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Volume III-D
Special Study Report

Social Aspects of Power Plant Siting

Sue Johnson and Esther Weil
University of Kentucky

May 15, 1977

PHASE I

OHIO RIVER BASIN ENERGY STUDY

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PREFACE

This Special Study had somewhat global aims at its inception, the major goal of which was to try to assess, using secondary data, what kinds of environmental orientations were likely to be present in counties where power plants, both nuclear and coal-fired, are planned or projected. It is a qualitative analysis guided by a theoretical paradigm of environmental orientations which seeks to describe, at the county level, what we speculate the likely impact of a power plant to be. We have also tried to relate what we think the prevailing environmental orientation of a county to likely reaction of the county's residents to this kind of developmental change.

The entire analysis is carried out as if all events were happening in the present or near future; no attempt has been made to speculate as to a county's destiny between now and the year 2000. This limitation is an important one, yet, when we are forced to rely on existing data and literature in the general area of social aspects of the siting of large facilities in communities, it seems a reasonable method of provoking the reader to at least think a bit about what the social impact of a power plant could actually be.

This report contains a description of the theoretical paradigm we have followed; a series of hypotheses drawn from existing literature as well as some of our own formulations, and these hypotheses are classified by environmental orientation; and then, demographic profiles of counties where power plants are planned or projected are presented. From this basis, we then speculate as to what we think the dominant environmental orientation(s) to be and what we think the likely general impact of siting a power plant in a county to be, given the information at hand. The demographic profiles are given in greater detail than the impact assessment so that the reader may draw his/her own conclusions concerning likely impact. Our goal, in the brief impact assessments, is to present what we consider a plausible picture of possible impacts of and the reaction of the host county to power plant development; we make no claims for presenting an accurate picture for only actual fieldwork and the future can tell us that.

This report reflects solely the views and conclusions of the authors. These do not necessarily reflect the views of our sponsoring agency, the U.S. Environmental Protection Agency, nor that of any other agency of the U.S. Government.

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1. INTRODUCTION

The framework for analysis of likely impacts and reactions to power-plant siting in the ORBES region is derived from a paradigm of environmental orientations developed by Erik Cohen which is shown in Table III-D-1, (1, p. 51). Each sub-orientation or "mode" has mappable referents and a spatial analysis of the Ohio River Basin and the varying environmental orientations within the region is made utilizing secondary information. The maps are found in Appendix A. Mapping of the referents associated with environmental orientations has the major virtue of being a clear mode of presentation.

We have supplemented our analysis with a thorough review of the literature on the impact of large installations on communities and from this survey have collected a large number of hypotheses and generalizations pertinent to each orientation. It is assumed that knowledge of prevailing orientations in a county will give us a basis from which to predict likely impacts of power plant siting and community reaction to these impacts. Conflicts between different orientations are also likely, some more severe than others. Where we think conflicts possible, this too is discussed.

We have then produced demographic profiles of counties which have been chosen as likely sites for power plant development and tried to create, utilizing our orientational framework, knowledge of the literature, and specific knowledge of the county, a plausible picture of impact. This study makes no claim for accuracy, for only the future can tell us if our predictions were correct; rather likelihood and plausibility of our impact analysis has been the goal.

Table III-D-1

THE PARADIGM FOR SOCIAL ECOLOGICAL ANALYSIS

Orientation to Environment	Instrumental		Territorial		Sentimental		Symbolic	
Purpose of Orientation	Resources		Control		Attachment		Significance	
Modes of Orientation	Technological Feasibility	Economic Benefit	Strategic Dominance	Political Organization	Primordial Belonging	Social Prestige	Aesthetic Enjoyment	Moral Religious Meaning
Regulative Mechanisms and Processes	Knowledge	Market Exchange	Tactics Strategy	Decision-making	Identification	Social Evaluation	Taste Formation	Stratification
Types of Environmental Organization	Exploitative Potentialities	Land and Property Values	Tactical Strategic Value	Territorial Rights and Boundaries	Extent of Belongingness	Prestige Area	Aesthetic Value	Sacred and Secular Places
Institutions	Techniques and Technology	Economic	Military	Political	Solidary	Stratificational	Artistic	Moral-Religious
Functional Sphere	Adaptation		Goal Attainment		Integration		Pattern Maintenance	

Within each orientation, the first mode is the less institutionalized of the two.

REFERENCES

1. Erik Cohen. "Environmental Orientations: A Multidimensional Approach to Social Ecology." Current Anthropology, Vol. 17, No. 1:(1976):49-70.

2. ENVIRONMENTAL ORIENTATION PARADIGM

2.1. THE INSTRUMENTAL ORIENTATION

Within this orientation, the environment has no value in itself, rather it is seen as a means to an end. Therefore, the development of resource potentials depends on what is technically feasible or economically profitable. "Natural" resources then are those which hold instrumental value to some person, group of persons, or other species. "Location" of natural resources is important only in terms of their accessibility and perceived utility.

Sub-orientations within this basic orientation are technical feasibility and economic benefit. Features of the environment become resources when some instrumental purpose is found for them. The technical sub-orientation leads to a perception of the environment as "exploitative" potential, but is non-economic in nature. The definition of potential depends on the state of knowledge about possible uses of the environment, that is, on existent technology.

Knowledge in the "technical" sub-orientation is the regulatory mechanism that organizes the environment in terms of its potential for exploitation. Differences in knowledge concerning the environment lead to differing definitions of its potential use. Technological competition, or "biological economics" expresses itself in the ability of different groups to take greater advantage of a given environment than other groups because of their greater knowledge. Competition concerning utilization of the environment may nor may not be directly "social," and often is not, whereas it is in economic competition. Knowledge of exploitative possibilities of the environment sets limits on economic activity. Resource maps of the area will depict the resource utilization possibilities within each domain of knowledge. Future proposed development will alter the resource map in that resources hitherto unexploited may take on new meaning as new facilities are constructed. This sub-orientation is also limited by the other orientations.

The "economic" sub-orientation is the perception of the environment in terms of the relative economic benefits that can be gained from utilization of environmental locations or features to meet a variety of goals. The "location" of an environmental feature or space is important to this sub-orientation, i.e., with reference to population centers, other resources, production and transportation facilities. The primary economic consideration is, of course, cost. Space, then, becomes an economically-valued entity, for it enhances or impedes access to resources and their production potential. The point of greatest accessibility therefore becomes the most economically valuable, and this relative value is expressed in terms of price.

Land and property values and the institutionalized mechanism of open-market economic exchange then are the key "regulatory" mechanisms in this sub-orientation. Natural resources are seen as a commodity. Although "pure" economic competition is rarely seen (other orientations that are non-economic interfere), it is nonetheless the basic dynamic underlying this sub-orientation and is expressed by participants' ability to pay, their desire for a specific location which determines its' market price and therefore, the use to which the environmental location and/or feature will be put. Land-use maps are the operationalization of this orientation (see Appendix A).

This orientation, of course, is characteristic of the utility companies and their supporting and related industries. It is also characteristic of highly industrialized communities. We, being responsible for the human and community impact analysis have accordingly not paid a great deal of attention to what the orientation of utility companies is save to note its character and to present three related generalizations and hypotheses that fall under the technological feasibility sub-orientation;

1. Power plants will be sited where there is adequate access to water, transportation and the raw product needed to produce electricity. Nuclear power plants also must be sited in areas that are not densely populated and which are not near earthquake zones. (1)

2. As techniques for dealing with high sulfur coal, coal gasification and liquefaction become useable, we will see plants sited with access to coal being a primary determinant of location. Mining activity will usually be associated with the development of these plants. (2)

3. Where exploitative potentialities exist, power companies in conjunction with governmental energy organizations will be present with development plans. (3)

The economic sub-orientation yields a great many more hypotheses and generalizations and is more germane to our interests here. Three basic generalizations are presented here and a number of related hypotheses.

4. Land values will fluctuate due to power plant development. (4)

5. A proposed site for a power plant which meets all technical siting qualifications will be purchased providing existing land use is not more valuable (in dollar terms) than what the conversion of the property to power plant useage would be. (5)

6. Plants will tend to be sited where the relative costs of producing electricity are the lowest and profit margins highest. As new technologies become available, they will be brought on line when profitmaking becomes possible (the technology becomes competitive with existing technologies). (6)

With regard to land use changes due to power-plant siting, we offer the following hypotheses:

7. Land use due to power plant development tends to move from less intensive to more intensive use. (7).

8. Open idle land experiences most dynamic development although land also tends to move from cropland, pasture and rangeland to some other use due to urban and industrialization pressures. (8)

9. Land prices vary directly with the size of the influx of outsiders coming to work in or on the plant. (9)

10. If a housing shortage exists in the host community, some land will be devoted to temporary housing communities. (10)

11. The value of land will be in part a function of the concentration of population growth and the proportion of the host county's population living in places of 2,500 or more is increased by industrial development, with some growth also in hamlets and the open country. Moreover, the population growth effect of a new plant is concentrated in villages and towns near the plant site. (11)

The market exchange aspect of the economic sub-orientation suggests the following hypothetical trade-off possibilities as a result of power plant development.

12. Communities too small to support most of the construction phase population will benefit only a little from development. (12)

13. Increase in the fiscal resource base of the local community often is outweighed by increased costs of providing services to the new industry and the community. (13)

14. A community can accommodate some influx of new population without "significant" disruption given a certain level of social, political and economic development as indicated by size, level of services, location, etc. (14)

15. Demand for land is related to the size of the project. (15)

The economic benefits (and costs) aspect due to power plant siting is, of course, complex and dependent on many variables, such as location of the site, prevailing land use, size and distance of host community and characteristics of the indigenous labor force as well as characteristics of whatever immigrants the project might bring. Also important here is whether a community experiences boom-town effects due to plant siting and what community attitudes toward development are.

16. Only activities which provide a continuing basis for regional exports generate compensating local benefits. (16)

17. Net fiscal gains to the local government do occur. This usually is when no local subsidy was offered the industry, or the plant work force is hired locally, or large proportions of the plant work force live outside the community and commute to work. (17)

18. If substantial numbers of construction workers relocate to the site, substantial economic effects through payroll infusions to local economy are created. (18)

19. Development tends to help local businessmen. (19)

20. Development is associated with higher labor costs for local business. (20)

21. Development is associated with increased employment opportunities. (21)

22. If development pulls men from old jobs to new ones, there will be increased employment opportunities for women. (22)

23. Impact of power plant siting is inversely related to the local unemployment rate. (23)

24. Acceptance of development and associated changes vary directly with perceived profitability to the individual. (24)

25. Local acceptance varies directly with actual or anticipated economic benefits. Lack of actual or perceived economic benefits means lowered acceptance or increased opposition. (25)

26. Anticipated benefits to the local community generally exceed perceived benefits after development. Even so, the percentage of local citizens perceiving benefits outweighs those expressing negative opinions. Those not perceiving personal benefits are heavily concentrated among the old, the ethnic and racial minorities, the unemployed and farmers. (26)

27. During the operating phase, if utility property tax payments from the nuclear plant siting go directly to the local municipality, then the major impact of the operating power plant is the augmented tax base. (27)

28. When utility property tax payments go directly to the local municipality, then new economic-fiscal options include the choice between recovering money benefits in the private sector through lowered tax rates, recovering money benefits through the public sector with increased services, or some combination of these two. (28)

With regard to impacts on the labor force, the following generalizations and hypotheses are offered:

29. Preferences for male versus female employees are related to the type of industry, with males predominating the heavy manufacturing industries and females being favored in the light industries such as apparel, textile, and appliance assembly plants. The latter are low-skilled, low-wage industries. (29)

30. There is considerable evidence that nonwhites are underrepresented in the work forces of nonmetropolitan industrial plants. Where they are hired they are concentrated in unskilled and semi-skilled jobs. This situation may indicate outright discriminatory hiring practices, or insufficient skill level among local nonwhites, or both. (30)

31. New jobs often do not go to the local unemployed, underemployed, minorities, and marginally employable persons likely to be near or below the poverty level. (31)

32. High-skill, high-wage industries, such as an operating power plant, which are most likely to increase the aggregate income and raise the percentage of families above the poverty level, are least likely to hire local disadvantaged. The apparent gains in aggregate income and unemployment rate often hide the failure to aid the local disadvantaged. (32)

33. Low-skill, low-wage industries are more likely to employ the disadvantaged. (33)

34. The labor sheds of nonmetropolitan industrial plants are often larger than those in metropolitan areas, their size depending on many factors including size of towns near the plant, local highway system, wage differentials between the plant and other local employers and personal attributes of the workers. (34)

35. Employers prefer younger workers although in some instances, skill gained through experience may be competitive with youth. (35)

36. The female labor market is generally unaffected by coal development. (36)

Potential boomtown conditions and impacts include the following:

37. The lower the overall population density of the area, the greater the disruptions due to power plant development. (37)

38. The rate of inflation varies inversely with the degree of present economic diversification. (38)

39. If the size of the host community is held constant, social and economic disruption will be directly related to the size and suddenness of development. (39)

40. The higher the skill requirements of the incoming power plant the greater the disruption to the community. (40)

41. Impact is directly proportionate to the number of new persons entering the area and will vary with unemployment rate outside region and general notoriety of project outside region. (41)

42. Those most negatively impacted are the lower class, less educated people with a stable history, also those on fixed incomes or salaries. (42)

43. Where new industry is accompanied by population growth it often strains existing basic service delivery systems. (43)

44. Communities that experience a boom during the construction phase will usually have insufficient revenues to finance needed expansion. (44)

45. There is usually a lag between the demand for services and the ability to provide them and is directly related to downturn in quality of life for affected residents, old and new alike. (45)

46. The rapidity of population buildup is inversely related to the communities' ability to provide services and amenities. (46)

47. Where workers can commute during the construction phase, impact is rather minimal except for construction worker traffic. (47)

48. A commuting labor force generates minimal fiscal, social or political impacts on the host community. (48)

49. If a nuclear plant is sited in or near a metropolitan area, the likelihood of access to an adequate labor force increase and boomtown effects are unlikely to occur. (49)

50. Public investment is most likely to occur after the peak of the boom has been reached when a clear tax and revenue base has been established. (50)

51. The larger the influx of outside workers the smaller the receiving community, the greater the social disruptions, provided its population is larger than 1,000-2,500. (51)

52. Boom affects housing, related services, health and educationa institutions as well as mental health services. (52)

53. The larger the host community, the easier the adjustment to development. (53)

54. The more industrialized the community, the lesser the social impact of development. (54)

55. There is an incentive to use labor late in the construction process and to shorten the overall construction process as much as possible, intensifying boomtown effects. (55)

56. The rate of population growth clearly is a function of the size of the industrial firm. (56)

57. In a clear majority of plant locations, the host community experiences population growth. (57)

58. Wages paid in boomtowns do not fully compensate for disamenities. (58)

The hypotheses and generalizations presented here regarding the instrumental and other orientations are not anywhere near exhaustive, however, they do provide us with a literature and theory-grounded framework to classify and predict likely impacts of power plant construction in the ORBES region.

2.2 THE TERRITORIAL ORIENTATION

Control of space is the focus of this orientation and the struggle for control the basic ecological process. The two modes or sub-orientations of territorial control are strategic (physical dominance) and political (decision-making by legitimate authority). The former applies primarily to "unsettled" conditions where the latter refers to stabler conditions such as that provided by institutionalized government.

The strategic sub-orientation relates to the environment in terms of whether physical control over territory is facilitated or obstructed. The relative "vulnerability" or "suitability for offensive or defensive purposes" of the territory is important here. This value attached to the environment is not objectively given and rests on the strategic doctrine held by an individual, group, or society. This doctrine, then, is the regulatory mechanism in this sub-orientation and defines the evaluation and organization of space. Strategic doctrines range from animals' defense of their living space to geopolitics. While this orientation falls most obviously in the military domain, this basic mechanism of territorial control by strategic location can be found at most levels of human behavior. Siting criteria and maps of present and possible sites of energy facilities are substituted here because this too is a form of territorial control.

The political sub-orientation is the organization of space by the establishment of recognized territorial boundaries over which some authority enjoys rightful control. This authority is hierarchical, ranging from that of an individual over his space to state sovereignity over national territory. Each level in the hierarchy of control enjoys some rights as to how the territory is used, but all are subject to regulations by some higher authority. Political organization of space then is usually not isomorphous with private property in the micro-political sphere, but rather finds its definition from its place in the hierarchy of control.

Political organization of space may range from the fluid definitions of nomadic tribes to the precisely sub-divided system of the modern nation-state. Modern governmental machinery and its formal proceedings represent the most autonomous aspect of the political decision-making process and is theoretically equivalent to the market mechanism in the economic sphere. However, the end result of the process is not a structure of property rights and values but a hierarchy of territorial rights and boundaries.

Boundaries set in the political sphere correspond to price in the economic sphere and are the end-product of a bargaining process that represents the agreed-upon division of a territory between competing groups or interests. Some go so far as to argue that the basic ecological pattern of the contemporary city is determined by the power conflicts between interest groups and no longer by the economic process of market allocation.

Political organization of space goes beyond mere limit-seeking; it excludes unauthorized personnel from areas and authorizes, encourages and often determines to what use a given territory will be put, i.e. through zoning, master plans and the like. The political orientation is also, at least implicitly, collective in orientation and is related to the broader goals of the collectivity. In principle, space is

organized with a view of these goals. Zoning maps and Regional Planning Commission Master Plans are the product here. Data to map this orientation were not available in a comparable form for the ORBES region and hence are not presented. However, the literature review did yield some interesting hypotheses and generalizations about the territorial orientation.

These hypotheses under the strategic dominance sub-orientation have to do with attitudes held by the populace toward power plant development which is an indirect indication of preferences about territorial control. Some consideration is given first under this sub-orientation as to how territorial dominance may be attained:

59. Given the stringent requirements for siting power plants, this narrows down possible locations and makes it more likely that proposed sites eventually will become the recipients of power plants.[1]

60. Owners of prime power plant siting land will be induced to sell either voluntarily through offering a very high price or legislatively, through powers of eminent domain.

61. If community leaders want power plant development, they will utilize their political power along with that of the power company to see that it occurs.

62. Industrial firms often are offered inducements by the local community to encourage their choice of the community as a plant site. (59)

63. Pro-development people will tend to emphasize the economic growth aspect of development. (60)

64. Anti-development will tend to emphasize perceived hazards and community disruption aspects of development. (61)

65. Pro-nuclear power advocates tend to be from the business and labor community. (62)

66. Anti-nuclear power opponents are usually women or farmers. (63)

67. Given the operation of a power plant, if the developing community is undesirable to live in, and labor is expensive, this will tend to discourage secondary investment. (64)

[1] Where no numbered citation is present, the authors have developed the hypotheses.

The political sub-orientation refers basically to decision-making processes within the community with regard to power plant siting. Considerations hypothesized or generalized about here include political structure of the community, including which groups are likely to have some real influence on decisions, and the community's structural amenability to development.

68. Community growth is a function of many interrelated variables of which a nuclear plant is only one. If certain planning and zoning conditions exist, then a nuclear power generating station can act as a powerful catalyst to community growth and development. If planning and zoning do not exist, they are unlikely to be implemented until after the community has experienced substantial impact from the new development because:

    a) anti-zoning attitudes prevail in many parts of rural America.

    b) planning and implementing bodies for land use control are often separate and on different local levels, e.g. community, county, township, area.

    c) local officials are often loath to cooperate at a higher level unless need is clear or pressure is exerted. (65, 66)

69. Vertical community structures (e.g. branches of national industries) where power is based outside the community with community representatives who wield economic sanctions but who are not broadly integrated into civic, educational or government subspheres are more amenable to outside manipulation. (67)

70. Horizontal community structures where local autonomous leaders are influential in economic, civic, educational and government decision-making time, are less amenable to outside manipulation. (68)

71. The more rational and bureaucratized the host community, the greater the ease in coping with the development impacts.

72. The more rational and bureaucratized the local government, and the better equipped it is to provide needed services for power plant development, the more receptive to development.

73. Developing communities tend to lose economic and governmental self-sufficiency. (69)

74. Rapid development and urbanization is related to loss of local autonomy, increased norm-conflict and specilaization and differentiations of interest and associations (fragmentation). (70)

75. If an increasing construction population demands major increased public services, then major political impacts upon local governments will occur. (71)

76. If a community lacks revenue, staff, planning capability, experience or the administrative infrastructure needed for dealing with sudden growth, then these inadequacies will exacerbate the need to deal with immediate problems and intensify social and political impacts. (72)

77. The more personal the governmental relationship is in a developing community, the more difficulty in coping with structural and political changes due to development.

78. Projects legitimized by local influentials tend to be accepted. (73)

79. Catalysts for change are often relative newcomers (few year's residence) rather than oldtimer locals. (74)

80. Communities which are fragmented and subject to outside control will have either low opposition to development or lack the ability to oppose.

81. There is some evidence that choices of types of organizations in which to be involved differ between newcomers and long-term residents. The in-migrants show a propensity to favor business, professional, and labor organizations which appears to reflect their educational and occupational characteristics. (75)

82. The less structured land use controls, the more likely the siting of a power plant.

83. If an operating nuclear reactor pays property taxes directly to the local municipality, then the available economic and fiscal options present public officials with a variety of growth-no-growth options. If augmentation of the local tax base occurs, then siting of a nuclear generating station alters the relationships of the host community with neighboring towns, the region, and the state.

    a. Neighboring towns may become resentful or antagonistic over the favored status and resources of the host community.

    b. Efforts will be initiated or intensified on the state level to redistribute the utility tax payments so that more revenues go to the state or region involved. (76)

84. If a host community develops and enforces strict zoning and land use regulations prior to the siting of a nuclear reactor from which it will derive massive economic benefits, 1) the chances for major changes in the social and political composition of that community will decrease, and 2) the community will have a mechanism for controlling the rate and direction of population increase. (77)

85. Unless a nearby operating nuclear plant has an accident, spill, or release, or a concerned citizens group brings attention to possible hazards, residents are generally unaware or unconcerned about the power plant. (78)

86. Communities without a history of zoning tend to be reluctant to invoke it when development occurs. (79)

87. The more centralized the local government is, the more likely a plant can come into the community providing the leaders are in favor of it.

88. Pro-development activity tends to be clustered in the business segment of the population and with local government officials, as well as utility company people. (80)

89. Anti-development activity tends to come from oldtimer women, those with a high attachment to place and a vested interest in keeping things as they are, older segments of the population, and isolated rural type of person. (81)

90. If an operating nuclear reactor pays property taxes directly to the local municipality, then new options offered by the augmented tax base include needs and opportunities to 1) professionalize and develop administrative infrastructures, and 2) develop and/or alter political and decision-making structures. (82)

91. Participation rates of industrial workers in voluntary organizations (churches, civic clubs, recreational) are similar to other community residents. (83)

92. Newcomers who expect to stay a while tend to try to get involved in community affairs and politics. (84)

93. If the level of knowledge about impending development is low, people tend to let utility companies make all the major decisions. (85)

94. One possible effect of decision-making is that: Attempts to broaden the tax base often mean, after the construction boom, taxes remain high and the environment is degraded. (86)

2.3 THE SENTIMENTAL ORIENTATION

This orientation refers to the environment in terms of attachment. Cohen argues that this sentimental attachment to space first elaborated by Firey (87) is part of a general tendency found in traditional societies to pervasively and systematically organize the whole environment in sentimental terms. The two sub-orientations are the mode of primordial belonging and the mode of prestige associated with a territory. The former sub-orientation is rooted in birth or tradition, the latter representative of social sentiments as to the relative worth of a space derived from the worthiness of those associated with it.

The primordial sub-orientation, the less institutionalized of the two, is expressed by a subjective "sense of belonging," that is, environmental features are given intrinsic significance by an individual or group apart from instrumental or symbolic value. The process is "identification" by which an individual organizes his whole environment in terms of the "extent of belongingness" and each point or space in the environment possesses a certain "belongingness value."

The institutional aspect of the primordial sub-orientation is not so clear as for other sub-orientations, but "solidary institutions" are the referent. This is the "nexus of values and norms regulating relationships of solidarity and attachment between people like kinship, friendship, neighboring, etc." This sense of belongingness performs an integrative function by providing emotional anchorage for individuals and groups. One means of mapping this sub-orientation without recourse to primary data-gathering is to map stability of the population and its basic demographic characteristics so as to get a feel for the kind of people who reside in an area. These maps are in Appendix A and classified under "Sentiment".

The prestige sub-orientation is the relationship to the environment in terms of the social evaluation accorded to its features and is derived from the worthiness of the people associated with given environments. The prestige of an area is a product of the gradual emergence and crystallization of consensus as to the relative worth of a place or area. The process here is social evaluation and is analogous to the process by which land and property values are determined or territorial rights delineated.

In a sense, if people live where they "belong" then the prestige of an area will reflect the social status of its inhabitants. In other words, the primordial sub-orientation is ideal-typically "objectified" into the prestige of an area. The status value or prestige of areas then, is another mode of organizing the environment. This is the spatial component of social stratification. A mappable referent here is value of land and housing. These maps are in the "Sentiment" section in Appendix A.

Though we have been plagued with difficulties concerning a lack of direct information about this orientation, it is also the one most of interest for it most directly concerns the lives of residents in the ORBES region. Also, our literature search has yielded a rich collection of hypotheses and generalizations concerning both the primordial and the prestige suborientations.

Hypotheses concerning the primordial suborientation follow:

96. The more people who reside in an area slated for power plant development who consider it "home" (never lived anyplace else), the less likely they will be receptive to development. (88)

97. Residents with deep and enduring ties to land and lifestyle will generally be opposed to development if it threatens their lifestyles. (89)

98. The greater the attachment to place and lifestyle on the part of residents, the greater the experience of discomfort from development. (90)

99. The more isolated the community from urban centers, the greater the impact of development.

100. The greater the difference between the oldtime residents and newcomers in terms of lifestyle and value the greater the impact of development.

