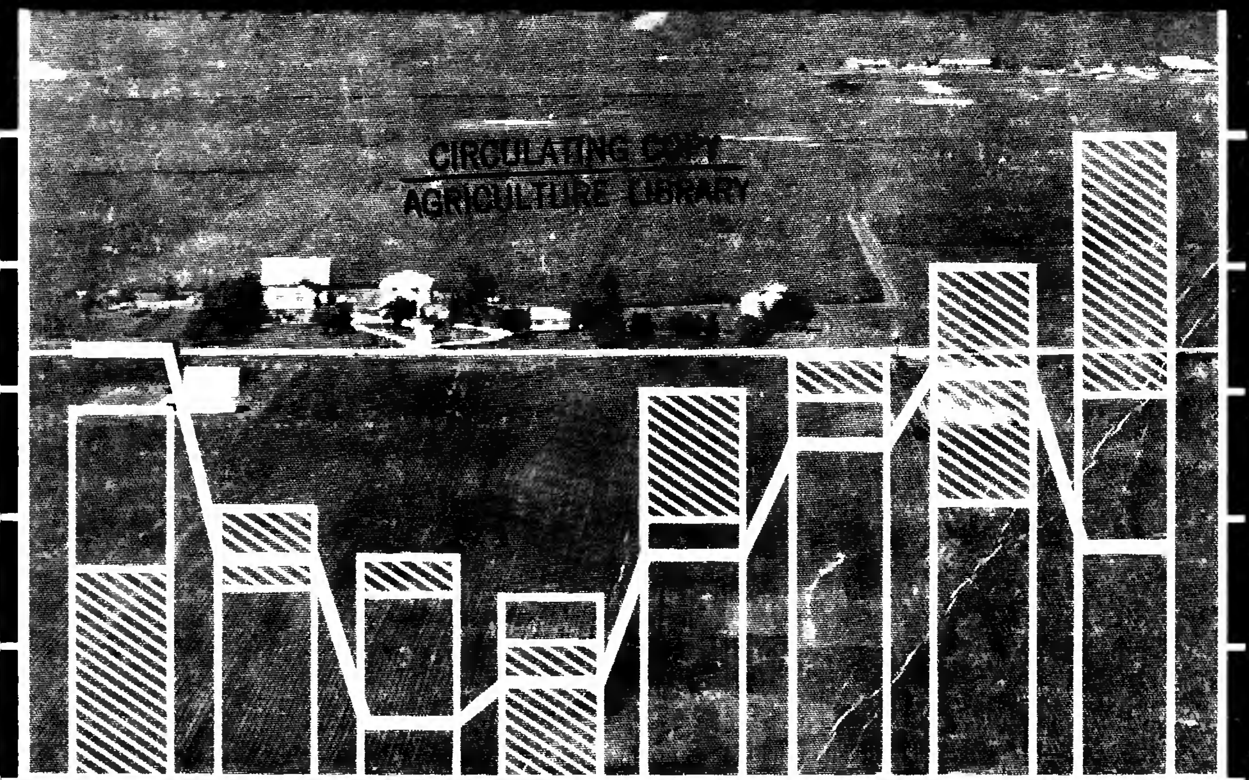
SOIL PRODUCTIVITY INDEXES FOR ILLINOIS COUNTIES AND SOIL ASSOCIATIONS



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ABSTRACT

The 2 percent sample soil data for the Illinois Conservation Needs Inventory were combined with productivity indexes to obtain state, county, and subcounty soil productivity characteristics that were used to evaluate variations in rural land quality. State soil productivity distributions were developed to provide a general framework of soil quality. Frequency diagrams (histograms) of county soil productivity indexes were constructed. Ratios comparing soil productivity patterns for the state and each county were developed and analyzed. Productivity characteristics of soil associations were assembled for Illinois and for each county in a table that lists the percentage of each county in each soil association, the percentage of each soil association in each of seven productivity index categories used in the histogram format, and comparisons of ratios between state and county soil association productivity indexes within the seven productivity index categories. The productivity index data can be used to compare the relative quality of soil for agricultural use between counties and between soil associations within counties. These data should aid county and state officials in evaluating rural land assessments.

Additional index words: *Conservation Needs Inventory, soil productivity distributions.*

CONTENTS

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EVALUATING RURAL LAND for purposes of tax assessment is often inconsistent and thus inequitable in many areas of Illinois and other states. Generally, these inconsistencies in evaluation reflect the paucity of information that would permit governmental officials to make soil quality judgments that would be consistent with one another and thus be equitable over large areas.

The soils information currently used by assessors to make land evaluation decisions varies in amount and quality from area to area. Modern county soil survey reports provide a wealth of detailed soils data that are coming to be widely used by assessors to judge soil quality, but many areas lack data in this form. Nine Illinois counties have no published detailed soil reports. Detailed soil reports for another 57 counties were published in the period 1911-1945. Only 36 counties have modern (post-1945) soil reports, published or being prepared for publication, that can be suitably used to estimate relative soil quality and, indirectly, land value. It is difficult to evaluate soil quality consistently when counties have greatly differing forms of soil information.

However, all Illinois counties do have soil association maps that indicate generalized soil distributions of two or more soil series, and they have detailed soil maps for the Conservation Needs Inventory (CNI) soil data. (*5*).[1] Detailed soil maps were made for quarter-section tracts of land for each township (36 sq. mi. or 93 sq. km.) in the Illinois CNI study (2 percent sample). For each CNI tract a Productivity Index (PI) was developed (*2*) by finding the weighted average PI for the soil mapping units on the tract. The soil association in which the tract occurred was recorded in the CNI study (*5*). Frequency distributions of CNI quarter-section tract PI's were prepared by counties, by soil associations for each county, and for Illinois.

In the interim period before modern county soil surveys are available for all counties, the results reported in this bulletin and in less complete form in Mausel *et al.* (*4*) should help assessors and others interested in evaluating soil quality make more consistent decisions in counties that have inadequate soil data. State officials charged

[1] Italicized numerals refer to entries in Literature Cited.

Table 1. — County Average Quarter-Section Tracts Productivity Indexes (PI)

County	High management PI	Basic management PI	County	High management PI	Basic management PI	County	High management PI	Basic management PI
Adams	98	60	Hardin	73	39	Morgan	124	77
Alexander	99	59	Henderson	119	73	Moultrie	146	93
Bond	106	60	Henry	123	76	Ogle	126	78
Boone	122	77	Iroquois	125	78	Peoria	113	69
Brown	100	59	Jackson	93	50	Perry	99	51
Bureau	133	84	Jasper	104	56	Piatt	145	93
Calhoun	91	55	Jefferson	95	48	Pike	113	68
Carroll	120	74	Jersey	106	64	Pope	81	43
Cass	109	67	Jo Daviess	92	54	Pulaski	102	57
Champaign	145	93	Johnson	76	40	Putnam	123	76
Christian	133	84	Kane	132	83	Randolph	101	55
Clark	107	59	Kankakee	120	75	Richland	104	54
Clay	106	55	Kendall	133	84	Rock Island	117	72
Clinton	104	57	Knox	123	75	St. Clair	110	64
Coles	133	82	Lake	116	70	Saline	104	57
Cook	116	69	LaSalle	134	84	Sangamon	137	87
Crawford	107	59	Lawrence	108	62	Schuyler	105	63
Cumberland	113	63	Lee	131	83	Scott	114	70
DeKalb	146	93	Livingston	132	82	Shelby	120	70
DeWitt	142	90	Logan	143	91	Stark	134	82
Douglas	144	92	McDonough	138	86	Stephenson	118	73
DuPage	122	75	McHenry	120	74	Tazewell	128	81
Edgar	140	89	McLean	143	91	Union	98	55
Edwards	100	54	Macon	146	93	Vermilion	132	82
Effingham	105	55	Macoupin	117	71	Wabash	115	68
Fayette	105	58	Madison	112	67	Warren	138	86
Ford	130	81	Marion	99	52	Washington	98	53
Franklin	98	51	Marshall	125	77	Wayne	103	54
Fulton	110	67	Mason	104	65	White	105	61
Gallatin	112	67	Massac	102	55	Whiteside	121	76
Greene	116	72	Menard	128	80	Will	117	71
Grundy	131	84	Mercer	126	77	Williamson	89	46
Hamilton	96	51	Monroe	102	59	Winnebago	120	75
Hancock	115	70	Montgomery	113	67	Woodford	131	82

with equalizing assessment between counties can compare average assessed value with county average PI's (Table 1) or with the frequency distribution of CNI tract PI's (Table 5) as part of their equalization procedure. This study can also be used to help assessors, probably with the assistance of a soil scientist, gain a further understanding of soil and PI relationships, which should lead to more equitable land assessment. It is hoped that county assessors will use specific soils information for each quarter-section tract in their counties.

DEVELOPMENT OF DATA

Each of the more than 5,000 quarter-section samples that make up the Illinois CNI has an accurate enumeration by acres of all soil mapping units (soil series, slope, and amount of topsoil remaining) located within the sample plot (*5*). These soil mapping units were recorded on computer cards or tape by number of acres in each soil series-slope-erosion class, by sample plot location, and by soil association area. The 26 soil associations identified for Illinois are given in Figure 1 and Table 2. Computer programs were written to assemble these data in forms used to provide patterns of soil distribution in Illinois.

Two sets of soil PI data at basic and high management levels (*2*) were combined with the computer-stored soil series distribution information. The basic and high management PI's of each soil mapping unit were calculated and recorded on cards for computer processing.

Combining the detailed soil distribution data and the PI's of the soil mapping units allowed us to generate previously unavailable data. The most significant information obtained from these procedures was as follows:

1. Basic and high management soil PI average for each sample plot.

2. Basic and high management soil PI averages for each county (average PI of all sample plots within a county).

3. Basic and high management soil PI state averages (average PI of all sample plots within the state).

4. Basic and high management soil PI averages for each state soil association (average PI of all sample plots within a state soil association).

5. Frequency distribution, expressed by percent of sample plot soil in each of seven PI categories, of soil PI under basic and high management for individual soil sample plots by county.

6. Frequency distribution of basic and high management soil PI for soil associations by county.

7. Frequency distribution of basic and high management soil PI for soil associations by state.

STATE PATTERNS OF PRODUCTIVITY

County averages for basic (Fig. 2) and high (Fig. 3) management productivity indexes were plotted on a map to provide accurate, albeit general, patterns of soil productivity. The boundaries delineated on the maps were constructed from interpolation between county average PI values, which were considered to be located in the geographic center of each county. This procedure successfully indicates general productivity differences among areas of the state; however, the small scale of the map, the interpolated nature of the boundaries, and the use of county average PI data limit the usefulness of these maps.

Although there is a great difference in actual productivity of soils at the different levels of management, the relative productivity patterns indicated on the two maps are similar. The areas of highest soil productivity, regardless of management level, are in the east-central and north-central counties. An example from this region is Champaign County, with basic and high management average PI's of 93.4 and 145.3, respectively. Many northwestern areas have lower county average PI's overall than the north-central and east-central parts of the state but have higher PI's than southern Illinois. For example, under conditions of basic and high management, respectively, Hancock County (northwestern Illinois) has PI's of 70.3 and 115.0, while White County (southern Illinois) has PI's of 60.7 and 105.2.

Comparing basic and high management PI county averages shows that significant soil productivity changes are associated with level of management. The PI frequently increases by 60 percent or more when management practices improve from basic to high. Moreover, the percentage improvement in PI is generally much greater on naturally poor soils than on naturally good soils. For example, the percentage increase in PI from basic to high management in Champaign County is 55.5 percent, while in White County the change is 73.3 percent. The PI of Franklin County, in southern Illinois, increases 91.4 percent from basic to high management.

A second set of maps (Figs. 4 and 5), developed from the same PI data, uses a ratio method to compare the county average PI to the state average PI. A county ratio of 1.00 indicates that the productivity average of the combined soils in the county is equal to the average state soil productivity. An analysis of Figures 2 through 5 reveals the general regional soil productivity differences for Illinois.

Figure 1. General soil map for Illinois (source: 1).

DARK-COLORED SOILS

DEVELOPED PRIMARILY FROM LOESS

- A Joy - Tama - Muscatine - Ipava - Sable
- B Sidell - Catlin - Flanagan - Drummer
- C Wenona - Rutland - Streator
- D Harrison - Herrick - Virden
- E Oconee - Cowden - Piasa
- F Hoyleton - Cisne - Huey

DEVELOPED PRIMARILY FROM GLACIAL DRIFT

- G Warsaw - Carmi - Rodman
- H Ringwood - Griswold - Durand
- I La Rose - Saybrook - Lisbon
- J Elliott - Ashkum - Andres
- K Swygert - Bryce - Clarence - Rowe

LIGHT-COLORED SOILS

DEVELOPED PRIMARILY FROM LOESS

- L Seaton - Fayette - Stronghurst
- M Birkbeck - Ward - Russell
- N Clary - Clinton - Keomah
- O Stookey - Alford - Muren
- P Hosmer - Stoy - Weir
- Q Ava - Bluford - Wynoose
- R Grantsburg - Robbs - Wellston

DEVELOPED PRIMARILY FROM GLACIAL DRIFT

- S Fox - Homer - Casco
- T Mc Henry - Lapeer - Pecatonica
- U Strawn - Miami
- V Morley - Blount - Beecher - Eylar

DARK- AND LIGHT-COLORED SOILS

DEVELOPED PRIMARILY FROM MEDIUM- AND FINE-TEXTURED OUTWASH

- W Littleton - Proctor - Plano - Camden - Hurst - Ginat

DEVELOPED PRIMARILY FROM SANDY MATERIAL

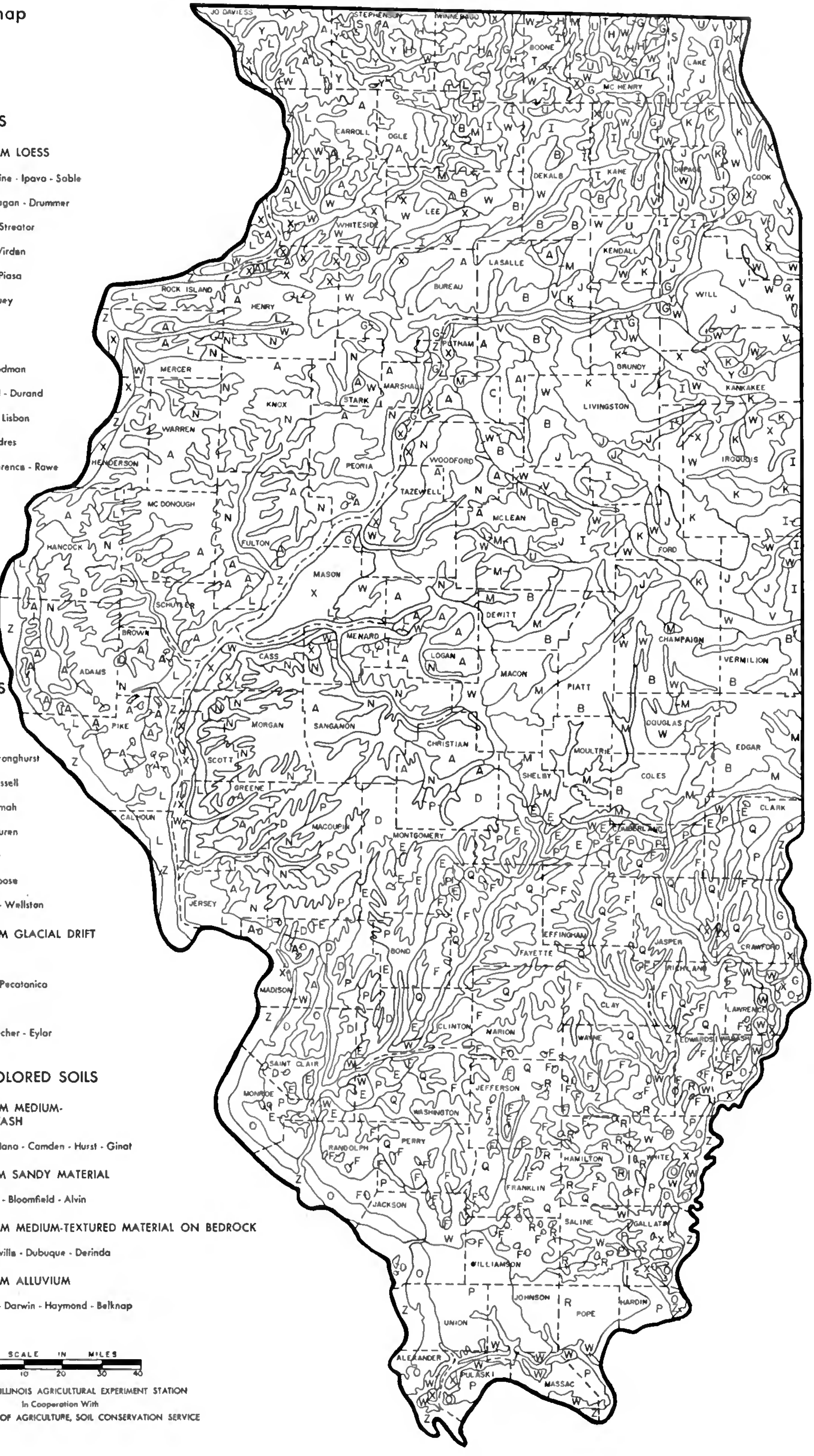
- X Hagener - Ridgeville - Bloomfield - Alvin

DEVELOPED PRIMARILY FROM MEDIUM-TEXTURED MATERIAL ON BEDROCK

- Y Channahon - Dodgeville - Dubuque - Derinda

DEVELOPED PRIMARILY FROM ALLUVIUM

- Z Lawson - Beaucoup - Darwin - Haymond - Belknap



SCALE IN MILES

0 10 20 30 40

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Table 2. — Soil Series in Illinois[1] Grouped by Association Area on General Soil Map of Illinois, According to Parent Material, Surface Color, Degree of Profile Development, and Natural Drainage Class (Source: 1)

Area on general soil map	Parent material[2]	Surface color[2]	Degree of development[2]	Natural internal drainage class: Well	Moderately well	Imperfect[3]	Poor	Associated soil type numbers[4]
A	Loess >4-5 ft. thick, noncalc. >3½ ft.	Dark	Weak	Port Byron 277	Joy 275			272, 276, 562, 564
		Dark	Moderate	——Tama 36——		Muscatine 41	Sable 68	34, 44, 45, 47, 67, 244, 272, 660
		Dark	Mod.-mod. strong		Bolivia 246	Ipava 43	Sable 68	34, 44, 45, 47, 67, 244, 249, 470
B	Loess 3-5 ft. thick on calc. loam-sicl. till	Dark	Mod.-mod. strong	——Catlin 171——		Flanagan 154	Drummer 152	67, 153, 330
	Loess 1-3 ft. thick on cl. till, noncalc. >3½ ft.	Dark	Moderate	Sidell 55	Dana 56	Raub 481	Drummer 152	330
C	Loess 3-5 ft. thick on calc. sic.-c. till or drift	Dark	Mod. strong		Wenona 388	Rutland 375	Streator 435	91, 235, 330
D	Loess 5-7 ft. thick on weathered Illinoian till	Dark	Mod. strong	Douglas 128	Harrison 127	Herrick 46	Virden 47, 50	138, 250, 251, 252, 256, 259, 474
E	Loess 4-6 ft. thick on weathered Illinoian till	Mod. dark	Strong		O'Fallon 114	Oconee 113	Cowden 112	48, 120, 138, 250, 474, 581, 584
F	Loess 2½-4 ft. thick on weathered Illinoian till	Mod. dark	Strong-very strong		Richview 4	Hoyleton 3	Cisne 2	48, 120, 167, 218, 287, 581, 584
G	Med. tex. mat. 2-3½ ft. thick on calc. gravel	Dark	Moderate	Warsaw 290		Kane 343	Will 329	93, 197, 313, 318
	Med. tex. mat. 2-3½ ft. thick on noncalc. gravel	Dark	Mod.-weak	Carmi 285, 286		Omaha 289	Abington 300	79, 155, 305, 253
H	Loess 2½-5 ft. thick on noncalc. cl.-scl. till	Dark	Moderate	Ogle 412				
	Loess 1½-3 ft. thick on noncalc. cl.-scl. till to 4 ft.	Dark	Moderate	Durand 416				
	Loess 1-3 ft. thick on sl. till, calc. <4 ft.	Dark	Moderate	——Ringwood 297——				191, 197
	Loess <1 ft. thick on sl. till, calc. <3½ ft.	Dark	Moderate	Griswold 363				
I	Loess 1½-3 ft. thick on loam till, calc. by 2-3½ ft.	Dark	Moderate	——Saybrook 145——		Lisbon 59		152
	Loess <1½ ft. thick on loam till, calc. by 2-3½ ft.	Dark	Moderate	LaRose 60, Parr 221	Corwin 495	Odell 490	Pella 153	152, 204
J	Med. tex. mat. 2-4 ft. thick on calc. sicl. till	Dark	Moderate	——Symerton 294——		Andres 293	Reddick 594	97, 100, 103, 210
	Med. tex. mat. <2 ft. thick on sicl. till, calc. at 1½-3 ft.	Dark	Moderate	——Varna 223——		Elliott 146	Ashkum 232	330
	Sandy mat. 1½-3½ ft. thick on sicl., calc. by <3½ ft.	Dark	Mod.-weak	——Rankin 157——		Wesley 141		
K	Med. tex. mat. 2-4 ft. thick on calc. sic. drift	Dark	Moderate	——Mona 448——		Mokena 295		
	Med. tex. mat. (inc. loess) <2 ft. thick on sic. drift, calc. at <3 ft.	Dark	Mod. strong			Swygert 91	Bryce 235	42, 229, 238
	Med. tex. mat. (inc. loess) <2 ft. thick on c. drift, calc. at <3 ft.	Dark	Mod.-strong			Clarence 147	Rowe 230	42, 229
L	Loess >5 ft. thick, calc. at 2½-4 ft.	Light	Moderate	Sylvan 19	Iona 307	Reesville 723	Whitson 116	30, 35, 271
	Loess >4-5 ft. thick, noncalc. >3½ ft. (Same as A above.)	Mod. dark	Weak	Mt. Carroll 268	Fall 263			
		Light	Weak	Seaton 274	Decorra 273			30, 271, 281, 282, 563, 565
		Mod. dark	Moderate	——Downs 386——		Atterberry 61		
		Light	Moderate	Fayette 280	Rozetta 279	Stronghurst 278	Traer 633	30, 35, 271
M	Loess 3-5 ft. thick on calc. loam-sicl. till (Same as B above.)	Mod. dark	Mod. strong			Sunbury 234		
		Light	Mod. strong	——Birkbeck 233——		Sabina 236	Ward 207	
	Loess 1-3 ft. thick on cl. till, noncalc. >3½ ft. (Same as B above.)	Mod. dark	Moderate	Mellott 497	Wingate 348	Toronto 353		
		Light	Moderate	Russell 322	Xenia 291	Fincastle 496		
N	Loess >4-5 ft. thick, noncalc. >3 ft. (Same as A above.)	Mod. dark	Mod. strong	——Sicily 258——		Clarksdale 257		
		Light	Mod. strong	Clary 283	Clinton 18	Keomah 17	Rushville 16	6, 7, 8, 119, 264, 470, 660

[1] Correlated and important uncorrelated soils in Illinois.
[2] Abbreviations and symbols used in tables are as follows: < = less than; > = greater than; c = clay; calc. = calcareous; cl. = clay loam; f. = fine; fsl. = fine sandy loam; ft. = feet; inc. = including; mat. = material; med. = medium; mod. = moderate; noncalc. = noncalcareous; scl. = sandy clay loam; sic. = silty clay; sicl. = silty clay loam; sl. = sandy loam; slt. = slightly; and tex. = texture.
[3] "Somewhat poor" may also be used for this soil drainage class.
[4] Associated soils often occur in the field with those soils shown on the same lines, but usually differ in one or more characteristics. Some soils shown in a given area are also listed as associated soils in other areas.

Table 2. — Continued

Area on general soil map	Parent material[2]	Surface color[2]	Degree of development[2]	Natural internal drainage class: Well	Moderately well	Imperfect[3]	Poor	Associated soil type numbers
O	Loess >5 ft. thick, calc. at 2½-4 ft.	Light	Moderate	Sylvan 19	Iona 307	Reesville 723	Whitson 116	30, 35, 271
	Loess >5 ft. thick, noncalc. >3½ ft.	Light	Moderate	Alford 308	Muren 453	Iva 454		35, 216, 271
P	Loess 4-10 ft. thick on Illinoian drift or >7 ft. thick on residuum	Light	Strong		Hosmer 214	Stoy 164	Weir 165	8, 15, 215, 583, 585
Q	Loess 1½-4 ft. thick on Illinoian drift	Light	Strong-very strong		Ava 14	Bluford 13	Wynoose 12	15, 109, 337, 583, 585
	Loess <1½ ft. thick on Illinoian drift	Light	Mod.-strong	——Hickory 8——		Blair 5		264
R	Loess 3½-7 ft. thick on bedrock residuum	Light	Strong-very strong		Grantsburg 301	Robbs 335		
	Loess 1½-3½ ft. thick on bedrock residuum	Light	Mod.-strong	——Zanesville 340——				339, 425
S	Med. tex. mat. 2-3½ ft. thick on calc. gravel	Light	Moderate	Fox 327		Homer 326		93, 253, 313, 323, 325, 342, 364
T	Loess 2½-5 ft. thick on noncalc. cl.-scl. till (Same as H above.)	Mod. dark	Moderate	Myrtle 414				
		Light	Moderate	Flagg 419				
	Loess 1½-3 ft. thick on noncalc. cl.-scl. till to 4 ft. (Same as H above.)	Mod. dark	Moderate	——Argyle 227——		Beaver 225		
		Light	Moderate	——Pecatonica 21——				
	Loess 1-3 ft. on sl. till, calc. <4 ft. (Same as H above.)	Light	Moderate	——McHenry 310——				292, 298, 299, 364
	Loess <1 ft. thick on sl. till, calc. <3½ ft. (Same as H above.)	Light	Moderate	Lapeer 361				25, 292, 296, 364
	Loess <1½ ft. thick on noncalc. cl.-scl. till to 3½ ft.	Light	Moderate	Westville 22				25
U	Loess 1½-3 ft. thick on loam till, calc. by 2-3½ ft. (Same as I above.)	Mod. dark	Moderate			Herbert 62		
		Light	Moderate	Dodge 24				
	Loess <1½ ft. thick on loam till, calc. by 2-3½ ft. (Same as I above.)	Mod. dark	Moderate	Octagon 656	Montmorenci 57	Otterbein 617		
		Light	Moderate	Miami 27	Celina 618			25, 205, 224
V	Med. tex. mat. <2 ft. thick on sicl. till, calc. at 1½-3 ft. (Same as J above.)	Mod. dark	Moderate	——Markham 531——		Beecher 298		210, 324
		Light	Moderate	——Morley 194——		Blount 23		
	Med. tex. mat. <2 ft. thick on sic.-c. drift, calc. at 1½-3 ft.	Mod. dark	Mod. strong			Frankfort 320		
		Light	Mod.-strong		St. Clair 560	Eylar 228 (Nappanee)		241
W	Loess 3-5 ft. thick on noncalc. med. tex. outwash or sl. till to 5 ft.	Dark	Moderate	——Plano 199——		Elburn 198	Drummer 152	191, 197, 206
		Mod. dark	Moderate	——Batavia 105——		Virgil 104		
		Light	Moderate	——St. Charles 243——		Kendall 242		
	Loess <3 ft. thick on med. tex. outwash to 5 ft., noncalc. to 3½ ft.	Dark	Moderate	Alexis 80	Proctor 148	Brenton 149		67, 136, 152, 206
		Mod. dark	Moderate	——Harvard 344——		Millbrook 219		346
		Light	Moderate	——Camden 134——		Starks 132	Sexton 208	137
	Silty wash >5 ft. thick	Dark	Weak	——Worthen 37——		Littleton 81		39
		Light	Weak	——Drury 75——				732
	Silty mat. >4 ft. thick, calc. at 2-3½ ft.	Dark	Moderate			Harco 484		
		Mod. dark	Moderate			Marissa 176	Patton 142	
		Light	Moderate	——Uniontown 482——		Reesville 723		

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[3] "Somewhat poor" may also be used for this soil drainage class.
[4] Associated soils often occur in the field with those soils shown on the same lines, but usually differ in one or more characteristics. Some soils shown in a given area are also listed as associated soils in other areas.

Table 2. — Continued

Area on general soil map	Parent material[2]	Surface color[2]	Degree of development[2]	Natural internal drainage class: Well	Moderately well	Imperfect[3]	Poor	Associated soil type numbers[4]
	Med. tex. mat. <2 ft. thick on noncalc. sic.-c. >3½ ft. thick	Dark	Moderate			Denrock 262	Perrot 568	110, 261, 576
		Light	Mod. strong		Colp 122	Hurst 338	Okaw 84	26
	Med. tex. mat. <1½ ft. thick on sic.-c., calc. at 2-3½ ft.	Light	Moderate		Markland 467	McGary 173		465
	Med. tex. mat. <1½ ft. thick on sicl., calc. at 2½-4 ft.	Dark	Moderate		Gilmer 341	Martinton 189	Milford 69	
		Light	Moderate			DelRey 192		
	Med. tex. mat. 3-5 ft. thick on loamy mat.	Light	Moderate	Wheeling 463	Sciotoville 462	Weinbach 461	Ginat 460	469
	Med. tex. mat. 3½-5 ft. thick on sand or fine sand	Dark	Moderate			LaHogue 102	Selma 125	130, 188, 265
	Med. tex. mat. or loess 2-3½ ft. thick on sand or fine sand	Dark	Moderate	——Pilot 159——				
		Light	Moderate	——Thebes 212——		Tamms 211		
X	Sand, fine sand, loamy sand, or loamy fine sand >5 ft. thick	Dark	None to 5 ft.	Hagener 88		Watseka 49	Maumee 89	
		Light	None to 5 ft.	Plainfield 54, 90			Kilbourne 203	270
		Dark	Weak at 3-5 ft.	Ade 98				
		Light	Weak at 3-5 ft.	Bloomfield 53				31
	Sandy loam and fine sandy loam 1½-3 ft. thick on sand, fine sand, loamy sand, or loamy fine sand at 3-5 ft.	Dark	Weak	——Dickinson 87——		Hoopeston 172, 237	Gilford 201	266
		Light	Weak	——Lamont 175——				332
		Dark	Moderate	——Onarga 150, 190——		Ridgeville 151, 156	Pittwood 130	101, 187, 200, 202, 359, 673
		Light	Moderate	——Alvin 131, 144——		Roby 184, 185	Ruark 178	101, 187, 200
Y	Med. tex. mat. <1 ft. thick on limestone	Dark	None-weak				Romeo 316	
	Med. tex. mat. 1-2½ ft. thick on limestone	Dark	Weak-mod.	——Channahon 315——			Joliet 314	
		Light	Weak-mod.	——Ritchey 311——				
	Med. tex. mat. 2½-4 ft. thick on limestone	Dark	Moderate			Plattville 220	Millsdale 317	
	Loess 1-2½ ft. thick on <1 ft. of limestone residuum on limestone at 1½-3 ft.	Dark	Moderate	Dodgeville 40				
		Light	Moderate	Dubuque 29				413, 471, 511
	Loess 2½-4 ft. thick on <1 ft. of limestone residuum on limestone at 3-5 ft.	Dark	Moderate	Ashdale 411				
		Light	Moderate	Palsgrove 429				
	Loess and noncalc. cl. drift 2½-4 ft. thick on limestone	Dark	Moderate	Hitt 506				
		Light	Moderate	Woodbine 410				
	Med. tex. mat. <1 ft. thick on shale residuum or shale	Light	Weak-mod.		Gosport 551			

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[4] Associated soils often occur in the field with those soils shown on the same lines, but usually differ in one or more characteristics. Some soils shown in a given area are also listed as associated soils in other areas.

