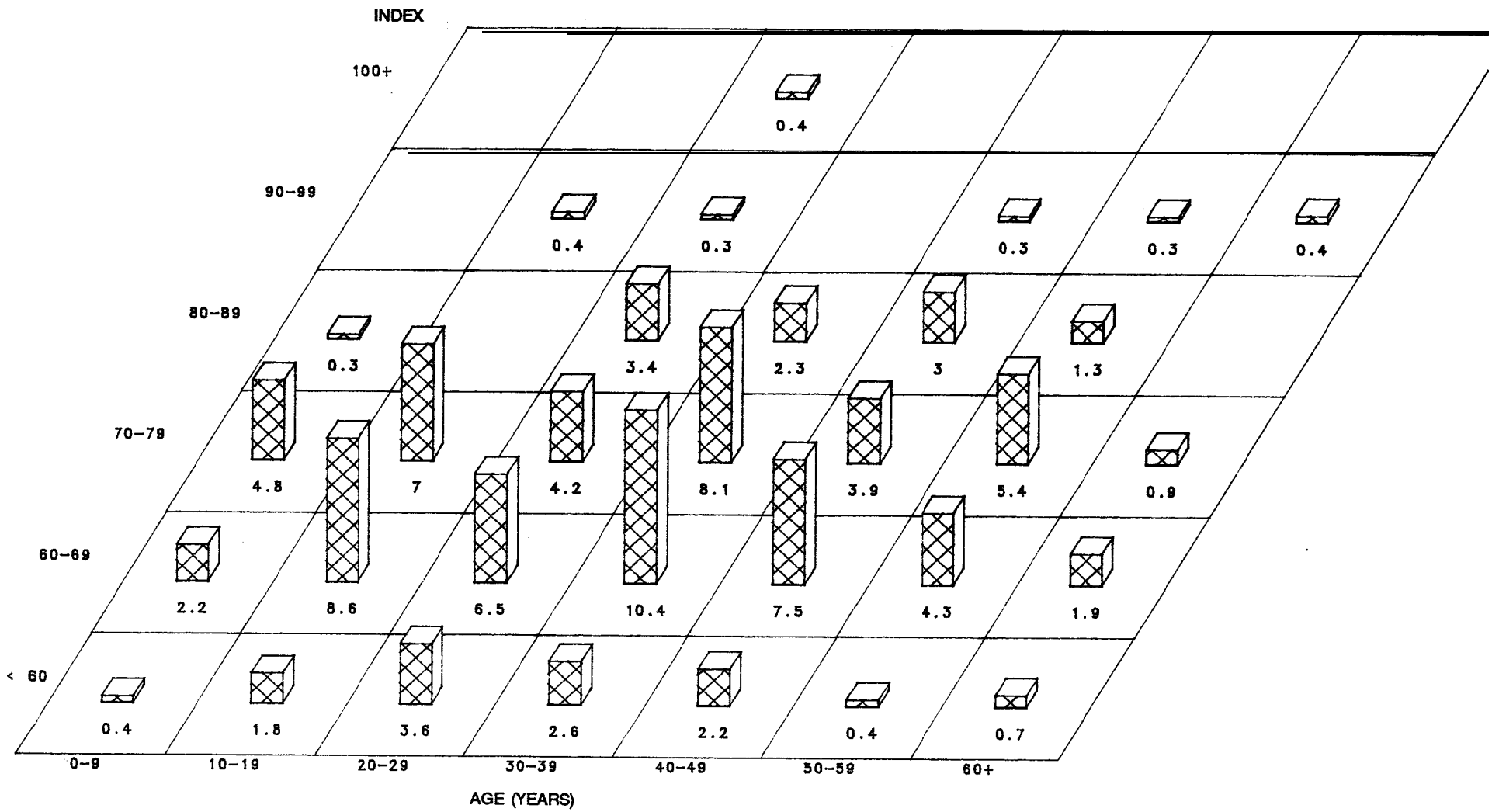


Figure 64A.–Percentage distribution of Virginia pine stands in Virginia, by site index and stand age. (Represents 994,116 acres of natural stands, and 35,628 acres of planted stands.)