101. Communities which have experienced previous rapid development tend to be less favorable and more cautious about further rapid development. (91)

102. A developing community is moving from homogeneity to heterogenity. (92)

103. The more people who identify with an area slated for power plant development (whether newcomers who chose to reside there or oldtime residents), the less likely they will be receptive to development.

104. If the oldtimer's social network is one based on kin, length of relationships, neighbor-based and cuts across generational lines,the newcomers will have a hard time being taken in. (93)

105. People in the later stages of the life cycle are generally less adaptable to forced change than are younger members. (94)

106. Assumptions and values of oldtimers tend to be questioned by newcomers. (95)

107. The more transitory the labor force, the less it will be absorbed into the community. (96)

108. The more transitory the labor force, the greater the social instability of families. (97)

109. Newcomers have little sense of community. (98)

110. Newcomers are more favorably disposed toward development than old timers. (99)

111. Residents of temporary housing communities tend to be socially isolated, demoralized, and subject to high rates of mental illness, alcoholism, and marital instability as well as child neglect and abuse.

    a. The crime rate increases with development.

    b. The divorce rate increases with development. (100, 101, 102)

112. People in temporary communities are lacking in recreational and social outlets as well as places to put constructive use of leisure. (103)

113. The depth of ties to an area slated for power plant development is related to receptiveness to development.

114. The impact of a power plant is inversely proportionate to the percentage of the population aged 18-35, and directly proportionate over 55. (104)

115. The higher the number of jobs going to persons already living within the area, the lower the disruptions to the community. (105)

116. Nonmetropolitan industrial workers have larger households than the local area residents generally. This appears to be a function of their age relative to the local population; more are in the child rearing stages of the family cycle. (106)

117. The majority (2/3 to 3/4) of immigrants move no farther than 50 miles. Those who move farther are probably managers and technical personnel. (107)

118. The initial source of population growth is likely to be increased in-migration coupled with unchanged or decreased outmigration. (108)

119. Nonmetropolitan industrial workers, as a group, are residentially more mobile than rural dwellers generally. Nonmetropolitan workers often commute long distances for a period of time after employment, but in the long run they move closer to their place of work, or change jobs. (109)

120. Women and children of boom-town, temporary employees suffer disproportionately. (110)

121. The children of the geographically mobile tend not to do as well in school (all phases) as those from a more stable population. (111)

122. Oldtimers will experience a loss of autonomy during development. (112)

123. The degree of familism is related to mental health. (113)

124. Individuals will exhibit more positive attitudes about accepting technological change than sociological change. (114)

125. If social changes are desired by an affected group, then the changes can be assimilated with little social disruption. (115)

126. Group members attitudes toward the changing community and the project should reflect the impact of change upon the group. (116)

127. People to be relocated tend to view project negatively and have negative consequences in readjustment. However, people who are to be relocated will have more positive attitudes toward the development if the negotiators for their land have exhibited tact, consideration for their problems in relocating and a willingness to compensate them for enduring a disproportionate share of the impact. (117)

The prestige suborientation yields the following hypotheses:

128. If an area is seen by residents as lacking in prestige or usefulness, the more likely development will be allowed to occur without protest. The more valuable the area slated for development, the less likely development will occur.

129. Power plant development changes social stratificational patterns. (118)

130. Power plants tend to be sited in areas where existing land useage provides marginal returns.

131. Power plants tend to be sited where poorer people live.

132. Residents of temporary housing communities tend to be seen as a social class apart and generally are negatively valued by old-time residents. (119)

133. People on fixed incomes (retired, working poor) suffer disproportionately from development-induced inflation. (120)

Power plant development also causes change in populations and labor force composition that indirectly affect the prestige sub-orientation:

134. If a large, temporary population increase occurs during construction, then major changes in social composition and organization of the host community will occur. (121)

135. Power plant development brings changes in the age and sex structure of the community, usually dropping median age, increasing the proportion of single men and increasing the number of pre-school and school age children. (122, 123)

136. The higher the wages in the developing industry, the more likely there is to be a labor shortage in other areas of the economy. (124)

137. Most male workers expect to seek other industrial work if laid off. Few would consider returning to farm work. Moving to another community to secure employment is an undesirable, but viable alternative. (125)

138. There is virtually no evidence that industrial development increases the level of educational attainment in the host community. Where it does occur the evidence suggests it is due to changes in the age structure, younger adults generally having completed more years of schooling. (126)

139. Developing communities show an increased division of labor. (127)

140. The proportion of newcomers who bring their families depends on wages, length of job and perceived amenities of the community as well as distance from "home." (128)

141. Newcomers tend to be better educated, younger and more highly skilled than old-timers. (129)

142. Old time residents generally bear more of the social and economic costs of development than do transient workers.

143. Communities with high unemployment rates tend to welcome development. (130)

144. Newcomers tend to have higher expectations about community services and amenities than do oldtimers. (131)

145. Newcomers tend to try to place themselves in the social stratification system by the church they choose to attend. (132)

146. In-migrants express more dissatisfaction with the local community services than long-term residents, particularly when the in-migrants are of higher skill and income levels than the host community residents. (133)

147. Development tends to make everyday life more unpleasant for consumers of services and retail stores, etc. (134)

148. Rapid growth frequently increases faster than benefits gained from new services made available. (135)

149. If a proposed power plant is seen by residents as enhancing the relative value and prestige of an area, it will be promoted.

150. The number and kind of newcomers to a developing area has a direct relationship to the magnitude and kind of impact to be expected. (136)

151. Development tends to increase urbanization. (137)

152. The greater the influx of newcomers, the more likely the emergence of a highly stratified class system and personal awareness of same. (138)

2.4. THE SYMBOLIC ORIENTATION

To the extent that the environment "means" something to an individual, group or society, it can be said to have symbolic significance, i.e., the environment expresses or represents human values. Meaning is extrinsically imposed upon the environment by culture and may be totally independent of its objective features. Cohen's two sub-orientations here are moral-religious and aesthetic.

The aesthetic sub-orientation is the less institutionalized and organizes the environment in terms of the aesthetic enjoyment that can be derived from it. Aesthetic judgement is, of course, subjective and subject to much variation. The regulative mechanism in the sub-orientation is "taste formation" and to the extent aesthetics are formalized, it may be seen as represented by artistic institutions. Parks and national forests, historic places, public gardens, etc. are the mappable referent here.

The moral-religious sub-orientation is the organization and evaluation of the environment in terms of its "nearness of the sacred" or the degree to which an environmental feature symbolizes the sacred. Socio-religious space is heterogeneous and varies in its relative sacredness. The process here is "sanctification." The degree of "religiousity" in a society will determine the extent to which space is organized according to its sacredness. The institutions here are religious-moral ones which represent the process of sanctification and give it a spatial referent. Cemetaries, churches, and church property such as schools, camp grounds, and the like can be mapped along with the aesthetic dimension. We have, however, substituted a map of predominant religion orientation because the other mappable referents are not readily available.

A few hypotheses are offered about the aesthetic and moral-religious sub-orientations. The effect of these orientations are basically self-explanatory with regard to power plant siting for it is unlikely that areas with these meanings attached would be chosen as a plant site.

153. Power plants will generally not be sited in areas primarily valued and used for aesthetic purposes.

154. Areas which have been formally designated as aesthetic areas will not be potential sites for power plant development.

155. The middle class is more environmentally concerned. (139)

156. Middle and upper classes will tend to take advantage of cultural amenities. (140)

157. Newcomers (those without established social networks) make greater demands on recreational facilities than those with well established social networks. (141)

158. An area that has been given moral-religious meaning will not be viewed as a potential power plant site.

159. Regardless of religious source, an area which is seen as sanctified will not be developed.

160. Areas which have been given meaning, either religious, historic, recreational, or other, will not be seen as appropriate for development.

161. Public parks and recreation places serve as places for (142) informal social groups and family and friends to recreate.

162. Those with high incomes, occupational prestige and higher educational attainment participate in recreation most, usually within 2 miles of home. This is correlated with time available, stage of life cycle and preferences are for swimming, sightseeing, picknicking. (143)

163. Rural people recreate less than urban people. (144)

164. The poor recreate less due to money and transportation constraints. (145)

Though environmental orientations can be analytically separated and examined in terms of what each orientation's likely impact on a given environment would be, actual utilization of the environment is usually a mix of different orientations. Moreover, the four orientations and their eventual ecological consequences on the environment are generally in conflict as shown in Table III-D-2. Cohen argues that any environmental use is a result of ecological institutionalization where limits are set on the spheres of influence each orientation would have. This is a trade-off process and the outcome seems to be predictable in a given case from 1) knowledge of the environmental impact of each orientation, 2) the "mix" of orientations present and 3) the "overall value system" of the impacted area. The latter will determine in part the priorities of different orientations and therefore eventual use of the environment.

Of all the possible conflicts between environmental orientations, the most severe are probably the instrumental orientation which views the environment basically as a commodity and the sentimental and symbolic orientations which imbue the environment with human meaning. Particularly acute conflict may emerge between the economic benefit and the primordial belonging, moral-religious, and aesthetic sub-orientations. The territorial orientation may be seen, in this light, as a mediating orientation between the instrumental and sentimental and symbolic orientations, for this crucial orientation basically determines, in interaction with the others, what the final outcome is with regard to use of the environment.

Table III-D-2

FRAMEWORK FOR A TYPOLOGY OF CONFLICTS BETWEEN ENVIRONMENTAL SUB-ORIENTATIONS

	Techno-logical	Eco-nomic	Stra-tegic	Poli-tical	Pri-mordial Belong-ing	Pres-tige	Aesthe-tic	Moral-Religious
Technical	X	T/E	T/S	T/P	T/PB	T/SP	T/A	T/MR
Economic		X	E/S	E/P	E/PB	E/SP	E/A	E/MR
Strategic			X	S/P	S/PB	S/SP	S/A	S/MR
Political				X	P/PB	P/SP	P/A	P/MR
Primordial Belonging					X	PB/SP	PB/A	PB/MR
Prestige						X	SP/A	SP/MR
Aesthetic							X	A/MR
Moral-Religious								X

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3. METHODOLOGY

3.1. INTRODUCTION

In attempting to assess the impact of any future energy development upon people and social institutions, two questions must be asked about each proposed site. First, will a "boomtown" syndrome be produced and if so, how large and what particular characteristics will be most significant? Second, what is the prevailing environmental orientation or mix of orientations in the county and how does this affect receptiveness to power plant development?

It must be clearly understood, however, that until the development actually occurs, it is impossible to know what the impacts will be. We can only suggest a plausible course of events based on 1) an understanding of the particular impact situation, 2) reports of the consequences of similar developments, and 3) general knowledge of human behavior. We recognize that there are gaps and inaccuracies in our knowledge of all three of these factors.

In a study with the scope of the ORBES project, there is a mandate to go beyond multiple impact assessments. The assessment is, first of all, relative: counties have been grouped where geographical proximity exists and the prevailing trends of the ORBES region have been taken into account. Second, in attempting to assess the impact or interactional consequences of simultaneous energy developments in groups of adjacent or nearby counties and in other parts of the region, we hope to provide some insight for decision making at a higher policy level and to delineate, in the summary section, what we think the approximate magnitude of these interactive effects would be.

The rather voluminous literature we have cited here gives us very little help in this kind of interactive assessment because most of the studies are case studies and very little, also, is known about the effects of plants in the operating phase. Following this introduction is a description of the ORBES region in general and then more detailed descriptions of those counties which would experience primary impacts, divided by state. Rather than treat each county separately, they will be described in clusters of contiguous or nearby counties. There were several reasons for this decision: 1) on the map of the scenarios, it is evident that the counties do cluster, usually around a water course; 2) the variation among counties which are all part of a particular sub-region can be better illustrated; 3) interactional impacts, both within the cluster and between clusters can be more easily discussed; and 4) ease of comprehension.

An impact assessment of each cluster will follow a description of the cluster, relating it to the typology. Subsequently, in the Summary Section we will also indicate any perceived regional or interactional impacts.

Delineation of the clusters has been somewhat arbitrary and was based primarily on geographic contiguity and sub-regional divisions as indicated by the description of the ORBES region in general. All counties in a single cluster are in the same state, even though there may be counties in the adjacent state which are part of the same sub-region. Differences among states in legal and organizational aspects plus some variation in data bases were the reasons for this.

The information about size of plant and other technical information was supplied by the report of the Task I team or other team members. At present the information on the construction schedule is very sketchy and as a consequence, only broad generalizations could be attempted, even if the sociological data were more complete.

3.2. METHODOLOGY OF DESCRIPTION

Descriptions are based exclusively on secondary data. We recognize the limitations: 1) information is not up to date and for some counties which have experienced much recent change, may present an erroneous picture; 2) the data are not synchronic, e.g. agricultural data are from 1969, population and housing data from 1970, industrial data from 1972, and various other sources cover periods as late as 1975; 3) data were not collected for our purposes so the available information often only indirectly bears on the questions we ask; and 4) collection methods vary. This is not an apology, but a statement of the necessary conditions prevailing at this preliminary stage of research. Any conclusions or evaluations drawn at this stage are necessarily hypothetical and should be viewed with a skeptical mind. The goal of any subsequent research must be to amplify, clarify, correct and refine the baseline data in addition to testing hypotheses suggested by the present state of the research.

Nevertheless, we do feel that the available information allows for a description of the region and counties, delineation of sub-regions, and a reasonably accurate picture of the nature of the population and the quality of their lives which, although inaccurate in detail, is not grossly untrue and which reflects sub-regional variation. It is true that measures of affluence such as income and housing values have almost certainly increased greatly since 1970, but it is unlikely that later housing and income figures would greatly alter a qualitative assessment of life in these counties.

Efforts to enlarge and update the scope of the baseline data by using state documents were abandoned after it was found that the difficulties of uncovering comparable data for all counties in the four state region were unlikely to be balanced by the increased understanding they provided.

The maps in Appendix A represent the spatial referents of the demographic data we have used. We urge the reader to consult them frequently while reading this report for we think them to serve a clarification function.

A qualitative evaluation of life in each major impact county, as compared with life in another county is the purpose of these descriptions or "profiles". The focus is on people, the environment in which they live, those with whom they may come into contact, the opportunities and the options provided them.

The county profiles present a verbal picture of the societal aspects of county life distilled from the various data sources. Although the same broad format was used for all profiles, there is some variation because of the desire to emphasize some feature of the profile considered to be significant from the interpretation of the data.

There was no statistical correlation of data items. The aim was to compare and relate holistically the patterns evident in a variety of social spheres.

3.3. SOURCES

In order to make the report concise and to promote ease of reading, each of the major sources of data will be discussed in the following section. Since the profiles will not discuss limitations of the source or ways in which the information has been handled, this section should be read before reading the profiles or assessments. Otherwise misunderstanding is almost certain to occur.

3.3.1. CENSUSES OF POPULATION AND HOUSING, 1970 (1, 2)

The largest part of our data comes from these reports which have the advantages of complete coverage of the region, simultaneous and uniform data collection. Frequently the information was taken from the City-County Data Book, 1972 because of the reporting form but it is census data (3). In almost all cases the figures have been converted to percentages if they were not already in that form. The reason for this was to show composition rather than magnitude and to allow for comparability among counties. For this reason the reader should note the county population size listed at the beginning of each profile in order to make the mental adjustments necessary to a full understanding of the profiles. When the authors felt that biases introduced by this approach merited special notice, both the figures and the percentages were dealt with in the text. The major limitation of these data are that they are seven years out of date. A second, minor problem is that some of the figures reflect a full count of the population and others are statistics, that is numerical inferences based on random sampling. However, very little sociological data is not statistical so this is discounted. When figures are quoted, it should be recognized that they are 1970 figures. We have cited these major sources only once for they reflect our primary data base.

3.3.2. CENSUS OF AGRICULTURE, 1969 (4)

The data from this source, although close in time to the decennial census, is eight years out of date. A more recent agriculture census

was carried out in 1974 but the reports were not out in time for incorporation in this report. This updated information should be consulted before proceeding into the second phase of research.

Farms covered by the census are classified and divided into two groups. This division has been used in the tables on farming. Class I-V farms include all farms with actual or potential sales of $2,500 or more in 1969. "Other" farms includes part-time or part-time retirement farms which have sales of $50 to $2499 in 1969 as well as Class VI farms which earned less than $50 or are under 10 acres and earned less than $250. ClassI-V farms are the referent for "potentially full-time farms."

3.3.3 CENSUSES OF MANUFACTURING AND GOVERNMENT, 1972 (5,6)

Because of the type of information and the form in which it has been reported, these data have been used primarily to check the picture of economic activities presented in other sources.

3.3.4 COUNTY BUSINESS PATTERNS, 1973 (7)

This governmental publication is a "statistical byproduct" of business information reported to the Social Security Administration which collaborates with the Bureau of the Census to assemble the data. There are a number of limitations in the information: 1) The data only onclude about 76.5 % of the total paid civilian wage and salary employment. Excluded are the self-employed (approximately 9%), those in agriculture, domestic service, government, railroad employment and a few others. This problem is compounded when attempting to describe economic activity at the county level because these percentages are national averages and probably vary considerably from county to county. For this reason the figures quoted from this source are only given to provide a rough estimate of the types and numbers of jobs which might be available to the ordinary person in the county. An additional problem is that this publication suppresses information which discloses operations of an individual employer. Industries with less than 100 employees or 10 reporting units are not reported. For this reason a certain amount of cross checking among tables in this publication and between publications was necessary. This involved further differences in dates and reporting methods. However, this publication was felt to give the clearest indication of occupational diversification and opportunity. The figures quoted only provide an indication for a point in time three years after the census, and should only be used in a comparative context. This source covers jobs within the county as opposed to the U.S. Census which describes occupations of the resident population.

3.3.5. U.S. FOREST SERVICE FIGURES (8, 9, 10, 11)

Estimates of the land in forest are carried out for each state at irregular intervals. The dates of the survey for each state should be kept in mind when examining this information. The reader should also recognize that farm land and forested land are not mutually exclusive.

3.3.6. INCOME DATA

Updated income data came from two sources: 1) the Survey of Current Business (12) which provides figures on per capita income, and 2) Sales Management (13) which provides a measure of "effective buying power," shortened to "EBI" in the text and tables.

3.3.7. RECREATIONAL DATA

Data on parks (14, 15, 16, 17) were collected from each state and vary as to date of collection and content.

3.3.8. BUREAU OF MINES PUBLICATIONS

The Minerals Yearbook and Mineral Industry Surveys (18, 19) were the primary sources for mineral production. Another publication on future fuel related projects for the eastern United States (20) was of help in locating some of the sites for planned power units and in estimating the work force.

3.3.9. KENTUCKY STATE DOCUMENTS

The Annual Directory of Manufacturers (21), the Annual Report of the Kentucky State Department of Mines and Minerals (22) and the River Basin Water Quality Management Plan for Kentucky (23) were used to elaborate or update certain aspects of the profiles for Kentucky counties.

Similar information was not attempted for the other states in the ORBES region since this is the kind of library research that involves hours of searching, many small judgements and the assistance of the library staff. It could not reasonably be requested of members of the other teams in the other states. The return does not warrant this expenditure of time and expense.

3.3.10. CULTURAL DATA

The 1975 Official Museum Directory (24) of the American Association of Museums and the National Register of Historical Places (25) as well as a map on "Ranking Christian Denominations" (26) were the primary sources of information on cultural amenities.

3.3.11 SUPPLEMENTARY SOURCES

A miscellany of other sources were used to prepare the profiles and all are listed as references. For the most part they are sources come upon in the process of library search and felt to be of some significance. However, they were not used consistently in every profile and were mainly of assistance in clarifying, or interpreting the profiles for some counties. (27-52)

3.4. LANGUAGE

In the interests of consistency several conventions have been used in the prose descriptions of the profiles. Most of the maps have five categories. The terms "high" or "low" refer to the categories at the appropriate end of the continuum. The terms "relatively high" or "relatively low" refer to the categories adjacent to the "high or low" categories. Where there are six or seven categories on the map, the terms "slightly above" or "slightly below" average were used to denote those categories closest to the middle of the continuum.

It is hoped that use of the above conventions would allow the reader to mentally place the county within the ORBES region without constantly referring to the maps.

3.5. SCENARIOS

The four scenarios represent two levels of energy production, high and low. The first two scenarios are based on a 1975 Bureau of Mines study (53), the third and fourth scenarios on a 1974 study sponsored by the Ford Foundation (54).

The high energy scenarios are based on the assumption that net energy consumption will almost double by the year 2000 due to greater per capita energy use and increased dependence on secondary energy sources with the concomitant conversion losses (55, p. 3). Scenarios I and II differ in the mix of coal and nuclear-fueled plants. Scenario I posits an 80% coal/20% nuclear mix while Scenario II posits a 50% coal/50% nuclear mix.

The third and fourth scenarios are based on low growth assumptions about future energy use. The assumptions are that conservation practices, slight reductions in real incomes and outputs will allow for more than halving the rate of energy growth "without requiring major sacrifices in real income growth." (56, p.511). Scenario III assumes that all plants will be coal-fired, Scenario IV that plants will all be nuclear-fueled.

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4. GENERAL CHARACTERISTICS OF THE ORBES REGION: CURRENT SOCIAL, ECONOMIC AND LAND-USE STATUS

4.1. POPULATION CHARACTERISTICS

4.1.1. DENSITY

The 18.4 million people residing in the ORBES region are, of course, not randomly distributed throughout the region, but cluster in a predictable fashion within topographic, prevailing land use, and social and economic constraints to form a rather hetereogeneous pattern. (See Map 14). The ORBES area as a whole is not a densely populated one, with the vast majority of the counties containing less than 100 persons per square mile. Pockets of heavy population density represent the few metropolitan areas centered on one or more large cities (1000 or more per square mile) and encompassing satellite and dormitory communities and occasional medium sized cities (400-999 square mile). In northeastern Ohio just south of Cleveland (outside the ORBES region in Cuyahoga County) is Akron, flanked on the south and east by the medium sized cities of Canton and Youngstown. In central Ohio, Columbus is dominant and in the southwestern Ohio is a metropolitan area with Dayton at the northern edge and Cincinnati on the Ohio River. Between the two cities are the small cities of Hamilton and Middletown. South of Cincinnati in Kentucky are the small cities of Covington and Newport. Louisville, southwest of Cincinnati and also on the Ohio River is the nucleus of a fourth metropolitan area and Indianapolis in central Indiana is the nucleus of a fifth.

The several medium sized cities are Fort Wayne and Evansville in Indiana and Lexington, Kentucky. Population concentration in St. Clair and Madison Counties, Illinois, are parts of the St. Louis metropolitan area. East St. Louis is in St. Clair County. Those counties with moderate density (100-199 per square mile) indicate the location of a number of small cities.

The ORBES region can be roughly divided into two regions. The first includes all of Ohio except the Appalachian area and the eastern two-thirds of Indiana. In general the density of the population is higher and the metropolitan areas more extensive than in the second region comprising all of Illinois, Kentucky, the western third of Indiana, and Appalachian Ohio.

4.1.2. RURAL/URBAN CONFIGURATION

The majority of counties in the ORBES region may be characterized as mixed rural and urban, counties devoted to both pastoral, rural nonfarm, and small community pursuits. (See Map 13). The major metropolitan centers are found clustered along the Ohio river, in the heartlands of Indiana and Illinois, and cutting a wide swath from southwest to northeast across Ohio.

Urbanization has recently (1970-1974) spread out from major Ohio River cities as well as from surrounding urbanized areas in Central Ohio (Columbus), the Ft. Wayne, Indiana/Lima, Ohio area, Central Kentucky (Lexington), and the Illinois area near St. Louis.

Completely rural counties are a minority in the region and are found primarily in Kentucky, and clustered in the Appalachian section. (See Map 13). The mountainous topography of the area militates against the formation of communities larger than 1000 population (as do important economic factors) and the population residing there is not only scattered primarily along roadways and comparatively isolated from one another but also from the rest of the region. Rural areas with larger communities (up to 2500 population) are scattered throughout the state of Kentucky, clustering again in the Appalachian area and along the banks of the Ohio River as well. Particularly notable are the number of contigous counties with no community over 2500. Highly rural Illinois communities share the river and are also found along the Western borders of the state, though rarely. Appalachian Ohio presents a similar but much less strong pattern of location of its four very rural counties. Other highly rural areas in the region are scattered about Indiana and Illinois and are surrounded by mixed rural and urban areas and some are on the fringe of SMSAs.

4.1.3. STABILITY OF RESIDENCE

One rather striking characteristic of residents of the ORBES region is their relative lack of geographic mobility, or put another way, their preference for maintaining their home (birth) state as their residence state. (See Map 23). The overwhelming majority of the counties are populated by native-born residents. Again it can be seen that the Illinois, Western Indiana and Kentucky portions of the ORBES region house the more stable while the Ohio-Eastern Indiana portions contain the more mobile populations. As is to be expected the more mobile residents are concentrated in urbanized areas and in border counties. The most stable segments of the population are concentrated in the rural areas of Kentucky. The exceptions in Hardin and Meade County in Kentucky probably reflect the existence of Fort Knox. Clark County, Indiana and Fulton County, Kentucky are unexplained at this time although the situation is possibly a consequence of the conjunction of several states at that point.

While we cannot say, at this point, whether these people have gone and returned after a sojourn in other states, recent figures for the five-year period of 1965-70 do suggest that this stability is of at least that long a duration. (See Map 28). Only a few scattered counties show less than eighty percent of the population as five-year residents. Of these counties, Champaign and Jackson in Illinois, Monroe in Indiana, Hardin in Kentucky and Greene in Ohio have sizable universities in moderate to small size communities. In addition both Hardin and Christian Counties in Kentucky have large military installations. The other anomalous counties are unexplained at this time. Areas that are characterized by over 90% of the population having lived there five years or more are primarily rural and semi-rural areas.

This picture of stability becomes even more clear and specific when one looks at the percentage of the population residing in the same county over this same five-year period (See Map 28). Again some of the same factors may apply. Portage and Athens in Ohio, Tippecanoe and Johnson in Indiana, Fayette in Kentucky, McDonough County in Illinois all have universities. Kentucky particularly shows the majority of counties have eighty or more percent having chosen to remain in the same county for at least five years, as do those residing in eastern Ohio, southern Indiana, central and western Illinois.