Table 2. — Concluded

Area on general soil map	Parent material[2]	Surface color[2]	Degree of development[2]	Natural internal drainage class: Well	Moderately well	Imperfect[3]	Poor	Associated soil type numbers[4]
	Loess 1-2½ ft. thick on shale residuum or shale	Dark	Moderate		Schapville 418			
		Light	Moderate		Derinda 417			309, 549
	Loess 2½-4 ft. thick on shale residuum or shale	Dark	Moderate		——Keltner 546——	Loran 572		
		Light	Moderate		——Eleroy 547——			
	Sl. and fsl. <1 ft. thick on Sandstone	Mod. dark	None	Bullard 389				
	Sandy mat. 1-3½ ft. thick on Sandstone	Dark	Weak-mod.	Hesch 390				
		Light	Weak-mod.	Boone 397				
Z	Calcareous sandy loam to sand or fine sand	Light	None		——Sarpy 92——			
	Calcareous medium textured sediments	Dark	Weak		——DuPage 321——		——Millington 82——	400
		Mod. dark	None			——Dorchester 239, 578——		
		Light	None		Jules 28			
	Slightly acid-neutral sl.-fsl. 2-3 ft. thick on sand	Dark	None-weak		——Landes 304——			
	Slightly acid-neutral med. tex. mat. 1-2½ ft. thick on sand	Dark	Weak		——Ware 456——			
	Slt. acid-neutral mod. f.-f. tex. mat. 1-2½ ft. thick on sand	Dark	Weak		Riley 452		——Bowdre 589——	
	Slt. acid-neutral med.-mod. f. tex. mat. 2½-4 ft. thick on sand	Dark	Weak			Newart 161	Gorham 162	248, 590
	Slightly acid-neutral med. tex. mat. 1½-3½ ft. thick on dark fine tex. soil	Dark	Weak			Radford 74		
		Light	None		——Arensville 78——	Dupo 180		415
	Slightly acid-neutral med. tex. mat. >4 ft. thick	Dark	Weak		——Huntsville 77——	Lawson 451	Otter 76	
		Light	None-weak		——Haymond 331——	Wakeland 333	Birds 334	475
	Slightly acid-neutral mod.-fine tex. mat. >4 ft. thick	Dark	Weak		——Allison 306——	Tice 284	Beaucoup 70, 124	107, 302
		Light	Weak				Petrolia 288	
	Slightly acid-neutral fine tex. mat. >4 ft. thick	Dark	Weak				Wabash 83	
		Mod. dark	Weak				Darwin 71	
		Light	Weak				Karnak 426	
	Acid med. tex. mat. >4 ft. thick	Light	None-weak		——Sharon 72——	Belknap 382	Bonnie 108	427
	Acid mod. fine tex. mat. >4 ft. thick	Light	Weak				Piopolis 420	
	Acid mod. f. tex. mat. 2-3½ ft. thick on fine tex. mat.	Light	Weak				Cape 422	
	Acid fine tex. mat. >4 ft. thick	Light	Weak				Jacob 85	

[1] Correlated and important uncorrelated soils in Illinois.
[2] Abbreviations and symbols used in tables are as follows: < = less than; > = greater than; c = clay; calc. = calcareous; cl. = clay loam; f. = fine; fsl. = fine sandy loam; ft. = feet; inc. = including; mat. = material; med. = medium; mod. = moderate; noncalc. = noncalcareous; scl. = sandy clay loam; sic. = silty clay; sicl. = silty clay loam; sl. = sandy loam; slt. = slightly; and tex. = texture.
[3] "Somewhat poor" may also be used for this soil drainage class.
[4] Associated soils often occur in the field with those soils shown on the same lines, but usually differ in one or more characteristics. Some soils shown in a given area are also listed as associated soils in other areas.

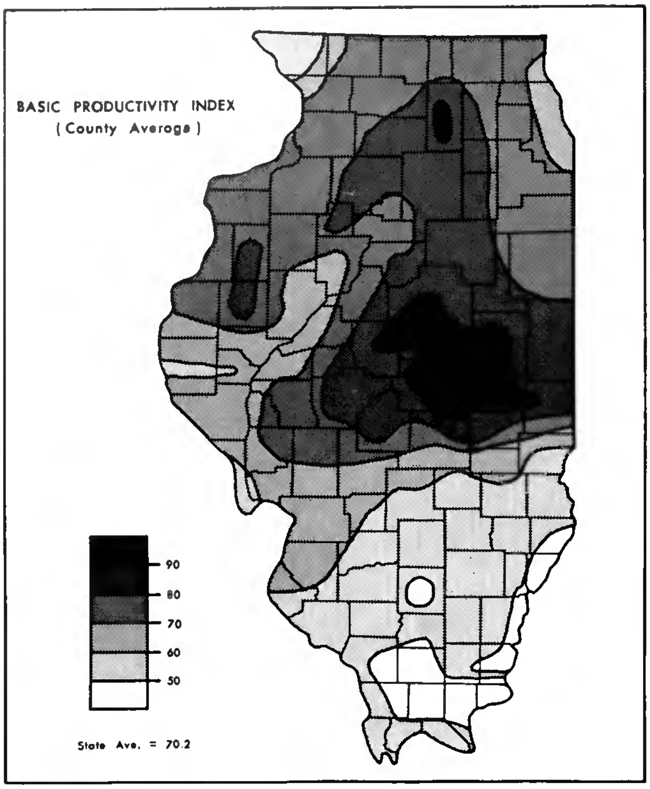


Figure 2. Basic management PI distributions for Illinois.

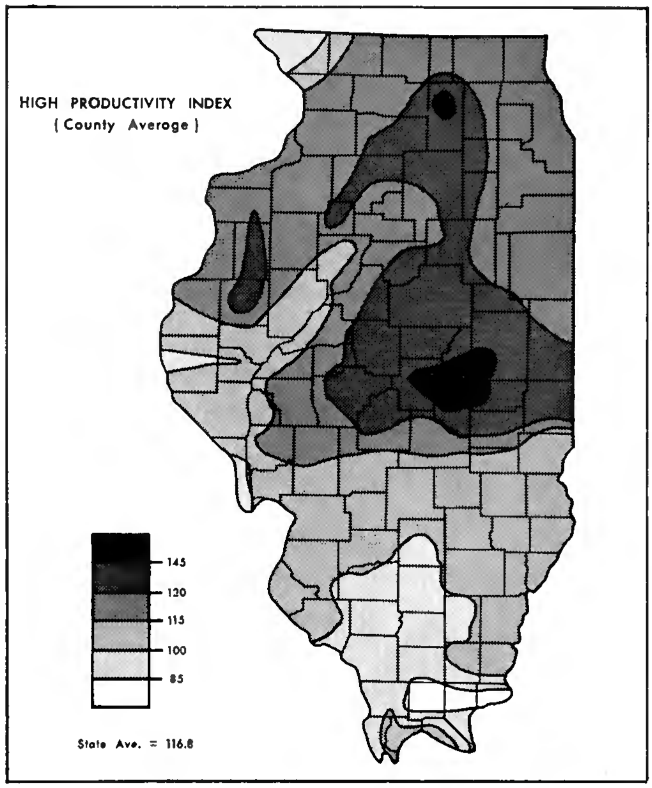


Figure 3. High management PI distributions for Illinois.

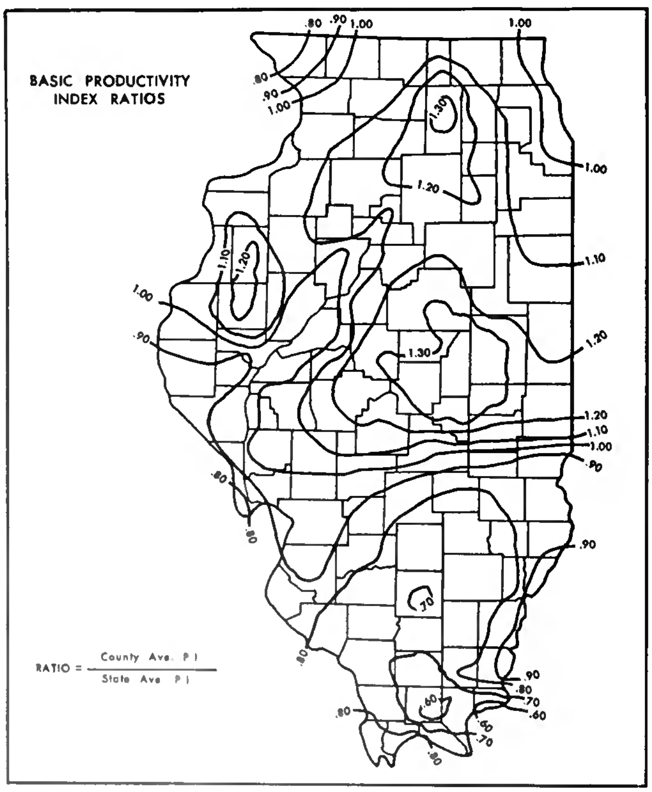


Figure 4. Basic management PI ratios for Illinois.

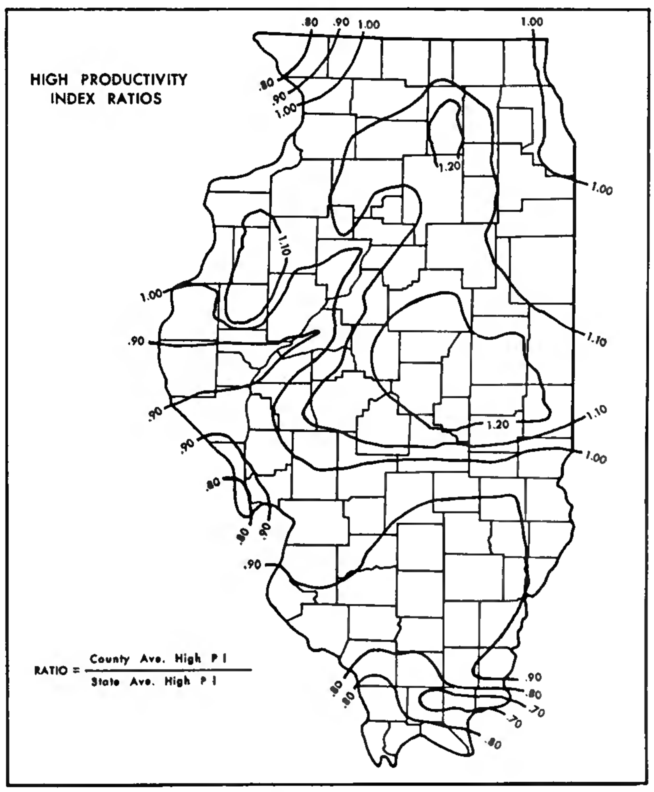


Figure 5. High management PI ratios for Illinois.

COUNTY PATTERNS OF PRODUCTIVITY

Frequency diagrams that reflect soil productivity variations in seven PI categories at two different management levels (basic and high) were constructed to provide detailed PI distribution data within each county. These diagrams present visual patterns of soil productivity within PI categories. An annotated example of the frequency histogram format is given in Figure 6.

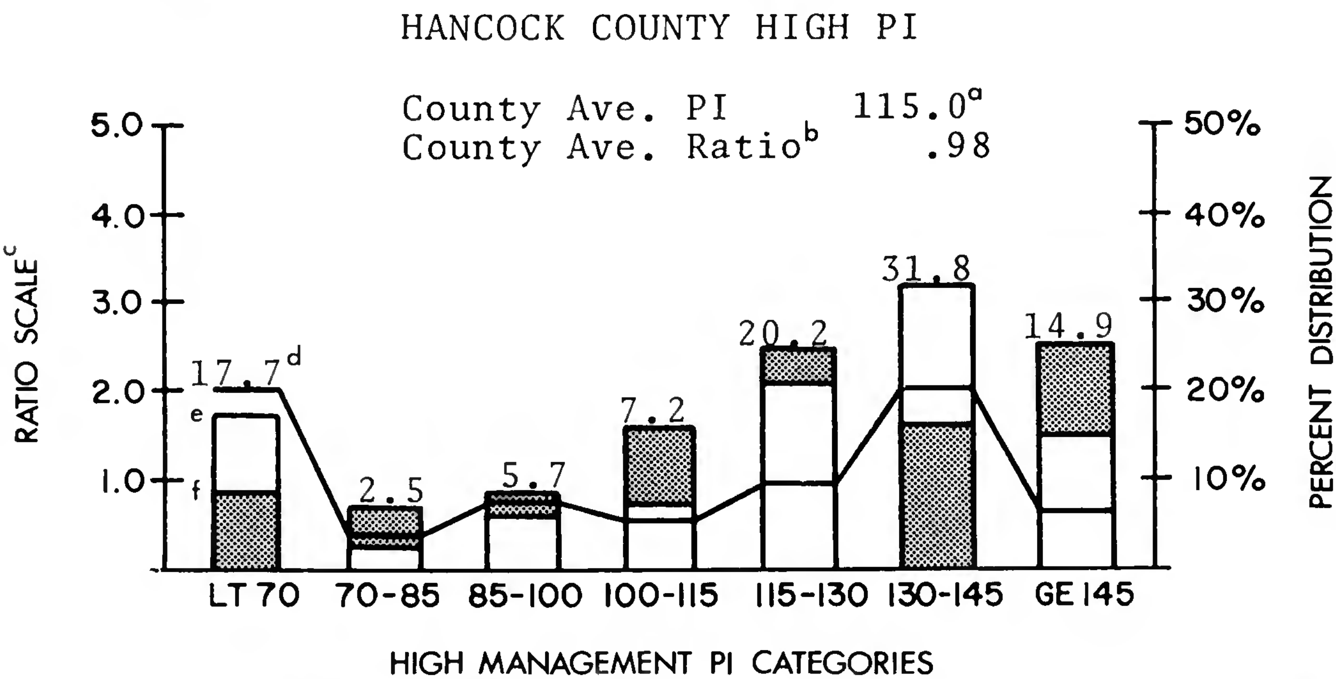
In the example, the Hancock County high management frequency diagram shows that 17.7 percent of the soils in the county are in the PI category of less than 70. The approximate percentage distribution is represented by the height of the *unshaded* part of the bar graph above each PI category; the exact statistical value of the percentage distribution of county soils by PI category is printed at the top of each PI category bar.

The height of the *shaded* portion of each bar represents the state average percentage of soils within a given PI category. The approximate state average percentage of soils can be estimated from the bar graph alone, but the exact statistics are available in Tables 3 and 4. In Hancock County, the shaded portion of the bar for the high management PI category of less than 70 indicates that not quite 10 percent of the state's soils have a PI in that range. The exact state average percentage of soils with PI's of less than 70 is 8.7 percent (Table 4).

Each frequency distribution graph has a ratio scale for comparing the percentage of county soils in a particular PI category with the average percentage of all Illinois soils in the same PI category. A ratio of 1.00 indicates that the county and state soil distributions are identical within a given PI category. A county ratio of more than 1.00 in a category means that the percentage of soil within the category is more than the state average for that PI category. Conversely, a county PI category ratio of less than 1.00 shows that the percentage of soils in the county PI category is below the state average.

Basic and high management PI frequency diagrams are designed to show trends of soil productivity within

Figure 6. Annotated diagram of frequency distribution of high management PI's for counties.



[a] Based on high input levels thought to be near the levels required for maximum profit. For specific high management characteristics see (2, p. 9).

[b] Productivity index average of all soils in the county divided by the productivity index average of all soils in the state.

[c] Percentage of county soils in a PI category divided by the average percentage of state soils in the same PI category. The solid continuous line indicates the ratios of the PI categories.

[d] The exact percentage of the county's soil in a specific PI category.

[e] The top of the unshaded portion of each bar represents the percentage of the county's soil in that PI category.

[f] The top of the shaded portion of each bar represents the average state percentage of soils in that PI category.

Table 3. — Frequency Distribution of Basic Management PI's for Illinois Soil Association Areas

Soil association area	Percent of soils in each basic management PI category[a]							Ave. PI
	23 <40	45 40–50	55 50–60	65 60–70	75 70–80	85 80–90	95 >90	
A	2.3	1.4	4.7	2.9	13.0	6.4	69.3	86.6
B	0.6	0.7	2.3	1.9	3.9	5.7	85.0	91.5
C	1.3	0.7	2.5	4.6	3.3	20.6	67.0	88.6
D	3.1	0.8	6.6	2.5	14.3	11.9	60.8	84.9
E	6.1	7.7	15.6	19.7	38.2	6.7	6.0	66.3
F	8.4	8.1	9.7	68.3	2.0	2.8	0.7	59.8
G	7.4	4.1	9.5	13.1	31.3	16.4	18.3	72.1
H	4.0	7.3	19.3	9.7	7.1	18.3	34.3	74.6
I	1.2	1.2	3.7	8.5	4.9	8.7	71.7	87.6
J	0.7	2.3	7.2	7.1	24 8	19.8	38.1	81.4
K	6.2	5.3	10.6	22.0	34.5	5.2	16.2	69.6
L	22.5	7.3	23.8	6.6	17.6	6.5	15.6	59.4
M	11.6	5.4	11.6	5.0	25.8	12.1	28.5	71.4
N	27.9	3.3	16.7	4.5	23.9	4.5	19.2	60.0
O	13.7	5.9	35.5	11.8	24.9	6.3	1.9	58.8
P	25.1	23.3	15.4	22.7	7.2	1.7	4.7	50.8
Q	28.3	6.7	38.4	21.1	3.7	0.3	1.4	48.7
R	70.1	4.7	13.4	8.6	3.1	0.0	0.0	33.5
S	10.6	13.7	6.3	13.6	6.6	39.2	10.1	68.8
T	2.7	22.0	6.6	22.8	20.0	5.9	19.9	67.9
U	3.4	15.2	8.9	10.0	24.4	14.7	23.4	72.0
V	8.6	21.7	15.7	16.6	11.3	13.1	13.0	63.1
W	2.9	3.3	8.2	10.8	13.2	15.3	46.3	80.6
X	17.4	8.0	14.5	23.1	15.8	12.5	8.7	61.3
Y	24.6	8.6	15.3	10.9	18.1	8 0	14.5	59.2
Z	2.0	2.5	12.9	21.3	19.5	8.6	33.2	76.0
State	12.4	5.8	13.7	14.6	13.8	7.4	32.3	70.2

[a] The PI categories are designated by range (lower line) and average value (upper line).

and among counties, as related to state PI distribution data. The county frequency distribution diagrams of Champaign, Hancock, and White Counties illustrate the patterns of soil productivity most typical of east-central, northwestern, and southern Illinois, respectively (see Fig. 7). Although no single county can be used to characterize a large region, the examples selected give insight into productivity variations within and among counties, as illustrated by the frequency-diagram approach.

Champaign County and associated areas

Champaign County is one of the most productive areas in Illinois. Many counties in Illinois have the same general pattern of soil distribution as Champaign County but not all of them are as productive. The most common high management PI frequency distribution pattern for east-central Illinois (and certain northwestern areas) has two main characteristics: a high to very high percentage of soils in the two highest PI categories (>130), and a low percentage of soils in the two lowest PI categories (<85). Generally, more than half (frequently, more than 60 percent) of the soils in east-central Illinois have PI's of >130, and less than 10 percent of the soils have PI's of <85. Specifically, 87 percent of Champaign County soils have a PI of >130, and only 1 percent have a PI of <85. As expected in a county with high soil productivity, the percentage of soils in each of the five lower PI categories (<130) is far below the state average (the PI ratios in those categories are less than 1.00), and the percentage of soils in the two highest categories is above the state average (those PI ratios are greater than 1.00).

Hancock County and associated areas

Most of the northwestern and far northern areas of the state have soil productivity distribution patterns characterized by a large or moderately large percentage of soils in the two highest PI categories and an intermediate percentage of soils in the two lowest PI categories. Counties with this pattern of distribution have at least 30 percent of their soils with high management PI's of >130 and more than 10 percent of their soils with high management PI's of <85. These counties have areas with soil of superior quality, as in east-central Illinois; however, there is also an appreciably larger percentage of poor soil. The overall county average PI is lower than

Table 4. Frequency Distribution of High Management PI's for Illinois Soil Association Areas

Soil association area	Percent of soils in each high management PI category[a]							Ave. PI
	40 <70	77.5 70–85	92.5 85–100	107.5 100–115	122.5 115–130	137.5 130–145	152.5 >145	
A	1.7	1.9	2.3	5.2	14.7	12.0	62.2	139.2
B	0.6	0.8	1.2	2.2	4.9	10.3	80.1	146.6
C	0.0	0.0	4.2	2.4	9.5	45.1	38.7	139.1
D	3.1	3.6	2.1	9.0	10.9	65.6	5.6	127.7
E	4.2	11.9	7.8	20.0	43.7	10.8	1.7	110.6
F	4.2	9.3	3.7	9.8	69.3	2.9	0.7	112.8
G	6.1	6.4	8.2	38.7	18.7	10.7	11.2	111.3
H	3.5	5.8	21.2	9.5	11.5	15.8	32.6	121.3
I	0.8	1.2	3.4	4.7	10.4	34.1	45.4	138.3
J	0.3	1.0	6.4	4.9	31.3	32.8	23.3	131.1
K	1.2	1.4	12.1	13.0	51.3	15.7	5.2	119.1
L	19.4	8.1	13.2	17.8	21.7	11.5	8.3	100.4
M	7.3	8.6	3.6	10.6	28.1	21.9	19.9	119.9
N	25.6	6.3	4.5	15.8	27.4	9.9	10.6	99.4
O	12.2	3.9	17.6	29.5	29.5	6.2	1.1	102.2
P	17.5	7.9	27.7	18.0	23.3	2.2	3.6	95.1
Q	13.7	16.0	4.4	41.3	23.0	0.6	1.1	97.0
R	36.5	33.7	14.5	4.8	10.4	0.1	0.0	72.2
S	10.0	11.1	10.2	12.3	22.2	30.7	3.4	109.9
T	2.3	22.2	7.0	34.1	11.4	8.3	14.7	109.1
U	1.9	15.3	4.2	11.0	33.5	16.0	18.2	119.1
V	2.8	17.6	20.6	12.4	22.6	18.4	5.6	108.7
W	2.2	1.9	6.4	14.4	15.2	25.3	34.6	129.9
X	14.6	10.3	15.5	30.5	9.4	15.1	4.6	100.2
Y	22.3	11.8	13.0	14.2	21.3	7.1	10.3	96.9
Z	1.5	1.9	7.8	24.5	24.4	31.6	8.2	121.4
State	8.7	6.5	7.8	15.9	22.8	14.8	23.5	116.8

[a] The PI categories are designated by range (lower line) and average value (upper line).

for Champaign County. In Hancock County approximately 47 percent of the soils have high management PI's of >130, and 20 percent of the soils have high management PI's of <85.

Comparing PI categories for Hancock County and for the state as a whole (Tables 3 and 4) indicates that Hancock County is more complex than Champaign County. For example, Hancock County soils in the >145 PI category are present only 0.6 times as much as the state average; however, soils in PI category 130 to 145 are represented over three times as often as the state average. Hancock County also has far less soil in PI category 70 to 85 than average for the state (the ratio is 0.3); however, there is twice as much Hancock County soil in the PI category of <70 as is average for the state. Throughout this region the county to state ratios are variable; ratios of greater than 1.00 and less than 1.00 are distributed throughout all PI categories.

Soil distribution patterns in which any PI category may be far above or far below the state average soil distribution for that PI category are common in northwest and western Illinois counties (Fig. 7).

White County and associated areas

The counties of southern Illinois — the southern two-fifths of the state — have a third distinctive soil PI pattern. The basic pattern is characterized by a relatively low percentage of soils with PI's of >130 (generally no more than 30 percent, but usually less than 15 percent, of the soils), and a relatively large percentage of soil in PI's of <85 (generally at least 10 percent, but frequently more than 20 percent, of the soils).

White County has a large variety of soils characteristic of southern Illinois. Overall, the county has above-average soils for southern Illinois because of a large amount of alluvial soils; however, the pattern of soil productivity is typical of this section of Illinois. About 12 percent of the county has soils with PI's of >130, and 17 percent has soils with PI's of <85. White County, like most of southern Illinois, has greater than average percentages of soils in the middle and lower PI categories (Fig. 7).

The three counties used as examples illustrate the most common patterns of soil productivity distribution revealed through frequency-diagram analysis. Variations of the three basic patterns can also be identified.

Figure 7. Frequency distribution of county high and basic management PI's.

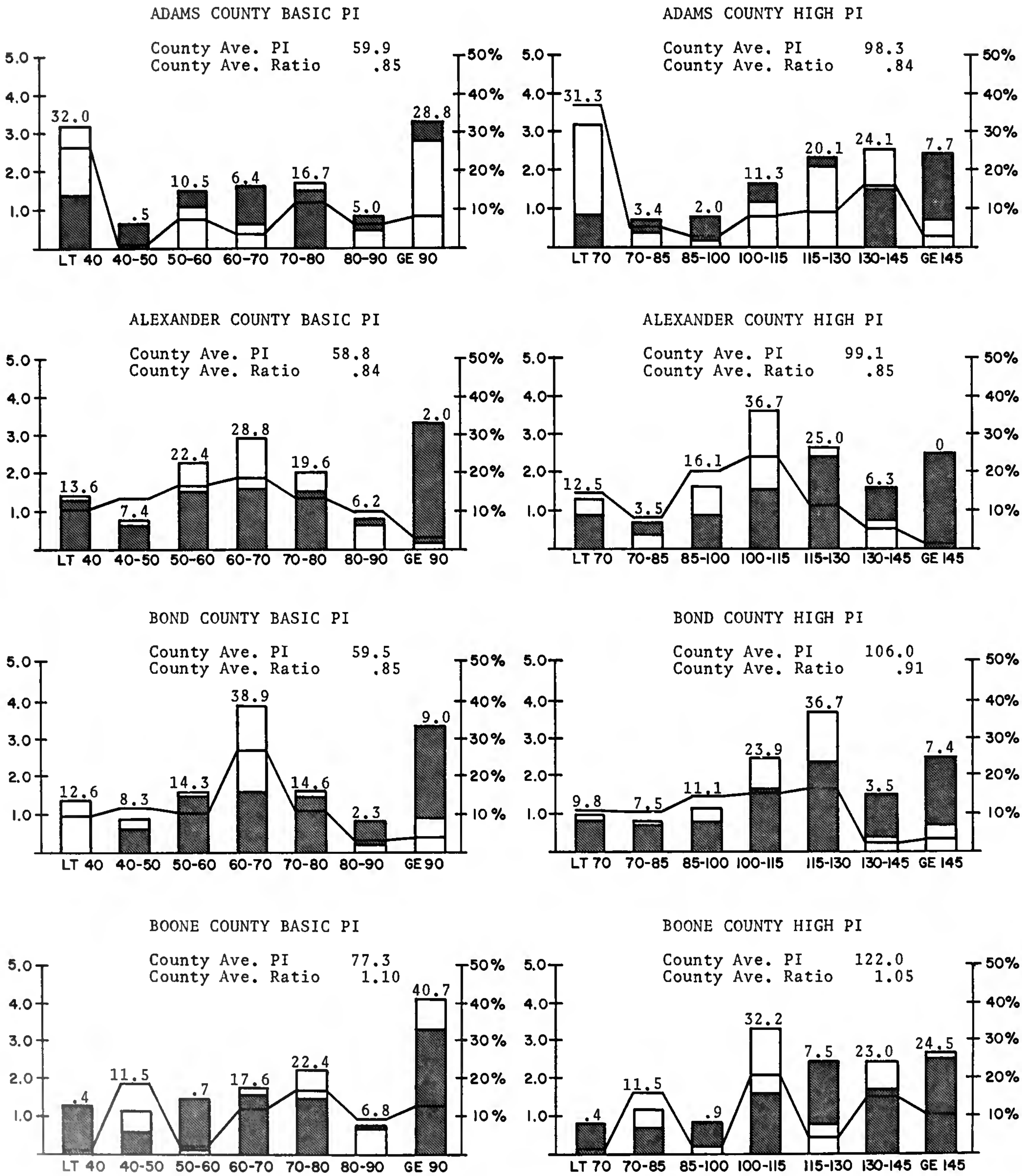
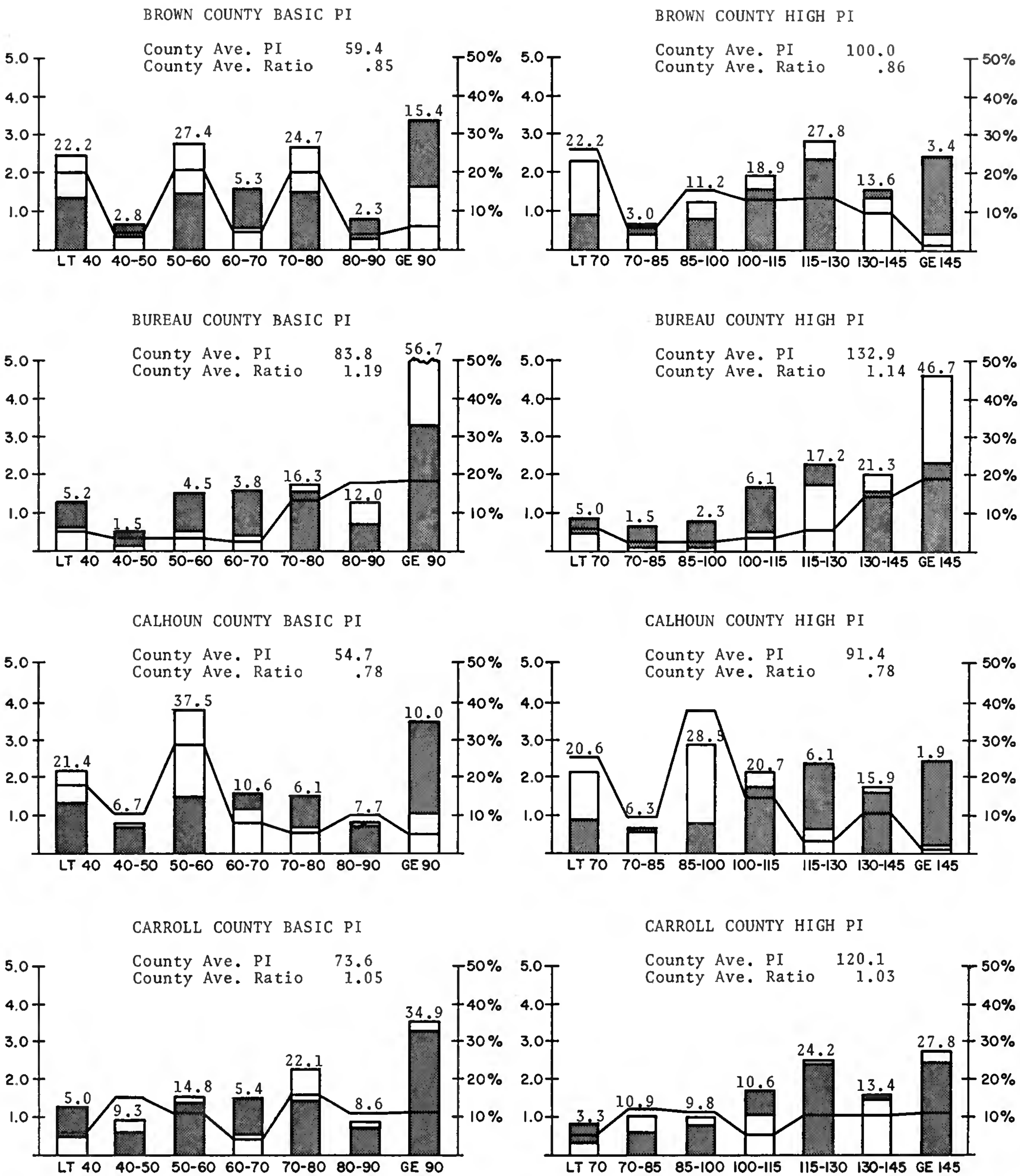


Figure 7 (continued).