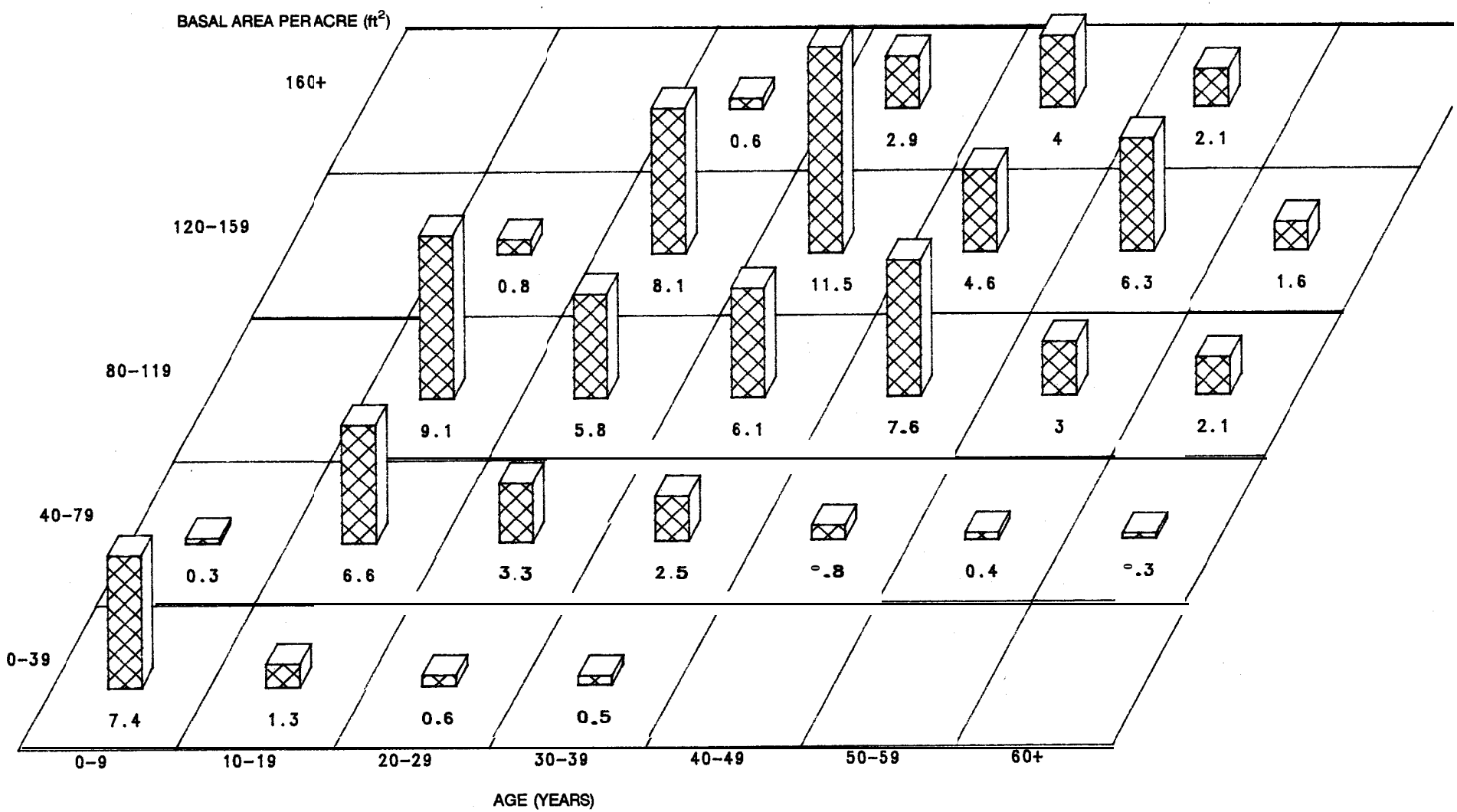


Figure 64B.--Percentage distribution of Virginia pine stands in Virginia, by basal area per acre and stand age. ents 994,116 acres of natural stands, and 35,628 acres of planted stands.)