4.1.4. MIGRATION

Migration trends within the region can be characterized as to type and direction by examination of Maps 16 and 17, showing figures on net migration within the ORBES region. The recent reversal of the trend of rural to urban migration to urban to rural shows up here, particularly in eastern Kentucky, an area which has traditionally lost population for decades. The counties losing population recently form an east-west band in central Kentucky, through scattered counties where Kentucky, Indiana and Illinois meet, up the Wabash River toward Chicago, across north central Indiana to west central Ohio. Other pockets of out-migration are along the Mississippi River in Illinois and extreme northeast Ohio.

Eastern Kentucky and southeastern Ohio are gaining population in part due to the coal boom. However, the reversal of a hundred-year-old migration trend also says much about the preferences of people shifting away from urban areas to more rural ones. Still, many of the areas gaining population in the ORBES region are those near SMSA's suggesting that dependency on urbanized areas continues to exist, but perhaps more so on the fringes of SMSA's rather than in their urban cores. Generally speaking, the ORBES region states are gaining population through migration, though Illinois counties are faring less well in this respect than Indiana and Kentucky.

4.1.5. AGE

Maps of the age composition of the ORBES region population (Maps 29-35) have been prepared as well as graphs illustrating the population composition of impact counties. Map 35, showing the proportion of the population 65 years of age and older, possibly lends further clarity to our description of the remarkable stability of the population, by suggesting, albeit indirectly, that many of the native residents are life-long ones. Older residents are noticeably concentrated in western Illinois and the counties along the Ohio and Wabash Rivers in southern Illinois and extreme western Kentucky. This latter area is characterized by numerous recreational facilities, e.g. the Shawnee National Forest, a low level of urbanization (Map 95). This Illinois migration trend of the 1960's has been described as one, primarily of the elderly, moving from the northern cities to the southern rural counties with an accompanying out-migration of the young from these southern counties (1.p.7.). Examination of Map 16 inclines one to suspect an out-migration from the state as well.

Kentucky and Illinois have the highest proportion of counties where the elderly account for 12% or more of the population and only parts of western Indiana and southeastern Ohio may be so characterized. The counties with low percentages of older population appear to correlate with urbanized areas, universities, and military installations. The low percentage of elderly in the extreme eastern Kentucky, especially in Pike, Leslie, Rowan and Greenup Counties are extremely provocative.

4.1.6. SEX COMPOSITION

As with most of the rest of the United States, females make up the majority of the population, (51%). Map 36 shows where females comprise at least fifty-three percent of the population and over, suggesting, in part, that many of these women are, due to greater female longevity, somewhat elderly (See Map 35 as well). Military bases and university communities account in part for counties where men considerably outnumber women.

4.1.7. MARITAL STATUS

The proportion of married males in the population is shown in Map 43 and females in Map 44. Together, the most "married" population cuts a wide swath through the very center of the ORBES region from its southwestern tip to its northern center, an area where at least 70% of the males and 65% of the females form marital units. The noticeably low proportions of married males in Illinois, together with the generally higher percentage of females in the population (Map 36) tend to support the suggestion of out-migration of youth, especially males.

A slightly different picture of the married emerges in Map 45 which shows the proportion of "intact" families compared with all families. This map shows Indianapolis as sort of the "hub" from which a high proportion of intact families radiate north-south in Indiana and east and west into Ohio and Illinois respectively. Kentucky is somewhat of an anomaly with regard to intact families, particularly in eastern Kentucky. Maps 39 through 42 shed a little more light on this interesting configuration of marital status graphically displayed by showing the proportion respectively, of females and males in the population that are either widowed or divorced. Females at any given time do show a greater proportion of their population as not-married than do males, in demographic terms, so the relative proportion is what is of interest here. Map 40 shows a heavy concentration of formerly-married women in southern Illinois, as is the case for men as well in Map 39. The relatively large proportion of the population that is over 65 suggests that many of these residents are older widows and widowers who are retired here. Eastern Kentucky, however, presents no clear picture at this point as is a fairly high percentage of not currently-married women and no correspondingly high proportion for men. This may point to a higher out-migration level for men than for women.

Knowing the number and age of children among families helps to tell us about what stage characterizes the population in the family life cycle and their adaptability to developmental change. Not too surprisingly, Map 46 shows a high proportion of families with children in a pattern similar to our "intact families" map, but with information about eastern Kentucky, which shows large numbers of families with children under 18 (being discrepant from the norm). Since the population here is probably fairly young, a fairly high degree of marital instability may characterize this area, though we are far from certain about this speculation. It is also possible that religion and contraceptive practices may be different here. Map 47, however, does show a very high proportion of families there headed by females. Illinois patterning points to the probability that most families are in later stages of the family cycle.

4.1.8. ETHNIC COMPOSITION

Not surprisingly, the only significant concentrations of foreign-borns or those of foreign or mixed parentage are on the outskirts of Chicago and westward in northern Illinois and in the far northeast corner of the ORBES region near the urban-industrial northern cities.

4.2. SOCIO-ECONOMIC CHARACTERISTICS

4.2.1. INCOME

The ORBES region, compared with the U.S. as a whole in terms of per capita income, is not a wealthy area. However, there are a series of counties in Central Illinois, Indiana, and southwestern and northeastern Ohio that manage to be at or above the U.S. mean per capita income. On the other hand, there is a considerable pocket of very low per capita income centered in Appalachian Kentucky and spreading westward and northward. Another small pocket of low per capita income is to be found in very southern Illinois and western Kentucky. (See Maps 69 and 70).

Median family income (Map 68) shows much the same picture, but more sharply (at least for families). Only Kentucky has counties where family median income falls below $4,000 a year. The ORBES region, metaphorically, is built somewhat like a layer-cake in terms of median income, with the bottom slice being the poorest (eastern Kentucky) moving northwesterly to slightly higher median incomes, a layer of medium to moderate incomes ($5,000 tO $8,999) and then an icing of a fairly high income layer. The metaphor wears off above the fairly well-to-do belt in central Illinois, Indiana and the southwest and northeast corners of Ohio. Incomes begin to decline again above that, though not to low levels. Areas around SMSA's (except for the Ashland area and Christian County in southern Kentucky) tend to have median family incomes of at least $7,000 and the majority have incomes above $9,000.

Map 67 showing percentage of families with incomes above $15,000, presents a somewhat different picture, especially with regard to high and low percentages of that income. Counties with highest percentage of relatively well-to-do families are in the same affluent belt previous maps have

shown, but there are fewer of them. The counties with less than five percent of the families earning $15,000 or more now form a belt northwest of the Appalachian counties running from Western Kentucky, Southern Illinois across Kentucky to a few isolated counties in Southern Ohio. The majority of counties have a moderate proportion of the well-to-do (7.5-14.9%).

Map 74 is somewhat the converse of the preceding maps, for it shows the percentage of families below the low income level in 1969. Here the layer-cake effect is even more pronounced. One must think of the cultural and lifestyle differences, as measured by income, that are present in the region; the southern third of the ORBES region is by and large very poor and the northern third comparatively very well-to-do, and about on par with U.S. averages or better. Moreover, as Map 76 shows, the poverty strikes disproportionately at the young in the southeastern quarter of the region compared to the rest. Or, as Map 75 shows, it strikes disproportionately at the old in the northwest quadrant. So, even among the poor, life-cycle differences in association with poverty vary greatly in the region.

Even among the old and poor, the nature of the poverty as measured by percentages paid for old age assistance (Map 77) varies too. The highest percentages are to be found in Western, South-central and Northern Kentucky, and the next highest among the remaining Kentucky counties with a few exceptions. Old age benefits account for less than 30% of Public Assistance payments in all of Illinois, and in the vast majority of Indiana counties. The same is somewhat less true of Ohio.

Clearly percentages paid for old age assistance do not correlate with percentages of the elderly in the low income population. Illinois, with the highest percentage of elderly in its low income population pays out a very small portion of public assistance to those 65 or older. The parts of Kentucky with very high portion of public assistance going to the elderly have, in general, moderate proportions of the elderly in the low income population.

A patterning similar to Map 77 on old age assistance can be seen in Map 67, "percentage of families with incomes of $15,000 or more." Illinois and Indiana have generally low levels of poverty (Map 74) and of these a high proportion are elderly. Many of the elderly in the well-to-do parts of Illinois and Indiana may not be experiencing substandard living conditions in spite of low level of money income. The higher likelihood of their having had a relatively affluent working life (Map 69) and having accumulated sufficient assets to provide for comfort and security, would result in fewer of their numbers receiving old age benefits. Public assistance could then be diverted toward other categories of the poor. Conversely, in parts of Kentucky with a few at higher income levels, it is less likely that the elderly would have been able to provide their own old age security during their working life and thus one would expect a large percentage of the elderly to be recipients of old age benefits. Since the old comprise a more substantial percentage of the

poor than in those eastern Kentucky counties with even higher levels of poverty, as one would expect, the percentage of public assistance devoted to old age benefits is higher.

4.2.2. THE FARM POPULATION

While farming may be as lucrative as any other business enterprise, it can also be little more than a source of cheaper vegetables or recurrent debt. Many of the characteristics of the agricultural industry are detailed in the land-use section which follows this one. However, living on a farm is one type of lifestyle commitment that is important both to the persons engaged in that pursuit and to the economy of the region. Map 68 presents crucial information on the personal income of farmers, and the value of farm products and land types and sizes of farms, and changes in numbers of farms and farm acreage. These are illustrated in Maps 90, 91, 92, 93, 94, 88, and 89. Nonetheless, Maps 15 and 19 do give us some valuable information on the farm population.

Kentucky (Map 15) has, by far, the most counties where 40% or more of the population reside on farms. Ohio and Illinois both have only one such county so characterized. If we expand our definition of rural-farm life to include counties where at least a quarter of the population resides on farms, then approximately half of Kentucky but less than a quarter of Indiana and Illinois and only a tiny portion of Ohio qualifies. (Size of farm is of course a crucial variable here: see land-use section).

Map 19 shows an interesting pattern of changes in the farm population over the 1960-70 decade with a massive loss (40% or more) characterizing the southeastern border of the ORBES region, south-central Indiana and bits of southern Illinois and western Kentucky.

All counties in the ORBES region show losses of farm population except one (Massac County in Illinois), part of the national trend of the decline of small farms and concommitant consolidation of existing farms into ever-larger enterprises with fewer owners.

Map 65 represents the economic need to seek employment elsewhere among farm operators, suggesting indirectly something about the relative profitability of farming in the region. North-central Illinois by this measure has fewer farmers working 100 or more days off the farm, southern and central Kentucky also has a fairly high proportion of full-time farmers as does the remainder of Illinois and parts of eastern Indiana. The same is true of a few isolated counties in east-central Indiana and central and northeastern Illinois. Judging by this admittedly imperfect measure, generally speaking, farming is regarded as a full-time activity by half or more of the farmers in the region and must provide at least an acceptable level of return for them and their families, whether it be a bountiful return or not.

4.2.3. SELECTED OCCUPATIONAL CHARACTERISTICS

University and college communities and many SMSA counties show a predictably high proportion (20% or more) of employed professionals and managers (Map 57). So, surprisingly, do several counties in Appalachian Kentucky. This phenomenon deserves further exploration in the future. Map 64 does show that a fairly high proportion of the professionals in Eastern Kentucky may be in the education field. (This map also includes non-professional school support personnel). Counties with colleges and universities without a great deal of other economic diversification also show up clearly on this map.

Eastern Kentucky shows a high proportion of the labor force working for the government as do some of the poorer counties in Southern Illinois (Map 62). Presumably much of this is associated with the administration of public assistance programs. State hospitals and other large governmental personnel.

Employees dependent upon the manufacturing industry to earn a livelihood form a heavy proportion of the work force in over half of Indiana and Ohio (Map 52). The heaviest concentration of manufacturing is found in the Eastern half of Indiana and the Northeastern quadrant of Ohio. Conspicuously lacking in employees engaged in manufacturing is all of Eastern Kentucky, much of Southern Illinois, and scattered Central Illinois counties.

The high percentage of the labor force employed in retail trades (20%+) (Map 59) reflects primarily trade center communities scattered throughout the region. Only a few counties in Kentucky have less than ten percent of the labor force employed in retail trades.

The construction trade (Map 58) has fair prominence in Eastern Kentucky, reflecting work associated with mining in large part. Another pocket of fairly heavy concentration of construction workers is in Western Kentucky and the tip of Southern Illinois, reflecting most probably work on the Interstate occurring near 1970. The same is probably true of Crawford County in Southern Indiana.

It should be remembered that these maps do not necessarily indicate the location of high levels of construction activity. Proportionately, a larger part of the labor force is dependent upon construction activity which by its nature is less stable than some other forms of employment.

4.2.4. UNEMPLOYMENT

Unemployment (Map 56) is definitely associated with the degree of poverty in Eastern Kentucky and Southern Illinois. Of interest is the band of high employment stretching east to west across Northern Ohio, and Central Indiana and Central Illinois as well as in the Bluegrass area and surrounding counties in Central Kentucky.

4.2.5. WOMEN IN THE LABOR FORCE

Again, Appalachian Kentucky and Ohio show another deviant pattern in a minimal proportion of women in the work force, as does the tip of Southern Illinois (Map 54). Lack of employment opportunities characterize these areas. Particularly hard hit must be the Appalachian women who are heads of households(See Map 47).

Central Illinois, Northern Indiana, and the Bluegrass area of Kentucky show high percentages of women in the labor force, and their participation in the labor force is generally associated with areas of relatively high median income of families, as well as higher per capita income (See Maps 68 and 69 as well).

Map 55, the percentage of families with both husband and wife working, shows much the same pattern described above, detailing even more clearly the women's contribution to overall household affluence (as well as their lack of contribution elsewhere).

4.2.6. COMMUTING WORKERS

Naturally, SMSA areas draw workers from surrounding counties, particularly the central-city counties, as Map 51 shows. The patterns on the map show precisely which counties are "commuter" counties and which are "recipient" counties. This facet of county life should prove interesting in future sections of this report where we discuss the likely impacts of power plant construction.

4.2.7. EDUCATIONAL LEVELS

The affluent belt seen in previous maps crossing North Central Illinois, Indiana, and Ohio also represents a comparatively well educated population, the median being 12 years or more (Map 48). The layer-cake effect is once more present with Southern and Eastern Kentucky showing very low levels (9 years or less) of educational attainment in the population. Except for a cluster of counties in Southwestern Indiana, Northern Kentucky, and Southern Illinois, Indiana and Ohio represent intermediate levels of educational attainment. Educational levels are usually lower in rural areas as opposed to urban areas. However, while this holds true here, too, of more striking significance are the vast discrepencies that characterize the region. Since educational attainment is associated also with income and occupational status, these educational differences point to vastly different lifestyles and even perceptions of lifestyles.

Except for Kentucky, most counties in the ORBES region have a 5 - 9.9% college educated population. The predominant percentage in Kentucky is 5% or less. Exceptions are the university communities with small populations and undiversified economies.

Those who failed to complete high school are shown in Map 49. Nearly all counties in Kentucky show that 60% or more of the population falls in this category, rising to 80% or above in some Eastern Kentucky counties.

Most of the ORBES region can be characterized as not highly educated with 49% or more of the population not completing high school. Only Northcentral Illinois, Indiana and Ohio escape this trend.

4.2.8. HOUSING

Housing lacking some or all plumbing is a surrogate index for poverty, and Map 83 looks somewhat like Map 74. Rather primitive housing characterizes the Eastern Kentucky counties where 30% or more houses lack some or all plumbing. Conversely, in the affluent belt of Northcentral Illinois, Indiana and Ohio, less than 5% of housing may be so characterized. Map 84 shows household density and once again, Eastern Kentucky shows a high proportion of crowded houses. Much of Kentucky and parts of Southern Indiana and Ohio indictate a fairly high prevalence of crowded housing conditions. The affluent belt, of course, shows the opposite. The map may be explained in terms of size and worth of homes, presence or absence of extended family under one roof and the number of children present in the household.

Map 80 shows the percentage change in year-round housing units during the 60s decade. Counties gaining ten percent or more housing units form a wide swath from the South-central Kentucky border due north through Central and Northern Indiana and eastward diagonally from the southwest to northeast corner of Ohio. Counties in far Southeastern Kentucky and Ohio and in Southern Illinois which show a loss in housing units are also counties which are experiencing out-migration (See Map 16). Clearly Illinois is the most stable of the four states. Most counties in the ORBES region, however, are gaining housing and most have a growth rate of 10% or more.

Home ownership patterns are shown in Map 86 and are in part an indicator of the relative transience or stability of the population. In this sense, the more stable areas are to be found in Southeastern Illinois and Southern Indiana. SMSAs and college and university and military communities generally show a high percentage of rental housing. Kentucky once again shows a higher proportion on non-owner occupied homes reflecting in part the greater poverty of the state as well.

As can be seen in Map 85 , the prevalence of one-unit structures is fairly homogeneous throughout the ORBES region, with only a few exceptions, notably some central-city counties of SMSAs. Tippecanoe and Monroe counties in Indiana and Meade and Hardin counties in Kentucky are all university or college communities and the Kentucky counties are near Fort Knox as well.

4.3 LAND USE

4.3.1. COAL

Coal supplies are of course, of crucial importance to the coal-utilizing power industry. Map 2 shows both where coal reserves lie and which counties are the coal-producing ones. Kentucky leads the region by far in terms of coal production with operating coal mines in Eastern and Western Kentucky. Most of the fertile Illinois farmland is also underlaid with coal though only the Southern Illinois region is a major producer. Eastern Ohio and Western Indiana also have quite a few coal-producing communities.

4.3.2. FORESTS

Forestry was once a major industry in parts of the ORBES region, notably in Eastern Kentucky, and it continues today on a much-reduced scale there. Map 4 shows the percentage distribution of forested land (figures vary from 1965 to 1975 sources). Forest acreage gradually decreases as one moves northwestward across Kentucky except for the Bluegrass area with little forest acreage. Forested areas surround Brown County in South Central Indiana and generally characterize counties along the Ohio River. Other forested patches are to be found in Eastern Ohio and Southern Illinois.

4.3.3. FARMLAND

The great agricultural expanses of most of Illinois, Northern Indiana and Northwestern Ohio show up as a clear belt in Map 3 . The forested Appalachian area clearly shows up as non-farm area as well. Generally speaking, except for the large cities in the region, the vast majority of the ORBES region can be characterized as primarily agricultural in nature, though as we will see, the size and profitability of agricultural pursuits varies quite widely.

Map 89 shows the dynamics of changes in farm acreage for the 1964-69 period. Part of what is shown here is farm land loss associated with urbanization and part of it is connected with the relative unprofitability of the enterprise, especially in Eastern Kentucky and Appalachian Ohio. Decline in farm acreage occurs not only here but along much of the Ohio River with a few exceptions.

Map 88 further clarifies the trends shown in Map 89 for it displays changes in the number of farms showing sharp declines in Eastern Ohio and Kentucky as well as in Southern Indiana and Illinois. Again increase in the number of farms sometimes means smaller farms, particularly near urbanized areas where "baby farms" are a popular form of suburban living. Maps 88 and 89 show that an increase in number of farms as well as farm acreage was primarily a Northeastern Ohio and Central Kentucky phenomenon. Illinois, the Southern border of Kentucky, and to some extent Northern Indiana exhibit the general trend of increased farm acreage consolidated into fewer holdings.

As stated previously and shown in Map 92 , the size of the farm varies widely in the ORBES region, with the largest farms to be found in Illinois, Northeastern Indiana and Central Ohio. Very small farms (100 acres or less) characterize the Southern Appalachian area in Kentucky and moderately small farms (100-200 acres) characterize almost all of Kentucky, Ohio and three-quarters of Indiana.

Relative profitability is shown indirectly in Map 93 and more directly on Map 94 . These two together support the contention that profitability of farms is in part a function of size as well as what is grown. Counties with larger farms show a much higher percentage of sales of $2500 or more than do counties with small farms.

The average market value of agricultural products per acre (Map 91) shows considerable discrepancy across the region with the Northern part of the Region doing much better than the Southern. Further evidence of the relative profitability of farming is found in Map 90 the average value of farm land and buildings per acre. Illinois clearly has the largest area of the most valuable farm land with Indiana running a close second. About half (the Southern half, with the exception of the Bluegrass area in Kentucky and the area where the Wabash and Ohio Rivers meet) the ORBES area contains farms worth $299 an acre or less. These areas in particular are candidates for land use other than farm, notably mining and forestry.

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5. DEMOGRAPHIC PROFILES AND IMPACT ANALYSIS: KENTUCKY

5.1 RUSSELL COUNTY (10,542).

Russell County in South Central Kentucky is the proposed site of a nuclear power plant in both of the high energy scenarios. Currently the only power generating facility is a 270 megawatt hydro-electric plant at Jamestown. The two-unit plant in the first scenario and the three-unit plant in the second scenario will bring the county's generating capacity up to 2,270 or 3,270 megawats respectively by 2000.

5.1.1. LAND USE

Lake Cumberland and the land between its numerous fingers covers the southeastern half of Russell County, providing over 50,000 water recreational acres. Of the land area, almost 77% is devoted to farming and over 50% of the land is forested. Urban use of the land is minimal since there are only two towns with over 1,000 residents and both are small.

Both Jamestown (pop. 1,027) and Russell Springs (pop. 1,641) are located on U. S. 127 which runs north-south across the county. Running east-west with a junction at Russell Springs are a toll road and State Highway 80. Twenty-four miles east on these roads is Somerset (10,436) and 52 miles to the west is Glasgow (11,301).

There is no mining of coal in Russell County. There is, however, some quarrying of sand and gravel and production of petroleum totaling $22,000 in 1973.

5.1.2. RECREATIONAL AND CULTURAL FACILITIES

As mentioned above, Russell County is at the center of a large recreational area around Lake Cumberland, with 3,629 land and 50,263 water acres devoted to recreation, part of this a state park. In addition, Green River Lake is only 23 miles north-northwest from Russell Springs on State Highway 76.

There are no museums or other urban recreational facilities in the area.

Baptists are the dominant religious denomination.

5.1.3. RESIDENCE

This rural, sparsely (44 persons per square mile) populated county is well removed from any of the urbanized areas in Kentucky. A very high percentage of the population lives on farms (44%), the rest in

small towns or in the countryside. The population is composed primarily of native Kentuckians (91.3%), with a few people from the North Central U.S. (3.9%), and is very stable. Almost 92% of the residents lived in Kentucky in 1965 and 87% resided then in Russell County.

Like much of Kentucky, Russell County has experienced a reverse in the trend towards loss in population and out-migration since 1970. In the 1960's net migration was -14.7 and the population declined by 4.8%. Since 1970 the population grew by 9.9% and migration rate is 7.6. Much of this loss in the 1960's must have been from the farm population which decreased by 20.9% since the towns of Jamestown and Russell Springs both showed moderate increases (29.7 and 45.9 percents respectively) during the same time period. We cannot say whether the reversals reflect an increasing tendency to stay on a farm.

5.1.4. AGE STRUCTURE

Russell County has a relatively high median age of 33.6, reflecting the relatively high percentage of the population over 65 (13.3%)

The graph of age structure shows a sharp decrease in the young adult population, both male and female, presumably the result of out-migration. This and the substantial proportion of adults 45 and older present a picture of a population with families mostly in the later stages of the family cycle. Maps on marital structure support this interpretation. Although percentages of married men and women are high or relatively high, percentages of single men and women are relatively low or low. There are average numbers of widowed men and women but relatively low percentages of divorced men and women as well as families with female heads. However, the proportions of intact families and families with children under 18 are also moderately low. This indicates that most of the population marries, marriages are reasonably stable, but many families no longer have children at home and often one of the spouses is dead.

Without seeing a graph of age structure since 1970 it is impossible to speculate on the composition of the recent in-migrants. A guess is that increasing development of recreational facilities may be keeping some of the original population and drawing others, possibly at retirement.

5.1.5. EDUCATION

Educational levels are characteristic of rural Kentucky, low, with very few having completed college or even high school. There is no resident college population in this or any of the neighboring counties.

5.1.6. HOUSING

There was only a small gain in the number of households between 1960 and 1970. Nevertheless, there was a sizeable percentage of housing units built in that time (21.2%) as well as a 23.2% increase in the number of housing units. Considering the population losses and out-migration during the same period, this must mean the residents are building new residences and splitting households into smaller units.

Housing units are overwhelmingly owner-occupied (80%) one-unit structures (92%). Many (31%) lack some plumbing. House values are relatively low ($7,658) as are rents ($51). As expected in an area with a predominance of the elderly, only average proportions of the units are over-crowded with more than one person per room.

5.1.7. ECONOMIC ACTIVITY

Characteristic of this part of Southern Kentucky, Russell County exhibited small gains in farm acreage (1.4%) coupled with small losses in numbers of farms (-3.0%) between 1964 and 1969, indicating a trend toward farm consolidation. Farming is not profitable in Russell County. Class I-V farms are small (average 128 acres) and average return is low ($7,545). Various farming activities are pursued with livestock raising and tobacco dominant, but the few class I-III farms (114 out of 608 Class I-V farms) suggest that very few farmers have economically viable operations.

Table III-D-3

Ky-1 FARMS BY TYPE

Type	No. of Farms
Livestock (exc. poultry and dairy)	235
Tobacco	130
General	118
Dairy	92
Poultry	16

Out of 1,540 farms, 932 are either part-time retirement or class VI farms. The average return on these farms is $1,040 and the average size is 42.3 acres. The fact that only 40% of farmers worked 100 or more days off the farm in 1969 suggests both lack of supplementary employment opportunities and generally low income expectations.

Although Russell County does not have large absolute numbers of workers covered by County Business Patterns it apparently provides job opportunities for residents of nearby counties as well as its own residents.