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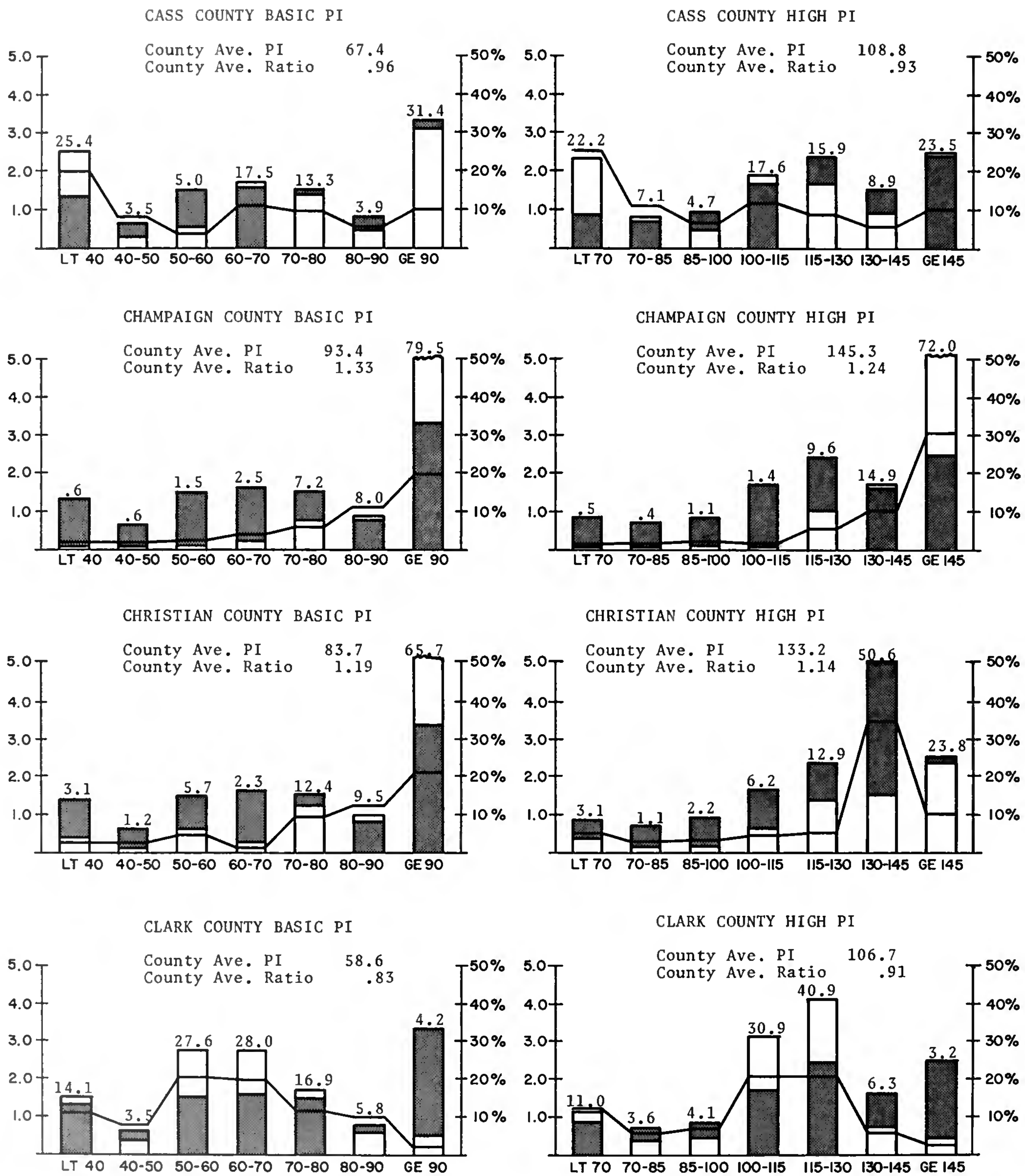

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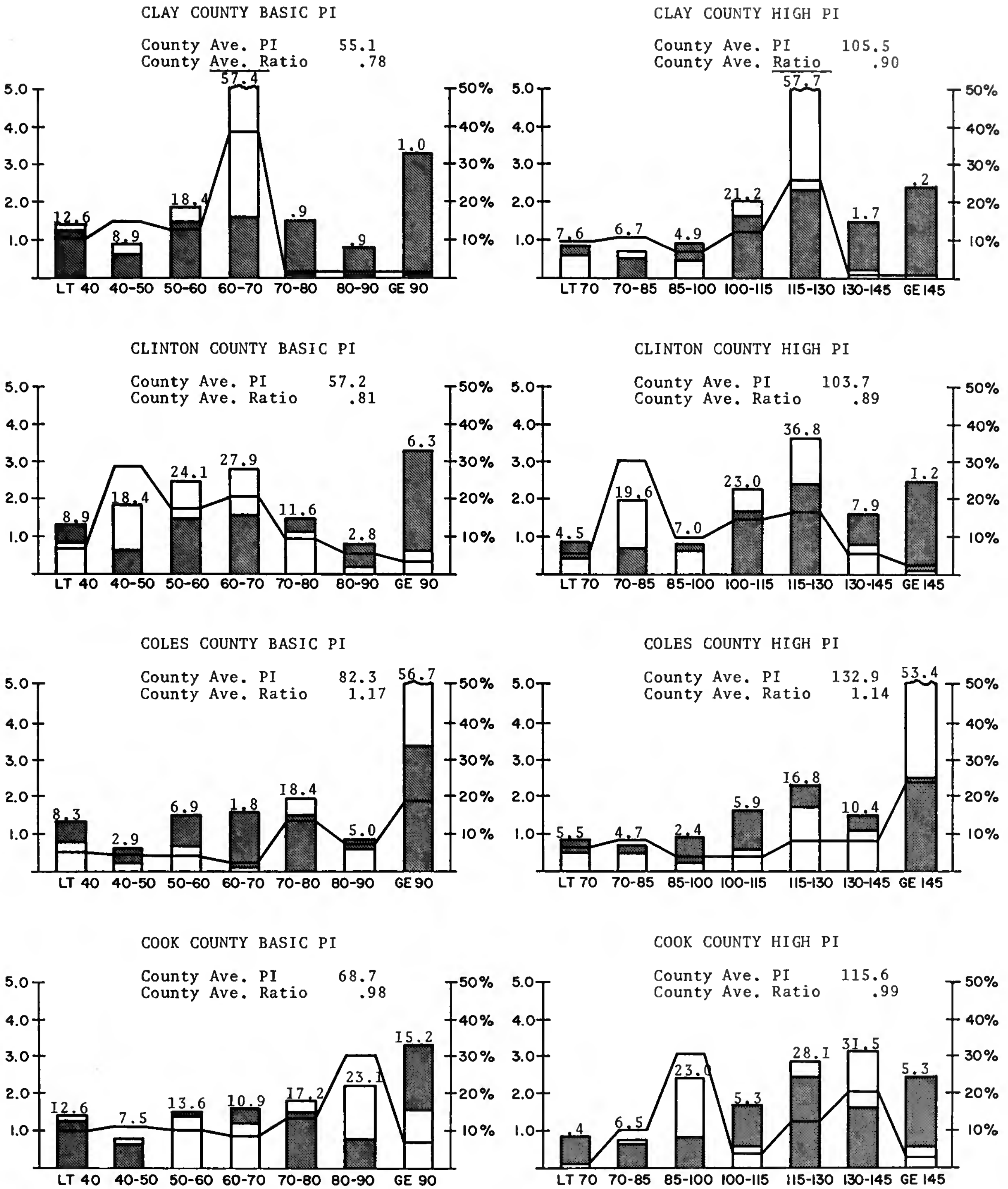
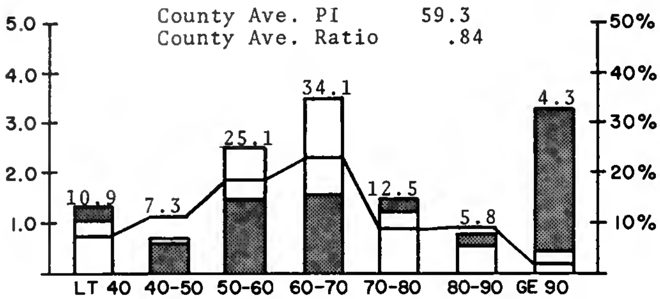
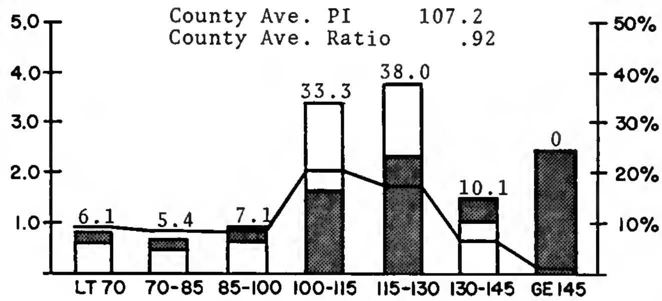


Figure 7 (continued).

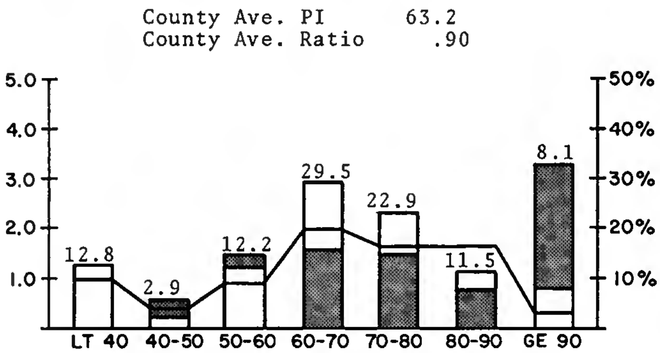
CRAWFORD COUNTY BASIC PI



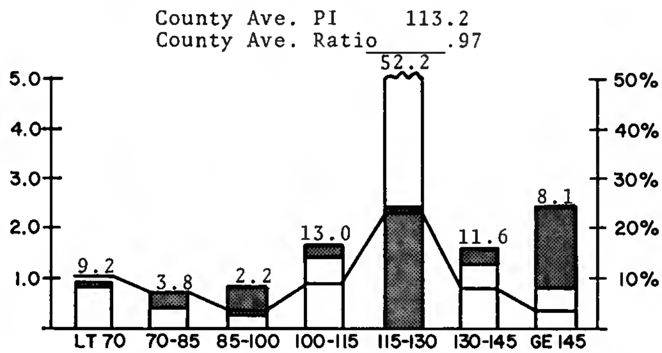
CRAWFORD COUNTY HIGH PI



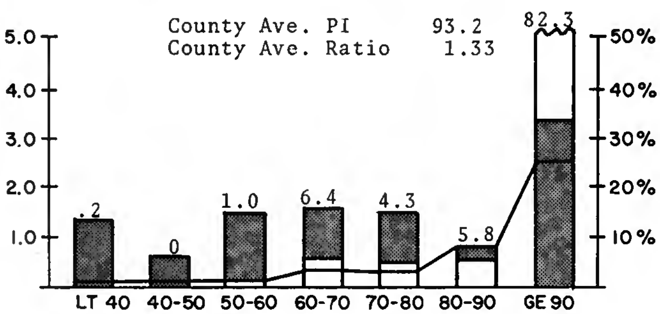
CUMBERLAND COUNTY BASIC PI



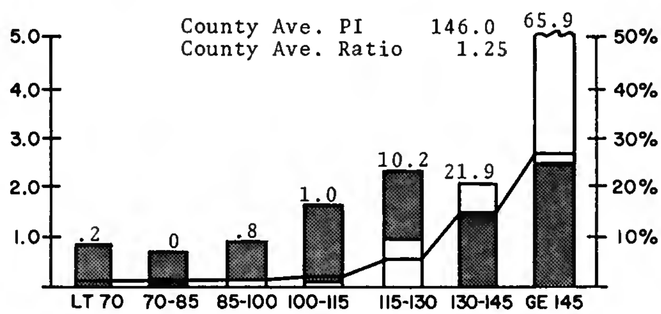
CUMBERLAND COUNTY HIGH PI



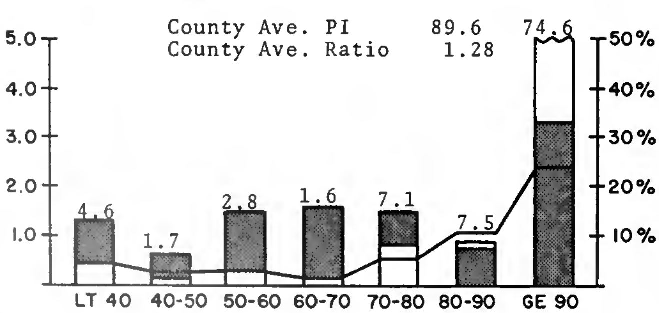
DEKALB COUNTY BASIC PI



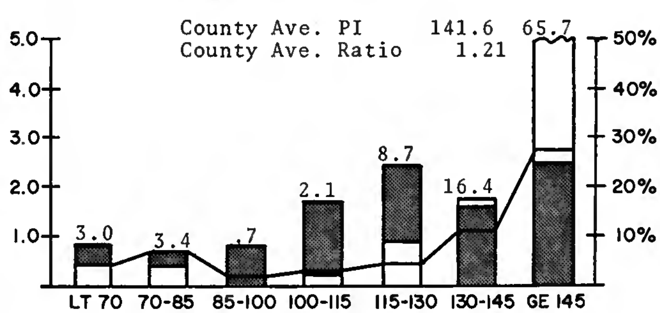
DEKALB COUNTY HIGH PI



DEWITT COUNTY BASIC PI



DEWITT COUNTY HIGH PI



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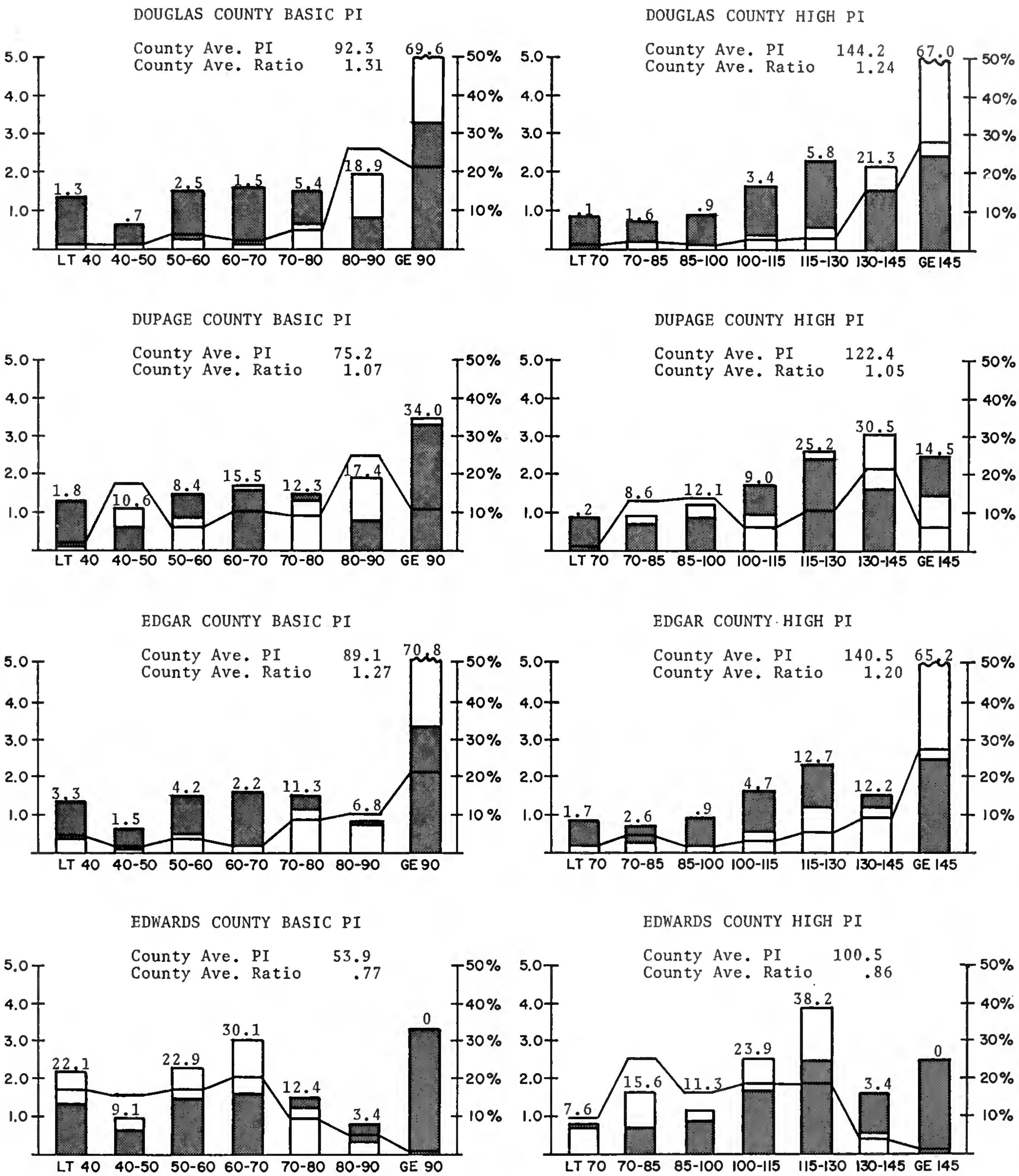

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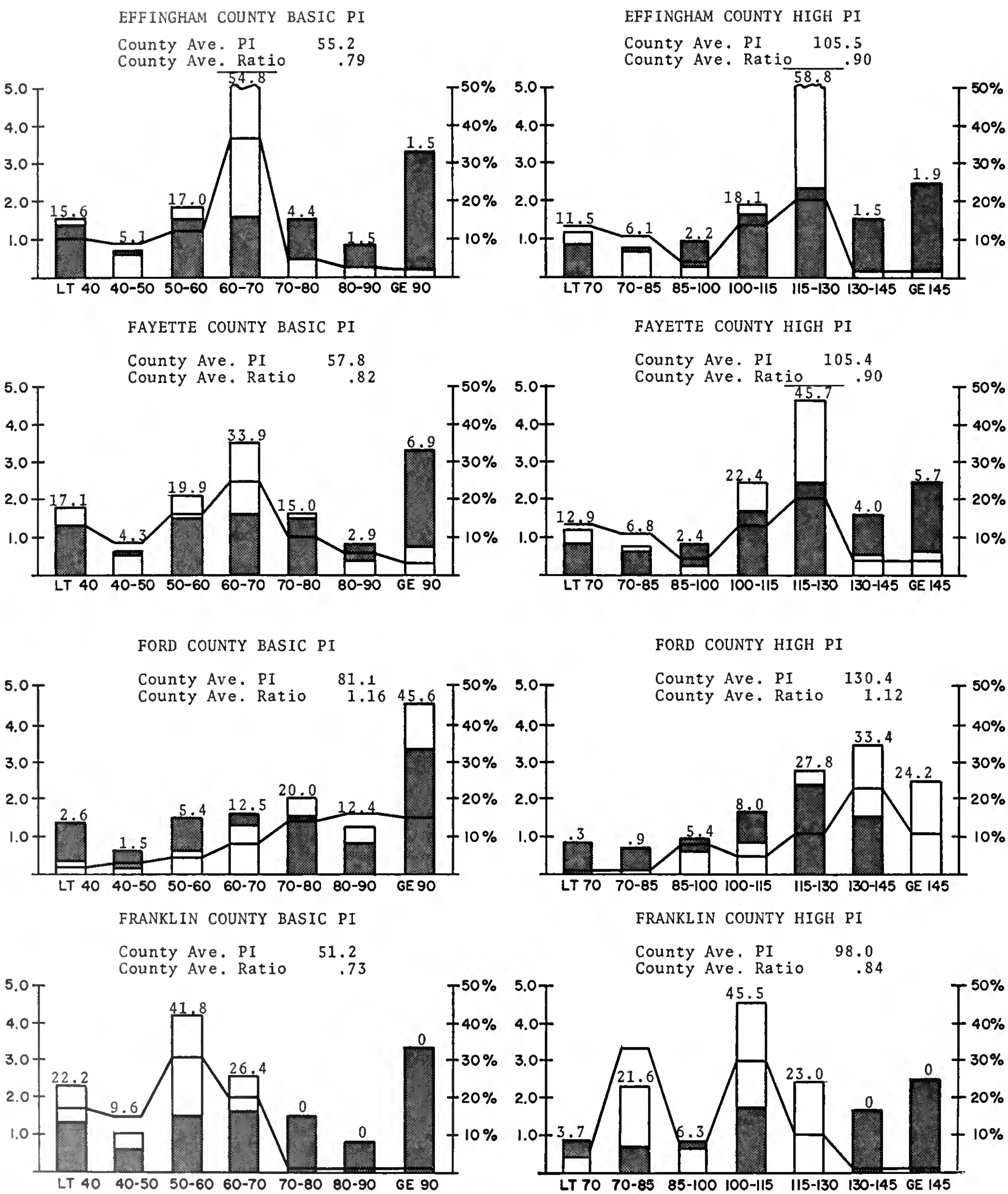

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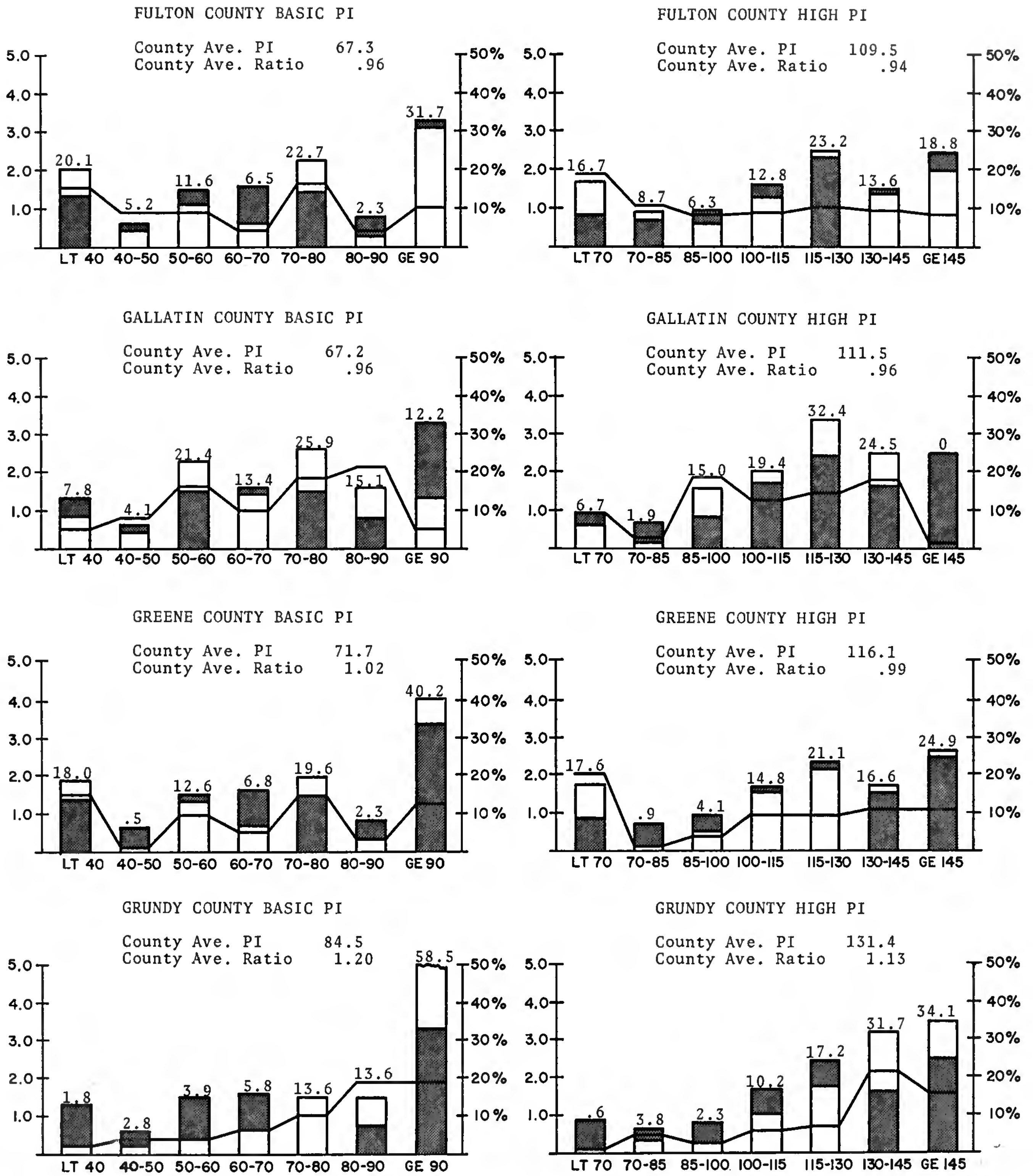

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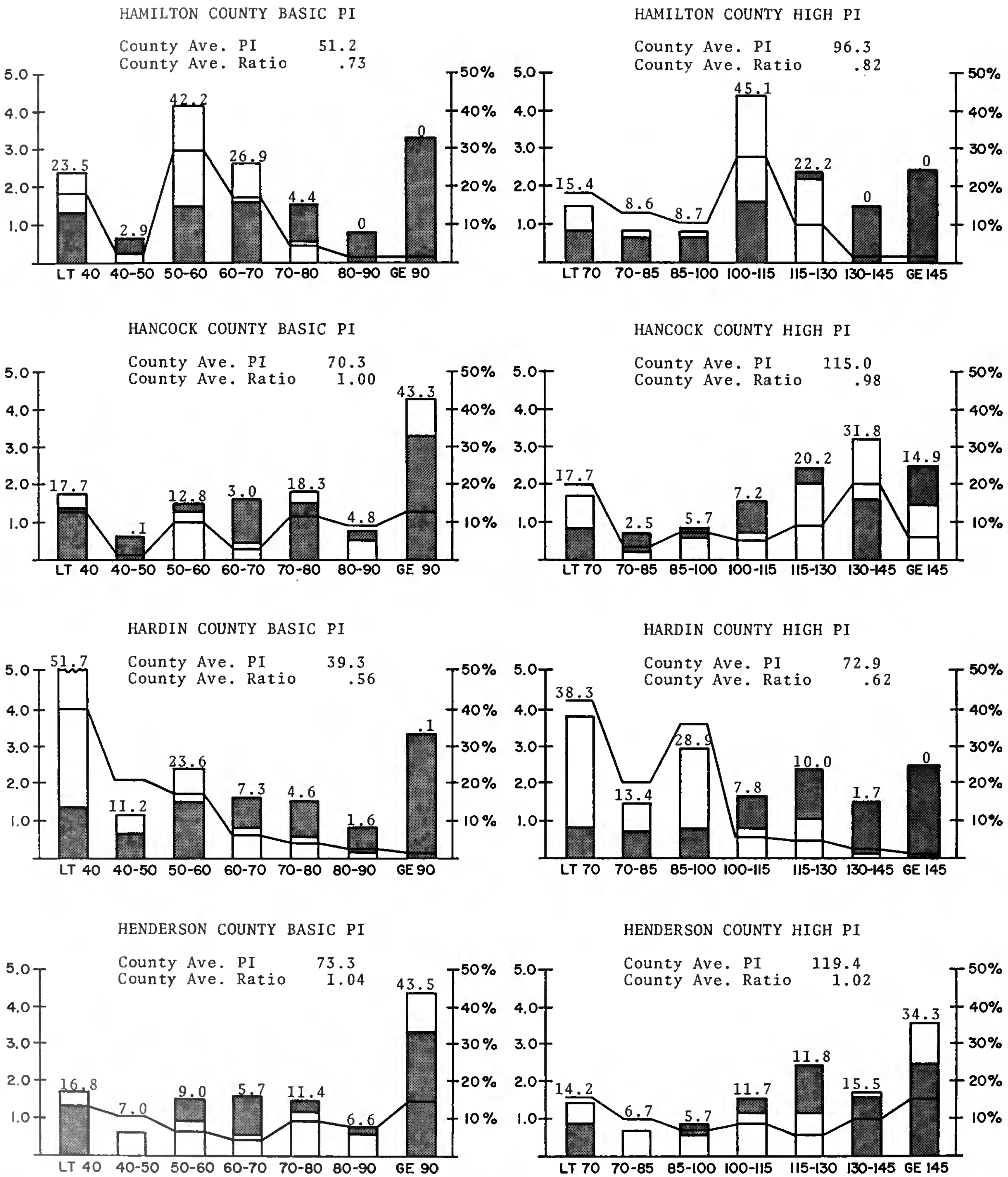

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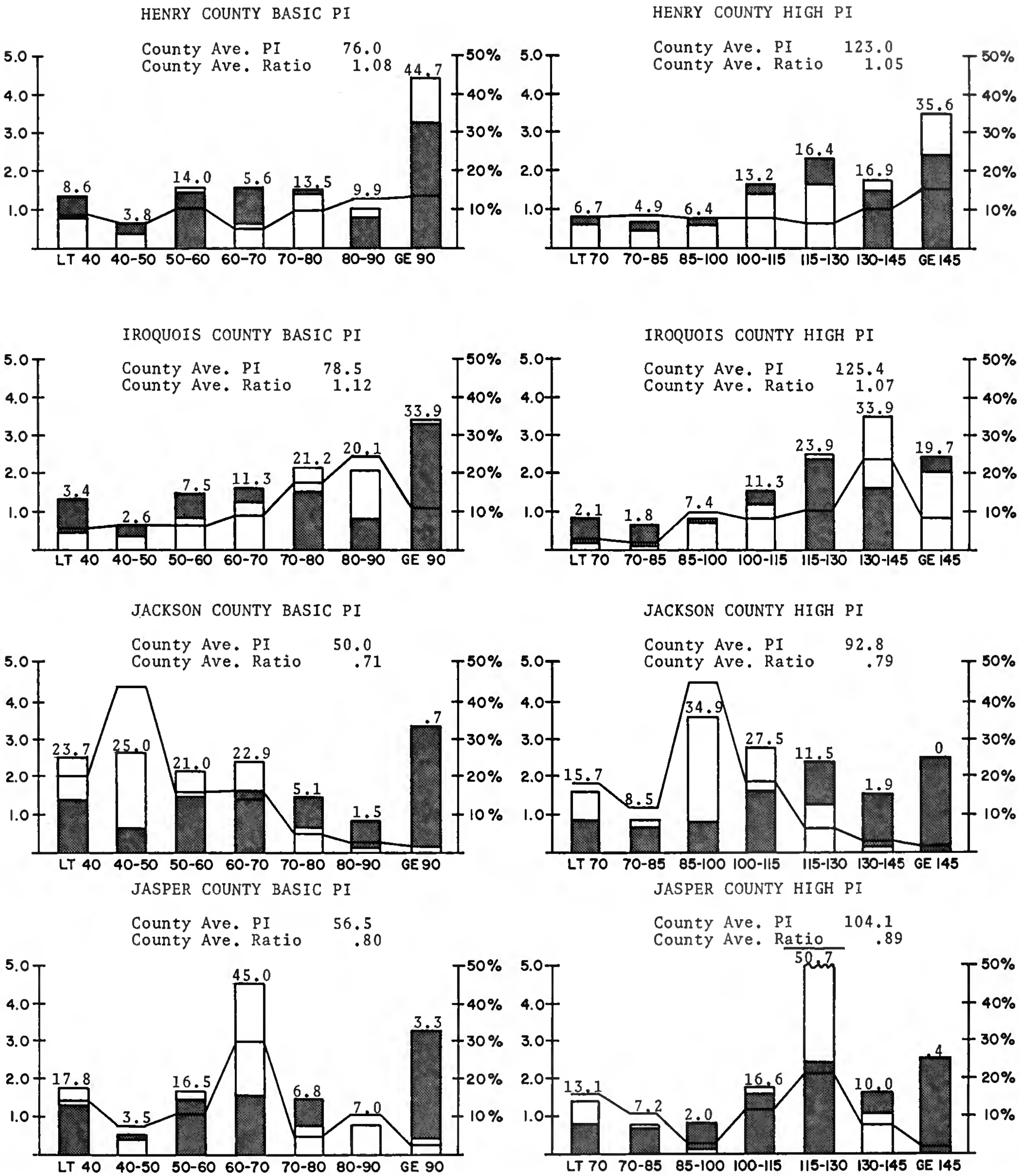

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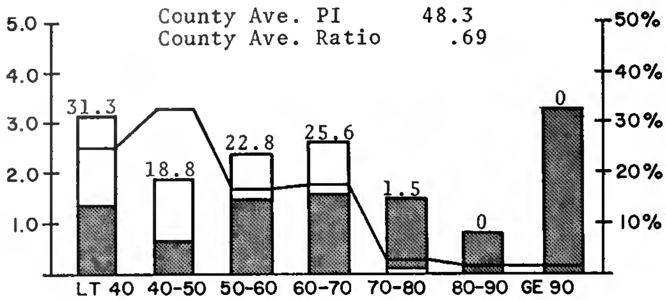
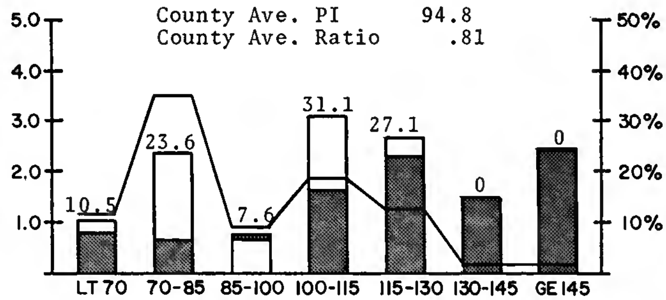
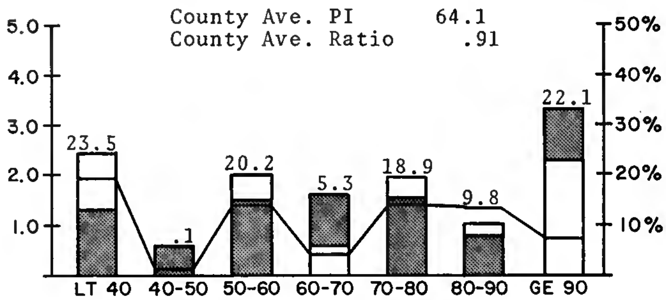
JEFFERSON COUNTY BASIC PI



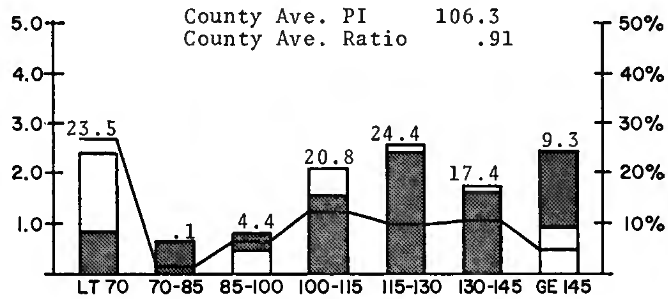
JEFFERSON COUNTY HIGH PI



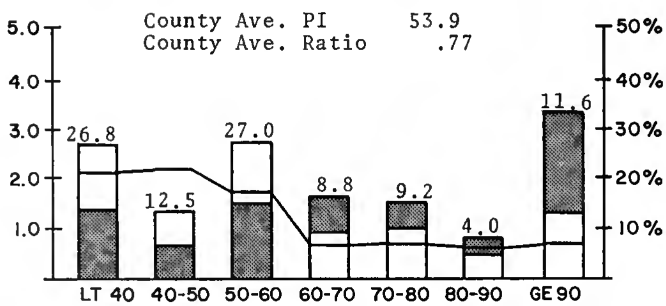
JERSEY COUNTY BASIC PI



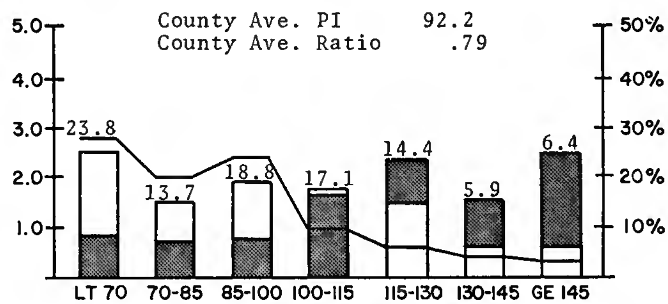
JERSEY COUNTY HIGH PI



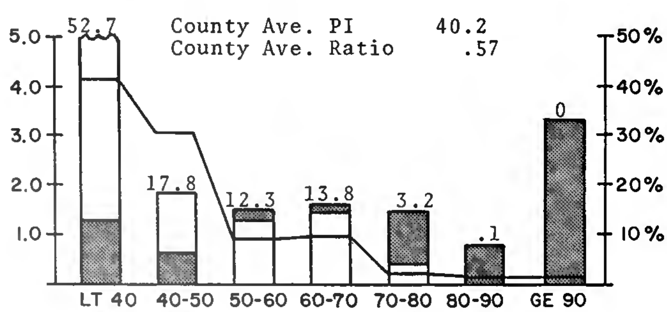
JO DAVIESS COUNTY BASIC PI



JO DAVIESS COUNTY HIGH PI



JOHNSON COUNTY BASIC PI



JOHNSON COUNTY HIGH PI

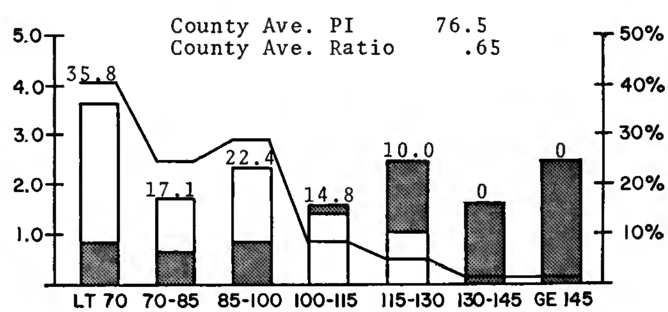


Figure 7 (continued).