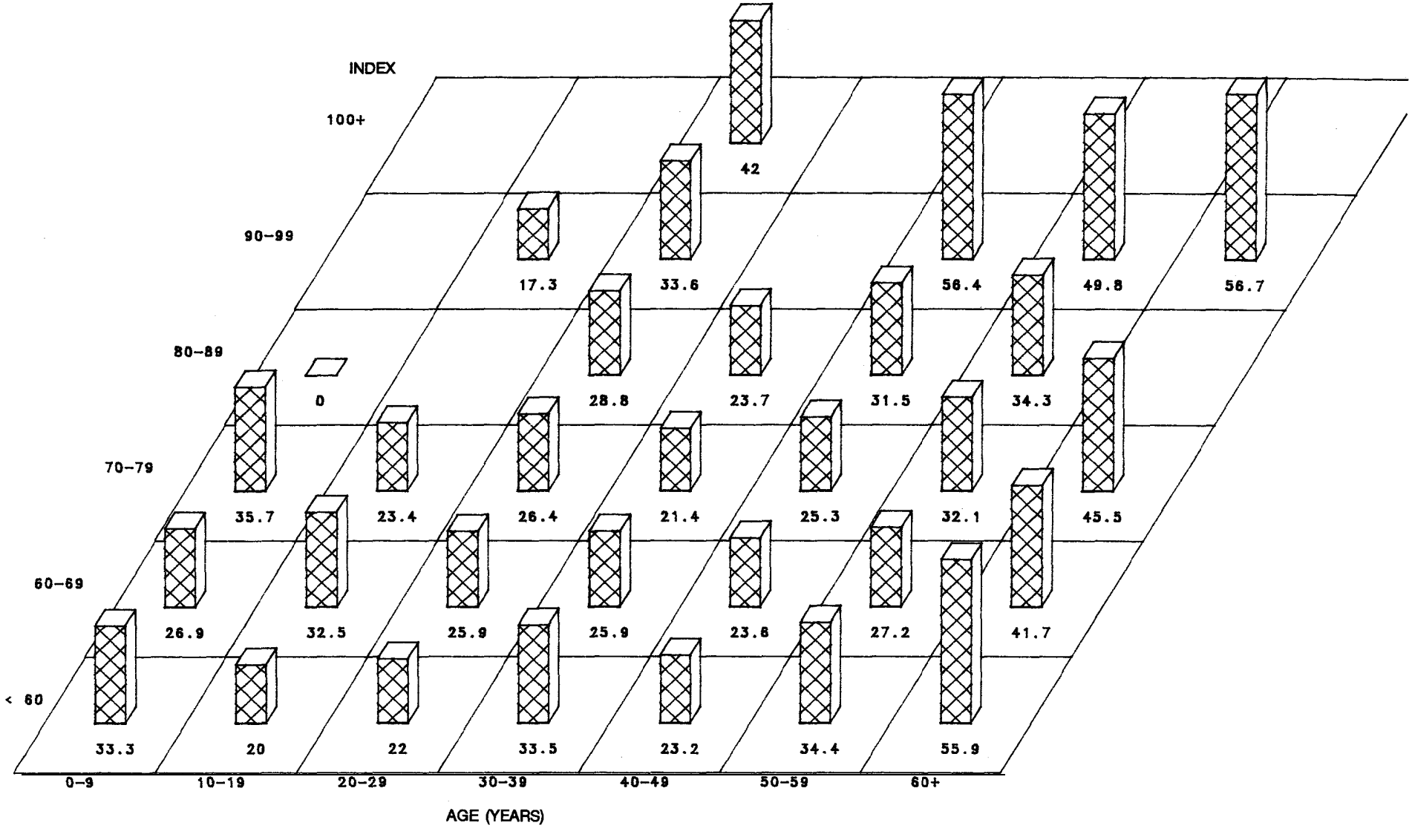


Figure 64C.--Percentage of basal area per acre in non-yellow-pine species, by site index and stand age, for Virginia pine stands in Virginia. (Represents 994,116 acres of natural, and 35,628 acres of planted stands.)

Bechtold, William A.; **Ruark,** Gregory A.
Structure of pine stands in the Southeast. Resour. Pap. X-274. Asheville, NC: U.S. Department of Agriculture, Forest Service, Southeastern Forest Experiment Station; 1988. 185 pp.

Distributional and statistical information associated with stand age, site index, basal area per acre, number of stems per acre, and stand density index is reported for major pine cover types of the Southeastern United States. Means, standard deviations, and ranges of these variables are listed by State and physiographic region for loblolly, slash, longleaf, pond, shortleaf, and Virginia pine cover types. Graphic illustrations of multidimensional relationships among some of the variables are also provided.

KEYWORDS: Southern pine, timberland, **Pinus,** stand structure, forest inventory.

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