Table III-D-4

Ky-1 COUNTY BUSINESS PATTERNS, 1973

Total Population	10,542
In CBP	1,558
Construction	61
Manufacturing	897
Transportation	37
Trade	408
Finance and Services	141

The primary non-farm economic activity is manufacturing, but significant numbers are involved in trade as well. The major type of manufacturing appears to be textiles and apparel. There is nothing else with even 100 employees by 1975.

In examining the residents of Civilian Labor Force for 1970, and comparing the figures with those in County Business Patterns, it should be noted that the 11% of the Civilian Labor Force employed in construction does not appear to be part of the employment picture in 1972. Perhaps in 1970 there was a large construction project in or close to the county.

It is difficult to interpret other aspects of the occupational structure. As often happens in small counties with little diversity in economic activity, those in education and government service represent a higher than average percentages of the Civilian Labor Force. It appears also that relatively few wives work, not surprising considering the large rural farm sector. The percentage of women in the work force, however, is just about average, probably reflecting of the percentage of women who must work and possibly also the fact that, of teh work force in the textile and apparel industries, most are women.

5.1.8. INCOME

Per capita and median family incomes in this rural county are low ($1,635 and $4,497). For farm families median income is only slightly lower ($4,033). By 1973 the relative position of Russell County had not changed. Per capita income was still low ($2,527). The statistics in Sales Management support this picture of low "effective buying power" with few in the higher categories and many with an EBI of less than $3,000.

Low income population is high (35.7%) and even higher in the farm population (37.9%).

5.1.9. IMPACT ASSESSMENT

Russell County, being poor, very isolated and rural in nature, has the primordial belongingness sub-orientation. It is also a seeming candidate for the classic boomtown syndrome associated with power plant development in these kinds of communities. However, its lack of economic diversification and an infrastructure to deal with boomtown demands means that the boom is likely to take place in nearby Somerset, in another county, which does have more amenities and facilities to offer the labor force during the construction phase. Residents then will have to deal only with day-to-day impacts. We predict some conflict between the instrumental orientation of the utility companies and those residents whose land is seen as a possible site, for their attachment to place is likely to be very strong as it is with many Eastern Kentucky residents.

5.2. TRIGG, (8,620), LIVINGSTON, (7,596), MARSHALL, (20,381), BALLARD, (8,276), AND CARLISLE, (5,345) COUNTIES

Five counties in the extreme western section of Kentucky are slated for power plants under the two high energy scenarios. Each will be the site of a two-unit (2,000 megawatt) coal-fired plant under scenario one. All but Ballard County will have a two-unit coal-fired plant under scenario two. Scenario three, the low energy coal based scenario, would place one plant (1,500 megawatts) in Livingston County.

At present, Livingston is the only county with an operating power plant facility. This is a small 130 megawatt hydroelectric unit at Grand Rivers. There is, however, in neighboring McCracken County, a 1,750 megawatt coal-fired power plant.

These five counties do not form a contiguous cluster. Trigg County on the Tennessee border is directly to the east of Lake Barkley and the "Land Between the Lakes" recreation area. Livingston County, north of the "Land Between the Lakes" area, is on the Ohio River. Marshall County, just south of Livingston, lies on the western side of the "Land Between the Lakes" area and Kentucky Lake. Ballard and Carlisle Counties are on the Ohio River about where the Ohio and Mississippi Rivers converge.

Except for Marshall County, these counties appear to be just off the major highway routes. The Kentucky Parkway, a toll road, runs diagonally across the state from Ashland through Lexington, across the northern edge of the "Land Between the Lakes" area, across Marshall County to Mayfield in Graves County and to the state border. At intervals, major roads lead north and south to population centers. In this area only three are of significance. Paducah, 27 miles north of Mayfield in McCracken County, is the largest of the cities (31,627). Situated on the Ohio River between Ballard and Marshall Counties, it probably is not more than forty miles from any place in Carlisle, Ballard, Marshall or Livingston Counties. Mayfield itself (10,724) and Murray (13,537) south of Marshall in Calloway County are secondary urban centers. For the residents of Trigg County, Hopkinsville (21,250) in neighboring Christian County is the nearest city and is readily accessible over U.S. Highway 68 and several state highways.

Except for Marshall County, the populations of these counties are small and sparsely populated. Towns are very small and few in number, the two largest being in Marshall County. In these five counties, only the following six towns have over 1,000 residents:

Trigg:	Cadiz (1,987)
Marshall:	Benton (3,652)
	Calvert City (2,104)
Ballard:	LaCenter (1,044)
	Wickliffe (1,211)
Carlisle:	Bardwell (1,049)

5.2.1. LAND USE

Approximately a third of Trigg County is covered by Lake Barkley and the "Land Between the Lakes" Recreational Area. This is reflected in the higher than usual (for this area of Kentucky) percentage of land in forest, and the very high recreational land acreage for this County. Marshall County as well has large acreages devoted to recreational use, although in this case most of the acreage is water.

Table III-D-5

Ky-2 LAND USE

	% Farms	% Forest	RECREATION [Total	Land	Water]
Trigg	56.4	49.0	117,077	116,362	715
Livingston	69.8	39.6	408	353	74
Marshall	47.1	35.4	57,082	7,323	49,762
Ballard	75.3	26.8	28,052	24,848	3,205
Carlisle	72.5	25.5	2,259	1,784	477

While discussing recreational acreages, however, the substantial acreage in Ballard County should be noted as well. Possibly the lower percentages of land devoted to farming in Trigg and Marshall Counties are a consequence of this recreational development. In Trigg County it appears that a large proportion of the land simply is not available for farming. In Marshall County, it is likely that there has been a secondary recreational development for private or commercial use. This is in accord with population variation among the counties.

This area is outside the coal and oil producing regions of Kentucky. There is one mine in Carlisle which produced 26,139 tons of clay in 1973, as well as some quarrying of sand and gravel. Trigg County produced $390,000 worth of stone, Ballard and Marshall, a very small amount of sand and gravel. Livingston County, however, produced $14,170,000 in stone, sand and gravel, and zinc.

5.2.2. RECREATIONAL FACILITIES

The outdoor recreational facilities are very good in this area, even for Kentucky. The large lake enclosed "Land Between the Lakes" area covers part of Trigg County and extends to Marshall County. Three state parks are connected with this large recreational area. Ballard County has the large Ballard Wild Life Management Area along

the Ohio River. Nearby facilities include Pennyrile State Forest and the Shawnee National Forest across the river in Illinois. One characteristic of recreational possibilities in this area is the large percentage of the water acreage available.

5.2.3. RESIDENCE

Except for Marshall County, these five counties are entirely rural and sparsely populated. Since the population of Calvert City, (the only community classified as urban by the U.S. Census) has less than 4,000 people, the rural population of Marshall County must be distributed less sparsely than in the other four counties.

Table III-D-6

Ky-2 DISTRIBUTION OF POPULATION

County	Density	% Urban	% Rural non-Farm	% Rural Farm
Trigg	21	0	68	32
Livingston	24	0	81	19
Marshall	67	17	70	13
Ballard	32	0	74	26
Carlisle	27	0	72	28

Marshall County exhibited substantial growth and in-migration during the sixties, although Livingston grew as well, but at a slower rate.

Table III-D-7

Ky-2 POPULATION SHIFTS

	1960-70	1970-4	1960-70	1970-4
Trigg	-2.8	5.4	-11.4	4.6
Livingston	8.1	10.7	4.2	10.3
Marshall	21.8	7.3	13.4	5.7
Ballard	-0.2	.3	.8	.8
Carlisle	-4.5	1.1	-4.3	2.2

After 1970, growth continued at a lower level in Marshall County and appears to have accelerated in Livingston County. After losing population during the sixties, Trigg, Ballard and Carlisle have experienced small growth, and, for Trigg and Carlisle, a reversal of migration direction. Ballard appears to have the stable population in terms of growth.

In spite of the relative stability of Ballard County, it has a higher percentage (72.3% native Kentuckians as opposed to 86.6, 84.3, 80.4 and 82.5 for Trigg, Livingston, Marshall and Carlisle respectively) of the native population who were born in other states. These migrants are predominantly from the North Central U.S., (14.3) probably neighboring Illinois and Indiana, but there are also substantial proportions from the south (9.5).

Judging from the stable population size, the fact that this county had only a slightly lower percentage of the population (83.4) living in Kentucky in 1965, and its extreme western location, Ballard is part of a pattern of local residential movement which includes the adjacent states. The difference between Ballard and Carlisle may be due to the location of bridges across the river. The other three counties are more likely part of a pattern of local mobility oriented slightly more toward other Kentucky counties. Of the five counties, Livingston experienced the greatest level of inter-county mobility.

In general the residential mobility of the counties in this area are about average for the ORBES region. Livingston and Ballard Counties have somewhat higher percentages who lived in another state in 1965 but this is reasonable considering their locations along the river bordering the state.

5.2.4. AGE STRUCTURE

The age structures of the population in all five counties are similar. Median ages are high:

Trigg	32.5
Livingston	32.1
Marshall	33.1
Ballard	36.5
Carlisle	37.5

Still there is a difference of over 3% between the median ages in the three eastern and the two western counties. There is a sharp decline in relative numbers of young adults in all counties. However, in Marshall County the relative numbers in each age cohort are roughly equivalent until the attrition in numbers due to old age sets in. In the other counties there are relatively larger numbers in the middle aged cohorts than in the young adult cohorts.

5.2.5. MARITAL STRUCTURE

Consistent with the picture presented by the age structure, percentages of widowed men and women in the two western counties, Ballard and Carlisle are relatively high, and since the death rate is higher among men, this leaves a relatively high percentage of families with a female head. There are few divorced or single people in any of the counties.

Generally the percentages of both men and women who are married is high or relatively high. Marshall and Livingston Counties also show high percentages of intact families pointing to relatively stable marriages. Marriage may not be less stable in the other three counties but owing to the larger percentages of the widowed in the western counties and the relatively larger numbers of single men and few married men and women, husband-wife families are less prevalent.

5.2.6. EDUCATION

These counties are characteristic of Kentucky with low levels of educational attainment. Ballard and Marshall Counties show the highest median school years completed at that is less than 11.0. No county has even 40% of the population who have finished high school. Percentages having completed college are lower than 5%.

5.2.7. HOUSING

Marshall and Livingston Counties have the largest percentages of new housing units and households since 1960.

Table III-D-8

Ky-2 HOUSING, 1970

	Trigg	Livingston	Marshall	Ballard	Carlisle
Change 1960-70:					
Households	4.6	19.5	31.6	8.5	2.5
Housing units	7.3	22.2	26.3	2.5	2.2
Average:					
House value	$8,582	$8,238	$11,673	$7,217	$7,171
Rent	63	60	69	71	65
%Built since 1960	33.0	29.6	33.9	24.2	23.1
%Owner occupied	69.7	80.5	84.2	80.0	79.2
%Lack some plumbing	28.8	27.6	13.2	14.7	18.9

This is consistent with the rate that new units are being built and the population increase discussed earlier. The other counties are building new units at a moderate to high rate but this does not appear to reflect the changing needs for more housing. Between 13% (Marshall) and 29% (Trigg) of the housing units in these counties lack some plumbing

and only in Trigg County are over 10% of the units crowded. Over 85% of the housing is in one unit structures, is predominantly owner-occupied, and is relatively low in value. It should be noted, however, that Marshall County with the highest percentage of home owners, has the highest median house value.

5.2.8. ECONOMIC ACTIVITIES

Marshall County, which has the smallest percentage of its population living on farms (13%) and the smallest percentage of land devoted to farming (47%), has the least productive farming among the five counties. This may be a function of size. This low profitability

Table III-D-8

Ky-2 FARMING, 1969

	Trigg	Livingston	Marshall	Ballard	Carlisle
Change 1964-69:					
Farms	9.8	-3.2	-15.0	-5.8	-4.9
Acreage	2.0	-6.0	- 9.8	- .7	-4.6
Average:					
Land value	$212	$147	$236	$257	$215
Return per acre	44	29	29	57	50
Class I-V Farms:					
Number	418	299	285	484	344
Avg. acres	276	342	155	214	212
Avg. return	$14,497	$12,226	$7,133	$13,866	$12,306
Other Farms:					
Number	300	297	632	364	281
Avg. acres	106	124	74	59	62
Avg. return	$1,170	$1,019	$920	$1,163	$1,157

may be reflected in the very low ratio of potentially full-time farming operations (Class I-V farms) to other types of farms, as well as the higher percentage losses in farm numbers and acreage between 1964 and 1969. Although the farming in Trigg County does not, from these data, appear qualitatively different nor does the return appear substantially higher, Trigg and several nearby counties have experienced gains in the numbers of farms and gains or very small losses in the farm acreage between 1964 and 1969. Also fewer than average numbers of farmers work off the farm.

Livestock raising as a primary operation is the most important type of farming. Tobacco (Trigg and Ballard) and dairy farming (Carlisle) are second in importance.

Both Marshall and Trigg Counties have substantial percentages of manufacturing jobs covered in County Business Patterns although only Marshall County is a focus for in-commuting workers. The difference appears to be in numbers. Marshall has almost four times the number of jobs, and less than three times the population of Trigg County.

Table III-D-9

Ky-2 COUNTY BUSINESS PATTERNS, 1973

	Trigg	Livingston	Marshall	Ballard	Carlisle
Population	8,620	7,596	20,381	8,276	5,354
Jobs in CBP	1,419	796	5,221	1,358	1,333
Mining	-	160	-	-	-
Construction	142	51	591	219	13
Manufacturing	654	-	3,062	-	-
Transportation	36	62	199	-	6
Trade	279	247	753	253	142
Finance	48	103	178	42	26
Services	245	153	361	54	53

The most important industry in these counties is the chemical industry in Marshall County employing over 2,000 persons. The next most important are the primary metal industry, also in Marshall County, and the paper industry in Ballard County, each employing between 500 and 999 persons. All the other manufacturing industries employ less than 500 persons. Marshall also produces furniture or fixtures. Trigg County has fabricated metal, apparel and machinery industries. Carlisle produces electrical equipment.

The numbers employed in finance or in services in Livingston County is surprsing considering the fact that this county has no communities of 1,000 or more. The numbers employed in Ballard County in construction are also noticeable. Livingston, as is consistent with the value of mineral production, is the only county with significant numbers of jobs listed in mining. However, Carlisle's clay mine may employ significant numbers also because there are over 1,000 jobs unaccounted for in this county and most of them must be in mining or manufacturing. Similar gaps in the data for Ballard County are more likely to reflect the presence of one large employer, the paper industry mentioned above.

Examination of the composition of the labor force in 1970 adds little to the picture. High percentages of foremen and craftsmen in the labor force in Marshall and Ballard Counties are probably related to the relatively high numbers of jobs in manufacturing (Marshall) and construction (Ballard) in these counties. Considering the highly rural nature of Livingston County, it is not surprising that few women (29.8) are counted in the labor force.

5.2.9. INCOME

For the ORBES region, per capita and median family incomes are close to average, and the median family incomes for total and farm population do not differ greatly. This middling position within the ORBES region does not appear to have changed by 1974.

Table III-D-10

Ky-2 INCOME

	1969 Median family	1969 Median farm family	1969 Per. Cap.	1973 Per. Cap.	1974 Median Family EBI
Trigg	5,761	4,875	3,210	3,720	8,244
Livingston	6,164	7,143	3,497	4,202	8,627
Marshall	7,305	7,593	3,350	3,644	9,099
Ballard	7,000	8,109	3,590	3,936	9,540
Carlisle	5,839	5,943	3,815	4,405	6,856

5.2.10. IMPACT ASSESSMENT

These five Kentucky counties, which are in close geographical proximity, Trigg, Livingston, Marshall, Ballard and Carlisle, differ somewhat in their basic environmental orientations in spite of relative homogeneity of the population itself in terms of age structure, educational attainment and income. Trigg and Marshall may be classified as having an aesthetic (symbolic) sub-orientation primarily because of the large recreational aspect. The possibility for conflict between the economic benefit and the aesthetic sub-orientations exist in Marshall because it is also the most urban, the most affluent, more industrialized and has the most commuting workers. In short, it seems ripe for further industrial development such as a power plant site and associated industrial development. Furthermore, given the nature of the population, it seems likely that Marshall County would be open and receptive to a power plant.

Because the prevailing orientation in Trigg County is aesthetic, we would expect considerable opposition to power plant siting there. It is questionable though whether the county has the resources to be effective in opposition efforts.

Livingston County also with its recent population growth and high inter-county mobility might also be receptive to power plant development, however, given its rural nature, it would also be innundated by the construction phase boom and experience negative impacts because of the lack of an effective economic infrastructure to deal with demands of migrant workers for services, housing and amenities.

Ballard County with its aesthetic sub-orientation seems an unlikely candidate for power-plant development because it also is an area of generally older people and contains the most valuable farmland and the highest incomes. In short, it seems to be prospering at its own pace and the people there probably do have a fairly high sentimental attachment to place as well. In other words, we would predict opposition to a plant in this county. The only mitigating factors are the mixed origins of the population, with quite a few being from other states, however, we think many of these in-migrants to be retirees, and probably unsympathetic to development. However, should a plant be sited there, many workers could commute from nearby cities and mitigate any boomtown impacts.

Carlisle, being isolated, rural farm in nature and with an older population of limited education and income, while possibly being receptive to development, would probably experience an intense boom-bust phase should a plant be located there with its attendant disamenities.

5.3. HENDERSON (36,031), UNION (15,882), WEBSTER (13,282), MCLEAN (9,062) AND BUTLER (9,723) COUNTIES

In Eastern Kentucky, just south of the place where the Wabash runs into the Ohio River and the states of Kentucky, Indiana and Illinois meet, are five counties subject to the impact of potential power plant development. Two counties, Henderson and Union, are on the Ohio River. Webster County, adjacent to both of the above counties, is bordered on the west by the Tradewater River and on the east by the Pond River. Adjacent McLean County also has the Pond River as its western border. The Green River cuts across this county and merges with the Pond River. To the southeast the Green River also crosses Butler County, the fifth county likely to be directly affected by power plant development.

At the present time there are power generating facilities in both Henderson and Webster Counties. Henderson has both a small hydro-electric (170 megawatts) and a small coal-fired (52.5 megawatts) plant. Webster has two plants also, both located at Sebree. There is a 350 megawatt coal-fired municipally owned plant. In addition, the Big Rivers Rural Electric Cooperative has a coal-fired unit (80 megawatts) in operation, a 60 megawatt unit under construction, and three units (65, 200, and 200 megawatts respectively) planned for operation in 1976, 1979 and 1984. An additional facility planned for Henderson County is a coal conversion plant at Baskett, just east of Henderson on U. S. Highway 60.

No plants would be located in this area in the low energy scenarios.

For each of the high energy scenarios, a two-unit (2,000 megawatt) coal-fired plant would be placed in both Union and Webster Counties. In Scenario I, a single unit (1,000 megawatt) coal-fired plant would be built in both McLean and Butler Counties as well. This area would have no nuclear plants.

Three, or possibly four urban areas would likely be of importance to the residents of these counties. Henderson (22,976), though not the largest city, is on the Ohio River just ten miles south of Evansville, Indiana (138,764) where major highways converge from all directions. Most residents, at least in the eastern halves of Union and Webster Counties and in the western part of McLean County, should find the city less than thirty miles away. Some of those in McLean County might find Owensboro (50,329), in Daviess County, a bit closer. Likewise those living in southern or western Webster County might prefer to go to Madisonville (15,332), in Hopkins County, for some shopping, services and urban amenities. Bowling Green (36,253), in Warren County, would be the closest urban center for those in Butler County. This area is generally well serviced by highways connecting these centers and crossing the area to more distant parts of the state.

Outside of the city of Henderson, there are only eight communities with populations over 1000 in these five counties and four of them have less than 2000 residents.

Table III-D-11

KY-3 POPULATION CENTERS

	Density	Population
Henderson County	83 per sq. mile	36,031
Henderson		22,976
Union County	47 per sq. mile	15,882
Morganfield		3,563
Sturgis		2,210
Uniontown		1,255
Webster County	39 per sq. mile	13,282
Providence		4,270
Clay		1,426
Sebree		1,092
McLean County	35 per sq. mile	9,062
Livermore		1,594
Butler County	22 per sq. mile	9,723
Morgantown		1,394

Looking at portions of the population concentrated in the urban areas and the relative sizes of the counties and populations, it can reasonably be suggested that the populations of these five counties are similar in the sparseness of their distribution outside the urban areas.

5.3.1. LAND USE

These five counties all lie in the western coal-producing region of Kentucky. Union County had the most substantial coal production in 1973 and 1974, as well as the largest production of oil. There is a small amount of quarrying of stone in Butler and sand and gravel in Henderson and Union Counties.

TABLE III-D-12

KY-3 MINERAL PRODUCTION, 1973

	Coal		Oil
	No. of Mines	Tonnage	Barrels
Henderson	2	524,175	1,043,932
Union	6	7,086,571	1,291,987
Webster	3	1,842,961	605,633
McLean	5	1,309,335	480,670
Butler	7	74,394	47,840

We do not have reliable figures on the amount of land which is affected by mining operations.

Only in Butler County is there a substantial proportion of the land in forest. Conversely, Butler has the lowest (although not low for the region) percentage of its land devoted to farming.

TABLE III-D-13

KY-3 LAND USE

	FOREST % 1975	FARM LAND % 1969	RECREATIONAL ACREAGE 1975
Henderson	19.6	86.3	4,546
Union	15.6	90.2	6,363
Webster	27.2	72.5	547
McLean	25.2	80.2	307
Butler	52.1	61.6	855

Union and Henderson both have sizeable acreages devoted to outdoor recreational facilities. The other three counties have less than 1,000 acres each devoted to outdoor recreation.

5.3.2. RECREATIONAL AND CULTURAL AMENITIES

One major park, the John J. Audubon Park, is located in Henderson County, but as in most of Kentucky, outdoor recreational facilities are readily accessible to most residents. The Land Between the Lakes, Pennyrile Forest State Park, Mammoth Cave National Park, Rough River Dam, and the Shawnee National Forest in Illinois provide some of the major possibilities for residents of these counties.

The possibilities for urban amusements and activities are in varying degrees available in the urban centers, especially Evansville, Indiana which has the only museums listed by the American Association of Museums near this area.

Baptists churches have the largest membership in all these counties. In all except Union County, they comprise over 50% of all church membership.

5.3.3. RESIDENCE

The farm population is relatively small in the three northwestern counties of Union, Webster, and Henderson Counties and comprises slightly over one-fourth of the population in McLean (28%) and Butler (29%) Counties.

This portion of the population, as in the ORBES region in general, decreased disproportionately, as can be seen in the following percentage changes in farm population for 1960 through 1970:

Henderson	-49.0
Union	-17.2
Webster	-41.2
McLean	-20.4
Butler	-39.2

If you ignore Henderson (the city), the largest sector in each county is the rural non-farm population.

Table III-D-14

KY-3 DISTRIBUTION OF POPULATION

	Percent Urban	Percent Rural Non-farm	Percent Farm
Henderson	64	29	1
Union	22	62	15
Webster	33	53	14
McLean	0	72	28
Butler	0	71	29

McLean and Webster experienced both population decline and out-migration in the sixties while Henderson continued to grow even though experiencing a low level of out-migration.

Since 1970 all five counties have had a slow growth in population and negligible or small in-migration. Webster and McLean, which had the highest rate of out-migration in the sixties now have the highest level of in-migration.

Table III-D-15

KY-3 POPULATION SHIFTS

	Population Change		Net Migration	
	1960-70	1970-74	1960-70	1970-74
Henderson	7.5	2.1	-2.9	-0.8
Union	9.3	2.2	2.1	0.5
Webster	-6.7	5.5	-8.6	5.7
McLean	-3.1	6.6	-9.7	5.7
Butler	1.4	5.2	.8	4.0

The two border counties with their higher populations have larger percentages of people born in other states, mostly the North Central States, probably neighboring Indiana and Illinois. When looking at residence in 1965,

Table III-D-16

KY-3 RESIDENTIAL STABILITY

		Residing in:	
	Birth State	County 1965	Ky. 1965
Henderson	80.0	84.0	88.8
Union	77.9	71.8	79.3
Webster	87.5	81.4	89.8
McLean	87.3	80.9	89.3
Butler	89.4	86.1	90.9

it is clear that Union has a much more mobile population than any of the other counties. Butler County on the other hand is the most stable of the five.

5.3.4. AGE STRUCTURE

The very low median age of the Union County population (23.8) reflects the very high population of males, age 15-19 (2,290). This one group of males forms almost 15% of the population. This must be an institutional population since almost 2000 live in group quarters but the nature of the institution has not been determined. Otherwise the profile of the age structure is not greatly different from those of the other four counties.

Median age in the other four counties range from 29.1 (Henderson) to 35.9 (Webster). There are relatively few children, a decline in the relative numbers of young adults (especially sharp in Webster County),

and relatively larger numbers of the middle aged and older. The curve for Webster County is interesting in that there are roughly equal numbers in each cohort between 20 and 55 with a sharp drop between children and adult cohorts and a small increase in numbers after age 55.

5.3.5. MARITAL STRUCTURE

If you attempt to eliminate the effect of the unusually large number of teenage males in the Union County population, there is little distinction about the marital structure of this area. High percentages of men and average or above average percentages of women are married. With the high median age, one expects a relatively high percentage of widows in Webster. Higher numbers of divorced women and families with a female head as well as fewer intact families would also be expected in Henderson, the most urbanized county. In addition, the greater numbers of young adults agrees well with the higher than average percentages of families with children under 18 in Henderson County.

5.3.6. EDUCATION

In accordance with their younger median ages, both Union and Henderson Counties have relatively high median levels of educational attainment. This reflects the higher than average percentages of the population who have completed high school. Percentages of the population who have completed college are low, less than 6% in these two counties, and less than 5% in Webster, McLean, and Butler Counties.

5.3.7. HOUSING

The changes in numbers of households and housing units between 1960 and 1970 are in accord with generally average percentages of new units being built.