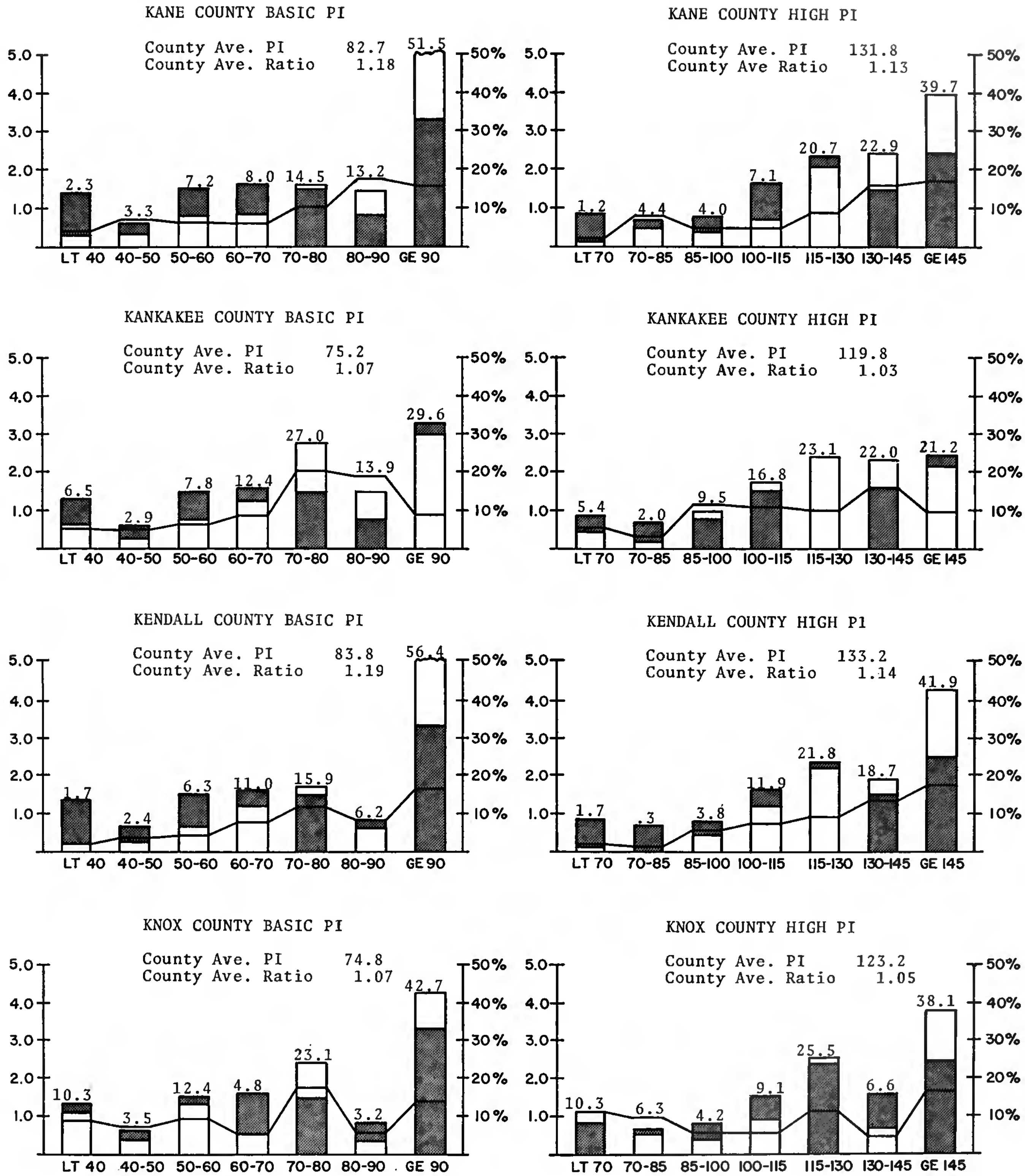


Figure 7 (continued).

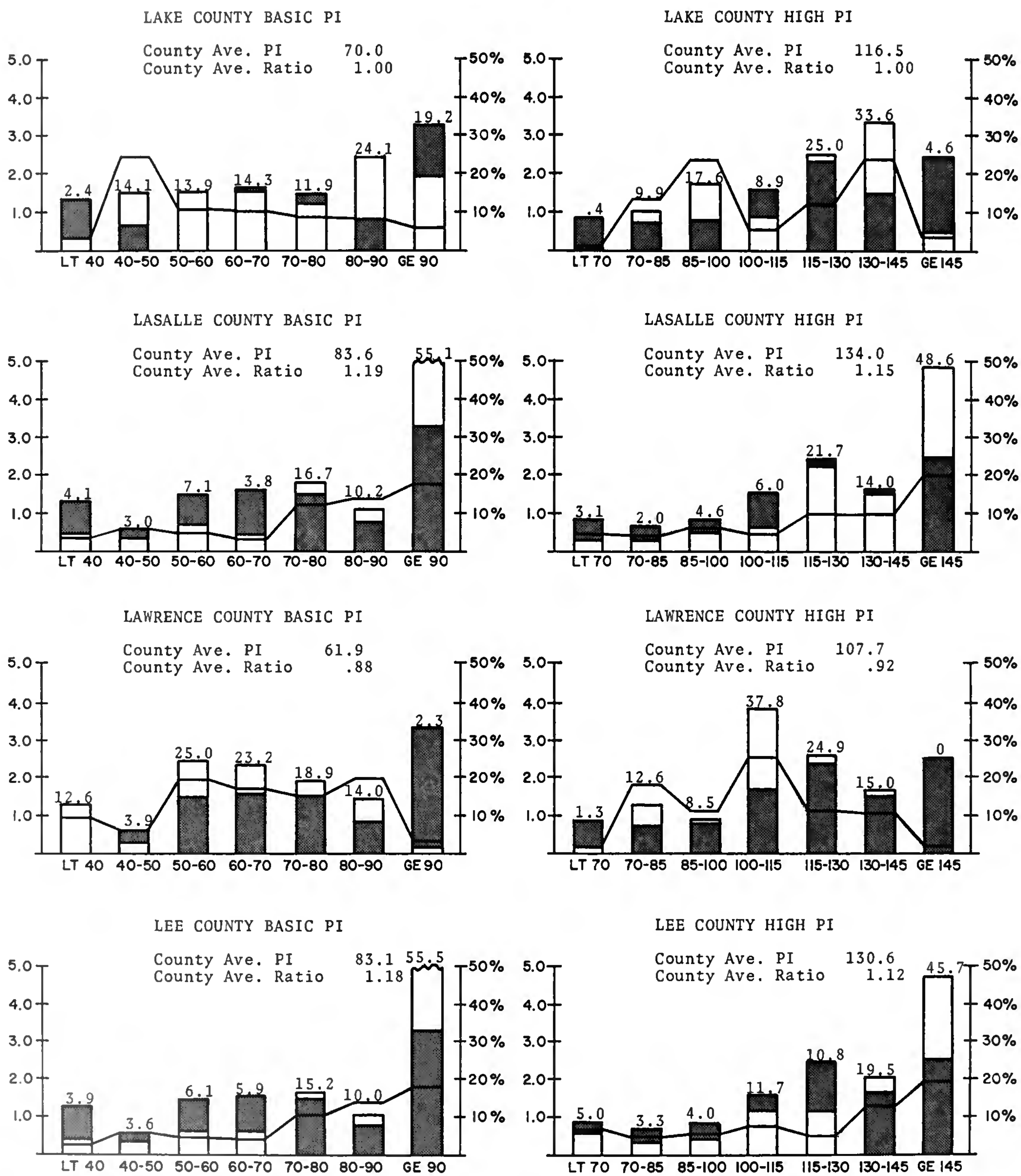


Figure 7 (continued).

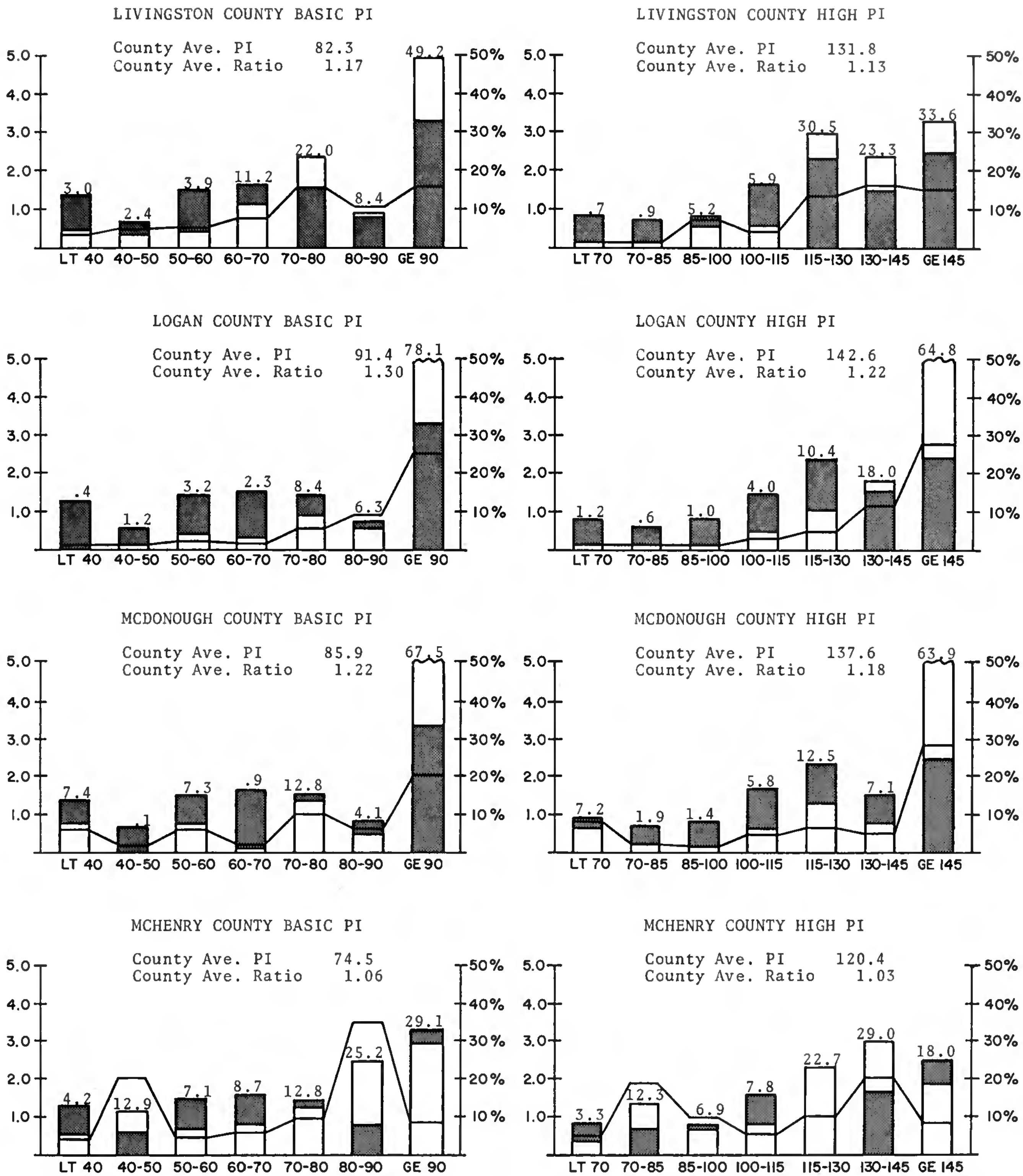
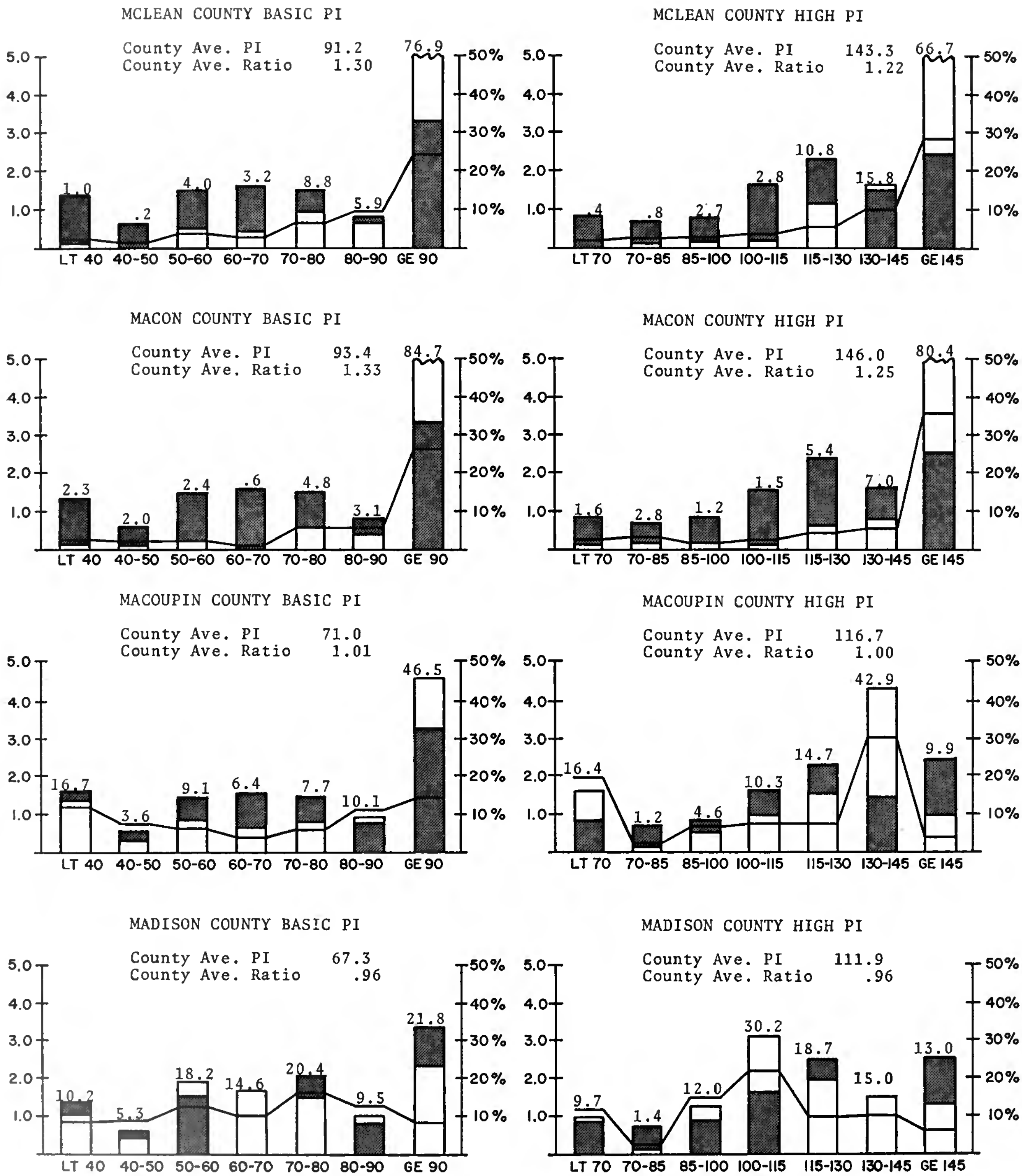


Figure 7 (continued).



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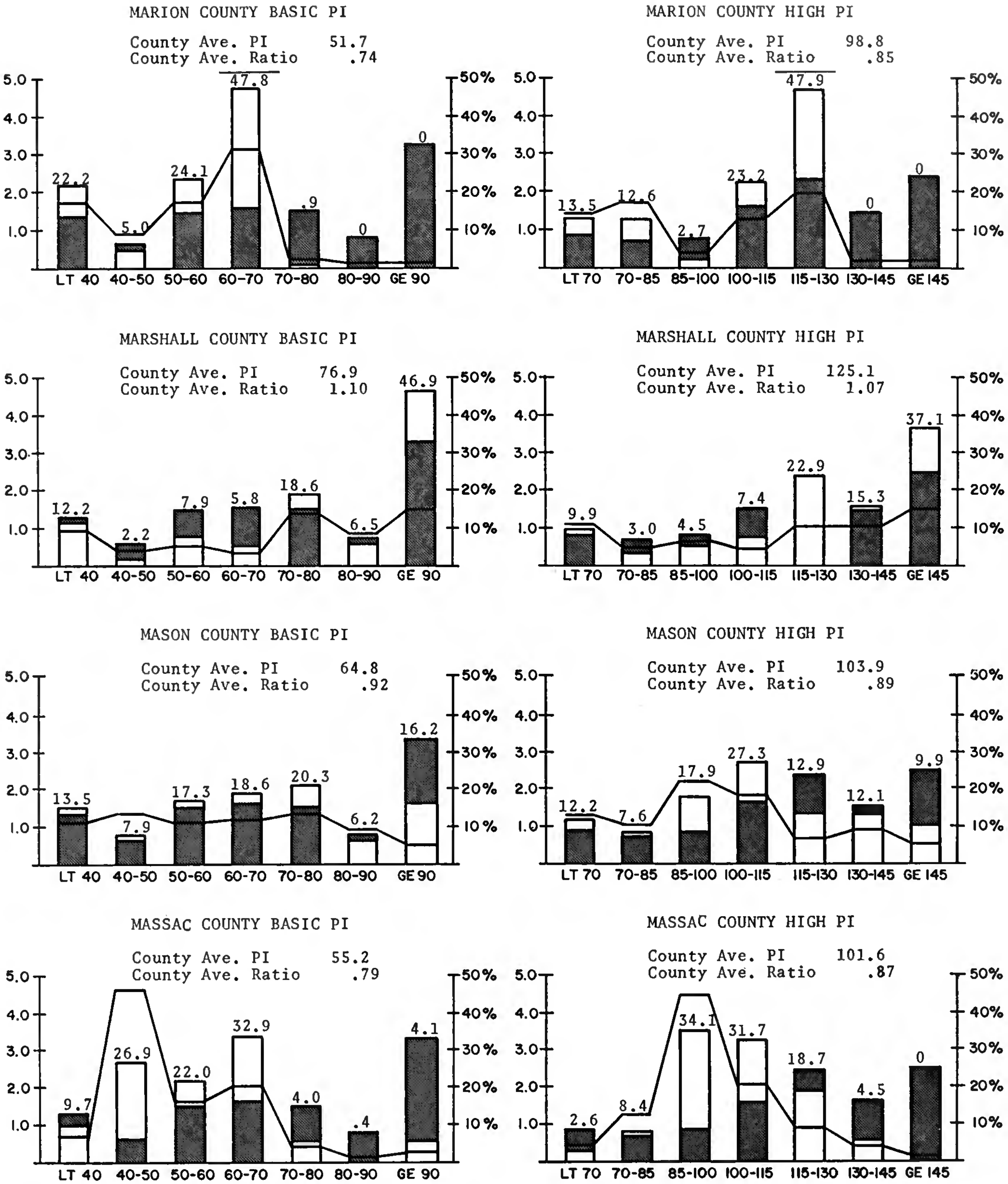
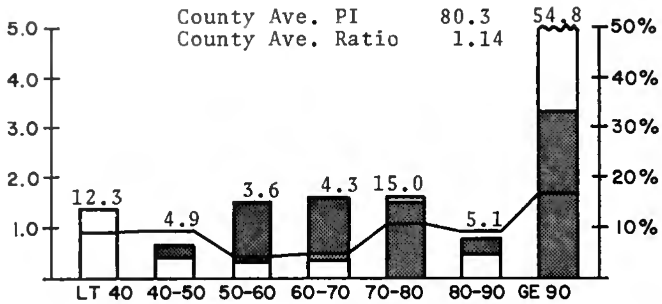
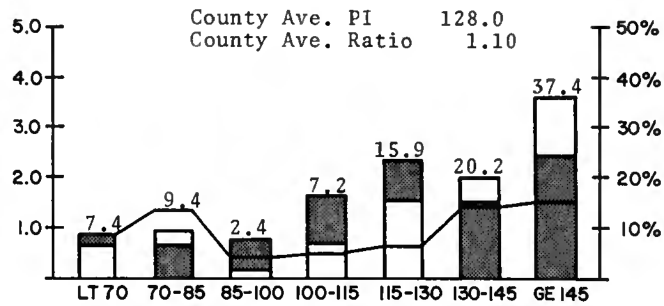


Figure 7 (continued).

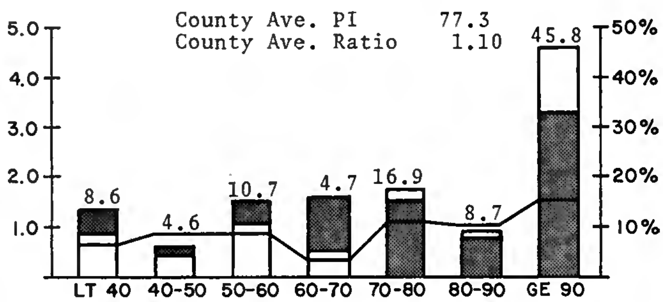
MENARD COUNTY BASIC PI



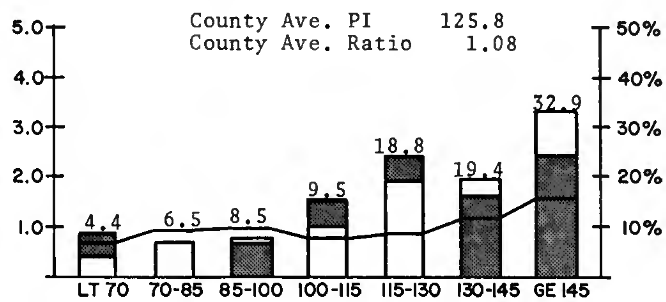
MENARD COUNTY HIGH PI



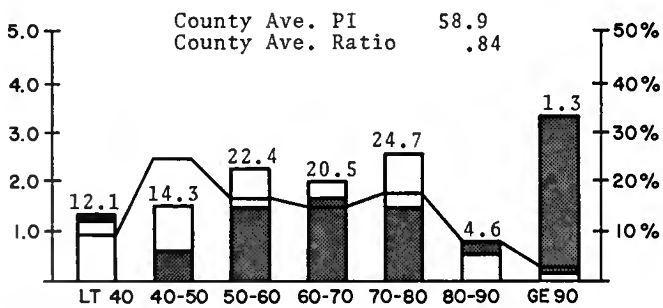
MERCER COUNTY BASIC PI



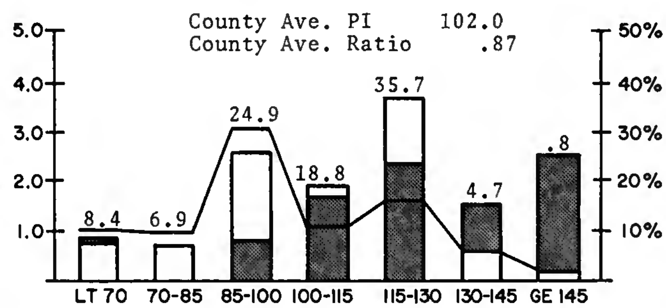
MERCER COUNTY HIGH PI



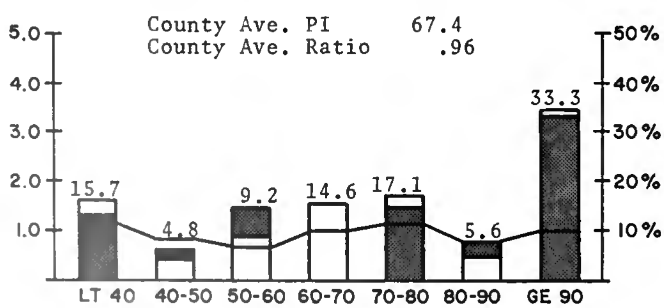
MONROE COUNTY BASIC PI



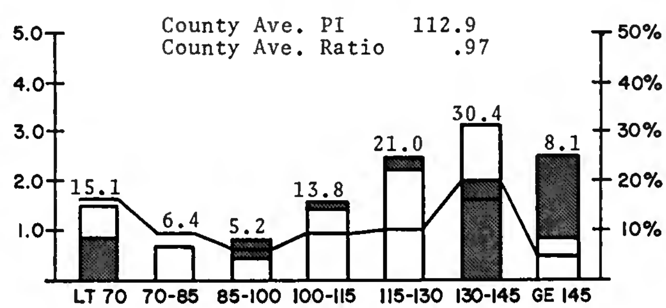
MONROE COUNTY HIGH PI



MONTGOMERY COUNTY BASIC PI



MONTGOMERY COUNTY HIGH PI



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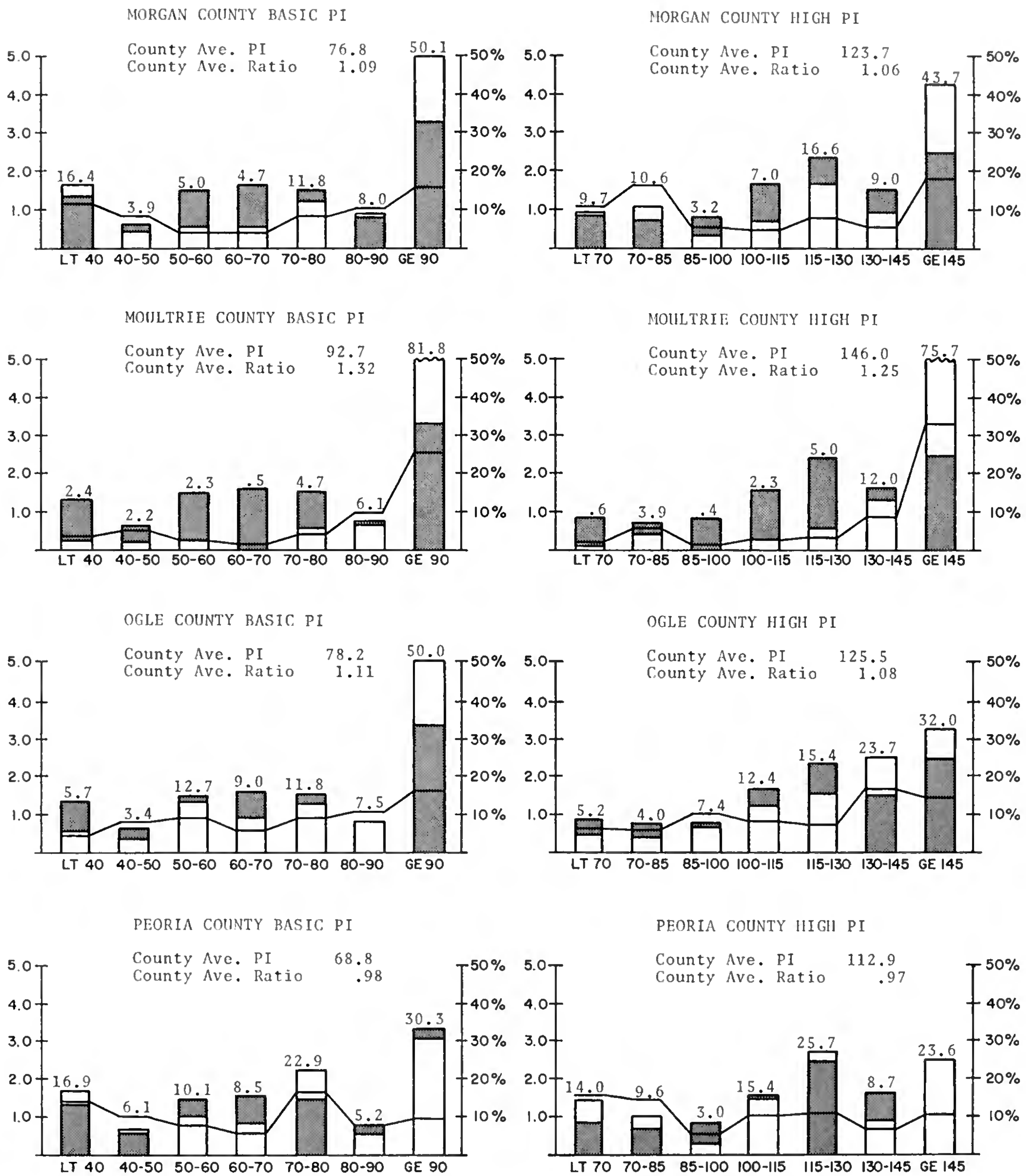

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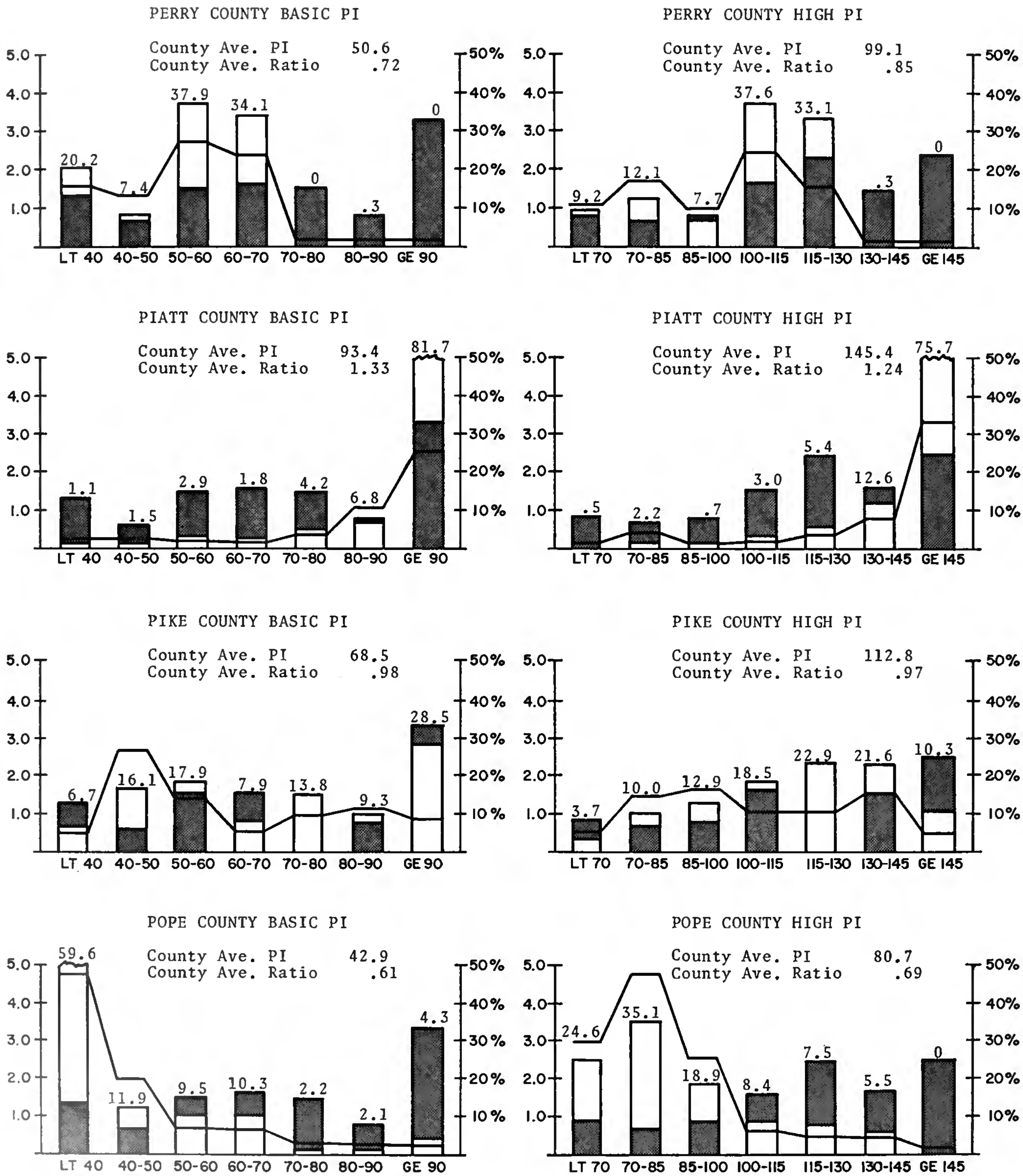

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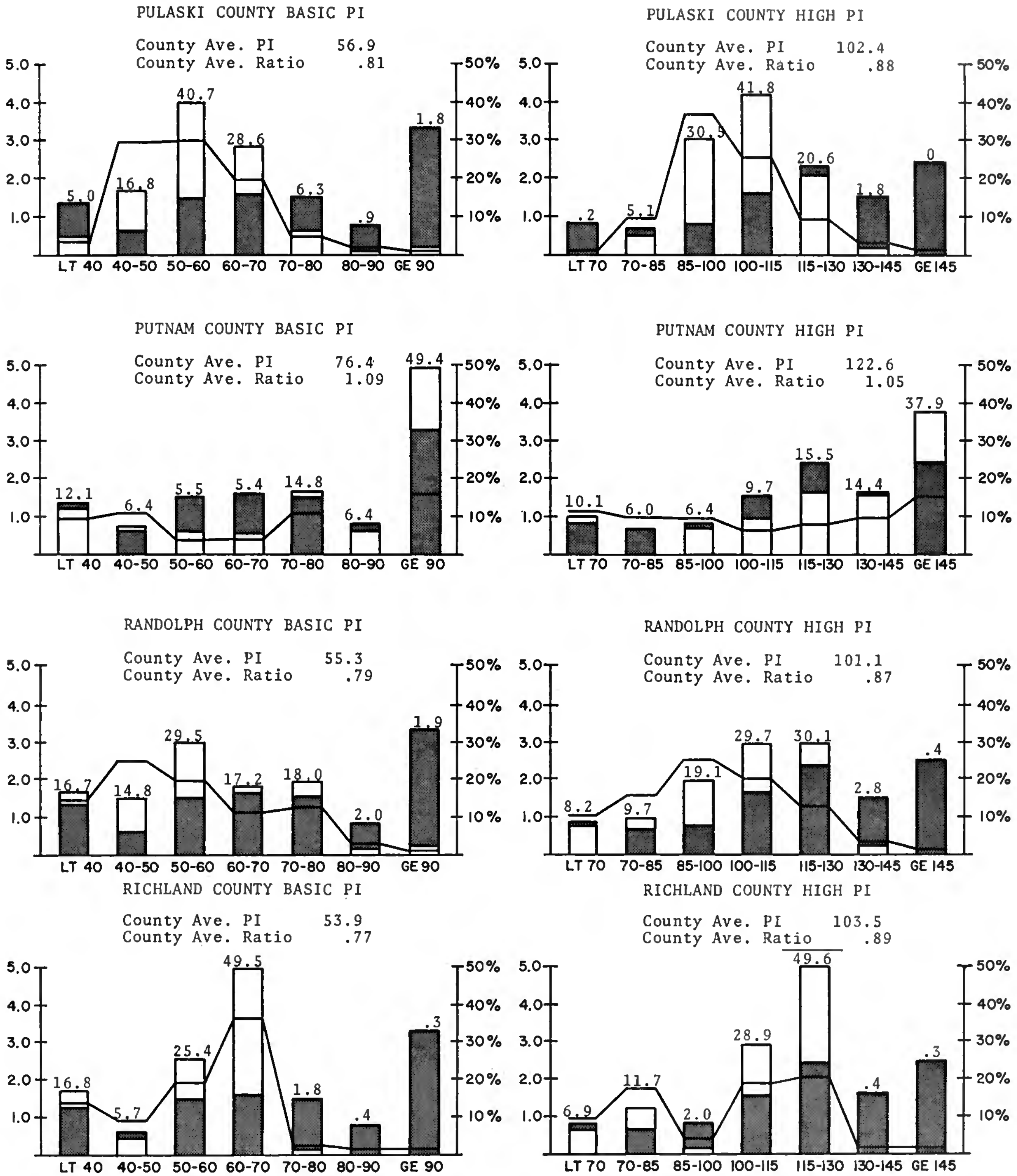

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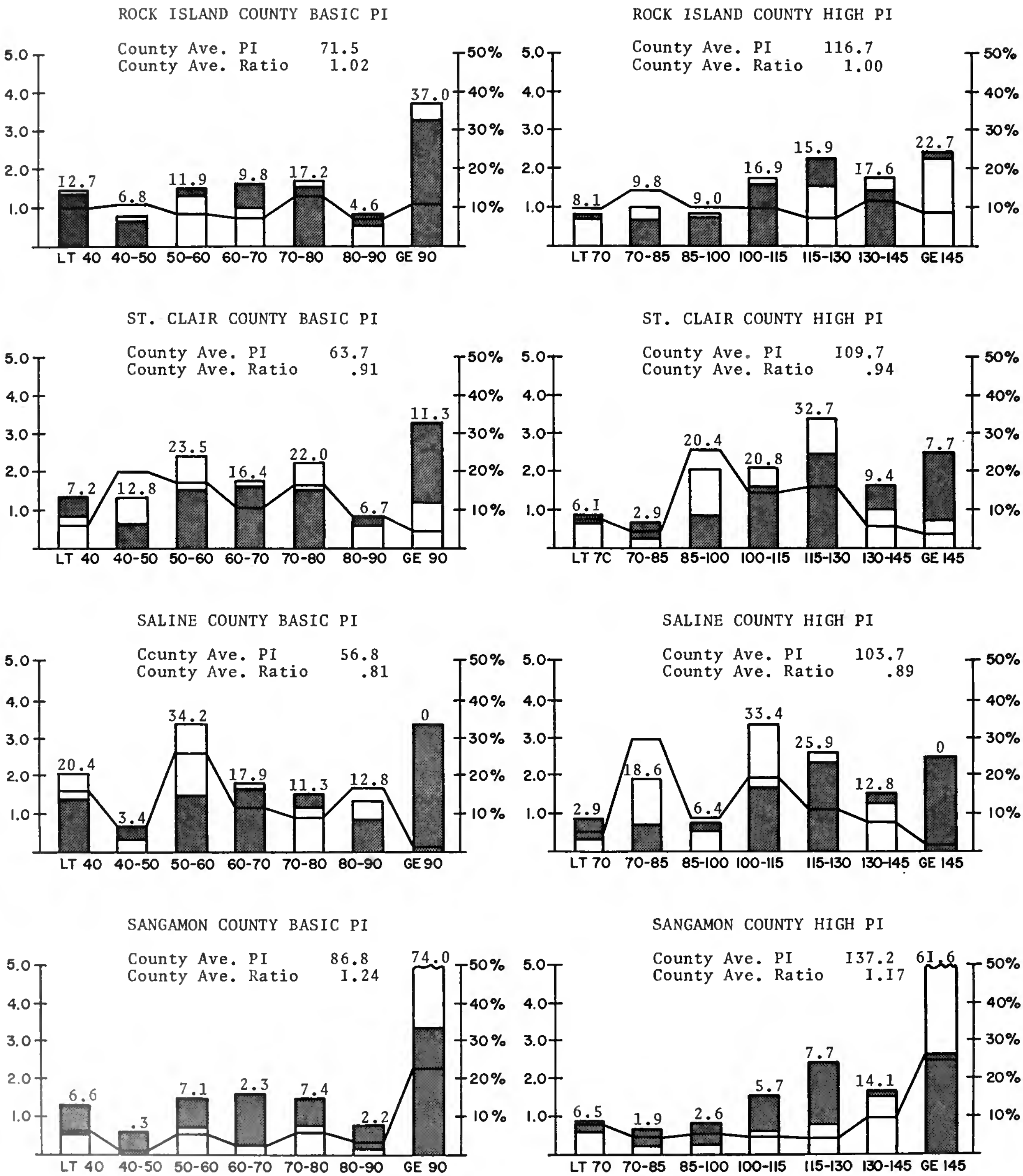

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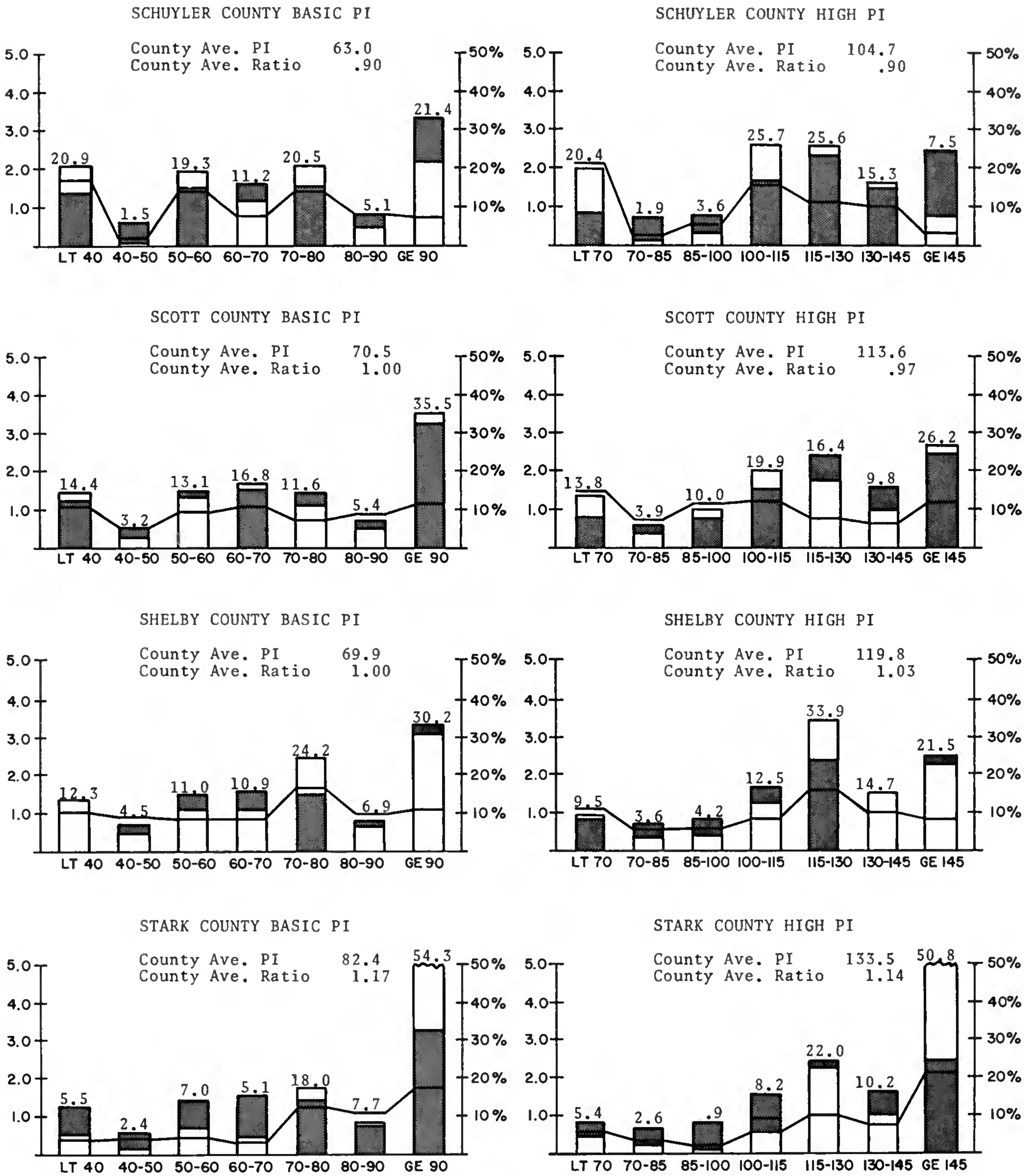

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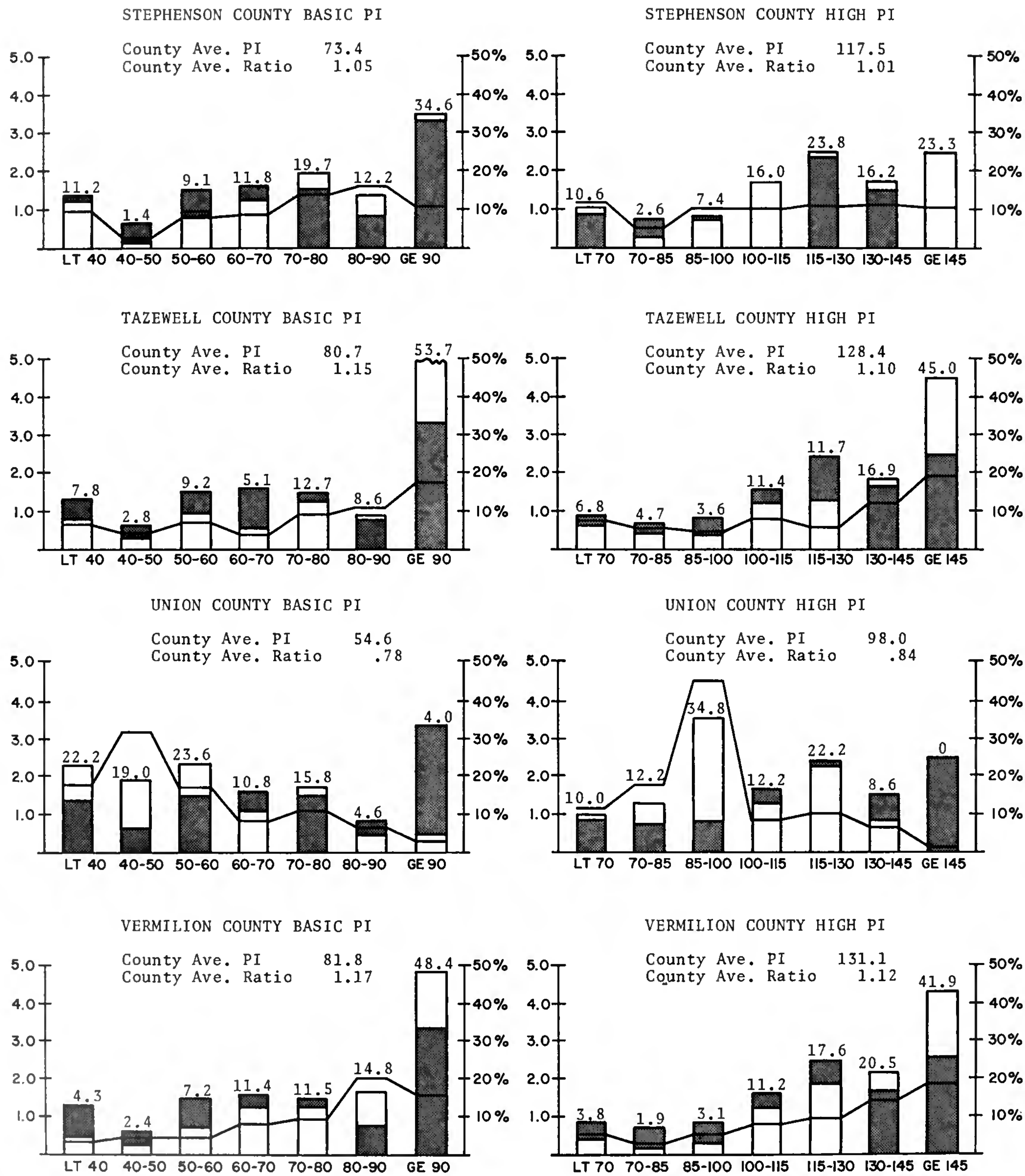


Figure 7 (continued).

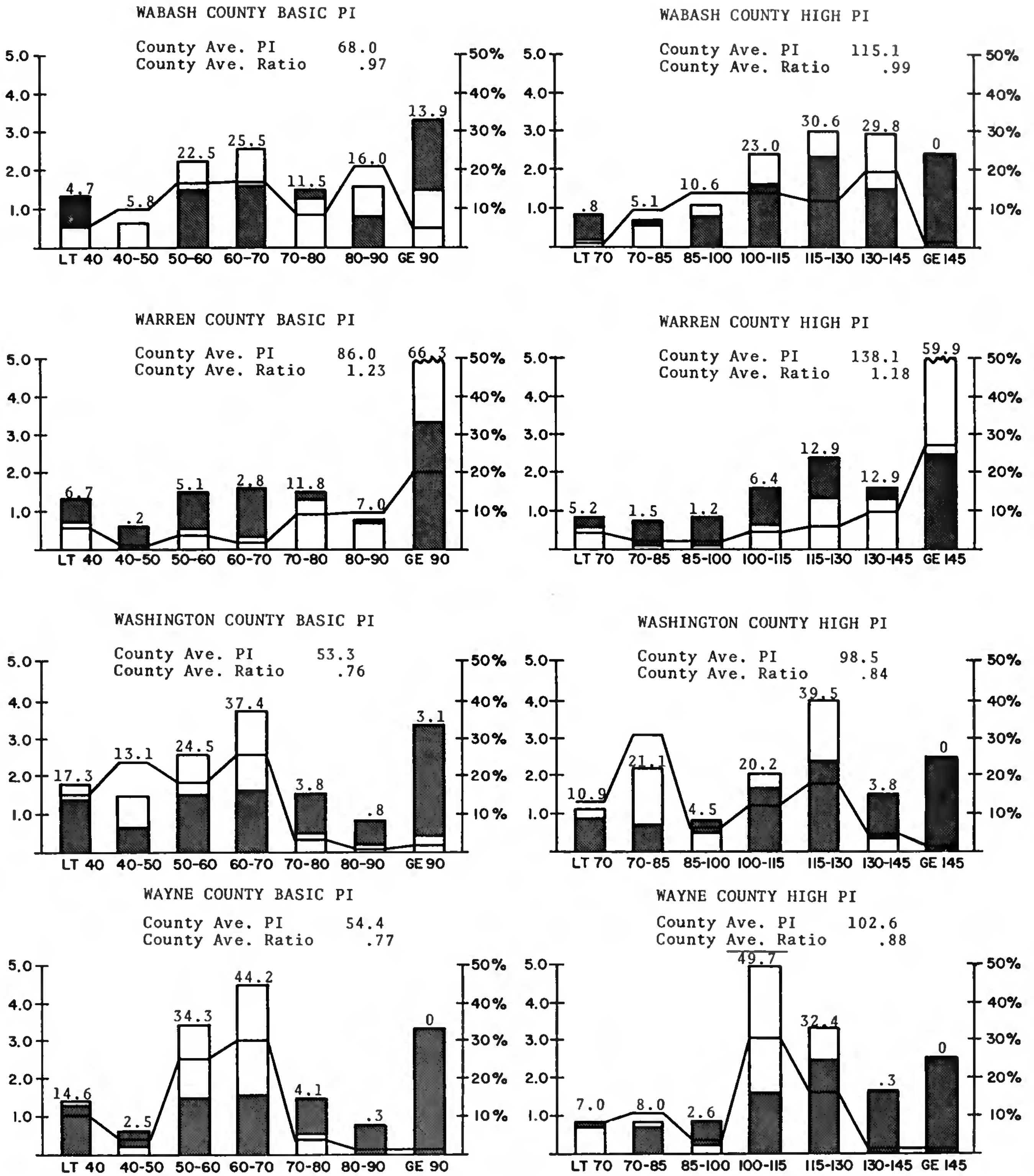


Figure 7 (continued).

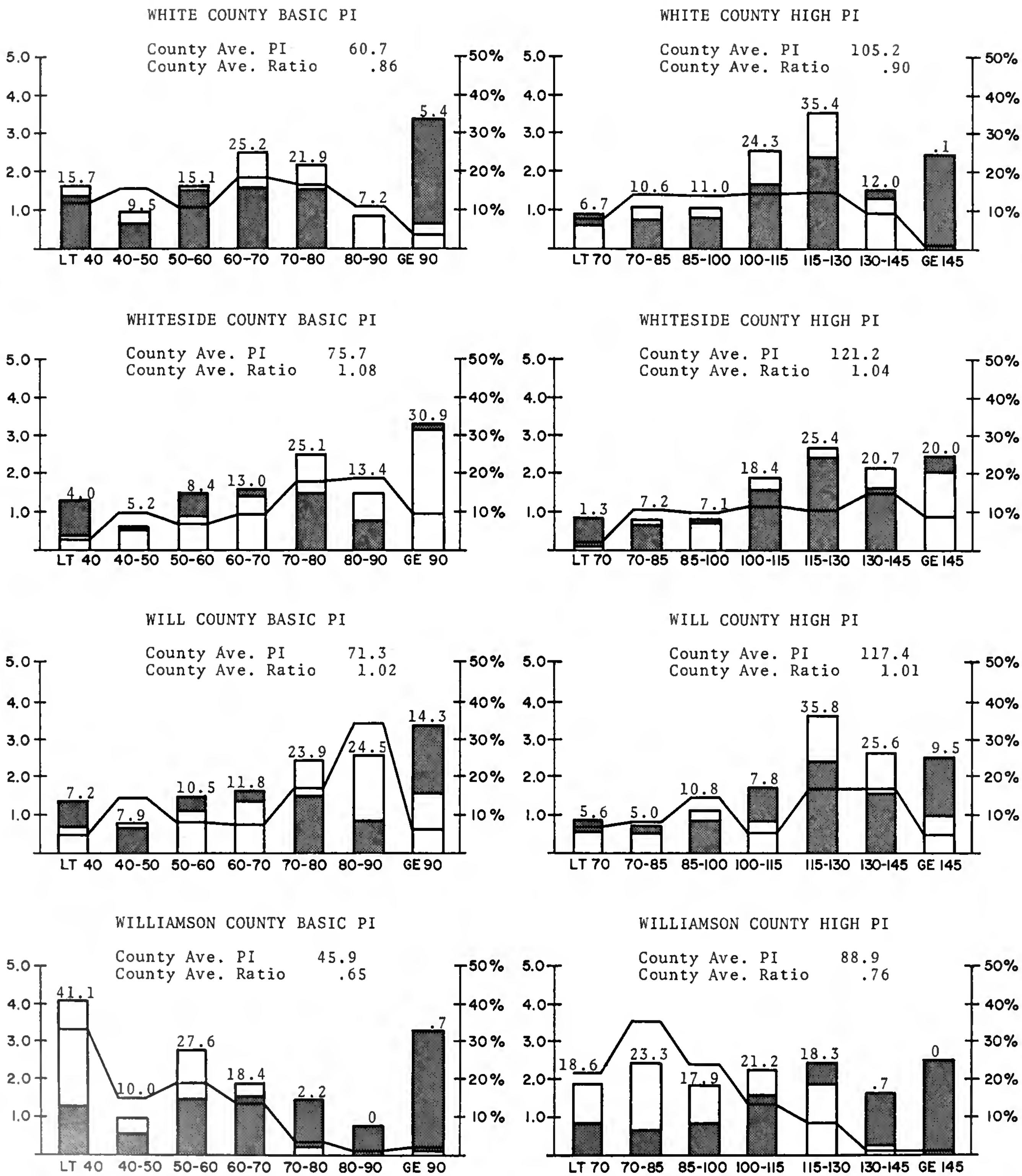
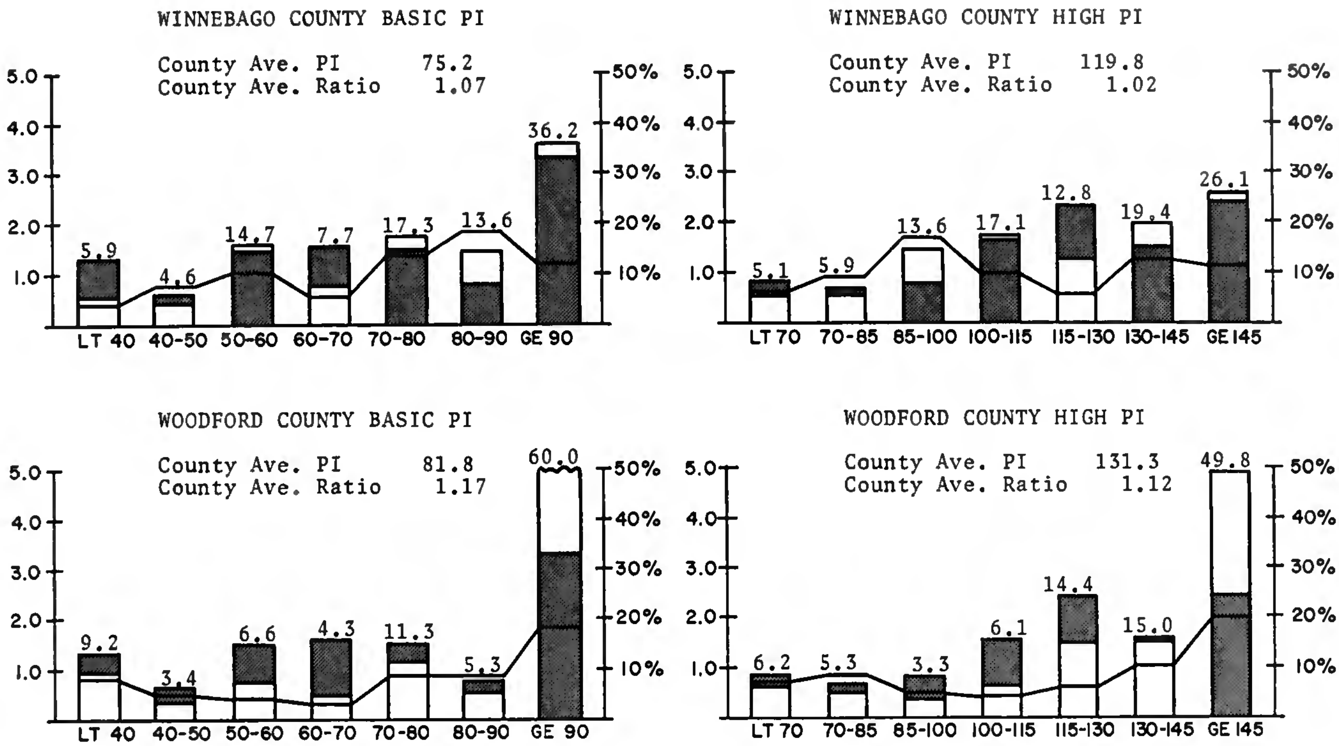


Figure 7 (concluded).



STATE SOIL ASSOCIATION PATTERNS OF PRODUCTIVITY

Basic and high management soil productivity characteristics of the major Illinois soil associations were developed (Tables 3 and 4). These data give a broad insight into soil productivity distribution characteristics for every soil association of the state by indicating the average percentage of soils in each of seven PI categories for basic and high management. It is not our intent to discuss these PI categories for each soil association area; rather, examples of prairie, forested, and alluvial soil will be examined. It may be noted, however, that soil association B is the most productive soil association: 95.3 percent of the area designated as B has a high management PI of 115 or greater. Soil association R is the least productive: 84.7 percent of the area designated as R has a high management PI of 100 or less.

Prairie soil associations

Soil association area A (Fig. 1) has soils that developed under prairie vegetation on thick to moderately thick (1.5 meters or more) Wisconsin-age loess that overlies gently rolling topography. The dark colored, moderately permeable soils are fertile and suffer from few problems. The most productive areas are in northwestern Illinois on flat interstream divides. Very high soil PI's are characteristic of this soil association. The combined PI average of all soils this soil association comprises frequently can be used to approximate the soil productivity of almost all land in association A. Variation in PI's between the nearly level major soil series within soil association A is only about 10 units. (Average high and basic management PI's for these individual soil series vary from 150 to 160 and from 95 to 100, respectively; the overall average high and basic management PI's for the association are 139 and 87, respectively.) Larger PI variations occur for less commonly distributed soil series and for more sloping phases within a given soil series. It is possible, therefore, to estimate PI's for different areas within a soil association even though PI variations exist within an individual soil series or among the various soil series that are a part of the association.

Soil association B is similar to soil association A in many respects. Soil association B contains soils that developed under prairie vegetation on thin to moderately thick (0.5 to 1.5 meters) loess over calcareous loam till.

The general properties and productivity of soil series in soil association B are similar to those of soil association A. Major soil series that make up association B have high and basic management PI's between 145 and 160 and between 90 and 100, respectively. Soil series that have minor geographical distribution or occur on sloping land have PI's that are not typical of the major soils in association B. The overall high and basic management PI averages for soil association B are 147 and 91, respectively (Tables 3 and 4); hence, soil association B is somewhat better than association A.