Table III-D-17

KY-3 HOUSING CHANGES, 1960-70

	Households	Housing Units	Built since 1960 New Units
Henderson	13.8	10.6	21.0
Union	5.1	8.6	17.1
Webster	-1.1	-0.3	13.8
McLean	6.7	8.8	23.8
Butler	13.4	13.8	24.6

It should be noted that those counties with declining population and increasing households, must contain smaller households, or greater numbers of single person households.

Except for Henderson County, housing is overwhelmingly in one unit structures, it often lacks plumbing, house values and rents are low. Henderson County with its large urbanized area has fewer home-owners, higher rents and house values, and fewer units lacking some plumbing.

Table III-D-18

KY-3 HOUSING CHARACTERISTICS, 1970

	Lack some Plumbing	% Owners	Median House Value	Median Rent
Henderson	11.1	66	11,631	79
Union	18.9	71	6,995	84
Webster	24.4	76	5,663	55
McLean	21.0	78	8,350	66
Butler	47.1	76	5,456	54

5.3.8 ECONOMIC ACTIVITIES

Farming appears to be a profitable economic activity in Union County where farms are large and return per acre, though not high for the ORBES region, is high for Kentucky.

TABLE III-D-19

KY-3 FARMING, 1969

	Henderson	Union	Webster	McLean	Butler
Return per acre	$ 60	$ 83	$ 43	$ 46	$ 21
Value per acre	320	300	202	229	128
Chg. acres 1964-69	-1.0	13.9	6.0	3.1	15.7
Chg. farms 1964-69	-5.5	8.5	6.6	-1.0	10.3
Farms, I-V No.	735	480	471	512	380
Ave. size	301	389	268	223	271
Ave. ret.	$18,835	$33,737	$13,647	$10,966	$7,975
Farms, Other No.	338	136	390	351	627
Ave. acres	54	71	79	51	114
Ave. ret.	$1,190	$1,267	$930	$1,140	$919
Class I-V Farm Types					
Livestock	408	355	252	157	242
Cash-grain	261	111	156	199	40
Tobacco	10	2	7	44	14
Dairy	-	4	6	13	32

Henderson County farmers, although not as well off as those in Union County, can produce a return which makes farming a viable economic activity.

It is clear from the figures for these counties that changes in numbers of farms and farm acreage do not provide indicators of relative profitability. (See Henderson, Union, and Butler county figures).

Clearly livestock and cash-grain crops are the primary agricultural products, with a little tobacco raising and milk production in McLean and Butler Counties.

None of these counties have any significant amount of manufacturing activity as measured by the 1972 value added by manufacturing. However, Butler County job opportunities are predominantly in manufacturing (68%) and a relatively high percentage of the labor force in Henderson County work in manufacturing.

Because of restrictions on publication of data, the number of miners employed in mining in Union County is not listed. However, recalling the large coal production, the Department of Mines and Minerals figures for 1973 were checked for number of employees. In 1973 mining provided employment for 1618 men. This figure is consistent with the figures listed in County Business Patterns. If we assume that the numbers were similar in 1972, mining is the most important economic activity in Union County (over 40%).

Except for Butler and Union Counties, a fairly low level of mixed job opportunities are available. Union County is the only one of the five counties in which substantial proportions of the population does not commute out for work.

Table III-D-20

KY-3 COUNTY BUSINESS PATTERNS, 1973

	Henderson	Union	Webster	McLean	Butler
Total Population	36,031	15,823	13,282	9,062	9,723
in CBP	9,301	3,920	1,307	882	1,333
Agriculture	27	-	-	-	-
Mining	276	-	-	-	24
Construction	895	-	73	15	28
Manufacturing	3,184	531	71	306	910
Transportation	406	52	124	-	28
Trade	2,543	607	353	236	189
Finance	270	102	62	52	48
Services	1,664	978	134	97	106

By 1975 the only industry employing over 500 persons was a primary metals industry in Henderson County. A rubber and plastics industry, also in Henderson County, had employed 665 persons in 1972 but that number had declined to less than 500 by 1974.

Other smaller industries (employing less than 500) are listed in the county figures for at least some of the time between 1972 and 1975. Henderson County had industries producing: 1) furniture, 2) lumber products, 3) textile products, 4) apparel, 5) transportation equipment, and 6) chemical products. Butler County had industries producing 1) lumber products, and 2) apparel and textile products. Webster County produced: 1) primary metals and 2) apparel. Union County produced: 1) apparel, 2) textiles and 3) fabricated metal. McLean County had industries producing: 1) furniture and 2) primary metals.

Examination of the occupational distribution of the work force in 1970 calls for two additional observations. The four counties closest to the river are part of an area with high concentration of craftsmen and foremen in the work force. This area extends from the convergence of the Ohio and Mississippi Rivers north along the Ohio and Wabash Rivers and is centered in southwestern Indiana. The concentration then thins out but still comprises a substantial portion of the work force across eastern Indiana and all of Ohio.

A second observation is that the percentage of the civilian labor force working in construction in 1970 in Butler County was relatively high but there were few jobs in construction in the 1973 County Business Patterns. It appears that a construction project might have been taking place in Edmonson County but the direction of commuting does not bear this out. Perhaps the gross measures obscure the real situation. If not, this anomaly cannot be explained.

5.3.9. INCOME

Per capita and median family incomes range from moderate to low with the highest incomes in Union and Henderson, and the lowest in Butler. Income for farm families is generally on a par with the median family income except for Union County where the productive agriculture provides farming families with the highest median income in the state. The relative positions of the counties remain in 1973. The 1974 figures on effective buying power indicate that Butler County has unusually large percentages of the poor, even for Kentucky.

TABLE III-D-21

Ky-3 INCOME

	1969 per capita	1969 medium family	1969 farm families	1973 per capita	1974 medium family EBI
Henderson	2,431	7,833	7,402	4,517	10,416
Union	2,117	8,120	10,089	4,622	9,672
Webster	2,069	6,003	5,992	3,829	7,106
McLean	2,116	6,218	6,371	3,423	8,841
Butler	1,572	4,772	4,795	2,390	4,597

5.3.10. IMPACT ASSESSMENT

These five Kentucky counties slated for possible power plant siting, Webster, Henderson, Union, McLean and Butler, are physically close to one another but differ greatly in what their basic environmental orientations would seem to be. Henderson and Union, the most affluent and urbanized counties, seem to have a primarily instrumental orientation, which would generally make them receptive to power plant development and likely, also, to have an economic infrastructure to deal with population growth. Henderson county would not be subject to a boom-bust syndrome because of the availability of a skilled labor force in nearby Evansville and in Henderson itself. Union county, on the other hand, is likely to experience a boom-bust cycle from the construction phase in one or two of its small cities, depending on where the plant is located.

Webster and McLean Counties, and particularly the former, are likely to be highly sentimental in their environmental orientation and somewhat resistant to power plant development because of relative stability, elderliness and rurality of the population. It is doubtful whether effective opposition to a plant could be brought about should the residents be opposed to power plant development given the low educational and occupational levels that characterize these counties.

Butler County seems to have a primordial belongingness environmental sub-orientation. It also seems to have an aesthetic sub-orientation considering the proportion of the land which is forested. The high proportion of the poor and lack of economic diversification suggest poor adaptation to a boomtown syndrome that would be likely in this isolated county. We also would expect the population to be opposed to development.

5.4. MEADE, (18,796) AND BRECKENRIDGE, (14,789) COUNTIES

Meade and Breckenridge Counties on the Ohio River southwest of Louisville are the proposed sites of coal-fired plants for both of the high energy scenarios. A two-unit, 2,000 megawatt plant would be placed in each county in both scenario one and two. Neither county has any current power generating facilities.

U.S. Highway 60 between Louisville and Owensboro (a distance of 109 miles) crosses both Meade and Breckenridge Counties making either of the above cities readily accessible to many of the residents of these counties. Those who live close to the river, where a plant is likely to be sited, would have to travel over side roads to reach the major highway. Elizabethtown in nearby Hardin County is readily accessible to some of the residents by state roads or U.S. Bypass 31W as well.

Table III-D-22

Ky-4 COMMUNITIES OVER 1,000

Meade	Breckenridge
Vine Grove (2,987)	Hardinsburg (1,547)
Muldraugh (1,773)	Cloverport (1,388)
Brandenburg (1,637)	Irvington (1,300)

Both counties have three town each, only one of which has over 2,000 inhabitants. Only Cloverport and Bradenburg are located on the river.

5.4.1. LAND USE

Both counties have just under half the land in forest (Meade 43%, Breckenridge 49%) but Breckenridge has a substantially larger proportion of land devoted to farming (Meade 68%, Breckenridge 88%). Approximately 2% of the land is in urban use. Part of Meade County on the Hardin County line is a large army base, Fort Knox. Both have substantial amounts of recreational land.

Table III-D-23

Ky-4 RECREATIONAL LAND USE

	Meade	Breckenridge
Total acres	6,346	8,143
Land	5,940	2,982
Water	408	5,139

There is no coal production in these counties but in 1972 and 1973 Breckenridge produced 17,848 and 13,285 barrels of oil respectively.

5.4.2. RECREATIONAL FACILITIES

As can be seen in the land use figures above, outdoor recreational facilities are available for most residents. Otter Creek Park is in Meade County and in addition, there are several state recreational facilities in nearby counties: Bernheim Forest, Knobs State Park, Mammoth Cave National Park, Nolin River Lake, and Rough River Lake and Dam. Directly across the Ohio River is the Hoosier National Forest in Indiana.

5.4.3. RESIDENCE

On the border between Meade and Hardin Counties is a large army base, Fort Knox. Since a third of the workforce is non-civilian in Meade County, the assumption has been made that the extremely anomalous profile of this county presented by demographic measures used in this report are due to the presence of this base. Until we discuss economic activity, it is impossible to separate the population attached to military base from the remainder of the population. For this reason, this section will profile Breckenridge County and assume that the civilian population of neighboring Meade County does not differ greatly.

This is a sparsely populated (27 per square mile) rural county with 37% of the population living on farms. There has been very slow population growth (.4%) increasing slightly since 1970 (4.3%). Like much of Kentucky, the out-migration of the sixties (-7.1) has stopped and there is net in-migration since 1970 of 3.2%. Whether this reversal has meant a slowdown in the decrease of the farm population (-30.8) is undetermined. Of the native population, 92% were born in Kentucky and most of the few out-of-state residents probably came from neighboring Indiana.

The population is very stable in residence, 93% having lived in Kentucky in 1965, 88% in Breckenridge County.

5.4.4. AGE STRUCTURE

Median age in Breckenridge County is 30.5. The age profile illustrates the predominance of older middle-aged and the elderly in the adult population. The largest single adult cohort is that for ages 55 through 59.

5.4.5. MARITAL STRUCTURE

This relatively young population is for the most part married with few, especially women, who remain single. There is a somewhat higher than average percentage of widowed men but little significance is seen

in this. Since most women appear to marry, and divorce does not seem to be particularly frequent, the percentage of families with a female head is somewhat lower than usual.

5.4.6. EDUCATION

Educational levels are low with less than 30% of the population having finished high school and only 2% having finished college.

5.4.7. HOUSING

In spite of the out-migration and low population growth of the sixties, there have been substantial gains in numbers of households (9.3) and housing units (10.7). The housing is predominantly in one-unit structures (85%) and over 27% have been built since 1960. Housing values ($5,126) and rents ($42) are relatively low and relatively high percentages lack some plumbing (33%). Slightly over three-fourths are owner occupied, a relatively high percentage for Kentucky.

5.4.8. ECONOMIC ACTIVITIES

As in so much of Kentucky, raising livestock and tobacco are the major farming operations. Although farming appears to be only marginally profitable, average return per acre is only $35. Breckenridge County is one of a cluster of counties exhibiting gains in both numbers of farms (8.5) and farm acreage (.3) during the late 1960's. Meade also exhibited an increase in the number of farms (8.5) although farm acreage was reduced (-4.3). Since the population remained almost the same during this period, farms must be breaking up to some extent. Price of farm land is low in these counties. Perhaps that is related to these trends.

Table III-D-24

Ky-4 FARMING, 1969

	Meade	Breckenridge
Average:		
Land value	$198	$151
Return per acre	42	35
Class I-V Farms:		
Number	462	1,045
Average return	$10,730	$9,385
Average acres	199	236
Other Farms:		
Number	509	783
Average return	$1,152	$1,194
Average acres	79	81

The size of the civilian work force covered in County Business Patterns is about equal in both counties and distribution among the various job categories is similar. The category with the largest numbers is "trade". Although numbers are withheld, indications are that Meade County has a significant proportion of jobs in manufacturing. Over 600 jobs are unaccounted for and since few are likely to be in agriculture, construction or transportation, they are probably in one or a few large manufacturing firms. The 1972 Census of Manufacturing supports this suggestion by listing one chemical industry which employs between 500 and 999 people.

Table III-D-25

Ky-4 COUNTY BUSINESS PATTERNS, 1973

	Meade	Breckenridge
Total employed	1,285	1,194
Construction	32	41
Manufacturing	-	226
Transportation	-	68
Trade	331	424
Finance	130	96
Services	143	303

Breckenridge County has small industries employing between 100 and 499 people in: 1) apparel and textiles, and 2) stone, clay, glass and concrete. One striking difference is the numbers employed in services, more than twice as many in Breckenridge County which also has the smaller population. Of course it is possible that the military services provide many services for the base attached residents of Meade County.

Substantial numbers in both counties commute out for work.

5.4.9. INCOME

Per capita and median family incomes are below average for Breckenridge ($1,972 and $6,316) and average for Meade County ($2,273 and $7,803). The surprising feature of income distribution is the relatively high median family income for farm families in Meade County ($9,095 as opposed to $5,968 for Breckenridge). Since there is only a small difference in average return per farm, it must be suggested that many farm families have a member working elsewhere. A relatively high percentage (56.1) of farmers work off the farm at least 100 days a year and 322 of the 509 "other farms" are classified as part-time.

Fort Knox with a population of over 37,000 (almost half the population of the county) is across the county line in Hardin County which also contains Elizabethtown (11,748). These two communities contain 63% of the population of Hardin County, one of the larger Kentucky counties. Since Hardin County draws commuters for work, the location of Fort Knox would argue for the disproportionate drawing of workers from Meade County. If so, why this would affect farm families more than non-farm families would be interesting to know.

Relatively, per capita incomes appear to have reversed by 1973 (Meade $2,900, Breckenridge $3,445) but there is not enough information to say more.

5.4.10. IMPACT ASSESSMENT

The predominant orientation of Meade and Breckenridge Counties is clearly sentimental and symbolic given the farming and recreational use of the land and its stable, older and poor residents. Meade County's previous experience with Fort Knox and mobile populations suggests a somewhat easier possible adjustment to power plant siting, however, neither of these counties has the infrastructure to deal with a construction boom. The nearness to rather large cities suggests the likelihood of a commuting labor force by and large, and in that sense, minimum impact of that phase. On the other hand, the nature of the indigenous population, especially in Breckenridge County, suggests there may be quite a bit of resistence to a power plant project.

5.5. SCOTT COUNTY (17,948)

Scott County is the site of a planned low BTU coal conversion plant. At present there are no power generating facilities in that county.

Located in Central Kentucky just north of Fayette County, the center of the Lexington SMSA, by 1974 Scott County was included in the SMSA. The major town in Scott County is Georgetown (8,629). All other residents live in places of less than 1,000. However, several cities are nearby. Lexington (108,137) is 17 miles south by I-75 or U.S. Highway 25. Frankfort (21,356), the state capitol, is 18 miles west on U. S. Highway 460 and 64. In addition, Cincinnati is just an hour's drive away by I75 which passes Georgetown.

5.5.1. LAND USE

Only a relatively small percentage of the land in Scott County is forested (17%). It is for the most part rolling farm land (95%). There is no mining or quarrying in Scott County and only a negligible portion of the land (872 acres) is in recreational use, so the balance must be devoted to urban or rural residential use. According to The River Basin Water Quality Management Plan, about 3% of the land is devoted to urban use.

5.5.2. RECREATIONAL AND CULTURAL AMENITIES

The recreational, cultural and educational facilities of nearby metropolitan areas are readily accessible to residents of Scott County. In addition, Scott County has a small college, Georgetown College. Central location and closeness to Lexington with the many highways which converge at this point means that many outdoor recreational facilities are available as well. Kentucky has an extensive system of state parks and within two hours one may reach a number of them as well as the Daniel Boone State Forest in Eastern Kentucky.

Residents of Scott County, as is the pattern in Kentucky, are predominantly Protestant and Baptist.

5.5.3. RESIDENCE

At least in 1970, population density in Scott County was relatively low (63 per square mile) and was predominantly rural with 20% of the population living on farms. During the 1960's the population of the county had been growing (16.8) both through natural increase and in-migration (6.0) although this was mainly due to the growth of Georgetown (23.5) and the rural non-farm population since farm population had been decreasing (-23.1). The total rural population had experienced a growth of 11.1% so the increases in the non-farm sector must have been large to offset such losses in farm population.

After 1970 these population shifts seem to have leveled off. Population increased but at a much lower level (2.5) and migration has been estimated at (-)0.5.

The residents of this county are somewhat more mobile than the average for the region. Only 73% lived in Scott County in 1965 although 87% lived in Kentucky. Most of the residents are native Kentuckians (85%) with most of the balance of native Americans born either in the South or in the North Central states.

5.5.4. AGE STRUCTURE

The age structure is characterized by a slightly higher than average percentage of young adults and slightly lower than average percentage of middle-aged adults which is reflected in the somewhat lower than average median age (26.3).

5.5.5. MARITAL STRUCTURE

As would be expected in the fairly young and mobile population, there are fewer than average widows and more than average numbers of divorced women in the population. The general tendency for larger proportions of men to marry and to remarry are reflected in the higher percentages of married, and the lower percentages of divorced and widowed men in contrast to women in the same categories.

5.5.6. EDUCATION

Educational levels are higher than usual for Kentucky but are not high relative to the region. Median school years completed is less than 11.0 and 8.6% of the population have completed college although only slightly more than half have finished high school. Considering the location of Georgetown College with over 1,000 students and the faculty to service the college, all of whom have at least a high school diploma, in a county with less than 18,000 residents, the educational levels of the general population must be lower than above percentages suggest.

5.5.7. HOUSING

Central Kentucky, in general, is characterized by low levels of home ownership. In Scott County only 62% of the housing is owned by the occupant, although 77% is in one-unit structures. The increase in number of households (20.7) and housing units (23.0) has been substantial and is in accord with the percentage of housing units built since 1960 (25%).

Values of housing are characteristic of fringes of urban areas in the region, lower than those at the urban center but somewhat higher than surrounding rural areas. Median value of owner-occupied housing

units is $14,464 and rent is $83. For Kentucky, the proportion of housing units lacking some plumbing facilities is lower than average (20%).

5.5.8. ECONOMIC ACTIVITY

In spite of the relatively high value of farm land ($488) and the moderate average return from farming per acre ($66) and per Class I-V farm ($13,858), the number of farms and farm acreage grew slightly between 1964 and 1969 (3.8% and 4.4% respectively). However, during the 1960's farm population declined sharply as mentioned earlier. It is difficult to explain this unless the nature of farming is changing. From census figures, farming appears similar to that in neighboring Fayette County except that it is less profitable in Scott County.

Table III-D-26

KY-5 FARMING, 1969

	Scott	Fayette
Class I-V farms:		
Number	798	698
Average acres	198	212
Average return	$13,858	$29,526
Other farms:		
Number	356	431
Average acres	43	33
Average return	1,220	1,666
Farm types:		
Tobacco	567	396
Livestock	168	153
General	36	38
County Agricultural returns:		
Total	$11,493,093	$21,327,271

Fayette County is the center of a horse farming area with sizeable cattle production as well. The labor intensive nature of this type of farming operation entails the on-farm residence of some of the farm workers as well as the farm operator. If a similar pattern has prevailed in Scott County, it is conceivable that the lower returns on farming or some other factors have led to a reduction in the resident farm labor force, hence reducing the farm population without forcing either farm consolidation or breakup. This, of course is speculation, but it points out the necessity of further examination of the experiences of the farm population (in this case a sizeable 20%) if we wish to be able to gauge their possible reactions to industrial development in their county.

According to County Business Patterns, the primary non-agricultural activity in Scott County is manufacturing. Major industrial

Table III-D-27

KY-5 COUNTY BUSINESS PATTERNS, 1973

	Scott
Total Population	17,948
In CBP	3,817
Manufacturing	1,979
Trade	702
Services	681
Construction	180
Finance	127
Transportation	80

employers are: 1) fabricated metal products (employing 617) and 2) non-electric machinery (employing 451). There are also plants employing between 100 and 499 persons for the manufacture of: 3) electrical equipment, 4) instruments and related products, 5) furniture and fixtures, 6) rubber and plastic products, and 7) office and art supplies.

Scott County has a substantial proportion of residents who commute out of the county, mostly to nearby Fayette County.

One notable characteristic of Scott County is the relatively high percentage of women in the work force and the similarly high numbers of these who must be working wives. This pattern is characteristic of Central Kentucky and often of urban, more affluent areas.

5.5.9. INCOME

Per capita and median family incomes are lower than those in the prosperous Central Kentucky counties to the south, although still higher than in much of Kentucky. In 1969, per capita income was $2,401 and median family income was $7,566. Surprisingly, median family income for the farm population was slightly higher ($7,598). Relatively speaking, income seems to have remained about the same with moderate percentages of the population in the high and low income categories through 1974.

5.5.10. IMPACT ASSESSMENT

Scott County, slated for a coal conversion plant, presents rather mixed environmental orientations to us. On the one hand, there is a large rural farm population with a predominantly sentimental orientation. On the other hand, urban influences, which are primarily instrumental in character and due both to a fairly good sized town in the county and nearby Lexington suggest the potential for real conflict concerning the location of a coal conversion plant. Being nearby residents ourselves, we know the plant is a very controversial issue. We predict,

however, that the instrumental orientation will eventually predominate and the plant be constructed there. Opposition will probably come primarily from environmentalists in nearby Fayette County and from farmers. If it is well-organized, it might be able to delay the plant or possibly stop its' construction.

5.6. BOONE (32,812), CARROLL (8,523), TRIMBLE (5,349), OWEN (7,470) AND GALLATIN (4,134) COUNTIES

Five counties in Northern Kentucky may be subject to the impact of power plant development. Sites in Boone, Carroll and Trimble Counties have already been chosen for new coal-fired units. Rabbit Hash in Boone County will be the site of a three-unit coal-fired plant totaling 2,138 megawatts with units scheduled to go into operation in 1980, 1982 and 1984. Carroll County presently has a plant at Ghent to which will be added three coal-fired units (500, 550 and 550 megawatts) scheduled for operation in 1977, 1980 and 1983. At that point, power generating capacity in Carroll County will total 2,625 megawatts. Trimble County will have a new two-unit coal-fired plant at Wises Landing totaling 990 megawatts and scheduled to go into operation in 1981 and 1984.

The scenarios posit additional units for Trimble County and new plants in Gallatin and Owen Counties. In Scenario I, Trimble and Gallatin Counties will both have large 3,000 megawatt coal-fired plants and Owen will have a 1,000 megawatt plant. Scenario II would place a 3,000 megawatt nuclear plant in Trimble County and a small 1,000 coal-fired plant in Owen. Scenario III would add only one plant, a two and one-half unit (1,500 megawatts) plant, in trimble County to the presently planned concentration in this area. From the information above, it appears that Trimble County offers good locations for either coal or nuclear power plants.

Boone, Gallatin, Carroll and Trimble Counties border the Ohio River between Cincinnati and Louisville. The Kentucky River goes from the Central Kentucky region across Carroll County and empties into the Ohio River. Owen County is adjacent to Carroll and Gallatin Counties and has the river for its northern border.

A major highway, I-71, crosses all four river counties from Cincinnati to Louisville. Two U.S. Highways, 127 and 421, cross I-71 in Trimble and Gallatin Counties running south to Frankfort, the capitol of the state which lies 20 miles west of Lexington, a third metropolitan center. Probably no place in these counties is more than fifty miles from one or another of these three cities.

Boone is the only populous county of the group. Although included in the Cincinnati/Covington SMSA, it has only two towns with over 1,000 residents, Florence (11,457) and Walton (1,801). Both are located just off I-71 and I-75 at the eastern edge of the county and close to the urbanized areas. Florence is just to the east of Covington in Kenton County. Probably any power plant, however, would be located along the river in the western, less densely settled part of the county.

Only three other towns in these counties have over 1,000 people: Carrollton (3,884) in Carroll County, Owenton (1,280) in Owen County, and Warsaw (1,232) in Gallatin County. Both Carrollton and Warsaw are located on the Ohio River but Owenton is on U. S. Highway 127 in the center of Owen County. Although Trimble does not have sizeable communities, Madison, Indiana (13,081) is just across the river in Jefferson County.

5.6.1. LAND USE

Over three-fourths of the land in all five counties is in farmland. Almost a half of the land in all but Boone County is forested. Urban use of land has been estimated and is negligible in all but Boone County.

Table III-D-28

KY-6 LAND USE

	Percent Farmland 1969	Percent Forest 1975	Percent Urban 1975
Boone	79.4	31.0	18.0
Gallatin	77.0	43.3	4.6
Carroll	77.9	45.1	2.0
Trimble	82.0	45.1	2.9
Owen	79.9	41.6	0.7

There is no oil or coal production and other mining or quarrying activities are negligible.

5.6.2. RECREATIONAL AND CULTURAL AMENITIES

Outdoor recreational facilities, as is usual in Kentucky, are readily accessible. Three of the counties, Boone, Carroll and Owen, have sizeable amounts of recreational land, considering the small populations and size of these counties. In addition to two state parks within these counties, there are several more within this Northern Kentucky region as well as any recreational facilities connected with the rivers.

Those who wish to enjoy museums, theatres or other similar recreational amenities must travel to one of the nearby urban centers.