The pattern of PI distribution within soil associations A and B is similar: a large majority of the soils of both are in high management PI categories of >130 (74 percent of association A and 90 percent of association B), while few of the soils have PI's of <85 (4 percent of association A and 1 percent of association B). The intermediate PI categories (85 to 130) occur at low frequencies because of the dominance of the two highest PI categories; approximately 22 percent of association A soils and 8 percent of association B soils are in the intermediate productivity categories. Both associations are characterized by a large concentration of productive soils. Other prairie associations are relatively uniform (compared to forested and alluvial soil associations) but have more variation in PI's between fields than do associations A and B.

Forest soil associations

Soil association area L comprises soil series that developed under broadleaf deciduous forest on thick (1.5 meters or more) Wisconsin-age loess. Soil series within this association have greater variation in PI than soil series of prairie associations because large variations in slope and loess thickness are common. Average high and basic management PI's of major soils in this association range from 70 to 140 and from 40 to 90, respectively. The overall high and basic management PI averages for association L are 100 and 59, respectively; thus, the average quality of a soil in association L is low compared to soils in associations A and B.

The distribution pattern of PI's within this association is rather uniform. For example, 28 percent of the soil association area has a high management PI average of <85, 20 percent has a high management PI average of >130, and more than half has soils in the intermediate PI categories (85 to 130). It is evident from this frequency distribution pattern that soils of any productivity level could dominate a given local area within soil association L. Large variations in PI's make it necessary to use procedures that allow differentiation between better and poorer soils in specific soil association areas. Other forested associations have similar wide variations in PI.

Alluvial soil association

Soils in soil association Z are related to the nature of the alluvial parent material on which they formed. The association is made up of bottomland and terrace deposits along streams and rivers. The variable nature of the alluvial deposit results in large variations in PI between soil series.

High and basic management PI's for the major soil series range from 100 to 145 and from 60 to 95, respectively. Most of these soil series have PI's in the higher categories, with the result that the overall high and basic management average PI's are 121 and 76, respectively. The soil productivity for the total association is above the state average; however, the combination of highly productive soil series with some soil series of lower productivity results in a productivity average less than those of soils in most prairie associations.

The distribution of high management PI's is as follows (Table 4): 3 percent of the soils in association Z have low PI's (<85), 57 percent have intermediate PI's (85 to 130), and 40 percent have high PI's (>130). Variations in PI's that are associated primarily with the texture of alluvial deposits make it difficult to generalize PI's over wide areas.

COUNTY SOIL ASSOCIATION PATTERNS OF PRODUCTIVITY

The state average areal distribution of soils within each of the seven PI categories in individual soil associations is given in Tables 3 and 4. These data can be used to help estimate soil PI in an association area. However, possible soil PI's of a given association in a particular county may be atypical and not closely related to the state average.

Patterns of high management PI of soil associations for individual counties (Table 5) were developed in order to estimate more accurately the approximate soil productivity of a soil area within a specific county. Intercounty comparisons of soil association PI patterns are indicated by means of ratios that compare individual county soil association PI distribution characteristics with comparable state soil association data.

Hancock County soil PI category >145 in soil association L has a county/state ratio of 0.83. This ratio means the county percentage of soils in PI category >145 is 83 percent as much as the state average for that category and association. Thus, whereas 8.3 percent of the state's soils in association L have a PI of >145, only 6.9 (0.83 x 8.3) percent of Hancock County soils in association L are rated that productive. This kind of information should be useful for evaluating soils within

Table 5. — Percentage Distribution of Soils in Various Productivity Index Classes for Soil Association Areas Within Counties (Ratios of County to State Percentage Distribution Are in Parentheses)

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management < 70	70-85	85-100	100-115	115-130	130-145	> 145
ADAMS	A	15.2	11.8(6.94)	10.4(5.47)	3.3(1.43)	2.5(.48)	16.5(1.12)	36.0(3.00)	19.6(.32)
	D	9.3	10.4(3.35)	2.2(.61)	--- ---	.2(.02)	2.5(.23)	84.6(1.29)	--- ---
	L	15.0	18.1(.93)	.6(.07)	4.2(.32)	14.9(.84)	33.1(1.53)	24.1(2.10)	4.9(.59)
	N	54.2	47.6(1.86)	2.8(.44)	1.3(.29)	14.0(.89)	22.4(.82)	6.2(.63)	5.8(.55)
	Z	6.3	--- ---	.9(.47)	3.3(.42)	17.5(.71)	3.9(.16)	60.8(1.92)	13.6(1.66)
ALEXANDER	O	24.9	43.1(3.53)	1.4(.36)	8.8(.50)	27.4(.93)	17.7(.60)	1.5(.24)	--- ---
	W	20.2	.5(.23)	1.2(.63)	28.4(4.44)	60.8(4.22)	9.1(.60)	--- ---	--- ---
	Z	54.9	2.9(1.93)	5.3(2.79)	14.8(1.90)	32.0(1.31)	34.1(1.40)	10.8(.34)	--- ---
BOND	E	28.5	3.8(.90)	6.2(.52)	7.8(1.00)	45.2(2.26)	29.9(.68)	6.5(.60)	.6(.35)
	F	36.3	4.3(1.02)	12.4(1.33)	16.4(4.43)	10.4(1.06)	51.4(.74)	2.0(.69)	3.1(4.43)
	P	20.6	22.8(1.30)	.5(.06)	10.7(.39)	25.1(1.39)	29.3(1.26)	1.0(.45)	10.6(2.94)
	Q	14.7	17.1(1.25)	7.7(.48)	5.3(1.20)	14.4(.35)	23.8(1.03)	4.9(8.17)	26.8(24.36)
BOONE	I	27.3	--- ---	--- ---	1.8(.53)	.4(.09)	13.8(1.33)	58.4(1.71)	25.5(.60)
	T	49.4	.4(.17)	23.1(1.04)	.3(.04)	47.5(1.39)	3.6(.32)	4.7(.57)	20.4(1.39)
	W	23.3	.7(.32)	.3(.16)	1.2(.19)	37.3(2.59)	8.5(.56)	20.2(.80)	31.8(.92)
BROWN	A	8.2	5.7(3.35)	.4(.21)	--- ---	15.1(2.90)	14.4(.98)	48.9(4.08)	15.5(.25)
	D	3.6	16.5(5.32)	--- ---	--- ---	12.5(1.39)	14.5(1.33)	56.5(.86)	--- ---
	L	22.6	7.1(.37)	2.2(.27)	27.2(2.06)	23.4(1.31)	38.2(1.76)	1.5(.13)	.2(.02)
	N	57.5	33.5(1.31)	1.8(.29)	8.8(1.96)	19.1(1.21)	28.3(1.03)	5.9(.60)	2.7(.25)
	Z	8.2	3.3(2.20)	17.3(9.11)	--- ---	11.4(.47)	14.2(.58)	47.3(1.50)	6.6(.80)
BUREAU	A	48.0	1.2(.71)	.7(.37)	1.2(.52)	4.4(.85)	15.2(1.03)	13.4(1.12)	63.9(1.03)
	B	1.1	--- ---	--- ---	--- ---	--- ---	15.5(3.16)	14.7(1.43)	69.8(.87)
	I	8.6	2.8(3.50)	.1(.08)	9.2(2.71)	2.6(.55)	12.4(1.19)	36.3(1.06)	36.5(.80)
	L	17.7	19.2(.99)	4.6(.57)	.9(.07)	10.7(.60)	38.9(1.79)	11.8(1.03)	13.8(1.66)
	W	21.2	3.3(1.50)	.8(.42)	3.1(.48)	7.2(.50)	5.2(.34)	35.7(1.41)	44.7(1.29)
	X	2.9	--- ---	5.1(.50)	4.5(.29)	12.2(.40)	21.8(2.32)	51.0(3.38)	5.4(1.17)
	Z	.4	13.3(8.87)	--- ---	--- ---	--- ---	2.2(.09)	84.4(2.67)	--- ---
CALHOUN	L	81.7	24.4(1.26)	6.8(.84)	32.6(2.47)	22.4(1.26)	6.3(.29)	6.5(.57)	1.1(.13)
	Z	18.3	4.0(2.67)	4.3(2.26)	10.3(1.32)	13.1(.53)	5.4(.22)	57.6(1.82)	5.3(.65)
CARROLL	A	47.3	.9(.53)	.8(.42)	2.1(.91)	5.0(.96)	23.0(1.56)	19.9(1.66)	48.4(.78)
	L	37.6	3.5(.18)	22.8(2.81)	16.8(1.27)	18.0(1.01)	22.7(1.05)	6.1(.53)	10.2(1.23)
	W	2.7	--- ---	24.2(12.74)	30.9(4.83)	24.8(1.72)	9.4(.62)	10.7(.42)	--- ---
	X	1.9	10.4(.71)	15.1(1.47)	42.5(2.74)	1.9(.06)	--- ---	--- ---	30.2(6.57)
	Y	8.3	16.6(.74)	12.0(1.02)	10.5(.81)	8.1(.57)	44.4(2.08)	6.6(.93)	1.8(.17)
	Z	2.3	--- ---	--- ---	.8(.10)	4.8(.20)	40.0(1.64)	39.2(1.24)	15.2(1.85)
CASS	A	25.4	2.6(1.53)	7.9(4.16)	1.6(.70)	2.6(.50)	15.4(1.05)	18.2(1.52)	51.6(.83)
	L	15.7	32.0(1.65)	16.8(2.07)	6.1(.46)	5.2(.29)	29.1(1.34)	5.9(.51)	4.9(.59)
	N	11.0	37.0(1.45)	5.7(.90)	9.0(2.00)	6.8(.43)	37.7(1.38)	.4(.04)	3.3(.31)
	W	14.2	14.2(6.45)	.9(.47)	3.5(.55)	9.8(.68)	10.7(.70)	9.6(.38)	51.3(1.48)
	X	23.2	45.1(3.09)	7.1(.69)	7.8(.50)	27.7(.91)	3.2(.34)	4.9(.32)	4.0(.87)
	Z	10.6	--- ---	--- ---	.4(.05)	72.0(2.94)	10.0(.41)	7.6(.24)	10.1(1.23)
CHAMPAIGN	B	55.8	.3(.50)	.1(.13)	.7(.58)	1.1(.50)	6.2(1.27)	10.7(1.04)	80.9(1.01)
	J	8.6	1.0(3.33)	--- ---	.3(.05)	2.1(.43)	11.2(.36)	33.3(1.02)	52.1(2.24)
	K	4.9	--- ---	--- ---	12.3(1.02)	1.1(.08)	38.4(.75)	22.7(1.45)	25.5(4.90)
	M	7.0	4.5(.62)	5.4(.63)	1.4(.39)	7.3(.69)	28.2(1.00)	34.0(1.55)	19.2(.96)
	W	23.7	--- ---	--- ---	--- ---	--- ---	5.6(.37)	11.0(.43)	83.4(2.41)
CHRISTIAN	A	31.6	.1(.06)	--- ---	1.2(.52)	3.7(.71)	5.2(.35)	26.8(2.23)	63.0(1.01)
	D	48.4	3.0(.97)	.5(.14)	1.6(.76)	2.7(.30)	10.0(.92)	77.7(1.18)	4.5(.80)
	E	3.7	--- ---	1.8(.15)	20.1(2.58)	18.3(.92)	53.6(1.23)	6.2(.57)	--- ---
	N	16.3	10.2(.40)	4.4(.70)	2.0(.44)	18.7(1.18)	27.1(.99)	26.8(2.71)	10.8(1.02)
CLARK	E	7.3	1.9(.45)	--- ---	--- ---	5.9(.30)	82.0(1.88)	7.5(.69)	2.7(1.59)
	F	16.6	.2(.05)	3.6(.39)	3.0(.81)	11.4(1.16)	75.1(1.08)	6.7(2.31)	--- ---
	G	2.4	--- ---	1.9(.30)	--- ---	35.4(.91)	62.7(3.35)	--- ---	--- ---
	O	12.9	15.1(1.24)	4.4(1.13)	7.5(.43)	32.5(1.10)	31.0(1.05)	9.5(1.53)	--- ---
	P	23.3	16.5(.94)	2.1(.27)	3.3(.12)	33.0(1.83)	39.2(1.68)	5.7(2.59)	.1(.03)
	Q	30.3	16.7(1.22)	6.1(.38)	5.9(1.34)	46.4(1.12)	21.6(.94)	1.0(1.67)	2.4(2.18)
	W	2.3	--- ---	--- ---	.7(.11)	5.2(.36)	35.3(2.32)	28.8(1.14)	30.1(.87)
	Z	4.8	.3(.20)	.3(.16)	.3(.04)	34.3(1.40)	8.7(.36)	22.8(.72)	33.3(4.06)
CLAY	P	63.7	2.3(.55)	6.1(.66)	2.4(.65)	13.8(1.41)	74.0(1.07)	1.2(.41)	.2(.29)
	Q	33.8	18.2(1.33)	8.3(.52)	9.8(2.23)	36.8(.89)	26.0(1.13)	.6(1.00)	.4(.36)
	Z	2.5	--- ---	--- ---	--- ---	--- ---	70.5(2.89)	29.5(.93)	--- ---
CLINTON	D	5.0	2.2(.71)	54.5(15.14)	--- ---	1.0(.11)	--- ---	42.3(.64)	--- ---
	E	15.8	7.1(1.69)	19.4(1.63)	15.6(2.00)	3.2(.16)	51.3(1.17)	3.1(.29)	.2(.12)
	F	26.4	4.4(1.05)	33.4(3.59)	1.0(.27)	2.8(.29)	53.2(.77)	5.3(1.83)	--- ---
	P	23.5	4.4(.25)	4.9(.62)	16.8(.61)	21.0(1.17)	43.4(1.86)	4.6(2.09)	5.0(1.39)
	Q	22.3	4.7(.34)	17.2(1.08)	1.4(.32)	54.7(1.32)	16.4(.71)	5.6(9.33)	--- ---
	Z	7.0	--- ---	--- ---	--- ---	65.4(2.67)	11.5(.47)	23.2(.73)	--- ---

Table 5. — Continued

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management						
			> 70	70-85	85-100	100-115	115-130	130-145	< 145
COLES	B	49.9	--- ---	--- ---	.4(.33)	1.8(.82)	1.0(.20)	8.8(.85)	88.0(1.10)
	E	4.7	--- ---	30.1(2.53)	--- ---	14.7(.74)	39.4(.90)	13.1(1.21)	2.6(1.53)
	M	40.8	12.3(1.68)	7.6(.88)	4.9(1.36)	10.2(.96)	33.3(1.19)	11.7(.53)	19.9(1.00)
	W	2.3	.7(.32)	--- ---	7.9(1.23)	3.3(.23)	28.5(1.88)	21.9(.87)	37.7(1.09)
	Z	2.3	19.1(12.73)	7.6(4.00)	--- ---	2.5(.10)	12.1(.50)	4.5(.14)	54.1(6.60)
COOK	J	5.8	--- ---	6.1(6.10)	51.0(7.97)	2.7(.55)	27.2(.87)	8.8(.27)	4.1(.18)
	K	29.1	--- ---	--- ---	34.7(2.87)	.8(.06)	56.6(1.10)	7.3(.46)	.5(.10)
	V	28.5	1.2(.43)	18.2(1.03)	29.8(1.45)	11.0(.89)	21.0(.93)	17.5(.95)	1.2(.21)
	W	22.5	--- ---	4.2(2.21)	4.0(.63)	4.5(.31)	15.0(.99)	54.2(2.14)	18.0(.52)
	X	14.2	--- ---	--- ---	4.1(.26)	5.2(.17)	5.0(.53)	82.3(5.45)	3.3(.72)
CRAWFORD	F	24.2	.6(.14)	2.1(.23)	2.1(.57)	14.4(1.47)	74.6(1.08)	6.3(2.17)	--- ---
	G	2.7	--- ---	--- ---	11.2(1.37)	55.9(1.44)	--- ---	32.9(3.07)	--- ---
	O	19.3	3.3(.27)	6.8(1.74)	5.0(.28)	27.3(.93)	42.4(1.44)	15.2(2.45)	--- ---
	P	13.1	7.5(.43)	10.2(1.29)	23.9(.86)	24.1(1.34)	30.5(1.31)	3.8(1.73)	--- ---
	Q	30.7	13.9(1.01)	7.1(.44)	4.9(1.11)	55.2(1.34)	18.4(.80)	.5(.83)	--- ---
	Z	10.0	.5(.33)	.9(.47)	7.0(.90)	29.5(1.20)	21.8(.89)	40.3(1.28)	--- ---
CUMBERLAND	E	27.8	.9(.21)	2.2(.18)	.6(.08)	4.0(.20)	68.5(1.57)	21.8(2.02)	2.0(1.18)
	F	25.3	5.3(1.26)	4.7(.51)	.8(.22)	8.5(.87)	75.7(1.09)	4.4(1.52)	.4(.57)
	G	1.7	25.8(4.23)	5.8(.91)	.6(.07)	21.3(.55)	6.5(.35)	3.9(.36)	36.1(3.22)
	M	6.9	4.1(.56)	--- ---	10.3(2.86)	1.3(.12)	63.2(2.25)	16.2(.74)	4.9(.25)
	P	1.7	25.2(1.44)	--- ---	--- ---	26.5(1.47)	33.5(1.44)	1.9(.86)	12.9(3.58)
	Q	24.6	26.1(1.91)	7.5(.47)	.4(.09)	35.8(.87)	29.7(1.29)	--- ---	.6(.55)
	W	1.7	--- ---	--- ---	--- ---	--- ---	--- ---	42.5(1.68)	57.5(1.66)
	Z	10.3	.4(.27)	.7(.37)	9.4(1.21)	.1(.00)	16.3(.67)	23.6(.75)	49.5(6.04)
DE KALB	B	26.5	.1(.17)	--- ---	.5(.42)	.3(.14)	6.2(1.27)	12.4(1.20)	80.4(1.00)
	I	34.6	.4(.50)	--- ---	1.6(.47)	2.5(.53)	11.9(1.14)	31.8(.93)	51.8(1.14)
	U	2.0	--- ---	--- ---	.6(.14)	--- ---	81.3(2.42)	8.8(.55)	9.4(.52)
	W	36.9	--- ---	--- ---	.2(.03)	.3(.02)	7.7(.51)	20.1(.79)	71.7(2.07)
DE WITT	B	69.8	.1(.17)	.3(.38)	.3(.25)	.2(.09)	4.2(.86)	8.7(.84)	86.2(1.08)
	M	21.6	13.2(1.81)	14.4(1.67)	2.4(.67)	8.2(.77)	24.6(.88)	28.7(1.31)	8.4(.42)
	W	8.6	.5(.23)	.7(.37)	--- ---	2.3(.16)	5.1(.34)	48.3(1.91)	43.2(1.25)
DOUGLAS	B	64.6	--- ---	--- ---	.2(.17)	.8(.36)	1.1(.22)	15.2(1.48)	82.6(1.03)
	M	14.4	.3(.04)	11.2(1.30)	3.9(1.08)	13.5(1.27)	26.5(.94)	15.4(.70)	29.2(1.47)
	W	21.0	--- ---	--- ---	1.0(.16)	4.2(.29)	6.2(.41)	43.9(1.74)	44.7(1.29)
DU PAGE	I	23.1	--- ---	3.3(2.75)	5.0(1.47)	8.4(1.79)	12.2(1.17)	44.4(1.30)	26.7(.59)
	J	44.7	.1(.33)	2.0(2.00)	19.1(2.98)	6.0(1.22)	36.3(1.16)	21.2(.65)	15.3(.66)
	V	18.4	.7(.25)	37.4(2.13)	5.2(.25)	19.4(1.56)	17.7(.78)	13.1(.71)	6.5(1.16)
	W	13.7	--- ---	.3(.16)	10.0(1.56)	5.6(.39)	20.6(1.36)	61.1(2.42)	2.4(.07)
EDGAR	B	62.9	--- ---	--- ---	.5(.42)	.6(.27)	1.2(.24)	8.6(.83)	89.1(1.11)
	M	25.2	1.5(.21)	10.3(1.20)	1.3(.36)	16.7(1.58)	35.3(1.26)	22.8(1.04)	12.1(.61)
	P	4.2	30.8(1.76)	--- ---	7.1(.26)	1.3(.07)	42.3(1.82)	8.0(3.64)	10.6(2.94)
	W	7.7	--- ---	--- ---	--- ---	.5(.03)	16.3(1.07)	9.3(.37)	73.9(2.14)
EDWARDS	F	5.7	--- ---	5.2(.56)	8.7(2.35)	11.3(1.15)	74.8(1.08)	--- ---	--- ---
	P	14.6	17.7(1.01)	13.9(1.76)	14.4(.52)	16.4(.91)	37.0(1.59)	.8(.36)	--- ---
	Q	42.4	9.0(.66)	19.6(1.23)	7.0(1.59)	31.9(.77)	32.5(1.41)	--- ---	--- ---
	R	17.4	6.7(.18)	26.4(.78)	28.9(1.99)	8.5(1.77)	29.2(2.81)	.2(2.00)	--- ---
	W	10.6	.4(.18)	1.6(.84)	6.2(.97)	26.5(1.84)	39.7(2.61)	25.7(1.02)	--- ---
	Z	9.3	.4(.27)	1.8(.95)	.8(.10)	32.7(1.33)	58.1(2.38)	6.2(.20)	--- ---
EFFINGHAM	F	69.2	6.5(1.55)	5.1(.55)	2.6(.70)	10.5(1.07)	72.6(1.05)	2.1(.72)	.6(.86)
	Q	28.1	24.3(1.77)	8.6(.54)	1.3(.30)	38.1(.92)	27.4(1.19)	.4(.67)	--- ---
	Z	2.7	4.4(2.93)	4.4(2.32)	--- ---	2.5(.10)	32.9(1.35)	--- ---	55.7(6.79)
FAYETTE	E	6.6	5.7(1.36)	4.3(.36)	8.7(1.12)	7.7(.39)	72.0(1.65)	1.6(.15)	--- ---
	F	31.7	4.7(1.12)	8.3(.89)	1.6(.43)	2.9(.30)	72.5(1.05)	8.0(2.76)	2.0(2.86)
	P	1.6	20.9(1.19)	--- ---	7.2(.26)	48.4(2.69)	23.5(1.01)	--- ---	--- ---
	Q	46.8	22.3(1.63)	8.3(.52)	2.1(.48)	39.4(.95)	24.6(1.07)	.4(.67)	2.9(2.64)
	Z	13.3	2.0(1.33)	.5(.26)	1.8(.23)	13.4(.55)	45.7(1.87)	8.6(.27)	28.0(3.41)
FORD	I	5.0	--- ---	--- ---	11.4(3.35)	1.9(.40)	2.3(.22)	54.9(1.61)	29.5(.65)
	J	34.6	.1(.33)	.2(.20)	2.5(.39)	2.7(.55)	28.3(.90)	37.2(1.13)	28.9(1.24)
	K	35.5	.9(.75)	2.3(1.64)	8.9(.74)	18.9(1.45)	44.3(.86)	20.4(1.30)	4.3(.83)
	W	24.9	--- ---	--- ---	3.2(.50)	1.0(.07)	8.7(.57)	42.2(1.67)	45.0(1.30)
FRANKLIN	F	5.6	--- ---	3.0(.32)	--- ---	26.1(2.66)	71.0(1.02)	--- ---	--- ---
	Q	83.2	4.2(.31)	25.0(1.56)	2.7(.61)	45.7(1.11)	22.4(.97)	--- ---	--- ---
	W	11.2	1.5(.68)	5.2(2.74)	35.8(5.59)	53.7(3.73)	3.8(.25)	--- ---	--- ---
FULTON	A	14.4	1.3(.76)	.5(.26)	4.5(1.96)	8.3(1.60)	4.5(.31)	10.2(.85)	70.7(1.14)
	L	8.5	7.6(.39)	34.7(4.28)	.9(.07)	6.0(.34)	43.8(2.02)	6.7(.58)	.4(.05)
	N	64.1	24.3(.95)	8.8(1.40)	8.7(1.93)	12.1(.77)	28.8(1.05)	7.4(.75)	10.0(.94)
	Z	13.0	2.6(1.73)	.1(.05)	.1(.01)	25.5(1.04)	2.5(.10)	52.4(1.66)	16.7(2.04)

Table 5. — Continued

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management						
			< 70	70-85	85-100	100-115	115-130	130-145	> 145
GALLATIN	O	10.2	15.0(1.23)	.1(.03)	10.7(.61)	31.9(1.08)	37.2(1.26)	5.2(.84)	--- ---
	P	10.6	35.7(2.04)	6.8(.86)	19.5(.70)	10.4(.58)	23.6(1.01)	4.0(1.82)	--- ---
	Q	3.8	12.8(.93)	8.7(.54)	3.0(.68)	43.0(1.04)	32.6(1.42)	--- ---	--- ---
	W	54.7	1.6(.73)	.7(.37)	18.5(2.89)	14.6(1.01)	42.4(2.79)	22.3(.88)	--- ---
	X	7.8	--- ---	6.3(.61)	21.6(1.39)	31.8(1.04)	19.7(2.10)	20.6(1.36)	--- ---
	Z	12.9	--- ---	--- ---	--- ---	23.0(.94)	1.3(.05)	75.7(2.40)	--- ---
GREENE	A	17.2	.2(.12)	--- ---	.2(.09)	1.5(.29)	1.1(.07)	11.6(.97)	85.5(1.37)
	D	2.2	13.1(4.23)	2.0(.56)	--- ---	--- ---	33.3(3.06)	51.6(.79)	--- ---
	L	27.3	28.0(1.44)	.9(.11)	8.9(.67)	17.2(.97)	20.5(.94)	12.6(1.10)	11.9(1.43)
	N	39.6	24.3(.95)	1.6(.25)	3.8(.84)	13.4(.85)	30.0(1.09)	12.7(1.28)	14.1(1.33)
	W	2.2	--- ---	--- ---	--- ---	27.1(1.88)	11.6(.76)	14.8(.58)	46.5(1.34)
	Z	11.6	--- ---	--- ---	1.1(.14)	33.8(1.38)	21.3(.87)	40.5(1.28)	3.3(.40)
GRUNDY	G	5.1	--- ---	17.7(2.77)	3.2(.39)	17.0(.44)	50.5(2.70)	2.2(.21)	9.4(.84)
	J	41.0	.1(.33)	3.2(3.20)	3.1(.48)	4.7(.96)	9.7(.31)	37.6(1.15)	41.5(1.78)
	K	9.1	--- ---	--- ---	--- ---	.2(.02)	55.4(1.08)	44.4(2.83)	--- ---
	W	23.1	--- ---	.2(.11)	.3(.05)	.5(.03)	13.4(.88)	28.7(1.13)	57.0(1.65)
	X	11.1	--- ---	--- ---	5.6(.36)	56.6(1.86)	15.1(1.61)	21.4(1.42)	1.3(.28)
	Y	10.5	5.6(.25)	15.3(1.30)	1.9(.15)	9.4(.66)	7.7(.36)	29.2(4.11)	31.0(3.01)
HAMILTON	Q	63.7	12.0(.88)	7.3(.46)	3.1(.70)	51.1(1.24)	26.5(1.15)	--- ---	--- ---
	R	19.3	40.3(1.10)	20.3(.60)	18.4(1.27)	10.6(2.21)	10.5(1.01)	--- ---	--- ---
	W	17.0	--- ---	--- ---	18.7(2.92)	61.9(4.30)	19.3(1.27)	--- ---	--- ---
HANCOCK	A	15.0	1.4(.82)	2.7(1.42)	.6(.26)	7.6(1.46)	20.1(1.37)	20.9(1.74)	46.7(.75)
	D	36.5	9.5(3.06)	5.2(1.44)	7.5(3.57)	.8(.09)	14.9(1.37)	57.9(.88)	4.2(.75)
	L	30.6	24.3(1.25)	.3(.04)	9.4(.71)	17.3(.97)	22.6(1.04)	19.3(1.68)	6.9(.83)
	N	18.0	36.5(1.43)	.6(.10)	--- ---	2.7(.17)	26.8(.98)	9.5(.96)	23.9(2.25)
HARDIN	O	16.3	25.4(2.08)	3.4(.87)	24.5(1.39)	26.6(.90)	13.6(.46)	6.5(1.05)	--- ---
	P	42.0	39.5(2.26)	6.0(.76)	38.5(1.39)	3.5(.19)	11.1(.48)	1.4(.64)	--- ---
	R	41.7	42.2(1.16)	24.6(.73)	20.9(1.44)	4.7(.98)	7.4(.71)	.1(1.00)	--- ---
HENDERSON	A	33.0	5.7(3.35)	.5(.26)	2.8(1.22)	6.3(1.21)	13.8(.94)	7.8(.65)	63.1(1.01)
	L	40.0	24.0(1.24)	.7(.09)	7.7(.58)	15.8(.89)	13.4(.62)	14.5(1.26)	23.9(2.88)
	W	3.0	--- ---	--- ---	--- ---	20.7(1.44)	9.0(.59)	2.1(.08)	68.3(1.97)
	X	18.2	14.7(1.01)	34.7(3.37)	9.3(.60)	14.6(.48)	6.3(.67)	13.3(.88)	7.2(1.57)
	Z	5.8	--- ---	--- ---	--- ---	--- ---	8.5(.35)	80.7(2.55)	10.8(1.32)
HENRY	A	44.7	4.1(2.41)	3.7(1.95)	2.4(1.04)	16.2(3.12)	16.1(1.10)	11.9(.99)	45.6(.73)
	L	11.8	4.6(.24)	7.7(.95)	13.5(1.02)	18.2(1.02)	16.0(.74)	13.8(1.20)	26.2(3.16)
	W	31.5	11.3(5.14)	3.0(1.58)	5.9(.92)	6.4(.44)	18.3(1.20)	22.3(.88)	32.8(.95)
	X	9.1	8.2(.56)	15.1(1.47)	18.9(1.22)	19.1(.63)	15.3(1.63)	23.3(1.54)	--- ---
	Z	2.8	--- ---	--- ---	5.4(.69)	--- ---	6.1(.25)	27.2(.86)	61.2(7.46)
IROQUOIS	I	9.2	.3(.38)	1.2(1.00)	5.0(1.47)	9.0(1.91)	6.4(.62)	18.2(.53)	59.8(1.32)
	J	17.5	.1(.33)	.1(.10)	.8(.13)	3.0(.61)	27.6(.88)	44.5(1.36)	23.8(1.02)
	K	25.7	.3(.25)	.9(.64)	11.1(.92)	14.0(1.08)	50.7(.99)	18.9(1.20)	4.0(.77)
	W	26.5	.7(.32)	1.7(.89)	2.5(.39)	4.1(.28)	11.3(.74)	50.2(1.98)	29.6(.86)
	X	21.2	8.3(.57)	4.5(.44)	15.5(1.00)	25.0(.82)	11.4(1.21)	29.9(1.98)	5.5(1.20)
JACKSON	O	12.5	14.6(1.20)	--- ---	29.3(1.66)	44.8(1.52)	7.6(.26)	3.3(.53)	.4(.36)
	P	43.2	19.6(1.12)	13.6(1.72)	36.4(1.31)	18.5(1.03)	11.9(.51)	--- ---	--- ---
	Q	5.1	7.2(.53)	15.1(.94)	18.7(4.25)	58.4(1.41)	.7(.03)	--- ---	--- ---
	W	28.8	15.2(6.91)	6.2(3.26)	40.1(6.27)	27.1(1.88)	11.4(.75)	--- ---	--- ---
	Z	10.5	6.2(4.13)	1.1(.58)	28.6(3.67)	30.5(1.24)	19.5(.80)	14.1(.45)	--- ---
JASPER	P	52.6	5.6(1.33)	7.9(.85)	1.2(.32)	2.6(.27)	72.0(1.04)	10.2(3.52)	.6(.86)
	Q	38.3	25.6(1.86)	7.6(.48)	1.3(.30)	37.4(.91)	24.2(1.05)	3.6(6.00)	.2(.18)
	X	2.3	10.6(.73)	6.6(.64)	36.4(2.35)	30.5(1.00)	15.9(1.69)	--- ---	--- ---
	Z	6.7	1.4(.93)	.2(.11)	.7(.09)	3.4(.14)	46.6(1.91)	47.7(1.51)	--- ---
JEFFERSON	F	22.2	1.4(.33)	11.8(1.27)	9.7(2.62)	15.7(1.60)	61.4(.89)	--- ---	--- ---
	Q	75.5	12.1(.88)	26.3(1.64)	7.3(1.66)	36.6(.89)	17.7(.77)	--- ---	--- ---
	R	2.3	44.8(1.23)	49.1(1.46)	--- ---	.6(.13)	5.5(.53)	--- ---	--- ---
JERSEY	A	5.6	--- ---	--- ---	--- ---	9.7(.87)	11.0(.75)	2.0(.17)	77.2(1.24)
	D	6.6	4.1(1.32)	1.3(.36)	--- ---	6.6(.73)	15.3(1.40)	72.8(1.11)	--- ---
	L	43.1	36.5(1.88)	.1(.01)	10.0(.76)	24.3(1.37)	20.0(.92)	8.1(.70)	1.1(.13)
	N	39.4	18.9(.74)	--- ---	.3(.07)	21.2(1.34)	31.6(1.15)	17.4(1.76)	10.5(.99)
	Z	5.3	1.0(.67)	--- ---	--- ---	17.7(.72)	32.5(1.33)	41.0(1.30)	7.9(.96)
JO DAVIESS	A	4.6	--- ---	2.6(1.37)	30.2(13.13)	33.9(6.52)	2.9(.20)	9.2(.77)	21.3(.34)
	B	4.2	15.6(26.00)	2.2(2.75)	17.5(14.58)	28.7(13.05)	18.2(3.71)	17.8(1.73)	--- ---
	L	39.5	17.0(.88)	6.3(.78)	19.9(1.51)	22.5(1.26)	23.3(1.07)	7.8(.68)	3.2(.39)
	X	4.1	11.6(.79)	23.5(2.28)	.6(.04)	14.5(.48)	--- ---	--- ---	49.8(10.83)
	Y	47.7	33.5(1.50)	21.0(1.78)	18.4(1.42)	10.2(.72)	9.0(.42)	3.4(.48)	4.4(.43)
JOHNSON	P	53.8	31.0(1.77)	12.5(1.58)	33.1(1.19)	14.4(.80)	9.0(.39)	--- ---	--- ---
	R	39.1	48.8(1.37)	26.5(.79)	9.3(.64)	5.4(1.13)	10.1(.97)	--- ---	--- ---
	Z	7.1	--- ---	--- ---	13.0(1.67)	70.2(2.87)	16.8(.69)	--- ---	--- ---