Table III-D-29

KY-6 RECREATIONAL LAND (Acres)

	Total	Land	Water
Boone	2,735	2,591	144
Gallatin	138	100	38
Carroll	1,078	1,033	45
Trimble	416	404	12
Owen	2,923	2,414	509

5.6.3. RESIDENCE

Population density is low for all but Boone County. In the three completely rural counties, Gallatin, Trimble and Owen, the farm population is substantial. As expected, Boone County is largely rural non-farm with a substantial urban sector. The unexpectedly urban-like profile presented by the percentages for Carroll County is the consequence of a small county having the main local population center. The rural population is probably just as sparse in the rest of the county as it is in the other highly rural, low density counties.

Table III-D-30

KY-6 DISTRIBUTION OF THE POPULATION

	Density per.sq. mile per	Percent rural non-farm	Percent rural farm	Percent urban
Boone	132	50	12	38
Gallatin	41	64	36	0
Carroll	66	39	16	46
Trimble	37	61	39	0
Owen	21	55	45	0

Except for Boone County the populations are highly stable and composed predominantly of native Kentuckians. Owen County appears to be the most stable. Higher rates of mobility, expected in an urbanizing area, characterize Boone County. It appears that most of the native out-of-state population comes from the North Central States, probably Indiana across the river.

Table III-D-31

KY-6 RESIDENTIAL STABILITY

Resident in:	Birth State	Same County 1965	Same State 1965
Boone	77.6	67.1	81.4
Gallatin	87.6	82.7	93.1
Carroll	85.5	82.4	91.8
Trimble	87.4	78.6	90.4
Owen	91.6	87.0	94.7

The only striking population shifts since 1960 have been in Boone and Owen Counties. In Boone County the direction of change has remained the same but the magnitude is reduced. Owen County has experienced a reversal in numbers and direction of migration. Whether it is the conditions at home or the conditions elsewhere which are inducing residents to stay in the county cannot be determined with current information. Generally, what these figures seem to convey is that people are increasingly inclined to stay put. Perhaps in some of the counties which have experienced out-migration, old residents are returning.

Table III-D-32

KY-6 POPULATION SHIFTS

	Population Change		Net Migration	
	1960-70	1970-75	1960-70	1970-74
Boone	49.6	10.3	32.1	5.0
Gallatin	7.0	5.3	.1	3.6
Carroll	6.9	1.4	2.0	-0.2
Trimble	4.9	3.0	- 4.7	---
Owen	-9.3	6.1	-13.2	6.1

Statistics for the shifts in farm population are only available for the decade of the sixties when Carroll, Trimble and Owen experienced sharp reductions (45.5, 23.1 and 32.2 respectively) while Boone and Gallatin Counties had only a small reduction in farm population (3.8 and 5.4). We cannot estimate to what extent the farm population has participated in these changing patterns in population shifts since 1970.

5.6.4. AGE STRUCTURE

The age structures of these five counties can be viewed as lying on a continuum with Boone County at one end and Owen County at the other end. Boone County is characterized by a large young population and rapidly decreasing numbers in the older age cohorts.

In Owen County there are relatively few children, a sudden drop in numbers after the teens, and relatively large numbers of the older middle-aged and elderly in the population. Trimble, Gallatin and Carroll Counties vary between these two extremes as can be seen in the age profiles and in the median ages:

Boone	25.3
Trimble	28.1
Gallatin	29.7
Carroll	30.2
Owen	35.0

5.6.5. MARITAL STRUCTURE

In general this is an area that has relatively high percentages of married people in the population. Boone County, in addition, has a young population with relatively few divorced or widowed persons and high percentages of intact families and families with children under 18. There are correspondingly low percentages of families with a female head. Carroll County presents an interesting anomaly with relatively high percentages of divorced people and somewhat higher than average percentages of families with children under 18. It is Gallatin County which has the low numbers of intact families and larger numbers of families with female heads, accompanied by relatively high percentages of divorced women and the widowed. This poses a question, since one would expect the one-parent families to be drawn to the local center of population in Carroll County. The distribution cannot be explained unless the small numbers of people involved and the problems incurred when looking at percentages rather than numbers have obscured the situation. Owen County, as expected with its older population, has fewer families with children still at home.

5.6.6. EDUCATION

Except for Boone County, educational levels are low, ranging from a median of 11.0 to a median of 11.9 years. Even the levels for Boone County are just above the ORBES region average for percentages who have completed high school and college. There is no resident student population to affect these percentages.

5.6.7. HOUSING

Consistent with shifts in population, Boone County gained significantly in percentages of households (54.8) as well as new housing units (56.9). Over 40% of its housing units have been built since 1960 but this rate is not high enough to accommodate the increased demand. Almost 80% are one-unit structures and relatively few lack plumbing (9.6).

The situation in Owen County is almost the reverse. The loss in percentage of households (-0.2) is consistent with, if smaller than, population losses. There was a small gain in the number of housing units (2.9), however, and surprisingly, almost a fifth (19.7) of the housing units have been built since 1960. Many still lack some plumbing (42%), nevertheless.

The other three counties range between these extremes with moderate gains in households and numbers of units. Gallatin seems to have been building houses at a somewhat slower rate (13.7) and consequently has a slightly higher percentage of houses lacking some plumbing (33.1).

House values and rents are in line with the above pattern, highest in Boone($16,995; $128) and lowest in Owen ($8,774; $57) County with the others ranging in between. It should be noted that home ownership levels are not particularly high in this area.

5.6.8. ECONOMIC ACTIVITIES

Although substantial proportions of the population live on farms, farming for the Class I-V farmer is just barely a viable economic activity. Tobacco is the most important crop in the five counties. In Boone County, however, livestock farming is a more important type of farming operation.

Table III-D-33

KY-6 FARMING, 1969

	Boone	Gallatin	Carroll	Trimble	Owen
Changes 1964-69:					
Farms	- 1.4	-16.2	- 2.2	- 4.8	- 3.1
Acreage	11.0	-14.3	-14.4	- 9.2	- 1.1
Average:					
Land value	$468	$236	$253	$253	$193
Return per acre	49	46	50	52	39
Class I-V farms:					
Number	499	205	335	403	707
Average acres	177	181	171	158	205
Average return	$10,944	$10,004	$9,116	$9,176	$9,166
Other farms:					
Number	746	168	150	213	383
Average acres	52	71	52	62	90
Average return	$ 426	$1,246	$1,274	$1,239	$1,223
Percent farmers:					
Work off farm	58.4	36.5	38.8	43.0	36.0

Boone, the only county with above average land values, is the only county with an increase in farm acreage during the late sixties. All counties experienced decreases in numbers of farms, Gallatin having the sharpest decrease (16%). These figures, together with the percentages of farmers working off the farm at least 100 days per year also provide an indicator of the extent to which farming provides a viable economic alternative to other employment for the farm population. Of course, it should be remembered that farm residence may reflect preferred life style and not necessarily economic orientation.

Boone and Carroll Counties, the only counties with substantial numbers of employees covered in County Business Patterns, were the only two with listed manufacturing activity, although it is considerably more important both in numbers and in percentages in Boone County.

Table III-D-34

KY-6 COUNTY BUSINESS PATTERNS, 1973

	Boone	Gallatin	Carroll	Trimble	Owen
Population	32,812	4,134	8,523	5,349	7,470
In CBP	7,931	268	2,358	213	504
Mining	---	---	57	---	---
Construction	428	---	129	58	36
Manufacturing	3,435	---	812	---	---
Transportation	245	29	73	---	113
Trade	2,358	180	527	59	169
Finance	134	19	93	44	61
Services	947	15	651	16	50

In 1973, County Business Patterns listed an apparel and textile industry employing 494 persons for Carroll County. By 1974 there were also chemical and primary metals industries employing between 100 and 500 persons each. The textile industry was no longer operating. By 1975 there was a similarly sized transportation equipment industry and the primary metals industry was apparently not operating. With these changes, it is impossible to suggest what is there now. In general, Carroll County seems to provide a fairly balanced range of job opportunities to both its own residents and to those of adjacent counties. It is a focus of in-commuting, probably because of containing the main local population center.

Boone County offers a wider range of jobs in manufacturing with sizeable industries (employing between 500 and 999) in: 1) non-electric machinery, 2) fabricated metal products, 3) electrical equipment, 4) furniture and fixtures, and somewhat smaller industries in 5) rubber and plastic products, 6) paper, 7) instruments and various miscellaneous manufacturing. Substantial numbers are employed in the services and

trade as well. Nevertheless, many residents commute to other counties (probably the Covington or Cincinnati areas) for work, or alternately, elect to live in more rural Boone County.

It should be noted that in spite of the relative importance of manufacturing in these two counties, neither had over 50 million dollars in value added from manufacturing in 1972.

The other three counties all have very few job opportunities listed in County Business Patterns.

In examining the distribution of the work force among the various occupations, the relatively high percentages in construction in Gallatin County and as craftsmen or foremen in Gallatin, Boone and Carroll Counties should be noted. Recalling the anomalies in the marital structure previously mentioned for Gallatin and Carroll Counties, it is interesting to speculate about whether there has been some construction or developmental activity in that area which is affecting the social structure and composition of these two counties.

5.6.9. INCOME

As expected, the per capita and median incomes are high or relatively high in Boone County and below average in the other counties. This pattern holds through 1974. It is also interesting to note that, except for Boone County again, there is little difference between the figures for the total and for the farm population.

Table III-D-35

KY-6 INCOME

	Boone	Gallatin	Carroll	Trimble	Owen
1969:					
Median family	$10,011	$5,864	$6,885	$6,596	$5,892
Median farm family	8,179	4,537	6,594	5,679	6,366
Per capita	2,857	1,844	2,311	2,073	2,094
1973:					
Per capita	4,523	3,286	4,019	3,339	3,833
1974:					
Median family EBI	14,938	8,269	9,857	10,280	6,830

5.6.10. IMPACT ASSESSMENT

The environmental orientations of these five Kentucky counties, Boone, Carroll, Gallatin, Owen and Trimble, are very homogeneous with the exception of Boone County. The latter county, being part of a SMSA, has a primarily instrumental orientation and, as such, should house a population generally amenable to power plant development.

Moreover, there would be no boomtown syndrome due to the nearby availability of a skilled labor force.

Gallatin, Owen and Trimble Counties would seem to be characterized by the primordial belonging sub-orientations, given the rural and recreational nature of land use and the stability and relative elderliness of the population who are probably highly attached to their homes, land and lifestyle. Gallatin and Trimble would not experience booms because of nearness to urban centers. Owen County would be innundated by the construction phase and unable to deal with the strains.

Carroll County presents a less clear picture with its rural population and one small city that serves as a trade center. If a power plant were to be sited in the county, Carrollton would become a likely boomtown candidate. The city might generally welcome such development and, given its relatively diversified but small, economic infrastructure, not have too much difficulty coping with boomtown demands and successfully attracting secondary industry after the power plant is built. One might surmise that the prestige sub-orientation would characterize Carrollton residents and the primordial belongingness sub-orientation characterize its rural population who might be opposed to power plant development.

5.7. BRACKEN (7,227), MASON (17,273), LEWIS (12,355) AND GREENUP (33,192) COUNTIES

In northeastern Kentucky along the Ohio River a string of four counties, Bracken, Mason, Lewis and Greenup, have been selected as potential sites for power development. The only power generating facility in the area is a new plant near Maysville in Mason County with one 300 megawatt coal-fired unit under construction and two coal-fired units (300 and 500 megawatts respectively) scheduled to go into operation in 1977 and 1980.

Under both high energy scenarios, this area will be subject to a high level of impact. Under Scenario I there will be two-unit coal-fired plants in both Bracken and Greenup Counties and a single unit nuclear plant in Lewis County. Scenario II proposes a three-unit nuclear plant each for Bracken, Mason and Lewis Counties and a two-unit nuclear plant in Greenup County. Under low energy Scenario IV a three-unit (3,000 megawatt) nuclear plant would be built in Lewis County.

The C & O Railroad and state highways both run along the river across all four counties from the Cincinnati-Covington SMSA to the northwest to the Portsmouth, Ohio, Ashland metropolitan areas to the east. All along the river, most likely sites for plants, are within 60 miles of one or the other of the above mentioned metropolitan areas. In addition, three U.S. highways, 62 from Georgetown in Scott County, U.S. 68 from Lexington in Fayette County, and State 11 coming north through Fleminsburg from I-64 (47 miles), all converge at Maysville, major town of the area on the river in Mason County.

5.7.1. LAND USE

The region is primarily agricultural with relatively high percentages of forest land in both Lewis and Greenup Counties.

Table III-D-36

Ky-7 LAND USE

	Recreational acreage (1975)	%Land in Farms (1969)	%Land in Forest (1975)
Bracken	320	84.9	35.4
Mason	482	91.1	17.5
Lewis	1,100	59.4	74.4
Greenup	2,000	51.8	70.4

Mining is of negligible importance. Greenup, although on the edge of the eastern Kentucky coal producing region, has no production listed for 1973. Greenup County did produce 26,151 tons of clay mined by 11 men at six mines in 1973. Lewis County also produced some clay, 15,155 tons at two mines employing 5 men.

5.7.2. RECREATIONAL AND CULTURAL AMENITIES

The area is predominantly Protestant with Baptists predominating in Lewis and Greenup Counties. Methodists predominate in Mason County. Residents have little access to museum or cultural facilities. There are however, extensive outdoor recreational facilities available. Greenbo Lake State Park is in Greenup County, and Blue Licks Battlefield, Grayson Lake, and Carter Caves State Parks are located in nearby counties. Stretches of the Shawnee State Forest and Wayne State National Forest in Scioto and Lawrence Counties, Ohio, are across the river. Less than 50 miles south is the northern edge of Daniel Boone National Forest. In addition, as can be seen from the forest map, sizeable portions of these counties are in forest although the land may not be developed for recreation.

5.7.3. RESIDENCE

Residence is predominantly rural non-farm although Greenup County has been included since 1970 in the Ashland SMSA, indicating the increasingly urban nature of that area. Only Greenup County has more than one community with a population of 1,000 or more. Maysville, in Mason County, and Flatwoods, in Greenup County, and each have between 7,000 and 8,000 people. Augusta in Bracken County, Vanceburg in Lewis County, and Russell, Raceland, Worthington and Greenup, in Greenup County, all have less than 2,000 residents. The small variation in the generally low population densities (less than 50 per square mile in Bracken and Lewis: 50 to 100 per square mile in Mason and Greenup) no doubt reflects the distribution of the towns.

The population is overwhelmingly stable in residence. Over 80% are native Kentuckians in the three easternmost counties while between 70% and 80% are native Kentuckians in Greenup County. It should be noted that of those coming from other states, greater numbers have migrated from the north-central states than from the south.

Table III-D-37

Ky-7 RESIDENTIAL STABILITY

County	Live in Birth State	Lived in Same State, 1965	Lived in Same County, 1965
Bracken	89.7%	91.7%	82.8%
Mason	87.1%	90.3%	84.8%
Lewis	83.3%	91.6%	87.0%
Greenup	76.0%	89.1%	81.4%

Except for Greenup County, the area is characterized by higher than average residential stability. The greater mobility of Greenup County residents is to be expected but differences among counties are not great.

Migration trends between 1960 and 1970 show a very small gain in Greenup County and losses in Bracken, Mason and Lewis Counties.

Table III-D-38

Ky-7 POPULATION SHIFTS

	Bracken	Mason	Lewis	Greenup
1960-70				
Population	-2.6	-6.4	5.8	13.5
Farm Sector	-16.5	-18.8	-22.5	-38.1
Migration	-7.9	-14.6	-19.2	.2
1970-74				
Population	4.9	-2.4	3.7	0.9
Migration	3.7	-3.4	0.2	-2.5

In Bracken and Mason Counties natural increase was not high enough to offset loss from out-migration and both counties sustained population losses. In Lewis County, with the highest rate of out-migration, there was still a small increase in the population. This supports the picture of a county with many young families. Population increase in Greenup County was almost exclusively a consequence of natural increase.

By the early seventies only Mason County was continuing to lose population. Bracken and Lewis Counties were growing at a modest rate and had experienced a reversal of the previous trend towards out-migration. Greenup County's population appears to have stabilized in spite of a low level of out-migration.

Shifts from the rural sectors occurred in all four counties in the sixties and from the urban sector in Mason County (Maysville) as well. In Greenup County changes in population distribution (including net migration and natural increases) involved a loss of 15.5% from the rural sector and a gain of 87.3% to the urban sector. These changes were accounted for by the rapid growth of Flatwoods (97.3), Raceland (66.5) and Russell (35.9) during this period.

5.7.4. AGE STRUCTURE

There are distinct differences in age structure among these four counties. Bracken and Mason have moderately high median ages while Lewis and Greenup have rather low ones:

Bracken	33.0
Mason	32.3
Lewis	26.2
Greenup	26.9

The somewhat higher than average death rate and the low birth rate in Bracken County are in accord with this picture. Especially noticeable is the low proportion of adults in the middle years (20 to 50) for both Bracken and Mason Counties. This may reflect a past period of out-migration on a higher level than in the other two counties.

5.7.5. MARITAL STRUCTURE

In all four counties percentages of married men is high (Greenup) or relatively so and in Lewis and Greenup Counties the percentages of married women are also relatively high. These factors, coupled with the relatively low percentages of divorced men and women, the relatively high percentages of families with children and a low median age, present a picture of an area with especially large numbers of young families in the early stages of the family cycle.

Differences between Lewis and Greenup Counties appear to be related to relative stability versus mobility. As has been shown, Lewis County is relatively stable residentially with a low in-migration rate and probably an increasing tendency for the young to remain nearby. The young are workers rather than students. They marry and have families. Marital instability is not counteracted by the possibilities for re-marriage offered by the more mobile and more urbanized environment characteristic of Greenup County. Indeed, the higher than usual percentage of single men in Lewis County may be due to this same factor, fewer opportunities to marry in the first place.

Data for Mason and Bracken Counties suggest another group of factors. High median age and low to moderate percentages of families with children under 18 indicate an area where families are, for the most part, in later stages of the life cycle. In Bracken County a relatively high percentage of the women are widowed and there are relatively few single women. Mason County is characterized by a high percentage of divorced women and families with a female head and a correspondingly low percentage of intact families. Surprisingly, considering the industry in the county, there is also a low percentage of adult males in the population (46.8%). These data point to this area as a focus of in-migration for single and divorced women, most likely to work in Maysville. Continued net out-migration is a puzzle, however. The age structure for Mason County coupled with this information suggests out-migration of young adult males which may more than balance any in-migration of women, many of whom may be middle-aged. If males have a greater tendency to migrate out for jobs, education, or to leave a difficult family situation, marriage and remarriage for the remaining women are less likely.

5.7.6. EDUCATION

Generally the population is poorly educated with very few having college degrees or even high school diplomas. The median level of schooling is slightly higher in Greenup County.

5.7.7. HOUSING

Gains in numbers of households and housing units between 1960 and 1970 were less than 10% in all but Greenup County. Building rates are keeping up with the increase in number of households and providing for some replacement of existing houses.

Houses are overwhelmingly in one-unit structures. Many in the three western Counties lack some or all plumbing facilities. This is not surprising considering that housing is older in these counties.

The higher numbers of persons per room in Lewis and Greenup Counties is probably related to the younger population than to anything else.

Table III-D-39

Ky-7 HOUSING, 1970

	Bracken	Mason	Lewis	Greenup
Change 1960-70:				
Households	0.9	0.5	4.6	24.5
Housing Units	5.6	2.2	9.4	24.1
Median:				
House Value	$8,808	$12,873	$6,956	$11,412
Rent	63	72	55	77
% of Units				
One-unit structures	87.4	81.3	92.2	91.2
Built since 1960	8.0	14.4	16.0	27.9
Owner-occupied	66.5	56.1	67.6	77.7
Lack some plumbing	34.1	23.3	48.1	14.7

Values of housing units and rents, characteristic of the area, are low. The differences between the house values in Bracken and Mason Counties as opposed to those in Mason and Greenup Counties is striking and corresponds to the location of the larger population centers.

5.7.8. ECONOMIC ACTIVITY

An examination of the County Business Patterns for 1973 gives some indication of non-farm economic activity in these counties.

Table III-D-40

Ky-7 COUNTY BUSINESS PATTERNS, 1973

	Bracken	Mason	Lewis	Greenup
Total Pop.	7,227	17,273	12,355	33,192
In CBP	535	4,489	1,001	1,648
Agriculture	---	8	---	---
Mining	---	---	---	---
Construction	14	144	28	287
Manufacturing	---	1,975	648	383
Transportation	56	110	23	78
Trade	*125	1,356	235	595
Finance	40	202	37	76
Services	44	672	24	178

* Retail trade only; no wholesale figures supplied for Bracken County.

Highly rural Bracken has very few jobs in any of the categories and no activity is predominant. By 1974 there were between 100 and 500 persons engaged in the manufacture of rubber and plastics but nothing else of significance. Between 15% and 25% of the resident workers commute out of the county to work. Few women are in the labor force and consequently few families have both husband and wife in the labor force. Those women who must work, widows with children, divorcees and single women, may migrate rather than commute out, possibly to Mason County.

We see almost the reverse situation in Mason County. There are over 15% more workers than there are working residents. This county is a focus of in-commuting, probably from adjacent counties. There are over two and one-half times the number existent job opportunities in Mason than in Greenup County with almost twice the population. The major part of these jobs are in manufacturing although there are also substantial numbers in trade and the services. Surprisingly, given the pattern of job opportunities in the area, Mason has not been the focus of net in-migration. Age and marital structure plus an examination of the type of industries located in Mason County offer clues to the interpretation of this anomaly. The electric machinery industry and the textile industry, two of the three largest industries in this county, employ relatively high percentages of women (41% and 68% respectively) compared to the percentages of women employed in Kentucky manufacturing (34%) in general. These jobs plus the usual opportunities in trade and the services suggest a reason for the concentration of women who must work in this county. On the other hand, since women usually receive lower wages, these jobs may not be attracting men to the county.

In addition to the above industries, there are over 250 employed in the production of machinery and between 100 and 249 employed each in the tobacco and transportation equipment industries.

In Lewis County manufacturing is also a significant economic activity but apparently is not sufficient to provide jobs for all residents since over 25% of the workers commute out. This is not surprising when you look at the numbers. Lewis has approximately 70% of the population of Mason County but less than a fourth the number of jobs. Small firms make shoes and wood products and small numbers of workers are engaged in trade and services. This county is much more similar to Bracken than to Mason County in its economic composition.

The situation in Greenup County is somewhat different. Greenup appears to contain residential satellites of the Ashland SMSA. Most jobs are in trade which is probably only sufficient to serve the immediate area. Note that Mason County with only one town, Maysville, has many more jobs available in the trades and services than does Greenup County with similarly sized Flatwoods. This suggests the probability that Maysville serves a wider area. Possibly residents of Greenup County go outside for many services.

By 1974 Greenup County appeared to have developed some significant industrial activity, probably an outgrowth from Boyd County where these same activities were also present at about the same level. In addition to small industries in 1) stone, clay, glass, and concrete, and in 2) chemical products (both employing between 100-500), there is now a growing (employing over 1,000) industry in 3) primary metals.

In general the percentages of the population employed in the different sectors support the above profiles and add nothing to the picture. It should be noted, however, that there is a very high percentage of the work force who are employed as craftsmen or foremen in Greenup County. Since there is not a large amount of manufacturing, this information provides a clue to the segments of the population choosing to reside in that county.

As an economic activity, farming is noticeably more profitable in Mason County than in the other three counties, in spite of the relatively small size of farms. This may partially explain the slightly smaller percentage of farmers who worked off the farm for more than 100 days in Mason County (27.9% as opposed to 33.3, 38.5 and 58.0 percent in Bracken, Lewis and Greenup Counties respectively). Percentages working off the farm in Bracken and Lewis Counties are still relatively low, especially when compared to Greenup County. These figures accord well with the greater number part-time farms in the latter county.

Table III-D-41

Ky-7 FARMING, 1969

	Bracken	Mason	Lewis	Greenup
Change 1964-9:				
Farms	-2.6	-1.6	-8.5	1.6
Acreage	-5.9	-3.8	-5.7	9.4
Average:				
Land value	216	299	147	174
Return per acre	51	70	29	23
Class I-V Farms:				
Number	581	717	527	242
Avg. acres	151	170	236	218
Avg. return	9,096	12,010	8,674	8,145
Other Farms:				
Number	309	300	638	703
Avg. acres	74	57	95	90
Avg. return	1,155	1,107	1,141	1,033

Average sizes of farms are relatively small, less than 200 acres in Lewis and less than 150 acres in the other counties. Average values of land and buildings are also low. Except for Mason County where farming may be a more viable activity, the majority of farms in the area have cash incomes of less than $2,500 a year. Return per acre is low also, especially in the two easternmost counties.

There have been changes in numbers of farms and in farm acreage since 1964. Bracken, Mason and Lewis Counties all show losses in both numbers of farms and in farm acreage between 1964 and 1969. Greenup County, however, showed a gain in number of farms and in farm acreage for the same period. In terms of land utilization, the change is small but considering the low return on farming, the trend is of interest as a possible indicator of life styles of Greenup County residents.

Several types of farming activity are important in this area. Tobacco was the primary farm type listed for all four counties. Dairy farming was second in importance for all but Greenup County. Livestock raising was a close third in importance for Mason County. It should be noted that although tobacco is the most important activity on a large proportion of farms, the small differences between the total cash returns from crops and livestock (and products) indicate that the return per farm may not be sufficient to provide the basis for full-time farming operations. Considering the value of tobacco as a cash crop, it is likely that anyone owning a farm with a tobacco allotment will take advantage of it as a supplementary source of income to farming or any other economic activity either by working it himself or leasing it to a nearby farmer. That is, the return from tobacco may be widely and

thinly spread over the population. Dairy farming and other livestock farming, both labor intensive activities, are most likely to provide the basis of full-time farm operations.

• Table III-D-42

Ky-7 TOTAL VALUE OF FARM PRODUCTS, 1969

County	Crops	Forest Products	Livestock & Products
Bracken	3,452,152	2,555	2,097,276
Mason	5,057,133	2,903	4,600,767
Lewis	2,786,890	46,334	2,466,230
Greenup	1,414,640	22,725	1,259,617

It is suggested that the generally low return on farming and the low value of farm land, has (as indicated by the increase in numbers and acreage of farms and the high percentages of part-time farms) allowed workers in the increasingly urbanized Greenup County to elect a semi-rural life style. Farming as an avocation, to supplement the family income or simply to pay the property taxes, can be pursued as a secondary economic activity.

In the other three counties another interpretation is offered. Similar percentages of part-time farms, farmers who work off the farm, losses in farm numbers and acreage, and high levels of residential stability indicate that a fairly consistent proportion of farmers must either give up farming or find other sources of income to support an acceptable standard of living. Mason County, where farming is a slightly more viable economic activity, has fewer making these choices, even though opportunities for other employment are probably better here than in either of the two adjacent counties. Indeed residents of other counties commute to Mason County for work.

5.7.9. INCOME

Maps on median family income, per capita income, and percentages of families in the high and low income categories for 1969 all present a similar picture. Mason and Greenup Counties are average or slightly below average for the ORBES region. Bracken and Lewis are relatively poor. The farm population is poor in all four counties, especially so in Greenup County.

Figures for 1973 show a somewhat changed picture. Per capita income in Bracken and Lewis Counties is still low, but Greenup County also is categorized as a low income county. Perhaps this is related to the slowdown in migration in the early 1970's.

Table III-D-43

Ky-7 INCOME

	Bracken	Mason	Lewis	Greenup
1969:				
Median Family	$5,850	$7,140	$5,726	$7,592
Median Farm Family	5,417	5,517	5,372	4,818
Per capita	1,877	2,407	1,713	2,236
1973:				
Per capita	3,241	4,075	2,439	3,241
1974:				
Median Family EBI	6,216	8,881	6,187	11,916

Sales Management statistics for 1974 support the 1969 picture, showing Bracken and Lewis Counties as moderately low, Mason as about average for the region, and Greenup as somewhat above average in median "effective buying power" (EBI) and in percentage of households with above average EBI. High percentages of households with low EBI are shown for Bracken and Lewis Counties. Obviously a more sophisticated and detailed examination of income in these counties is necessary before a clear picture can be drawn. The pattern of income differences among the counties is apparent, however.

One aspect of income distribution should be noted. In all four counties the poor form a substantial proportion of the population and the low income population has many young people in all but Bracken County and fewer than average of the elderly in Lewis and Greenup Counties. This might have been predicted from age and marital structure. Public assistance payments, however, are primarily to the elderly. Except for Bracken County, this poses a question about the quality of life and the resources available to the poor in the middle and early phases of the family cycle who apparently are numerous in the other three counties.

5.7.10. IMPACT ASSESSMENT

Bracken, Lewis, Mason and Greenup Counties in northeastern Kentucky, while in geographical proximity, present some variation in environmental orientations. Bracken County is a poor rural county with a high proportion of people who are in the later stages of the family cycle, with children gone and frequently one spouse dead. There are few job opportunities for those in their working years who are unable to maintain a viable farming operation. Most of the public assistance goes to aid the elderly who are often widowed. As a consequence, some migrate out and some commute to nearby counties for work. Lewis County is very similar in demographic characteristics except for age structure. Young families are more prevalent in this county which also exhibits an unusually stable residential pattern, even for this generally stable area. The pre-

dominant orientation in these two counties is that of primordial belonging with some evidence of an aesthetic sub-orientation in Lewis County, which may account in part for younger people's presence there. Attitudes toward power plant development probably vary because of the difference in age structure of the population with Lewis County being more favorable. A commuting work force during the construction phase from nearby cities would generally mitigate construction boom impacts.

Mason County is the site of a regional trade and manufacturing center. Though sharing the general rural characteristics of the area and the age structure of neighboring Bracken County, Mason County provides economic options and supplements to farming for both its own residents and those of adjacent counties. Mason County presents a mixed environmental orientation picture. It seems to be a thriving county with a fairly diversified economy. This would suggest receptivity to power plant development and the capacity to deal with a moderate boomtown situation, given adequate planning.

Greenup County is a transition area between the more rural counties to the west and urban areas to the north and east. The population, young, working class, and somewhat more mobile, are most likely oriented to the urban areas for economic activities, living standards, social services and amenities, but they are very likely to have their roots in the more rural society to the west. Greenup County seems to be in the transition from a sentimental to an economic benefit sub-orientation as it continues to urbanize. The youthfulness of its population and its bedroom community status would seem favorable indicators for power plant development, provided the plant were located in a rural area for the prestige sub-orientation tends to be dominant in suburban areas where some opposition may exist but is likely to be ineffective. A commuting labor force from nearby Ashland or Portsmouth would mean minimal boomtown effects.

5.8. JEFFERSON (695,005) COUNTY

Jefferson County will be the site of two new coal-fired units (425 and 495 megawatts respectively), planned as additions to the Mill Creek Plant in Louisville and scheduled to go into operation in 1977 and 1979. These additions will bring the already high power generating capacity in Jefferson County to 3,254 megawatts by 1985. No additions are projected in the scenarios.

Jefferson County is the center of the Louisville SMSA which by 1974 included Bullitt County in Kentucky and Floyd and Clark Counties in Indiana. Louisville, located on the Ohio River, is the major city in the SMSA with a population of 361,472. Jeffersonville and New Albany, across the river in Indiana, are nevertheless sizeable with 20,008 and 38,402 respectively. The entire SMSA has a population of 826,553, but 695,005 are in Jefferson County.

5.8.1. LAND USE

About 15% of the land is in forest and almost 37% in farms in this highly urbanized county. Somewhat higher percentages of these uses of land prevail in the less populous counties of the SMSA.

This area is outside the coal producing areas and there is no oil production in these counties. The value of cement, stone, sand, gravel and clays quarried in this county totaled $21,009,000 in 1973, however.

5.8.2. RESIDENCE

The population is predominantly urban in Jefferson, Clark and Floyd Counties and presumably must be developing urban characteristics in Bullitt County since that county has been included in the SMSA by 1974. The number of people living on farms is low, only 2,043 (.3%), less than half what is was in 1960. Five percent of the population are classified as rural non-farm, the rest are urban dwellers.

As in most large cities, the percentage of foreign born or those with foreign or mixed parentage is larger than in the surrounding areas (4.5%) but, nevertheless, is almost negligible. Of the native born population, 77.9% are native Kentuckians, almost 15% come from the north-central and southern states and 2% from the northeast.

Considering the size of the city, Jefferson County is relatively stable residentially. In 1965, over 82% of the population lived in Jefferson County and another 4% in another Kentucky County. Census figures suggest that in the sixties people were moving out of the city into satellite communities since Louisville lost population by 7.5% but the county as a whole gained in population by 13.8%. Net in-migration

for this period is only 1.8% and thus would account for only a small part of the residential shift. By 1975 there had been a reversal of county migration to a -3.0% and practically no estimated increase in population. Neighboring Bullitt and Oldham Counties showed sharp increases in population (28.5 and 25.1) and net in-migration (19.8 and 20.9) between 1970 and 1975. All these figures suggest that there are two simultaneous trends occurring: 1) migration out of the SMSA and 2) migration to the urban fringes. In appears merely to have accelerated during the early 1970's.

Table III-D-44

Ky-8 POPULATION SHIFTS

	1960-70		1970-74	
	[Number	Percent]	[Number	Percent]
Population Change	84,108	13.3	5,700	0.8
Net Migration	--	1.8	-20,800	-3.0

5.8.3. AGE STRUCTURE

Median age is relatively low (27.6) in Jefferson County as might be expected in an urban area. There are no pecularities in the age distribution.

5.8.4. MARITAL STRUCTURE

Surprisingly, Jefferson County has a low (46.1) percentage of adult males in the population.

The characteristics of marital status are those expected in an urban environment. There are low or moderately low percentages of the widowed, both men and women, high percentages of divorced women and families with a female head, and correspondingly low percentages of intact families.

5.8.5. EDUCATION

Educational levels are only moderately high for the region with over half the population having completed high school and 9.7% having completed college. The latter percentage is, in part, a consequence of Louisville's having a college population of 16,508, mostly attending the University of Louisville.

5.8.6. HOUSING

There has been a gain of 21.3% in the number of households between 1960 and 1970, and a similar gain of 20.7% in the number of housing units for the same period. This rapid increase is reflected in the high percentage of total housing units built in this period (26.8%).

As expected only 72.1% of the housing units are in one-unit structures, only 46.9% are owner-occupied and there is a low percentage of housing units lacking some plumbing facilities. Housing is less expensive than usual for major urban areas averaging $15,380 for owner-occupied single family dwellings. Rents are about average ($78) for the area.

5.8.7. ECONOMIC ACTIVITIES

Jefferson County has a diversified and relatively balanced range of economic activities. It is the only Kentucky county with over 100,000 wage earners covered by County Business Patterns. In addition there were 8,615 on federal civilian payrolls in 1974. A high percentage of the labor force worked in manufacturing and Jefferson County had a respectable amount of manufacturing as measured by 1972 value added by manufacturing. The largest industrial employers in Jefferson County produce: 1) electrical equipment, (16,966); 2) machinery, (14,471); and 3) tobacco, (10,370). Since this is the largest city in the state, it is not surprising that many workers are engaged in the professions, in management, or in trade or that workers commute from surrounding counties to work. As expected also, a high percentage of the labor force are females.

Table III-D-45

Ky-8 COUNTY BUSINESS PATTERNS, 1973

Total Population	695,005
In CBP	268,183
Agriculture	610
Mining	363
Construction	16,727
Manufacturing	101,519
Transportation	16,183
Trade	68,704
Finance	16,340
Services	47,025

Farming as an economic activity is relatively insignificant in terms of the people involved. However, those who farm as a primary economic activity apparently do reasonably well. The average income for Class I-V farms is $17,701, and the average size, 150 acres.

Farm land is expensive, averaging $961 per acre. Farms are primarily devoted to the raising of livestock (other than dairy or poultry) and secondarily to dairy farming. There are, however, twenty-five vegetable farms in Jefferson County, over one-fourth of the total in Kentucky. Evidently some crops must also be raised on most farms since the 1969 total for return on crops was almost as high as that for livestock and products:

Crops	$3,568,854
Forest products	12,445
Livestock and products	3,749,563

Percentage of farm operators working off farms is high (57.2). Average income from part-time farms together with Class VI and retirement farms is only $1,155 and the average size is only 52 acres. Since there was a decrease in farm acreage (-6.9) but an increase in number of farms (14.5) between 1964 and 1969, it is suggested that many full time farms are being broken up into small farms which provide a semi-rural lifestyle option for residents whose primary economic activity is not farming.

5.8.8. INCOME

Considering the educational and occupational structures as well as regional variation, it is not surprising that median family income in this urban area was only moderately high ($9,813). Per capita income was $2,605 in 1969 and $3,717 by 1973. Moderately high percentages of the population are in high income categories and correspondingly few in the low categories.

Of those who are poor, higher than average numbers are young and relatively few are old. Public assistance payments are more or less in line with this.

5.8.9. IMPACT ASSESSMENT

The prevailing sub-orientation in Jefferson County, given its urban diversified nature, is economic benefit. Since the plants planned are additions to an existing plant, and there is a skilled labor force nearby, it is predicted that impact will be minimal unless opposition groups holding contrary environmental orientations emerge.

6. DEMOGRAPHIC PROFILES AND IMPACT ANALYSIS: ILLINOIS

6.1. MERCER (17,294), HENDERSON (8,451) and HANCOCK (22,645) COUNTIES

Three counties in northern Illinois along the Mississippi are slated for nuclear energy development under the high energy scenarios. Scenario I posits a two-unit (2,000 megawatt) plant for Mercer County. Under Scenario II, two-unit plants are planned for Henderson, Hancock, and Mercer Counties. At the present time there are no power plants in any of these counties.

There are only eight towns with over 1,000 residents in these counties, five in Hancock County and one on the border between Hancock and Henderson Counties. The communities are, for the most part, located at junctions of the main east-west highways which cross the counties and north-south state roads. These counties are, however, ringed by urban areas, both in Illinois and across the river in Iowa. Directly north of Mercer County, about 30 miles from Aledo (3,325) is the Davenport-Moline SMSA. U.S. Highway 34 crosses Henderson County, connecting Galesburg in Knox County with Burlington, Iowa. Monmouth (11,022) in neighboring Warren County is half way between the two metropolitan areas, on the same highway. The only Henderson County town, Oquawka (1,352), is six miles north of this highway on the river.

The presence of the Iowa cities of Fort Madison and Keokuk across the Mississippi River from Hancock County may account for the concentration of small communities in this county. All are in the northern half of the county on the routes (U.S. 136 and State 9) to the above cities. The nearest Illinois city for residents of this county is Macomb (19,643) in neighboring McDonough County.

6.1.1. LAND USE

All three counties have high percentages of land devoted to farming, less than 15% of the land in forest.

Table III-D-46

IL-1 LAND USE

	% Farmland	1973 Mineral Production (dollars)
Mercer	93.3	w
Henderson	83.0	w
Hancock	90.5	$1,085,000

Mercer County is underlain by coal bearing rock but, at least in 1974, there was no coal production. The other two counties are located just outside the coal fields. There are no oil or gas fields underlying this area but all three counties have some stone quarrying.

Mercer County has no land devoted to state parks or conservation areas. Hancock has a 150 acres state park and a further 49 acres of state managed conservation property. Henderson County, while having only 89 acres in state parks, has 6,281 acres of conservation property. There are a few state parks in the surrounding counties as well. Recreation facilities may also be connected with the river and together with the above facilities provide what is probably sufficient for these rural areas.

6.1.2. RESIDENCE

In all three of these sparsely settled counties, slightly over a fourth of the population live on farms. The urban segments live in one of three towns, each with less than 3,400 people (Aledo - 3,325, Carthage - 3,350, Hamilton - 2,764), and the rural non-farm segments live in even smaller places or in the open country.

Table III-D-47

IL-1 DISTRIBUTION OF POPULATION

	Mercer	Henderson	Hancock
Density	31 per Sq. Mile	22 per Sq. Mile	30 Per Sq. Mile
Farm Population	27%	32%	26%
Urban Population	19%	0%	26%
Rural Non-Farm Population	54%	68%	74%

The population in these counties appears to be changing very little. All the towns, with the exception of Oquawka and Hamilton (both show 24% population increase between 1960 and 1970) exhibit either little change or decline during the sixties. All counties have experienced low levels of out-migration since 1960 and although the population was maintained at about the same level during the sixties, it has been falling since then.

Table III-D-48

I1-1 POPULATION SHIFTS

	Mercer	Henderson	Hancock
1960-70			
pop. change	.8	2.6	-3.7
net migration	-5.1	-5.1	-5.9
1970-74			
pop. change	-0.9	-2.4	-5.4
net migration	-2.1	-3.5	-5.6

A large part of the population shifts may have affected farm families, although it is possible that shifts from farm to non-farm residence may occur within the county and thus not be reflected in county population change and net migration figures. Losses from the farm population during the sixties was substantial:

Mercer	-28.0
Henderson	-32.1
Hancock	-26.3

As expected in border counties, slightly fewer residents are natives of Illinois than in counties in the interior of the state. Levels of recent residential stability, however, do not appear to differ greatly from other counties in the state. Close to 90% of the population lived in the same state in 1965, over 75% in the same county.

Table III-D-49

IL-1 RESIDENTIAL STABILITY

	Birth State	Same County 1965	Same State 1965
Mercer	79.6	83.9	94.9
Henderson	70.3	76.1	87.6
Hancock	74.3	81.3	89.8

6.1.3. AGE STRUCTURE

Little about the age structure of these counties is distinctive. Median ages are:

Mercer	30.9
Henderson	31.6
Hancock	32.4

These counties have relatively high percentages of older people and relatively few young adults. The most noticeable difference among these counties relates to the pattern of variation among the young adult cohorts. All three counties exhibit sharp declines in relative numbers of individuals between the teenage and the adult age groups. The decrease is sharpest for Hancock County and there is a slight decrease in numbers after that for each cohort until the 40 plus groups. In Mercer and Henderson the pattern is for an increase in the 25-29 age group. This could indicate more of the young returning after working or going to school elsewhere.

6.1.4. MARITAL STRUCTURE

The high percentage of intact families characterizes all three counties:

Mercer	92.4
Henderson	89.8
Hancock	89.9

These percentages, together with the relatively low percentages of single and divorced people, the average percentages of widowed men and women and the age structure are consistent with a picture of these counties as peopled by families fairly evenly apportioned among the different stages in the family cycle. Neither those families with very young children nor those whose children have left home predominate. The young frequently leave, those who remain or return are likely to marry. Marriages are reasonably stable or the divorced, especially female heads of families find it advantageous to leave the county.

6.1.5. EDUCATION

As is true across the northern ORBES region, most people finish high school. Very few have gone to college, however. This does not mean that the children born in these counties are not attending college elsewhere. It does mean that the residents who remain in the area, for the most part, are not the ones who have gone beyond high school. There are no resident student populations large enough to materially affect these percentages.

6.1.6. HOUSING

Changes in numbers of households and housing units during the sixties was consistent with changes in population, and rates at which new units were being built.

Table III-D-50

I1-1 HOUSING, 1970

	Mercer	Henderson	Hancock
Changes: 1960-70			
Housing Units	3.8	15.8	-1.2
Households	3.6	8.8	-0.4
New units since '60	13.3	18.6	11.4
% of units:			
Lacking plumbing	5.4	10.3	9.8
One-unit structures	91.6	88.3	87.2
Home owners	73.5	72.5	74.8
Median value	$11,252	$9,372	$9,017
Median Rent	89	81	88

The fewer than average proportion of housing units which lack some plumbing may be a factor leading to lower replacement rates for units. Most are single unit dwellings.

Median values for owner occupied single unit dwellings and median rents are moderate to low in these counties.

6.1.7. ECONOMIC ACTIVITIES

As expected with the ring of urban centers around these counties, many commute out. The primary non-agriculture activity is in retail trade. A small amount of manufacturing is done in Hancock County in a food industry (employing 224 persons) and a chemical industry, both listed in County Business Patterns.

Table III-D-51

IL-1 COUNTY BUSINESS PATTERNS, 1973

	Mercer	Henderson	Hancock
Total Population	17,254	8,451	22,645
In CBP	1,341	530	2,636
agriculture	41	---	---
construction	74	32	158
manufacturing	87	4	577
transportation	166	59	161
trade	718	283	1,019
finance	66	60	164
services	164	68	520

One interesting aspect of the work force in Hancock County is the relatively high percentage of families with both husband and wife in the work force.

After comparing the numbers of jobs covered in the 1973 County Business Patterns and the numbers of farms reporting in the 1969 Census of Agriculture, it is clear that farming is the most important economic activity in all three counties. Return per acre is high, farms are relatively large and large proportions of them appear to be full-time operations. Livestock raising yields the most return (60% to 70%) and crops are second in importance.

These counties exemplify the gradual trend towards farm consolidation. The reduction in the amount of land devoted to farming in Henderson County poses a question for which an answer cannot be suggested using these data.

Table III-D-52

IL-1 FARMING, 1969

	Mercer	Henderson	Hancock
Average land value	$380	$384	$365
Average return per acre	106	96	92
Class I-V Farms:			
Number	1,094	564	1,620
Average acres	295	350	273
Average return	$32,082	$33,881	$23,231
Other Farms:			
Number	146	52	289
Average acres	64	49	65
Average return	$1,164	$ 806	$1,063
Changes: 1964-69:			
Number of farms	-9.3	-11.2	-5.6
Farm land	- .2	- 6.3	- .1

6.1.8. INCOME

Median family incomes for both the total and the farm population as well as per capita income are above average for the ORBES region. The figures on 1973 per capita income indicate the persistence of pattern. The 1974 figures in Sales Management place these counties as just about average in "effective buying power", clearly lower than the affluent north-central counties.

Table III-D-53

IL-1 INCOME

	Mercer	Henderson	Hancock
1969			
Per Capita	$ 3,215	$3,423	$3,018
Median Family	8,683	8,307	7,893
Median Farm Family	8,587	9,048	7,263
1973			
Per Capita	5,403	5,711	5,804
1974			
Median Family EBI	10,395	9,847	9,395

6.1.9. IMPACT ASSESSMENT

Mercer, Henderson and Hancock Counties, bordering the Mississippi River in northwestern Illinois, present a relatively homogeneous picture with regard to their prevailing environmental orientations: sentiment. However, among the sub-orientations, the ties are not simply primordial belonging but have a very substantial prestige or stratificational component as well. Given, too, the economic benefit derived from this prosperous farming area, the instrumental sub-orientation is there as well.

Given these orientations, we think Mercer County the most receptive to power plant development, largely because there would be minimal boomtown effects due to a nearby large city. In the other counties, we would expect some opposition from farmers should prime farmland be selected for a power plant site. The relatively numerous small towns in Hancock and Mercer County suggest some economic diversification is present though farming dominates land use. In Hancock County, the boomtown potential is there as is true for Henderson County. The latter county, being completely rural and given its relative prosperity, is likely to be opposed to power plant development. The same would probably be generally true of Hancock County as well.

6.2. IROQUOIS (33,532), LIVINGSTON (40,690), GRUNDY (26,535), LA SALLE (111,409), MARSHALL (13,302) and DE WITT (16,975) COUNTIES

In an area of norther Illinois with an already high concentration of present or planned nuclear power generation, increased development is posited under Scenarios I, II and IV. Grundy, LaSalle and DeWitt Counties presently contain sites of new or additional facilities planned to go into operation before 1985. The town of Morris in Grundy County is the site of a large nuclear power plant with a generating capacity of almost 5000 megawatts. The addition of five more 500 megawatt units before 1985 will bring the generating capacity of this county to 7372.6 megawatts. At Seneca, just over the county line in LaSalle County, 13 miles west and also on the Illinois River, another nuclear power complex is developing. In addition to units totalling 2293.4 megawatts under construction, two new units of 1078 megawatts each are planned for completion by 1978 and 1979. These will bring the power generating capacity of this county up to 4590.7 by 1985. DeWitt County, to the south in the north-central part of the state, has a nuclear plant planned for Clinton with two 950 megawatt units slated to go into operation by 1981 and 1984. The power generating capacity of this county will then reach 1907.5 megawatts.

Proposed developments under the scenarios would add further capacity in Iroquois, Livingston and Marshall Counties which lie south of LaSalle and Grundy and north of DeWitt Counties in this north-central region of Illinois.

Marshall County apparently offers the most promising sites since it would receive 4000 megawatts of power generating capacity under Scenario I, 2000 under Scenario II and 1000 under Scenario IV. Two units (2000 megawatts) in Scenario I would be coal-fired. All other units would use nuclear fuels.

Both Livingston and Iroquois Counties would receive nuclear plants under high energy Scenario II, 1000 megawatts for Iroquois County and 2000 megawatts for Livingston County.

These six counties are all close to a complex of urban centers in northern and central Illinois. Dominant, of course, is the Chicago area, just out of the ORBES region. Fanning out south and west from Chicago are major highways crossing the impacted counties and leading to secondary urban centers. Interstate Highway 80 goes west to the Davenport-Moline-Rock Island SMSA and almost half way across the state crosses Grundy and LaSalle Counties. LaSalle County has three small cities, Ottawa (18,716), Peru (11,772), and LaSalle (10,736), close to this major transportation route. Seneca (1,781) the plant site, is only a few miles south of the highway and about 20 miles east of Ottawa.

The Illinois River curves south after crossing LaSalle County and bisects Marshall County before it reaches Peoria. Any power plants are likely to be sited along the river and State Highway 29 runs along the river, connecting Peoria with Princeton and I-80 about 50 miles to the north.

U.S. Highway 66 runs southwest through Livingston County to Bloomington and Springfield. The major town in the county, Pontiac (9,031), in the center of the county, lies on this highway at the junction with State Highway 116. The probable location of the plant in this county cannot be guessed. However, there are four other small towns, two of them between 3000 and 4000, dispersed around the county and the county is ringed by urban centers so that the lighter concentration of communities and highways may not mean isolation for Livingston County residents.

Twenty-four miles directly south of Bloomington on U.S. Highway 51 is Clinton, site of the DeWitt County plant. Clinton is connected by State Highway 10 with Lincoln (21 miles to the west) and with Champaign-Urbana (40 miles to the east) as well as with Decatur (22 miles south).

U.S. Highway 57 runs south-southwest to Champaign-Urbana through western Iroguois County. There are numerous small towns in Iroquois County and although only one, Watseka (5,294), is larger than 2000, this county's residents also have access to urban centers in other counties. The closest is Kankakee, approximately 30 miles to the north from central Iroquois County. A little further, about 50 miles to the south, is Champaign-Urbana.

The generalization to be made about these counties is that they all lie on major highway routes between the major urban centers of northern Illinois. The counties have numerous small towns and although only LaSalle has communities with populations over 10,000, most residents have access to sizable towns or urban centers in nearby counties.

6.2.1. LAND USE

All six counties are underlain by coal-bearing rocks but none of them show any coal production for 1974. In 1973, Marshall County produced $59,000 worth of sand and gravel. All of the other counties also produced sand and gravel as well as cement, clay, some stone and petroleum in DeWitt County. Production figures have been withheld, however, so we cannot gauge the volume although we would guess it is low. Land is primarily devoted to agriculture, with very little land in forest. Some acreage in all but Livingston County is maintained by the state for parks or conservation areas.

Table III-D-54

IL-2 LAND USE

	% Land in Farms 1969	State Recreational Acreage, 1973
Iroquois	95.1	1,920
Livingston	96.1	-
Grundy	85.3	2,393
LaSalle	90.0	5,391
Marshall	87.1	4,403
DeWitt	96.0	371

6.2.2. RESIDENCE

The density of the population in the three counties where development is projected by the scenarios is somewhat lower than the density in the counties where development is already taking place. All counties, however, have densities of less than 100 per square mile.