Table 5. — Continued

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management						
			< 70	70-85	85-100	100-115	115-130	130-145	> 145
KANE	B	2.7	--- ---	--- ---	3.9(3.25)	--- ---	5.8(1.18)	--- ---	90.3(1.13)
	G	1.5	--- ---	--- ---	11.4(1.39)	30.7(.79)	--- ---	18.2(1.70)	39.8(3.55)
	I	26.8	2.7(3.38)	3.6(3.00)	5.0(1.47)	8.3(1.77)	22.3(2.14)	26.7(.78)	31.4(.69)
	J	2.8	--- ---	2.5(2.50)	8.0(1.25)	4.3(.88)	32.1(1.03)	16.0(.49)	37.0(1.59)
	T	2.3	11.2(4.87)	3.0(.14)	8.2(1.17)	7.5(.22)	7.5(.66)	59.0(7.11)	3.7(.25)
	U	14.3	.4(.21)	7.5(.49)	6.2(1.48)	12.4(1.13)	30.6(.91)	22.4(1.40)	20.5(1.13)
	V	2.7	--- ---	7.1(.40)	7.1(.34)	52.6(4.24)	11.7(.52)	19.5(1.06)	1.9(.34)
	W	46.8	.3(.14)	4.3(2.26)	1.9(.30)	2.0(.14)	18.8(1.24)	21.2(.84)	51.5(1.49)
KANKAKEE	I	7.4	--- ---	--- ---	--- ---	1.0(.21)	1.3(.13)	50.0(1.47)	47.8(1.05)
	J	24.4	--- ---	--- ---	8.8(1.38)	3.7(.76)	41.9(1.34)	19.6(.60)	26.1(1.12)
	K	5.6	--- ---	6.7(4.78)	26.3(2.17)	4.6(.35)	34.2(.67)	12.0(.76)	16.2(3.12)
	W	15.0	--- ---	.2(.11)	5.3(.83)	7.4(.51)	17.2(1.13)	31.0(1.23)	38.8(1.12)
	X	31.6	15.0(1.03)	3.6(.35)	10.5(.68)	43.0(1.41)	5.1(.54)	20.9(1.38)	1.9(.41)
	Y	16.1	4.3(.19)	2.7(.23)	11.0(.85)	5.5(.39)	41.5(1.95)	10.3(1.45)	24.7(2.40)
KENDALL	B	5.7	--- ---	--- ---	--- ---	.6(.27)	7.8(1.59)	15.2(1.48)	76.4(.95)
	I	35.7	.2(.25)	--- ---	.2(.06)	5.8(1.23)	9.6(.92)	30.5(.89)	53.8(1.19)
	J	7.7	--- ---	--- ---	12.9(2.02)	6.1(1.24)	27.2(.87)	7.0(.21)	46.8(2.01)
	K	21.3	--- ---	.2(.14)	8.6(.71)	21.0(1.62)	55.7(1.09)	5.1(.32)	9.4(1.81)
	U	1.9	1.3(.68)	5.2(.34)	--- ---	31.4(2.85)	20.3(.61)	17.0(1.06)	24.8(1.36)
	W	27.7	5.8(2.64)	.6(.32)	3.2(.50)	15.3(1.06)	13.0(.86)	18.0(.74)	44.1(1.27)
KNOX	A	52.6	3.2(1.88)	3.6(1.89)	1.5(.65)	6.5(1.25)	27.6(1.88)	5.6(.47)	52.1(.84)
	D	1.8	--- ---	--- ---	--- ---	.6(.07)	--- ---	--- ---	99.4(17.75)
	L	1.5	28.4(1.46)	8.2(1.01)	8.2(.62)	11.2(.63)	13.4(.62)	--- ---	30.6(3.69)
	N	44.1	18.7(.73)	9.6(1.52)	7.3(1.62)	12.4(.78)	24.4(.89)	8.2(.83)	19.3(1.82)
LAKE	I	9.4	--- ---	4.8(4.00)	1.0(.29)	10.0(2.13)	33.6(3.23)	39.1(1.15)	11.5(.25)
	J	38.8	--- ---	3.4(3.40)	17.1(2.67)	6.4(1.31)	24.0(.77)	41.7(1.27)	7.4(.32)
	K	7.6	--- ---	.9(.64)	25.4(2.10)	9.6(.74)	51.7(1.01)	12.4(.79)	--- ---
	S	4.2	4.4(.44)	3.9(.35)	--- ---	.6(.05)	19.4(.87)	71.7(2.34)	--- ---
	V	36.3	.6(.21)	21.6(1.23)	22.4(1.09)	12.7(1.02)	15.9(.70)	25.1(1.36)	1.7(.30)
	W	3.7	--- ---	--- ---	22.6(3.53)	2.6(.18)	55.5(3.65)	19.4(.77)	--- ---
LA SALLE	A	24.9	1.4(.82)	--- ---	.2(.09)	1.5(.29)	12.0(.82)	11.1(.93)	73.8(1.19)
	B	20.7	.3(.50)	--- ---	2.4(2.00)	4.1(1.86)	16.0(3.27)	9.1(.88)	68.1(.85)
	C	8.5	--- ---	--- ---	.5(.12)	--- ---	5.3(.56)	43.0(.95)	51.2(1.32)
	J	4.4	--- ---	--- ---	16.0(2.50)	--- ---	24.6(.79)	17.3(.53)	42.2(1.81)
	K	8.7	15.8(13.17)	--- ---	9.8(.81)	.5(.04)	48.8(.95)	7.2(.46)	17.9(3.44)
	L	2.1	7.3(.38)	--- ---	3.3(.25)	49.3(2.77)	8.7(.40)	27.3(2.37)	4.0(.48)
	M	4.2	--- ---	.3(.03)	--- ---	12.6(1.19)	29.2(1.04)	31.9(1.47)	25.9(1.30)
	V	15.0	7.2(2.57)	8.9(.51)	15.0(.73)	11.0(.89)	23.8(1.05)	13.4(.73)	20.7(3.70)
	W	6.6	.4(.18)	9.4(4.95)	2.6(.41)	15.2(1.06)	31.4(2.07)	4.5(.18)	36.5(1.05)
	Y	4.9	--- ---	--- ---	--- ---	11.5(.81)	51.6(2.42)	2.6(.37)	34.3(3.33)
LAWRENCE	F	1.7	--- ---	6.5(.70)	34.0(9.19)	15.7(1.60)	43.8(.63)	--- ---	--- ---
	G	12.0	2.0(.33)	4.2(.66)	8.4(1.02)	73.4(1.90)	5.5(.29)	6.6(.62)	--- ---
	O	4.8	--- ---	5.6(1.44)	9.0(.51)	13.7(.46)	59.6(2.02)	12.1(1.95)	--- ---
	P	8.3	2.0(.11)	13.1(1.66)	17.0(.61)	21.0(1.17)	45.2(1.94)	1.7(.77)	--- ---
	Q	38.2	1.8(.13)	25.0(1.56)	4.5(1.02)	45.8(1.11)	21.4(.93)	1.6(2.67)	--- ---
	W	15.2	.1(.05)	3.9(2.05)	4.5(.70)	14.7(1.02)	25.6(1.68)	51.1(2.02)	--- ---
	X	8.2	.7(.05)	5.9(.57)	11.1(.72)	43.8(1.44)	13.7(1.46)	24.9(1.65)	--- ---
	Z	11.6	1.0(.67)	--- ---	15.0(1.92)	26.3(1.07)	31.2(1.28)	26.4(.84)	--- ---
LEE	A	11.6	--- ---	.9(.47)	2.5(1.09)	1.6(.31)	18.1(1.23)	7.2(.60)	69.7(1.12)
	B	32.8	4.1(6.83)	3.5(4.38)	2.3(1.92)	6.8(3.09)	14.3(2.92)	16.2(1.57)	52.9(.66)
	I	6.6	9.0(11.25)	3.9(3.25)	15.6(4.59)	11.6(2.47)	7.7(.74)	32.2(.94)	20.0(.44)
	M	2.3	34.4(4.71)	--- ---	14.9(4.14)	24.7(2.33)	17.2(.61)	2.8(.13)	6.0(.30)
	W	35.1	1.4(.64)	1.7(.89)	1.9(.30)	13.3(.92)	3.6(.24)	26.9(1.06)	51.2(1.48)
	X	11.6	15.2(1.04)	10.4(1.01)	7.7(.50)	28.7(.94)	15.7(1.67)	14.7(.97)	7.6(1.65)
LIVINGSTON	A	3.5	--- ---	--- ---	--- ---	--- ---	--- ---	1.5(.13)	98.5(1.58)
	B	9.3	.4(.67)	1.9(2.37)	.6(.50)	15.3(6.95)	4.2(.86)	19.5(1.89)	58.0(.72)
	C	2.3	--- ---	--- ---	12.4(2.95)	3.6(1.50)	29.7(3.06)	17.3(.38)	37.6(.97)
	I	8.9	--- ---	--- ---	1.5(.44)	--- ---	11.8(1.13)	23.8(.70)	62.9(1.39)
	J	27.3	.1(.33)	--- ---	4.1(.64)	1.6(.33)	29.9(.96)	42.9(1.31)	21.5(.92)
	K	29.6	1.4(1.17)	2.1(1.50)	11.6(.96)	11.2(.86)	58.7(1.14)	14.3(.91)	.8(.15)
	W	19.2	1.4(.64)	.5(.26)	.7(.11)	3.2(.22)	15.0(.99)	15.6(.62)	63.7(1.84)
LOGAN	A	63.4	.2(.12)	.2(.11)	.6(.26)	3.4(.65)	8.4(.57)	15.5(1.29)	71.7(1.15)
	B	1.9	--- ---	--- ---	--- ---	--- ---	8.7(1.78)	1.3(.13)	90.0(1.12)
	L	2.0	4.5(.23)	7.1(.88)	17.9(1.36)	7.7(.43)	.6(.03)	12.8(1.11)	49.4(5.95)
	M	2.1	3.0(.41)	4.9(.57)	--- ---	6.1(.58)	13.4(.48)	22.6(1.03)	50.0(2.51)
	N	5.7	15.6(.61)	1.8(.29)	4.2(.93)	20.5(1.30)	30.4(1.11)	7.1(.72)	20.3(1.92)
	W	25.0	.1(.05)	.5(.26)	.3(.05)	1.5(.10)	11.6(.76)	28.3(1.12)	57.9(1.67)
MACON	A	2.2	2.8(1.65)	4.2(2.21)	--- ---	11.3(2.17)	38.7(2.63)	28.2(2.35)	14.8(.24)
	B	72.5	.1(.17)	.1(.13)	1.5(1.25)	.4(.18)	2.5(.51)	3.7(.36)	91.6(1.14)
	M	10.8	13.3(1.82)	25.0(2.91)	1.0(.28)	8.8(.83)	18.6(.66)	18.7(.85)	14.6(.73)
	W	14.5	--- ---	--- ---	--- ---	--- ---	4.5(.30)	11.7(.46)	83.8(2.42)
MACOUPIN	A	8.6	4.1(2.41)	--- ---	.9(.39)	10.6(2.04)	12.5(.85)	23.1(1.93)	48.8(.78)
	D	42.6	.5(.16)	2.3(.64)	1.1(.52)	4.2(.47)	7.9(.72)	84.1(1.28)	--- ---
	N	20.0	33.4(1.30)	--- ---	1.6(.36)	20.6(1.30)	20.3(.74)	8.7(.88)	15.4(1.45)
	P	28.8	31.8(1.82)	1.0(.13)	13.0(.47)	12.0(.67)	21.4(.92)	11.7(5.32)	9.2(2.56)

Table 5. — Continued

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management						
			< 70	70-85	85-100	100-115	115-130	130-145	> 145
MADISON	A	9.0	--- ---	--- ---	.6(.26)	15.5(2.98)	7.7(.52)	22.5(1.88)	53.8(.86)
	D	12.4	.7(.23)	.8(.22)	3.3(1.57)	51.6(5.74)	16.8(1.54)	26.8(.41)	--- ---
	E	15.6	.7(.17)	5.3(.45)	8.0(1.03)	60.2(3.01)	15.5(.35)	10.4(.96)	--- ---
	H	1.9	--- ---	--- ---	19.4(.92)	11.3(1.19)	11.9(1.03)	3.8(.24)	53.8(1.65)
	L	8.8	18.3(.94)	1.6(.20)	12.5(.95)	29.3(1.65)	23.0(1.06)	4.1(.36)	11.2(1.35)
	N	4.7	36.0(1.41)	--- ---	10.0(2.22)	15.8(1.00)	12.0(.44)	8.8(.89)	17.5(1.65)
	O	11.9	17.9(1.47)	--- ---	13.0(.74)	32.0(1.08)	25.3(.86)	7.8(1.26)	3.9(3.54)
	P	23.3	17.6(1.01)	.2(.03)	17.4(.63)	16.6(.92)	23.8(1.02)	6.8(3.09)	17.7(4.92)
	Z	12.4	.3(.20)	2.4(1.26)	22.3(2.86)	14.0(.57)	17.0(.70)	37.6(1.19)	6.4(.78)
MARION	P	41.6	4.1(.98)	11.7(1.26)	1.8(.49)	6.8(.69)	75.5(1.09)	--- ---	--- ---
	P	2.0	15.0(.86)	12.4(1.57)	4.6(.17)	45.8(2.54)	22.2(.96)	--- ---	--- ---
	Q	56.4	20.3(1.48)	13.3(.83)	3.3(.75)	34.5(.84)	28.5(1.24)	--- ---	--- ---
MARSHALL	A	34.3	--- ---	.4(.21)	2.1(.91)	1.7(.33)	30.1(2.05)	10.2(.85)	55.6(.89)
	B	19.0	--- ---	4.2(5.25)	13.0(10.83)	3.6(1.64)	11.5(2.35)	5.8(.56)	61.9(.77)
	C	9.4	--- ---	--- ---	--- ---	6.2(2.58)	6.4(.67)	43.3(.96)	44.0(1.14)
	M	3.1	15.7(2.15)	7.2(.84)	11.1(3.08)	24.8(2.34)	22.9(.81)	18.3(.84)	--- ---
	N	31.3	30.3(1.18)	5.9(.94)	3.1(.69)	15.2(.96)	29.1(1.04)	10.2(1.03)	6.2(.58)
	Z	3.1	--- ---	--- ---	--- ---	--- ---	--- ---	93.4(2.96)	6.6(.80)
MASON	A	9.7	.3(.18)	1.4(.74)	4.1(1.78)	19.8(3.81)	21.1(1.44)	1.9(.16)	51.3(.82)
	L	2.3	13.8(.71)	23.7(2.93)	2.0(.15)	34.2(1.92)	13.8(.64)	12.5(1.09)	--- ---
	W	15.0	--- ---	.4(.21)	5.1(.80)	19.2(1.33)	15.2(1.00)	32.7(1.29)	27.5(.79)
	X	63.3	18.8(1.29)	10.8(1.05)	26.4(1.70)	34.1(1.12)	3.4(.36)	5.2(.34)	1.2(.26)
	Z	9.7	--- ---	--- ---	.3(.04)	.8(.05)	62.8(2.57)	35.2(1.11)	.8(.10)
MASSAC	M	2.3	--- ---	3.5(.41)	32.9(9.14)	44.1(4.16)	19.6(.70)	--- ---	--- ---
	P	57.9	3.9(.22)	13.0(1.65)	49.1(1.77)	16.5(.92)	17.5(.75)	--- ---	--- ---
	W	21.9	1.5(.68)	3.0(1.58)	10.8(1.69)	62.1(4.31)	22.2(1.46)	.4(.02)	--- ---
	Z	17.9	.2(.13)	.9(.47)	14.3(1.83)	42.0(1.71)	18.3(.75)	24.4(.77)	--- ---
MC DONOUGH	A	73.0	2.6(1.53)	2.1(1.11)	.9(.39)	2.7(.52)	7.0(.48)	7.4(.62)	77.3(1.24)
	D	6.5	--- ---	6.2(1.72)	5.6(2.67)	.2(.02)	11.6(1.06)	4.2(.06)	72.1(12.88)
	N	20.5	26.1(1.02)	--- ---	1.7(.38)	18.9(1.20)	32.7(1.20)	6.9(.70)	13.7(1.29)
MC HENRY	B	2.0	1.3(2.17)	19.4(24.25)	10.3(8.58)	16.1(7.32)	29.0(5.92)	23.2(2.25)	.6(.01)
	G	10.4	4.4(.72)	10.3(1.61)	8.3(1.01)	17.9(.46)	26.2(1.40)	21.0(1.96)	11.9(1.06)
	H	6.0	.4(.11)	3.0(.52)	6.6(.31)	1.9(.20)	17.4(1.51)	52.3(3.31)	18.4(.56)
	I	6.0	--- ---	--- ---	6.2(1.82)	--- ---	1.3(.13)	56.9(1.67)	35.6(.78)
	J	3.8	--- ---	7.4(7.40)	29.1(4.55)	1.7(.35)	8.4(.27)	23.1(.70)	30.4(1.30)
	M	7.9	1.8(.25)	--- ---	--- ---	4.8(.45)	37.0(1.32)	26.5(1.21)	29.9(1.50)
	S	11.2	11.1(1.11)	12.6(1.14)	12.3(1.21)	14.8(1.20)	22.8(1.03)	22.4(.73)	4.1(1.21)
	T	13.8	3.7(1.61)	33.8(1.52)	6.3(.90)	8.3(.24)	27.0(2.37)	10.5(1.27)	10.4(.71)
	U	13.9	3.4(1.79)	24.8(1.62)	3.8(.90)	8.6(.78)	30.6(.91)	12.1(.76)	16.8(.92)
	V	3.6	.7(.25)	18.0(1.02)	8.5(.41)	7.8(.63)	40.3(1.78)	23.0(1.25)	1.8(.32)
	W	21.6	1.8(.82)	1.2(.63)	4.1(.64)	3.9(.27)	14.2(.93)	48.1(1.90)	26.7(.77)
MC LEAN	A	21.0	--- ---	--- ---	3.1(1.35)	.3(.06)	12.2(.83)	7.4(.62)	77.0(1.24)
	B	22.8	--- ---	--- ---	.8(.67)	.2(.09)	6.0(1.22)	9.5(.92)	83.6(1.04)
	I	24.4	.2(.25)	1.7(1.42)	7.0(2.06)	3.0(.64)	3.6(.35)	22.0(.65)	62.5(1.38)
	J	10.3	--- ---	--- ---	--- ---	1.3(.26)	26.7(.85)	20.3(.62)	51.8(2.22)
	M	6.6	--- ---	--- ---	1.2(.33)	1.8(.17)	10.0(.36)	35.7(1.63)	51.2(2.57)
	N	4.3	6.4(.25)	8.6(1.37)	2.1(.47)	29.7(1.88)	28.7(1.05)	12.8(1.29)	11.6(1.09)
	W	10.4	.5(.23)	--- ---	.3(.05)	3.8(.26)	12.8(.84)	16.5(.65)	66.1(1.91)
MENARD	A	38.0	--- ---	1.2(.63)	1.8(.78)	3.1(.60)	11.3(.77)	11.2(.93)	71.4(1.15)
	L	13.3	28.3(1.46)	16.6(2.05)	6.0(.45)	6.9(.39)	28.9(1.33)	4.2(.37)	9.1(1.10)
	N	9.5	14.5(.57)	26.7(4.24)	--- ---	4.7(.30)	37.1(1.35)	7.9(.80)	9.1(.86)
	W	20.3	4.7(2.14)	3.7(1.95)	1.8(.28)	9.3(.65)	13.4(.88)	28.0(1.11)	39.1(1.13)
	X	9.6	13.5(.92)	36.7(3.56)	5.9(.38)	22.6(.74)	15.0(1.60)	4.7(.31)	1.5(.33)
	Z	9.3	.4(.27)	--- ---	--- ---	6.1(.25)	1.3(.05)	91.6(2.90)	.6(.07)
MERCER	A	51.0	1.9(1.12)	1.0(.53)	6.5(2.83)	3.5(.67)	25.8(1.76)	11.8(.98)	49.5(.80)
	L	26.5	6.6(.34)	15.9(1.96)	8.0(.61)	16.4(.92)	20.7(.95)	19.5(1.70)	13.1(1.58)
	W	6.8	13.6(6.18)	9.7(5.10)	24.8(3.88)	2.7(.19)	--- ---	46.6(1.84)	2.7(.08)
	X	2.2	28.8(1.97)	41.9(4.07)	29.4(1.90)	--- ---	--- ---	--- ---	--- ---
	Z	13.6	1.1(.73)	1.4(.74)	5.5(.71)	23.6(.96)	1.0(.04)	37.5(1.19)	29.8(3.63)
MONROE	E	4.8	8.0(1.90)	21.6(1.82)	22.3(2.86)	6.1(.31)	40.7(.93)	.9(.08)	.4(.24)
	O	31.6	2.9(.24)	9.0(2.31)	32.7(1.86)	23.8(.81)	24.9(.84)	5.4(.87)	1.3(1.18)
	P	34.9	19.7(1.13)	8.6(1.09)	24.1(.87)	17.0(.94)	29.5(1.27)	.9(.41)	.2(.06)
	Z	28.7	.7(.47)	.1(.05)	17.5(2.24)	17.4(.71)	54.2(2.23)	9.1(.29)	1.0(.12)
MONTGOMERY	A	1.6	--- ---	--- ---	--- ---	--- ---	--- ---	42.6(3.55)	57.4(.92)
	D	33.0	--- ---	2.2(.61)	1.0(.48)	14.3(1.59)	7.0(.64)	75.5(1.15)	--- ---
	E	28.7	7.3(1.74)	18.2(1.53)	4.8(.62)	19.7(.99)	29.8(.68)	14.7(1.36)	5.6(3.29)
	P	27.0	33.9(1.94)	.4(.05)	10.0(.36)	10.2(.57)	28.3(1.21)	.6(.27)	16.6(4.61)
	Q	9.7	39.7(2.90)	3.2(.20)	8.8(2.00)	7.1(.17)	26.2(1.14)	4.0(6.67)	11.1(10.09)
MORGAN	A	55.8	1.7(1.00)	4.4(2.32)	1.5(.65)	7.0(1.35)	10.0(.68)	5.6(.47)	69.8(1.12)
	L	4.3	24.8(1.28)	31.5(3.89)	6.1(.46)	9.6(.54)	13.4(.62)	14.6(1.27)	--- ---
	N	35.7	21.7(.85)	19.1(3.03)	6.0(1.33)	7.5(.47)	27.1(.99)	5.3(.54)	13.3(1.25)
	W	2.3	--- ---	--- ---	--- ---	1.8(.13)	36.1(2.37)	60.9(2.41)	1.2(.03)
	Z	2.0	--- ---	--- ---	--- ---	--- ---	--- ---	100.0(3.16)	--- ---

Table 5. — Continued

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management < 70	70-85	85-100	100-115	115-130	130-145	> 145
MOULTRIE	B	76.9	--- ---	1.4(1.75)	.4(.33)	1.7(.77)	1.6(.33)	6.8(.55)	88.0(1.10)
	M	23.1	2.6(.36)	12.2(1.42)	.6(.17)	4.3(.41)	16.5(.59)	29.0(1.32)	34.8(1.75)
OGLE	A	30.2	1.2(.71)	3.0(1.58)	9.4(4.09)	10.5(2.02)	17.1(1.16)	16.0(1.33)	42.8(.69)
	B	8.2	3.2(5.33)	5.1(6.38)	2.3(1.92)	15.6(7.09)	21.5(4.39)	22.2(2.16)	30.1(.38)
	G	1.6	23.8(3.90)	8.6(1.34)	6.0(.73)	24.5(.63)	11.9(.64)	19.9(1.86)	5.3(.47)
	H	1.7	17.7(5.06)	--- ---	18.4(.87)	51.9(5.46)	--- ---	8.9(.56)	3.2(.10)
	I	16.2	1.8(2.25)	--- ---	.9(.26)	7.7(1.64)	7.7(.74)	32.3(.95)	49.7(1.09)
	L	13.1	14.2(.73)	10.6(1.31)	15.6(1.18)	18.0(1.01)	16.9(.78)	15.0(1.30)	9.8(1.18)
	M	3.3	1.0(.14)	.6(.07)	8.0(2.22)	1.6(.15)	44.7(1.59)	15.4(.70)	28.6(1.44)
	T	3.3	1.9(.83)	5.8(.26)	19.5(2.79)	17.6(.52)	39.6(3.47)	5.4(.65)	10.2(.69)
	W	17.5	6.9(3.14)	1.8(.95)	1.1(.17)	7.8(.54)	5.6(.37)	44.1(1.74)	32.7(.95)
	Y	5.0	9.2(.41)	12.2(1.03)	13.2(1.02)	21.7(1.53)	21.7(1.02)	19.8(2.79)	2.1(.20)
PEORIA	A	27.8	.1(.06)	1.1(.58)	.6(.26)	5.5(1.06)	22.9(1.56)	10.7(.89)	59.1(.95)
	N	64.9	21.5(.84)	14.2(2.25)	4.2(.93)	14.1(.89)	29.5(1.08)	8.5(.86)	8.0(.75)
	W	2.0	--- ---	--- ---	--- ---	--- ---	--- ---	--- ---	100.0(2.89)
	Z	5.3	--- ---	1.0(.53)	1.5(.19)	88.8(3.62)	4.6(.19)	4.1(.13)	--- ---
PERRY	F	30.6	.3(.07)	7.2(.77)	2.0(.54)	5.7(.58)	83.9(1.21)	1.0(.34)	--- ---
	P	9.4	19.4(1.11)	6.9(.87)	21.7(.78)	33.5(1.86)	18.5(.79)	--- ---	--- ---
	Q	58.6	12.5(.91)	15.9(.99)	8.6(1.95)	53.6(1.30)	9.4(.41)	--- ---	--- ---
	W	1.4	--- ---	--- ---	--- ---	94.1(6.53)	5.9(.39)	--- ---	--- ---
PIATT	B	84.7	--- ---	.5(.63)	.6(.50)	1.2( )	2.1(.43)	9.8(.95)	85.8(1.07)
	M	12.5	3.7(.51)	14.1(1.64)	1.9(.53)	16.0(1.51)	28.7(1.02)	34.1(1.56)	1.6(.08)
	W	2.8	--- ---	--- ---	--- ---	--- ---	--- ---	--- ---	100.0(2.89)
PIKE	A	12.0	--- ---	--- ---	--- ---	6.3(1.21)	27.5(1.87)	21.3(1.78)	44.9(.72)
	L	44.3	3.6(.19)	20.9(2.58)	22.6(1.71)	17.8(1.00)	25.9(1.19)	8.2(.71)	1.0(.12)
	N	24.1	8.8(.34)	2.8(.44)	12.1(2.69)	34.5(2.18)	27.6(1.01)	8.3(.84)	5.9(.56)
	Z	19.6	--- ---	.4(.21)	--- ---	8.1(.33)	7.8(.32)	68.5(2.17)	15.2(1.85)
POPE	P	21.1	15.2(.87)	7.5(.95)	47.8(1.73)	18.2(1.01)	8.4(.36)	2.8(1.27)	--- ---
	R	65.9	32.0(.88)	50.8(1.51)	10.7(.74)	2.2(.46)	4.3(.41)	.1(1.00)	--- ---
	W	4.7	6.0(2.73)	.7(.37)	31.1(4.86)	38.1(2.65)	21.5(1.41)	2.6(.10)	--- ---
	Z	8.3	--- ---	.6(.32)	4.1(.53)	15.9(.65)	22.6(.93)	56.8(1.80)	--- ---
PULASKI	O	5.5	2.0(.16)	--- ---	27.4(1.56)	35.3(1.20)	35.3(1.20)	--- ---	--- ---
	P	51.3	--- ---	9.2(1.16)	35.5(1.28)	31.1(1.73)	24.2(1.04)	--- ---	--- ---
	W	29.1	.2(.09)	1.3(.68)	23.2(3.63)	59.3(4.12)	14.5(.95)	1.5(.06)	--- ---
	Z	14.2	.5(.32)	--- ---	28.6(3.67)	47.1(1.92)	14.4(.59)	9.5(.30)	--- ---
PUTNAM	A	38.1	.1(.06)	1.3(.68)	.1(.04)	2.1(.40)	11.7(.80)	8.6(.72)	76.1(1.22)
	B	1.8	--- ---	--- ---	--- ---	--- ---	14.6(2.98)	6.6(.64)	78.8(.98)
	G	9.2	2.8(.46)	4.3(.67)	8.8(1.07)	33.6(.87)	16.2(.87)	4.8(.45)	29.5(2.63)
	L	3.4	66.3(3.42)	--- ---	--- ---	3.1(.17)	13.2(.61)	17.4(1.51)	--- ---
	M	3.7	12.3(1.68)	3.2(.37)	4.2(1.17)	28.6(2.70)	32.8(1.17)	15.3(.70)	3.6(.18)
	N	14.6	19.8(.77)	8.4(1.33)	7.1(1.58)	12.8(.81)	28.9(1.05)	18.2(1.84)	4.8(.45)
	V	5.8	14.2(5.07)	28.1(1.60)	22.6(1.10)	8.4(.68)	6.6(.29)	13.8(.75)	6.4(1.14)
	X	13.4	17.2(1.18)	14.8(1.44)	22.1(1.43)	17.0(.56)	3.7(.39)	3.7(.25)	21.6(4.70)
	Z	10.0	10.3(6.87)	1.7(.89)	.7(.09)	.5(.02)	25.4(1.04)	54.3(1.72)	7.1(.87)
RANDOLPH	E	10.1	3.2(.76)	7.5(.63)	10.6(1.36)	12.3(.62)	62.8(1.44)	--- ---	3.5(2.06)
	F	2.0	--- ---	12.3(1.32)	21.3(5.76)	14.2(1.45)	52.3(.75)	--- ---	--- ---
	O	20.8	10.7(.88)	2.0(.51)	16.0(.91)	40.4(1.37)	29.9(1.01)	1.0(.16)	--- ---
	P	30.6	10.5(.60)	6.2(.78)	31.7(1.14)	23.9(1.33)	27.6(1.18)	.1(.05)	--- ---
	Q	20.2	9.4(.69)	27.6(1.73)	8.8(2.00)	42.2(1.02)	11.9(.52)	--- ---	--- ---
	Z	16.2	3.0(2.00)	5.1(2.68)	17.3(2.22)	24.3(.99)	34.5(1.41)	15.8(.50)	--- ---
RICHLAND	P	46.4	4.3(1.02)	10.5(1.13)	1.6(.43)	10.9(1.11)	71.0(1.02)	.9(.31)	.7(1.00)
	Q	48.4	10.1(.74)	13.4(.84)	2.4(.55)	44.8(1.08)	29.3(1.27)	--- ---	--- ---
	Z	5.3	1.4(.93)	7.2(3.79)	1.8(.23)	41.8(1.71)	47.9(1.96)	--- ---	--- ---
ROCK ISLAND	A	24.4	--- ---	9.8(5.16)	11.9(5.17)	2.7(.52)	20.8(1.41)	11.6(.97)	43.2(.69)
	L	42.6	18.8(.97)	16.4(2.02)	11.2(.85)	10.9(.61)	21.6(1.00)	14.6(1.27)	6.5(.78)
	W	15.3	.5(.23)	1.5(.79)	1.5(.23)	27.3(1.90)	10.3(.68)	28.2(1.11)	30.8(.89)
	X	8.8	--- ---	2.2(.21)	8.8(.57)	74.2(2.43)	.4(.04)	14.4(.95)	--- ---
	Z	8.8	--- ---	--- ---	3.7(.47)	10.3(.42)	--- ---	33.3(1.05)	52.7(6.43)
ST. CLAIR	A	3.5	--- ---	--- ---	1.1(.48)	23.7(4.56)	23.7(1.61)	15.6(1.30)	35.9(.58)
	D	9.9	3.3(1.06)	14.7(4.08)	3.6(1.71)	21.2(2.36)	8.0(.73)	38.9(.59)	10.3(1.84)
	E	6.2	7.0(1.67)	--- ---	56.4(7.23)	11.4(.57)	22.2(.51)	2.1(.19)	.8(.47)
	O	22.6	9.8(.80)	.6(.15)	17.0(.97)	32.5(1.10)	23.9(.81)	10.5(1.69)	5.6(5.09)
	P	37.3	6.3(.36)	2.6(.33)	24.4(.88)	19.5(1.08)	32.8(1.41)	4.3(1.95)	10.0(2.78)
	Q	2.1	--- ---	--- ---	25.9(5.89)	18.5(.45)	38.9(1.69)	--- ---	16.7(15.18)
	W	4.1	10.0(4.55)	1.3(.68)	16.1(2.52)	28.0(1.94)	44.7(2.94)	--- ---	--- ---
	Z	14.3	2.7(1.80)	1.8(.95)	16.1(2.06)	7.4(.30)	65.8(2.10)	6.1(.19)	.3(.04)
SALINE	Q	40.7	3.3(.24)	26.6(1.66)	2.7(.61)	45.6(1.10)	21.7(.94)	--- ---	--- ---
	R	13.6	8.6(.24)	35.3(1.05)	13.6(.94)	2.5(.52)	40.0(3.85)	--- ---	--- ---
	W	45.8	.8(.36)	6.6(3.47)	7.4(1.16)	31.8(2.21)	25.4(1.67)	28.0(1.11)	--- ---
SANGAMON	A	70.7	1.1(.65)	.3(.16)	.6(.26)	4.7(.90)	4.7(.32)	9.4(.78)	79.1(1.27)
	N	19.2	23.1(.90)	1.1(.17)	9.0(2.00)	9.4(.59)	21.1(.77)	15.1(1.53)	21.2(2.00)
	Z	10.0	12.1(8.07)	14.6(7.68)	4.5(.58)	5.3(.22)	3.0(.12)	44.8(1.42)	15.7(1.91)

Table 5. — Continued

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management						
			< 70	70-85	85-100	100-115	115-130	130-145	> 145
SCHUYLER	A	2.7	--- ---	--- ---	14.4(6.26)	32.5(.86)	11.9(.81)	27.5(2.29)	13.8(.22)
	D	5.2	--- ---	--- ---	--- ---	28.4(3.16)	22.5(2.06)	49.0(.75)	--- ---
	L	19.0	13.3(.69)	2.0(.25)	9.7(.73)	33.3(1.87)	24.1(1.11)	14.7(1.28)	2.9(.35)
	N	62.2	28.7(1.12)	2.4(.38)	2.2(.49)	21.3(1.35)	28.0(1.02)	9.8(.99)	7.6(.72)
	Z	10.8	--- ---	--- ---	--- ---	34.4(1.40)	19.7(.81)	28.4(.90)	17.6(2.15)
SCOTT	A	16.8	2.2(1.29)	1.3(.68)	3.9(1.70)	13.4(2.58)	16.3(1.11)	7.4(.62)	55.6(.89)
	L	16.3	29.1(1.50)	11.9(1.47)	3.6(.27)	10.8(.61)	21.3(.98)	8.4(.73)	15.0(1.81)
	N	30.0	25.0(.98)	4.0(.63)	12.9(2.87)	13.7(.87)	22.5(.82)	5.2(.53)	16.7(1.58)
	W	9.4	12.9(5.86)	4.9(2.58)	--- ---	--- ---	4.1(.27)	22.6(.89)	55.5(1.60)
	X	13.9	--- ---	--- ---	35.0(2.26)	43.8(1.44)	14.3(1.52)	--- ---	6.9(1.50)
	Z	13.6	--- ---	.7(.37)	--- ---	41.7(1.70)	8.2(.34)	25.9(.82)	23.6(2.88)
SHELBY	B	19.4	--- ---	2.0(2.50)	.9(.75)	--- ---	6.6(1.35)	26.7(2.59)	63.8(.80)
	D	6.3	--- ---	.3(.08)	--- ---	--- ---	49.5(4.54)	50.2(.77)	--- ---
	E	24.4	2.0(.48)	1.5(.13)	3.6(.46)	6.5(.33)	70.1(1.60)	16.4(1.52)	--- ---
	F	6.5	15.4(3.67)	4.2(.45)	3.5(.95)	17.4(1.78)	53.1(.77)	.6(.21)	5.8(8.29)
	M	9.6	26.0(3.56)	5.2(.60)	11.0(3.06)	7.6(.72)	22.3(.79)	6.5(.30)	21.4(1.08)
	P	14.4	21.4(1.22)	1.2(.15)	9.5(.34)	15.2(.84)	20.2(.87)	4.2(1.91)	28.4(7.89)
	Q	13.0	18.8(1.37)	14.7(.92)	3.2(.73)	42.1(1.02)	19.7(.86)	--- ---	1.4(1.27)
	W	3.2	--- ---	--- ---	1.3(.20)	29.7(2.06)	43.2(2.84)	22.6(.89)	3.2(.09)
	Z	3.3	--- ---	--- ---	--- ---	15.2(.62)	1.3(.05)	12.7(.40)	70.9(8.65)
STARK	A	41.6	.4(.24)	.3(.16)	1.4(.61)	2.7(.52)	24.5(1.67)	6.4(.53)	64.3(1.03)
	D	2.1	--- ---	8.5(2.36)	3.3(1.57)	4.6(.51)	20.9(1.92)	3.9(.06)	58.8(10.50)
	N	29.2	17.2(.67)	8.0(1.27)	.7(.16)	19.8(1.25)	25.1(.92)	14.9(1.51)	14.3(1.35)
	W	27.1	.5(.23)	--- ---	--- ---	4.5(.31)	14.8(.97)	11.5(.45)	68.7(1.99)
STEPHENSON	A	32.5	2.4(1.41)	1.8(.95)	7.2(3.13)	9.9(1.90)	13.7(.93)	20.8(1.73)	44.2(.71)
	L	13.3	16.0(.82)	1.4(.17)	.7(.05)	18.1(1.02)	38.2(1.76)	24.7(2.15)	.9(.11)
	T	4.4	--- ---	3.9(.18)	9.4(1.34)	29.2(.86)	41.2(3.61)	13.6(1.64)	2.6(.18)
	W	12.2	1.9(.86)	.5(.26)	--- ---	10.4(.72)	17.9(1.18)	25.6(1.01)	43.7(1.26)
	Y	37.6	19.9(.89)	4.3(.36)	12.1(.93)	20.9(1.47)	27.3(1.28)	6.6(.93)	8.9(.86)
TAZEWELL	A	50.2	--- ---	--- ---	.1(.04)	2.4(.46)	10.1(.69)	6.6(.55)	80.8(1.30)
	N	15.1	22.8(.89)	7.3(1.16)	2.4(.53)	29.0(1.84)	28.7(1.05)	8.9(.90)	.9(.08)
	W	2.8	--- ---	45.6(24.00)	--- ---	--- ---	--- ---	8.7(.34)	45.6(1.32)
	X	11.1	23.5(1.61)	8.7(.84)	22.9(1.48)	40.2(1.32)	.3(.03)	4.4(.29)	--- ---
	Z	20.8	3.2(2.13)	6.6(3.48)	3.1(.40)	6.4(.26)	10.8(.45)	55.2(1.75)	14.6(1.78)
UNION	O	17.8	21.5(1.76)	2.4(.62)	13.8(.78)	22.8(.77)	39.0(1.32)	.6(.10)	--- ---
	P	62.0	10.0(.57)	19.0(2.41)	50.6(1.83)	11.1(.62)	8.2(.35)	1.1(.50)	--- ---
	Z	20.2	--- ---	--- ---	4.8(.62)	6.4(.26)	50.3(2.06)	38.5(1.22)	--- ---
VERMILION	B	25.4	4.6(7.67)	.9(1.13)	.7(.58)	2.6(1.18)	6.7(1.37)	10.3(1.00)	74.3(.93)
	I	11.1	--- ---	--- ---	--- ---	7.8(1.66)	4.8(.46)	30.7(.90)	56.7(1.25)
	J	27.0	1.5(5.00)	2.7(2.70)	6.3(.98)	9.6(1.96)	40.3(1.29)	24.7(.75)	15.0(.64)
	K	2.8	--- ---	--- ---	.7(.06)	99.3(7.64)	--- ---	--- ---	--- ---
	M	11.5	13.8(1.89)	6.3(.73)	5.0(1.39)	19.3(1.82)	13.8(.49)	27.0(1.23)	14.9(.75)
	V	5.4	6.2(2.21)	5.1(.29)	9.6(.47)	27.7(2.23)	13.4(.59)	36.3(1.97)	1.7(.30)
	W	16.8	1.5(.68)	--- ---	.9(.14)	3.3(.23)	13.0(.86)	16.7(.66)	64.6(1.87)
WABASH	F	12.6	--- ---	8.9(.96)	2.6(.70)	10.9(1.11)	77.6(1.12)	--- ---	--- ---
	O	16.8	--- ---	4.2(1.08)	13.0(.74)	29.3(.99)	44.8(1.52)	8.6(1.39)	--- ---
	P	17.6	3.0(.17)	3.7(.47)	20.1(.73)	23.2(1.29)	37.0(1.59)	13.0(5.91)	--- ---
	Q	7.6	3.2(.23)	20.5(1.28)	--- ---	25.8(.62)	50.5(2.20)	--- ---	--- ---
	W	14.9	.4(.18)	1.6(.84)	13.2(2.06)	8.4(.58)	10.3(.68)	66.0(2.61)	--- ---
	X	5.0	--- ---	13.0(1.26)	8.8(.57)	48.5(1.59)	1.3(.14)	28.3(1.87)	--- ---
	Z	25.6	--- ---	.8(.42)	8.4(1.08)	27.5(1.12)	5.2(.21)	58.2(1.84)	--- ---
WARREN	A	77.3	3.1(1.82)	.5(.26)	.5(.22)	3.3(.63)	12.9(.88)	9.8(.82)	70.0(1.13)
	L	13.7	4.2(.22)	8.5(1.05)	4.5(.34)	15.8(.89)	13.9(.64)	22.1(1.92)	31.0(3.73)
	N	9.0	24.1(.94)	--- ---	2.6(.58)	19.1(1.21)	11.6(.42)	25.4(2.57)	17.2(1.62)
WASHINGTON	E	14.4	10.1(2.40)	58.4(4.91)	.1(.01)	1.3(.07)	17.2(.39)	12.6(1.17)	.3(.18)
	F	40.9	9.7(2.31)	16.3(1.75)	3.6(.97)	9.3(.95)	60.2(.87)	1.0(.34)	--- ---
	P	4.3	7.3(.42)	19.0(2.41)	10.8(.39)	28.9(1.61)	33.0(1.42)	1.0(.45)	--- ---
	Q	34.1	14.5(1.06)	15.1(.94)	4.8(1.09)	37.1(.90)	28.5(1.24)	--- ---	--- ---
	W	4.4	4.7(2.14)	.9(.47)	11.6(1.80)	51.9(3.60)	30.0(1.97)	.9(.04)	--- ---
	Z	1.9	--- ---	1.4(.74)	21.8(2.79)	--- ---	--- ---	76.8(2.43)	--- ---
WAYNE	F	28.1	2.7(.64)	3.9(.42)	1.9(.51)	20.6(2.10)	70.8(1.02)	--- ---	--- ---
	Q	51.6	11.9(.87)	13.0(.81)	3.2(.73)	52.5(1.27)	19.3(.84)	--- ---	--- ---
	W	8.5	--- ---	--- ---	3.1(.48)	68.6(4.76)	24.3(1.60)	4.0(.16)	--- ---
	Z	11.8	.5(.33)	1.6(.84)	.9(.12)	92.6(3.78)	4.4(.18)	--- ---	--- ---

Table 5. — Concluded

County	Soil Association Area	Percent of County	Productivity index classes - high levels of management						
			< 70	70-85	85-100	100-115	115-130	130-145	> 145
WHITE	O	6.2	.8(.07)	14.1(3.62)	6.1(.35)	18.7(.63)	56.6(1.92)	3.8(.61)	--- ---
	P	29.1	10.5(.60)	10.5(1.33)	23.7(.86)	16.0(.89)	37.5(1.61)	1.7(.77)	--- ---
	Q	21.8	13.1(.96)	22.3(1.39)	5.3(1.20)	38.0(.92)	21.3(.93)	--- ---	--- ---
	R	2.3	28.9(.79)	32.9(.98)	13.4(.92)	12.8(2.67)	12.1(1.16)	--- ---	--- ---
	W	17.3	.1(.05)	.7(.37)	3.4(.53)	25.8(1.79)	41.3(2.72)	28.7(1.13)	--- ---
	X	7.3	--- ---	2.1(.20)	10.3(.66)	41.8(1.37)	19.5(2.07)	24.5(1.62)	1.7(.37)
	Z	15.9	--- ---	4.7(2.47)	5.5(.71)	14.7(.60)	46.9(1.92)	28.1(.89)	--- ---
WHITESIDE	A	19.1	.5(.29)	12.5(6.58)	2.4(1.04)	4.8(.92)	23.6(1.61)	10.3(.86)	45.9(.74)
	L	14.0	4.5(.23)	11.5(1.42)	13.0(.98)	15.2(.85)	36.1(1.66)	9.9(.86)	9.8(1.18)
	W	42.2	.9(.41)	5.8(3.05)	4.8(.75)	22.1(1.53)	16.6(1.09)	30.4(1.20)	19.5(.56)
	X	5.3	1.7(.12)	6.9(.67)	17.8(1.15)	35.8(1.17)	26.0(2.77)	10.9(.72)	.9(.20)
	Z	19.4	.5(.33)	2.0(1.05)	9.5(1.22)	21.3(.87)	38.2(1.57)	20.1(.64)	8.4(1.02)
WILL	G	3.1	30.2(4.95)	6.6(1.03)	16.7(2.04)	15.7(.41)	27.9(1.49)	3.0(.28)	--- ---
	I	8.6	.4(.50)	7.3(6.08)	2.5(.74)	2.2(.47)	6.4(.62)	30.2(.87)	51.0(1.12)
	J	44.9	.6(2.00)	--- ---	.6(.09)	9.6(1.96)	47.1(1.50)	34.8(1.06)	7.2(.31)
	V	27.1	1.4(.50)	10.7(.61)	28.6(1.39)	7.5(.60)	31.1(1.38)	17.2(.93)	3.6(.64)
	W	3.1	--- ---	--- ---	16.1(2.52)	--- ---	21.4(1.41)	46.5(1.84)	16.1(.47)
	X	8.8	19.1(1.31)	2.4(.23)	12.2(.79)	8.4(.28)	42.2(4.49)	12.9(.85)	2.8(.61)
	Y	4.4	51.7(2.32)	23.3(1.97)	10.7(.82)	1.4(.10)	9.8(.45)	.7(.10)	2.3(.22)
WILLIAMSON	F	5.2	--- ---	.8(.09)	--- ---	5.5(.56)	93.7(1.35)	--- ---	--- ---
	P	17.9	32.2(1.84)	1.5(.19)	30.2(1.09)	18.0(1.00)	18.1(.78)	--- ---	--- ---
	Q	53.4	11.5(.84)	36.6(2.29)	3.9(.89)	31.5(.76)	16.5(.72)	--- ---	--- ---
	R	13.7	41.0(1.12)	17.9(.53)	25.7(1.77)	5.4(1.13)	10.0(.96)	--- ---	--- ---
	W	9.9	10.8(4.91)	10.4(5.47)	70.0(10.94)	1.5(.10)	--- ---	7.3(.29)	--- ---
WINNEBAGO	A	15.7	2.9(1.71)	.3(.16)	10.1(4.39)	17.6(3.38)	26.1(1.78)	7.3(.61)	35.7(.57)
	G	.9	--- ---	--- ---	11.1(1.35)	24.1(.62)	7.4(.40)	57.4(5.36)	--- ---
	H	16.7	3.3(.94)	9.0(1.55)	29.0(1.37)	6.1(.64)	10.5(.91)	1.3(.08)	40.7(1.25)
	L	2.6	--- ---	--- ---	19.6(1.48)	--- ---	--- ---	61.4(5.34)	19.0(2.29)
	T	18.0	6.7(2.91)	19.9(.90)	25.7(3.67)	25.2(.74)	5.4(.47)	11.1(1.34)	6.1(.41)
	W	37.1	.3(.14)	1.0(.53)	2.9(.45)	11.9(.83)	14.1(.93)	37.6(1.49)	32.3(.93)
	Y	9.1	30.2(1.35)	4.3(.36)	10.2(.78)	45.7(3.22)	7.6(.36)	--- ---	2.0(.19)
WOODFORD	A	39.9	.8(.47)	.5(.26)	2.3(1.00)	1.1(.21)	9.4(.64)	9.7(.81)	76.3(1.23)
	B	19.6	.4(.67)	.1(.13)	6.3(5.25)	.5(.23)	4.6(.94)	10.3(1.00)	77.9(.97)
	C	6.7	--- ---	--- ---	8.9(2.12)	.5(.21)	4.1(.43)	74.0(1.64)	12.5(.32)
	N	31.0	18.5(.72)	14.5(2.30)	.3(.07)	14.8(.94)	30.4(1.11)	11.4(1.15)	10.1(.95)
	X	2.8	2.6(.18)	20.8(2.02)	18.2(1.17)	32.5(1.07)	.6(.06)	21.4(1.42)	3.9(.85)

a particular soil association at the county level. County data by soil association (Table 5) are the most detailed information presented in this bulletin and, it is hoped, will be useful in evaluating soil productivity within soil associations at the subcounty level.

The high management PI's of all 26 soil associations were analyzed to identify soil factors associated with various PI categories. The soils of 22 Illinois soil associations had characteristics whereby the slope of the land and the depth of the topsoil were parameters that could be used to estimate the specific high management PI category of any soil association area from field observation (see Table 6). In four terrace and bottomland soil association areas soil texture, color, and drainage were the parameters that permitted an accurate estimation of the high management PI category for a specific soil area.

SUGGESTED RURAL LAND EVALUATION PROCEDURE

Hancock County, Illinois, is used to illustrate the procedure that could lead to more equitable and consistent rural land evaluation in the period before detailed soil survey reports become available for all counties. The average high management PI of all Hancock County soils is approximately the same as or slightly below the state average (Figs. 2 through 5).

Hancock County contains numerous soil series representative of Illinois soil associations A, D, L, N, and Z. Soil productivity distribution data for all Hancock County soil associations except Z are given in Table 5. Soil association area Z has limited areal extent in Hancock County and was not included in the 2 percent CNI sample. In cases in which productivity distribution data for county soil associations are missing, state soil association productivity distribution data (Tables 3 and 4) can be substituted to give insight into common soil quality variations within a soil association area.

The guidelines in Table 6 supply the information for evaluating PI's for each soil in Illinois. These guidelines were developed by analyzing the PI characteristics of all areally significant soil series found within the soil association or associations area represented by each guideline. Within a soil association, however, it is possible that the PI's of a few soil series of very limited distribution are not as accurately evaluated as the major and more widely distributed minor soil series. Each guideline does not necessarily contain all seven PI categories or all feasible combinations of percent slope, topsoil thickness, texture, soil color, and drainage class. Only the PI categories and soil properties characteristic of Illinois soil association soil series are included.

Table 6. — Field Guidelines for Estimating High Management Soil PI Categories for Soil Association Areas of Illinois[a]

Soil association areas[b]	PI category	Relevant characteristics	
		Slope (%)	*Inches of topsoil*
A, B, I	145–160	0–4	More than 7
	130–145	*a.* 0–4	Less than 7
		b. 4–12	More than 7
	115–130	*a.* 4–12	Less than 7
		b. 12–18	More than 7
	100–115	12–30	Less than 7
	85–100	>30	3–7
	<85	>30	Less than 3
C, D, H, J, L, M, N, U	130–150	0–4	More than 7
	115–130	*a.* 0–4	Less than 7
		b. 4–12	More than 7
	100–115	*a.* 4–12	Less than 7
		b. 12–18	More than 7
	85–100	12–30	3–7
	70–85	>30	3–7
	<70	>30	Less than 3
E, F, G, K, O, S, T	115–135	*a.* 0–4	Less than 7
		b. 0–12	More than 7
	100–115	*a.* 4–12	Less than 7
		b. 12–18	More than 7
	85–100	12–30	Less than 7
	70–85	>30	Less than 7
	<70	>30	Less than 7
P, Q, V	100–120	*a.* 0–4	Less than 7
		b. 0–12	More than 7
	85–100	*a.* 4–12	Less than 7
		b. 12–18	More than 7
	70–85	12–30	Less than 7
	<70	>30	Less than 7
R	85–100	*a.* 0–4	Less than 7
		b. 0–12	More than 7
	70–85	*a.* 4–12	Less than 7
		b. 12–18	More than 7
	<70	*a.* >18	Less than 7
		b. >2	Less than 3

Soil association areas	PI category	Relevant characteristics	
		Soil texture	*Surface soil color*
W	145–160	Soils with silty or loamy materials over medium textured materials	Dark
	130–145		Moderately dark
	115–130		Light
	130–145	Soils with more than 30 inches of medium textured soil material over sandy or clayey material	Dark-moderately dark
	115–130		Light
	100–115	Soils with less than 30 inches of medium textured soil material over sandy or clayey materials	Dark-moderately dark
	85–100		Light
X	100–120	Loamy topsoil	Dark
	85–100	Loamy topsoil	Light
	85–100	Sandy topsoil	Dark
	<70	Sandy topsoil	Light

Soil association areas	PI category	*Soil texture characteristics*
Y	100–120	More than 30 inches of medium textured material over limestone
	85–100	Between 12 to 30 inches of medium textured material over limestone
	<85	Less than 12 inches of medium textured material over limestone

Soil association areas	PI category	*Surface texture*	*Surface color*	*Drainage*
Z	145–160	Medium	Dark	Well
	130–145	Medium	Dark	Moderately well/somewhat poorly
	115–130	Medium	Light	Moderately well/somewhat poorly
	100–115	Medium	Light	Poorly
	85–100	*a.* Fine	Light	Poorly
		b. Coarse (sandy)	Dark	Well
	70–85	*a.* Fine	Light	Very poorly
		b. Coarse (sandy)	Light	Very well
	<70	*a.* Very fine	Light	Very poorly
		b. Very coarse	Light	Excessively well

[a] In general, a surface soil color of black, very dark brown, or extremely dark grayish-brown is identified in the guidelines as dark; very dark grayish-brown and very dark gray soils are considered moderately dark; all other soil colors are considered light. Fine-textured soils identified in the guidelines are clay, sandy clay, and silty clay; coarse-textured soils are the sands and loamy sands; all other textural classes are considered medium or moderate.

[b] Soil association area C soils that have heavy clay subsoils should be evaluated one PI category lower than indicated in the table. Soil association areas D and E have a few soils of limited areal extent that have severe subsoil problems (Huey and Piasa, for example); such soils should be assigned productivity indexes of less than 85, even in areas with low slope and thick topsoil.

A few areas in association F have soils with very severe subsoil problems (Huey, for example). These soils should be assigned a PI of less than 85 even if they have thick topsoils and low slope. Small areas of soils in associations G and S (Rodman and Stonington, for example) have gravel within a few inches of the surface; these gravelly soils should be assigned PI's of less than 85, regardless of slope and topsoil thickness.

Association area V soils that have clay subsoils should be evaluated at one PI category lower than indicated in the table.

Light-colored soils in associations T and U should be rated 10 PI units less than that indicated in the guidelines.

Figure 8. Cross section of Hancock County soil association map.

Figure 8 shows a cross section of an area on the published soil association map of Hancock County (*6*). An assessor, after having trained with a soil scientist, should be able to evaluate this area effectively if equipped with the county soil association high management PI frequency distribution data and soil association field guidelines for PI categories. Suppose, for example, an assessor evaluates the soil quality of an area in soil association L, Fayette-Rozetta-Hickory Association (*6*). The PI category for that area could possibly be any one of the seven indicated in Table 5; if the approximate slope and topsoil thickness of the soil under analysis are known, however, the specific PI category for the area can be identified. An association L soil area with a slope of 4 percent and 5 inches of topsoil most typically will have a soil PI between 115 and 130 (an average of 122.5), according to the Table 6 guidelines. Another assessor evaluating the same Hancock County soil or evaluating another soil association L area with similar topsoil thickness and slope should estimate the same PI category if he follows the suggested procedures.

Other soil associations in Hancock County can be evaluated the same way. In the Hancock County example in Figure 8, soil association areas D, A, and N are encountered from west to east. The soils of these associations developed from good to excellent parent material and have not developed subsoil problems that reduce soil productivity. Variations in PI's in these soil areas, as in association L, can be related to differences in slope and topsoil thickness. The pattern of PI distribution varies among associations D, A, and N, however; for example, the soils of association areas A and D exhibit a dominance of thicker topsoils and less slope and thus are more productive than those of association N. Nevertheless, soils in association area N that have slopes and topsoil thicknesses comparable to those in associations A and D have PI's comparable to those of soils in associations A and D. State and county patterns of PI distributions for associations A, D, and N suitably indicate to an assessor the distributional characteristics of soil productivity within the general association area that can be used to evaluate (and adjust) an assessor's preliminary land assessment.

Productivity evaluation of soil association area Z at the eastern edge of the Hancock County example area illustrates two points. First, association area Z was not identified by CNI sample data, which means that productivity distribution patterns for association Z specific to Hancock County are unavailable. Under these circumstances, the state PI distributions for soil association Z (Tables 3 and 4) should be used.

Secondly, soil association Z, Sawmill-Lawson-Wakeland Association (*6*), in the Hancock County cross section will be more difficult to evaluate than other associations. After training and some experience, an assessor will find that he needs to observe soil color, soil texture, and soil drainage rather than slope and topsoil thickness, since this soil association is composed exclusively of alluvial soils. For example, a high management PI between 85 and 100 is expected if the observed association Z soil in Hancock County is well drained, light in texture (loamy sand), and dark colored (Table 6).

Tract PI's can be translated into average dollar sale value per acre of rural land by plotting recent rural land value sales against the corresponding PI average of the land sold (*3*). Figure 9 illustrates this suggested approach. In a hypothetical example, the sale values of 89 tracts of land were plotted against the PI's for each tract.

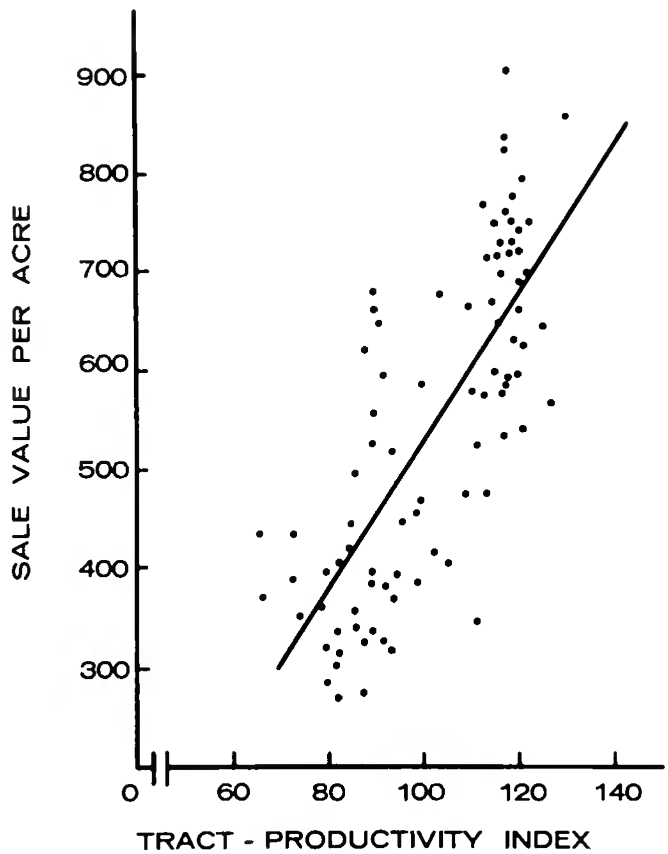


Figure 9. Hypothetical example of relationship between sale value and tract PI.

Through statistical analysis a regression line was established for these data that gives the average sale value of rural land per acre corresponding to a specific productivity index. For example, a soil area with an overall high management PI of 100 will, on the average, have a sale value of approximately $550. With information similar to that presented in Figure 9, assessors can relatively easily convert raw PI's to actual land sale values.

DISCUSSION

Rural land can be evaluated consistently and equitably when the area under evaluation is analyzed by means of a single system of soil productivity data in conjunction with soil distribution data of comparable quality. The CNI soil distribution data combined within a high management soil productivity framework are now available for each county of the state. As in the Hancock County example, these data can be used to help estimate the value of the soil land resources of a specific area in any part of Illinois. The resulting estimation of rural land values should thus be as fair and accurate as possible regardless of the area evaluated, even for counties without recent soil survey reports (provided the assessors apply the guidelines and data equally).

Other states might want to develop similar data and evaluation procedures if they have access to unprocessed CNI data, comparable county soil association maps, and a measurement of soil productivity that can be adopted for the purpose of land evaluation. The rural land evaluation procedures set forth in the Hancock County example can be used without supplementary data; however, all available soils data should be used, which will improve the quality of the final land assessment in selected areas. If detailed and accurate soil maps are available, a similar procedure can be followed except that the PI's for all tracts are determined directly: Soil mapping units are measured and PI's assigned; average PI's for the tracts are then determined as they were determined here for CNI quarter-section tracts. A similar relationship between sale value per acre and PI must be determined before assigning value.

The use of additional detailed soils data can assure — with a very high level of confidence — that the correct PI category is associated with a specific soil tract; it can also determine a PI with more precision than the PI categories presented in this study. Additional detailed soils data would sharpen the focus of land evaluation, but using the data and procedures developed in this publication will itself help improve the assessment of rural land.

According to correspondence with Mr. Floyd Smith, Farm Land Appraiser, Department of Local Government Affairs, State of Illinois, Springfield, the State of Illinois officials primarily responsible for rural land evaluation have indicated three important needs:

1. To develop soil distribution data that are comparable in quality with one another and are associated with soil productivity characteristics.
2. To develop guidelines for using soil distribution and productivity data effectively to evaluate rural land.
3. To educate persons associated with land assessment to use soils data and guidelines that promise to alleviate the problems of assessment inequities.

For the first time, comparable data are now available to carry out these functions for an entire state.

It is the opinion of the authors and the State of Illinois officials involved in this project that the consistent use of data and guidelines developed in this study have a potential for improving a very specific land assessment problem. In addition, these data provide soil geography information of general interest to farmers, students of agriculture, merchants and other citizens who support rural activities, and academicians. The pedagogic function of the data, however, may be secondary to the purpose of helping alleviate land assessment inequities.

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