Table III-D-55

IL-2 DISTRIBUTION OF POPULATION,

	Density	Rural Farm	Non-Farm	Urban
Iroquois	30	31%	53%	16%
Livingston	39	21	39	40
Grundy	61	15	43	42
LaSalle	97	10	25	65
Marshall	34	23	57	20
DeWitt	43	20	35	45

In general, urban percentages appear to reflect the locations of the larger towns and, in conjunction with the other figures, permit one to suggest that these counties may be grouped into two clusters with Grundy and LaSalle, the counties closest to Chicago, being the most urbanized, and the other four counties having a stronger rural flavor.

One interesting aspect of the population composition of the northern counties (excluding DeWitt) is that, for the ORBES region, these counties have high or relatively high percentages of the population who are either foreign-born or of foreign or mixed parentage. Thus, one might expect ethnic groups to be a visible element of the population in these counties.

Except for Grundy County, moderately high percentages of the native population are natives of Illinois. It is not clear, however, that the residents of any one county are more or less mobile than the residents of any other county. In general these counties are moderately stable residentially.

Table III-D-56

IL-2 RESIDENTIAL STABILITY

% Residing in:	Birth State 1970	Same State 1965	Same County 1965
Iroquois	80.0	91.8	84.5
Livingston	84.5	91.4	78.8
Grundy	75.4	86.1	76.8
LaSalle	83.8	92.3	85.7
Marshall	86.4	93.1	81.9
DeWitt	81.8	86.8	76.7

Grundy is the only county which has exhibited any substantial change in population since 1960. It has grown in size and experienced moderate in-migration. Interestingly, this increase has been primarily to the rural non-farm sector of the population. Morris, (8,194) the largest town had grown only 3.3% by 1970 while the farm population decreased sharply during the same period.

Table III-D-57

IL-2 POPULATION SHIFTS

	1960-70			1970-74	
	Tot. Pop.	Farm Pop.	Migration	Tot. Pop.	Migration
Iroguois	-.1	-16.3	-6.5	-.8	-2.2
Livingston	.9	-25.6	-5.6	0.2	-1.2
Grundy	18.7	-33.5	8.8	3.7	0.3
LaSalle	.5	-18.0	-7.1	-2.2	-3.5
Marshall	-.2	-21.1	-5.2	-1.5	-2.3
DeWitt	-1.6	-27.3	-5.6	-1.3	-2.0

The other five counties maintained their population at a relatively stable level in spite of small losses from out-migration. They also show people moving out of the farming sector.

6.2.3. AGE STRUCTURE

None of these counties is characterized by an unusually young or an unusually old population. There are relatively few in the older age cohorts in Grundy County. Grundy, Livingston, and DeWitt Counties do not exhibit the sharp decline in relative numbers for young adult cohorts which is evident in the other three counties. Since the presence of a sizeable college population does not account for the differences in the age profiles, this characteristic will be considered again when examining economic activities. Median ages are:

Iroquois	31.7
Livingston	29.1
Grundy	28.6
LaSalle	35.4
Marshall	32.4
DeWitt	32.7

6.2.4 MARITAL STRUCTURE

Relatively high (exception: LaSalle) percentages of the families in these counties are intact. Considering that relatively high numbers (exception: Grundy) of men are married, that there are few single women (exception: LaSalle) or divorced people, and the median ages are not particularly high, this would be expected. Consequently, there are relatively few families with female heads. The higher than average percentages of families in Grundy County with children under 18 is most likely due to the slightly lower median age.

6.2.5 EDUCATION

There is no substantial college populations in any of these counties. Most people have finished high school and the median number of school years completed is over 12. Somewhat less than 8% of the population has completed college.

6.2.6. HOUSING

Trends on population growth are consistent with the housing trends. Grundy is the only county with substantial gains in numbers of households and housing units. Consequently, the median house value and rent are somewhat higher in this county and percentages of single unit dwellings lower. It should be noted that, for the ORBES Region, this area has relatively high valuations for single family dwellings and for median rents. All the counties have low (less that 6%) percentages of their housing units which lack some plumbing. Approximately a third of the units are rented in this area.

Table III-D-58

IL-2 HOUSING - 1970

	Changes 1960-70 Households	Changes 1960-70 Units	% One-unit Structures	% Built Since 1960
Iroquois	3.9	5.5	89.7	13.0
Livingston	5.7	6.5	86.3	15.7
Grundy	22.2	22.4	79.8	26.1
LaSalle	5.2	6.0	82.2	13.5
Marshall	3.8	4.4	89.8	15.4
DeWitt	3.1	.7	84.6	14.0

	% Home Owners	Med. Value	Med. Rent	% Lacking Plumbing
Iroquois	69.3	$12,201	$ 97	2.9
Livingston	68.3	13,913	107	2.1
Grundy	68.0	17,081	124	2.7
LaSalle	73.1	14,493	100	3.1
Marshall	71.4	12,857	96	4.4
DeWitt	67.9	11,718	87	5.4

6.2.7. ECONOMIC ACTIVITIES

The farmland in these counties is among the most valuable in the ORBES region. Return per acre is high or relatively so, a large proportion of the farms fall into the Class I-V categories, few farmers in these counties work off the farm and farm acreage has been growing in four of the counties. The other two counties experienced only small losses. Simultaneously the number of farms has been falling (except for Grundy County) indicating a trend towards farm consolidation. Cash grain farms are the most important type of farming operation, providing approximately 70% of farm income. Livestock raising is second in importance and there are a few dairy and poultry farms.

Table III-D-59

IL-2 FARMING, 1969

	Changes 1964-9		Ave. Value	Ave. Return
	Farms	Acreage	Per Acre	Per Acre
Iroquois	-3.8	1.0	$542	$91
Livingston	-1.7	.9	582	92
Grundy	1.2	2.7	597	70
LaSalle	-1.6	.9	583	98
Marshall	-12.6	-3.3	546	96
DeWitt	-5.7	- .4	620	82

	Class I-V Farms		
	Number	Ave. Acres	Ave. Return
Iroquois	2,248	300	$27,526
Livingston	2,120	298	27,677
Grundy	754	305	21,619
LaSalle	2,466	262	26,152
Marshall	745	288	27,985
DeWitt	753	318	26,582
	Other Farms		
Iroquois	163	50	$1,135
Livingston	192	45	1,603
Grundy	73	77	1,123
LaSalle	254	67	1,032
Marshall	54	63	885
DeWitt	124	43	1,092

Except for LaSalle County, all of these counties have more working residents than workers working in the county, that is, some residents must commute out for work. This is reflected in numbers of jobs listed in County Business Patterns relative to the population. Over 40% of the jobs in LaSalle County are in manufacturing: 1) stone, clay and glass products; 2) machinery; 3) chemicals; 4) paper products; 5) electrical equipment; 6) printing and publishing; 7) instruments; 8) fabricated metal products; 9) primary metal; 10) transportation equipment; 11) apparel and textile products; and 12) food. There are also substantial numbers employed in trade and services.

Table III-D-60

IL-2 COUNTY BUSINESS PATTERNS, 1973

	Total Pop.	in CBP	Manufacturing	Construction
Iroquois	33,352	5,820	2,108	242
Livingston	40,690	9,472	3,655	556
Grundy	26,535	6,877	2,924	541
LaSalle	111,409	33,130	14,711	1,416
Marshall	13,302	2,369	965	103
DeWitt	16,975	3,051	793	238

	Agric.	Mining	Trans-portation	Trade	Finance	Services
Iroquois	7	-	191	2,147	254	819
Livingston	30	134	534	2,594	317	1,625
Grundy	-	-	516	1,772	230	769
LaSalle	58	539	1,855	8,309	1,012	5,179
Marshall	-	-	185	749	93	222
DeWitt	12	-	252	1,129	138	480

Although the magnitude is much less, manufacturing is also the primary economic activity in both Grundy and Marshall Counties. Grundy County industries produce: 1) paper products, 2) apparel, 3) chemicals, 4) rubber products, primary metal, and 6) electric equipment. Marshall County industries produce: 1) chemicals and 2) apparel or textile products. The amount of construction in Grundy, it should be noted, is almost as large as that in Livingston County which has a much larger population.

Jobs in DeWitt County are primarily in trade but there are small manufacturing industries dealing in: 1) printing and publishing, 2) primary metals, and 3) fabricated metals.

Iroquois and Livingston Counties have manufacturing activity on a level with that in Grundy County even though manufacturing does not involve as large a proportion of the work force. Iroquois had industries producing: 1) electric equipment; 2) food; 3) lumber and wood products, and 4) printing. Livingston has: 1) fabricated metals; 2) printing; and 3) electric equipment.

Livingston also has a few people involved in mining, as does LaSalle County.

The only amplification of this picture offered by examination of the labor force figures relate to women in the work force. Relatively high numbers of women in Livingston County work and in both Livingston and DeWitt Counties, relatively high percentages of families have both husband and wife in the work force.

6.2.8. INCOME

All of these counties are part of the relatively affluent northern ORBES region. The median family and per capita incomes for Grundy County appear to be slightly higher than for the other counties. Although the per capita income figures for 1973 do not show a continuation of this pattern, 1974 Sales Management figures do show that Grundy County residents have somewhat higher "effective buying power" per family than do the other counties.

It should also be noted that the median income for farm families is somewhat higher in DeWitt County.

Table III-D-61

IL-2 INCOME

	Med. Fam. 1969 Total	Farm	Per Capita Income 1969	1973	EBI 1974
Iroquois	8,723	7,864	3,452	5,906	10,240
Livingston	9,611	9,203	3,501	5,504	11,621
Grundy	10,982	9,833	4,098	5,587	14,468
LaSalle	9,953	9,451	3,813	5,299	12,355
Marshall	9,141	8,680	3,561	8,680	10,848
DeWitt	9,330	10,257	3,380	10,257	11,508

6.2.9 IMPACT ASSESSMENT

The prevailing environmental orientation in these Illinois Counties (Iroquois, Livingston, DeWitt, Grundy, LaSalle and Marshall) while primarily sentimental (prestige seems more important than primordial belonginess) have a strong instrumental orientation as well, as reflected in the high economic returns afforded by the economic activity especially in the more urban Grundy and LaSalle Counties.

Farming in this area is a highly instrumental activity which yields not only economic benefit but prestige as well. Acceptance of power plant development would probably be highest in Grundy and LaSalle Counties. With the exception of Iroquois County, no or minimal boomtown effects would be expected, given the nearness of skilled worker population in the urban areas and the economic diversification and affluence of the smaller towns. It is expected that in all these counties, were prime expensive farmland required for power plant development, there would be some opposition from farmers. However, again except for Iroquois County, these counties would seem likely to be receptive to further development.

6.3. FULTON (41,890), SCHUYLER (8,135), BROWN (5,586), CASS (14,219), SCOTT (6,096), GREENE (17,014), AND JERSEY (18,492) COUNTIES

Along the Illinois River between Peoria and St. Louis, is a string of counties slated for power development before A.D. 2000. Fulton, the largest and most populous, has a new coal-fired, three-unit power plant at Canton. The first unit (400 megawatts) was scheduled to go into operation in 1976. The remaining two units (400 and 600 megawatts) are scheduled to go into operation in 1979 and 1983 respectively.

At present Greene and Scott Counties each have very small power plants (less than 3 megawatts each). These are the only generating facilities in these counties.

Scenario I proposes placing one two-unit (2,000 megawatt) plant in all counties except Fulton. The plant in Cass County would use nuclear fuel, the remainder would be coal-fired.

Scenario II posits two two-unit nuclear plants, one to be built in Cass and another in Greene County. Three two-unit coal-fired plants would be built, one each in Brown, Greene and Jersey Counties.

Greene County will have the only plant under Scenario III, a two-unit coal-fired plant, (600 megawatts per unit).

Although the residents of these seven counties could not be described as isolated from urban centers, they are off of the main transportation routes which cross Illinois. Also, although residents have access to at least secondary urban centers, the distances they must travel are, on the whole, further than for the residents of north-central impact counties.

Peoria lies up the Illinois River from Fulton County. The distance between Canton (14,217) its largest town and that city is only 25 miles. Residents of the western part of the county are also very close to Macomb (19,643) in neighboring McDonough County. Canton, site of the plant, is in the eastern part of the county, however.

Residents of Schuyler, Brown and Cass Counties have relatively easy access to Quincy (45,288), approximately 60 miles west of the river and Springfield, approximately 50 miles east of the river. A somewhat longer drive north, along the river, will get the residents to Peoria. Centrally located on the river for residents of all three counties is Beardstown in Cass County. Beardstown (6,222) is the largest community in these counties.

Scott, Greene and Jersey Counties are located between Jacksonville (20,553) just over the county line in Morgan County and Alton (39,700) at the northern edge of the St. Louis SMSA.

6.3.1. LAND USE

Except for Fulton and Jersey Counties, which are close to SMSA's, over 90% of the land in these counties is devoted to farming.

For Illinois, these counties also have substantial proportions of their acreages in forest, or at least they did in 1962. Of course, it should be remembered that much of the forest land is counted as part of the farm acreage.

A large amount of land in Jersey County is managed by the state for recreational or conservation use. Fulton and Cass also have sizeable acreages in state parks. In fact, numerous conservation and recreational areas are located along the Illinois River, especially along the stretch between Peoria and Beardstown. In this region the river has formed many small lakes in its wanderings and one would expect many private recreational facilities as well.

All of these counties are underlain, at least in part, by coal bearing rock. Fulton County, however, is the only one showing any coal production in 1974, between 1.0 and 4.9 million short tons.

Table III-62

IL-3 LAND USE

	% of land in farms, 1969	% of land in forest, 1962	recreational acreage, 1973
Fulton	82.7	15.8	4,714
Schuyler	90.7	21.1	772
Brown	89.3	19.4	---
Cass	95.8	13.5	8,042
Scott	92.7	11.9	---
Greene	91.9	15.8	---
Jersey	81.6	23.2	17,328

6.3.2. RESIDENCE

These are sparsely populated, residentially stable counties, especially Brown and Schuyler. Among the counties, Jersey has exhibited the most residential mobility and has been the only county to show population growth since 1960. Fulton County has apparently reversed the downward trend and has begun to gain very slightly in population. The other counties experienced population decline and out-migration during the sixties and these trends have continued although they appear to be leveling off. As is characteristic of much of the ORBES region, these losses appear to be disproportionately from the farm population in all counties.

Table III-D-63

IL-3 RESIDENTIAL STABILITY

	% residing in birth state	1965 residence same state	1965 residence same county
Fulton	85.7	92.6	83.9
Schuyler	89.4	95.2	83.4
Brown	91.8	95.2	84.5
Cass	84.8	92.4	82.4
Scott	88.7	92.5	78.6
Greene	88.1	94.3	85.8
Jersey	82.2	91.3	78.5

Table III-D-64

IL-3 POPULATION SHIFTS

	1960-70 [total	migration	farm population]	1970-74 [total	migration]
Fulton	-.1•	-4.4	-26.7	1.3	0.3
Schuyler	-7.0	-8.7	-28.2	-2.9	-2.9
Brown	-10.0	-10.7	-32.8	-1.9	-1.0
Cass	-2.2	-6.0	-15.9	-1.0	-2.0
Scott	-4.4	-8.8	-21.5	0.2	-0.1
Greene	-2.6	-5.8	-12.7	-2.3	2.3
Jersey	8.6	.9	-26.7	2.9	1.0

The relative size of the farm population varies from about a third in Brown and Schuyler Counties to less than a tenth of the population of Cass County. It should be iterated that the density and urban percentage reflect the location and distribution of the larger communities. The density of the completely rural counties, when examined in conjunction with the farm/non-farm distribution provides a rough picture of the composition of the population outside local population concentrations.

Table III-D-65

IL-3 POPULATION DISTRIBUTION

	Density	% Farm	% Non-farm	% Urban
Fulton	48	19	33	48
Schuyler	19	36	23	41
Brown	18	33	67	0
Cass	38	8	48	44
Scott	24	29	71	0
Greene	31	24	42	34
Jersey	49	16	44	40

The low percentage of the population living on farms in Cass County poses some interesting questions. In spite of the percentage differences, there are similar numbers of farms in this and in Brown and Schuyler Counties which are about the same in size. Even if you discount the presence of Beardstown, the farm population only comprises about 15% of the population. The higher density along with the above factors indicates that in this county more people can be supported in small communities or in the open countryside than in the neighboring rural counties.

6.3.3. AGE STRUCTURE

Median age in all but Jersey County is high or relatively high with correspondingly few young adults and children in the population. Schuyler, Brown, Scott and Greene Counties have noticeably high proportions of those in the 40-plus age cohorts. Jersey County, on the other hand, has a population which is concentrated in young adult and early middle age groups. Since there is only a small (746) resident college population in Jersey County, most of these young adults must be in the labor force. The sharp decline in size of age cohorts after the teens is not so marked in Cass County as in the others. Median ages are:

Fulton	33.1
Schuyler	37.2
Brown	38.2
Cass	33.4
Scott	34.6
Greene	33.8
Jersey	27.9

6.3.4. MARITAL STRUCTURE

In all but Jersey County there are low percentages of single women and relatively low percentages of single men in the adult population. Remembering the lower median age, the patterns of population growth and migration, it is clear that Jersey County must be considered separately. This county does have relatively high percentages of both married men and women as well as higher than average percentage of families with children under 18. Relative numbers of widowed men and women are about average. Neither divorced men nor women seem to be attracted to this county and consequently there are relatively few families with a female head and relatively large numbers of intact families.

The pattern clearly indicates a predominance of families in the early and middle stages of the family cycle, possibly because in-migrants would tend to fall into this category and the young adults are not leaving in the proportions thay they are in other counties.

Fulton, Schuyler and Brown also have relatively large numbers of intact families and consequently few families with female heads. These families are probably further along in the family cycle for the most part since few of these families have children under 18. Of course, considering the older median age, these counties have average or higher percentages of the widowed in their populations.

Cass, Scott and Greene Counties exhibit a few unexplained anomalies. They are part of a cluster of counties in Illinois having especially low percentages of males in the adult populations. Since this is likely to be a consequence of disproportional out-migration of young males, one would expect effects on the marital structure but there does not appear to be a clearly discernable pattern of marital structure in these counties. Cass and Greene are somewhat similar in that both show high or relatively high percentages of married and widowed males. Cass County also has relatively large numbers of divorced males, indicating that most of the males who remain in the county marry. The men in Scott County do not seem as likely to marry as evidenced by the low percentages of widowed and the only average percentages of the married and divorced, and the few families with children under 18. Higher than average percentages of women do marry, however, posing still further questions.

6.3.5. EDUCATION

Educational levels in these seven counties are lower than in the northern half of the state. In all counties the median school years completed averages less than 12 years. Less than half of the population has finished high school and less than 6% have completed college.

6.3.6. HOUSING

Two of the counties, Schuyler and Brown have had decreases in both numbers of households and housing units during the sixties, while the other counties, with the exception of Jersey, have remained relatively stable. These figures correspond well with population shifts. The building rate for new housing units is consistent with this apparently stable housing market.

Table III-D-66

IL-3 HOUSING, 1970

	Fulton	Schuyler	Brown	Cass	Scott	Greene	Jersey
Changes 1960-70:							
Households, 1960-70	3.7	-3.0	-6.8	1.6	-0.8	2.0	12.6
Housing units change 1960-70	4.7	-2.8	-6.1	.8	7.0	4.6	25.5
Average:							
Median value	10,321	10,348	9,360	9,312	9,150	8,423	11,954
Median rent	89	81	73	88	71	72	87
%Units:							
% One-unit structures	85.1	89.1	94.5	83.4	92.0	90.2	90.0
% Units built since 1960	13.2	10.9	7.8	12.3	12.3	11.5	19.9
% Owners occupied	75.1	71.5	73.3	72.4	69.0	71.1	76.6
% Lack some plumbing	8.0	15.4	14.7	6.8	12.6	12.8	10.9

The higher rents and home values are to be expected in Fulton and Jersey Counties but are a surprise for Schuyler County. It should be noted that for Illinois, even these higher figures are only average and housing values for the other counties are low. The units lacking some plumbing facilities is relatively high for Illinois in all but Fulton and Cass Counties.

6.3.7. ECONOMIC ACTIVITIES

The farmland in this area, although relatively high in value for the ORBES region, is only about average for Illinois. Farming appears to be a full time activity for most farmers (except for those in Jersey County). Farming is a reasonably profitable activity and in two counties, Cass and Scott, the average return per farm is high. Farming operations are fairly evenly balanced between livestock raising and cash grain crops, the former predominating.

Table III-D-67

IL-3 FARMING, 1969

	Fulton	Schuyler	Brown	Cass	Scott	Greene	Jersey
Change 1964-69:							
Farms	-6.8	-12.2	-5.9	-3.2	-2.6	-7.5	3.3
Acreage	- .9	.4	- .3	2.3	-2.5	-	1.7
Average:							
Land value	325	266	252	385	337	343	395
Return per acre	72	66	91	84	74	106	76
Class I-V Farms:							
Number	1,419	685	510	616	433	951	620
Avg. acres	311	348	308	360	330	325	296
Avg. return	23,350	23,992	19,469	30,788	25,364	35,436	23,549
Other Farms:							
Number	353	125	128	87	86	179	222
Avg. acres	63	107	94	60	72	56	58
Avg. return	1,117	1,208	1,068	1,141	1,090	1,218	1,017

Clearly this area also exhibits the trend towards farm consolidation, most markedly in Schuyler where, it can be noted, the average value of the farm land and buildings is lower than in most of the other counties.

Non-agricultural jobs are primarily in retail trade in Schuyler, Brown, Scott, Greene and Jersey Counties. Workers in the various categories are more evenly distributed in Fulton and Cass Counties.

Table III-D-68

IL-3 COUNTY BUSINESS PATTERNS, 1973

	Fulton	Schuyler	Brown	Cass	Scott	Greene	Jersey
Population	41,890	8,135	5,586	14,219	6,096	17,014	18,492
In CBP	8,042	980	654	3,048	920	1,765	1,825
Agriculture	9	-	-	-	-	12	-
Mining	669	-	-	-	-	-	-
Construction	221	98	11	97	162	35	46
Manufacturing	2,840	151	25	1,195	77	393	166
Transportation	303	40	68	361	123	43	201
Trade	2,189	433	297	903	469	752	699
Finance	318	35	40	112	41	126	121
Services	1,458	159	180	363	29	385	584

All of these counties have significant proportions of their population who must commute out for work. It appears that fewer in Cass County would have to do so than in Greene or Jersey. Cass has fewer residents and more jobs listed in County Business Patterns. This finding accords well with the less marked declines in the relative sizes of the young adult age cohorts mentioned earlier for Cass County.

Clearly only two of the counties, Fulton and Cass, have substantial manufacturing activity. Fulton County has industries producing: 1) apparel and textile products, 2) machinery, and 3) transport equipment. Cass County has 1) food and 2) machinery industries. Industrial activity in Greene County revolves around 1) apparel and 2) paper industries. Jersey County produces some transportation equipment. As mentioned earlier when discussing land use, only Fulton County has a significant amount of mining.

6.3.8. INCOME

Income levels in these counties are about average or slightly above the ORBES region, with Brown County having somewhat lower income levels than the other counties, and somewhat higher percentages of those below poverty level. By 1973 there appears to have been some shifts within this area. Scott County, and possibly Jersey County, appear to have pulled ahead of the other counties in income levels.

Table III-D-69

IL-3 INCOME LEVELS

	1969 Median Family	1969 Median Farm Family	1969 Per capita	1973 Per capita	1974 Median Family EBI
Fulton	$8,619	$7,840	$3,228	$5,386	$10,124
Schuyler	7,556	7,753	2,960	6,111	10,040
Brown	6,024	5,929	2,688	5,406	8,407
Cass	7,795	7,406	3,444	5,944	9,368
Scott	7,353	6,662	3,424	6,276	11,068
Greene	7,380	7,352	3,048	5,547	8,020
Jersey	8,402	7,088	2,981	4,324	11,015

6.3.9. IMPACT ASSESSMENT

In Fulton, Schuyler, Brown, Cass, Scott, Greene and Jersey Counties along the Illinois River, a mix of environmental orientations is present in these prime power plant sites. Fulton and Jersey Counties, bordering SMSA's, have a primarily instrumental orientation while the remaining counties may be generally classified as sentimental, with emphasis on the prestige sub-orientation. Fulton, a coal-producing area near to Peoria, with an economically diversified infrastructure, should easily absorb power plant development and its residents be favorably disposed

toward development. This should be generally true of Jersey County as well, however, their population might be even more positive, given its youthful age structure. Its ability to benefit is also slightly greater.

The remaining rural counties, with the exception of Brown County (discussed below), being economically fairly well off, quite rural and isolated (except for Cass County) from urban centers and major transportation lines, have a primarily sentimental orientation toward the environment, and its older population suggests a strong primordial belongingness sub-orientation. Farming, with its business emphasis, is a strong instrumental activity here, as in the rest of Illinois, creating a mix of orientations. However, all these counties (except Cass possibly, because of its nearness to Springfield) would be candidates for a fairly severe boomtown syndrome. Given the nature of the population and their orientations, it seems likely that power plant development would not be welcome here and considerable opposition expected. Moreover, the economic infrastructure and the size of possible recipient communities suggest difficulties in coping with boomtown strains.

Brown County, the poorest of this group and with a high proportion of older people and a strong attachment to place, would also be subject to what we just discussed above, however, its ability to cope would be even less and fewer benefits from plant construction would accrue to its residents for they are not of the proper age to benefit.

6.4. ST CLAIR (285,176), WASHINGTON (13,780), AND PERRY (19,757) COUNTIES

Three counties east-southeast of St. Louis are slated for new power generating facilities under the high energy scenarios.

St. Clair, the populous county containing East St. Louis,would receive a low BTU coal conversion plant. Perry County would receive a high BTU coal conversion plant as well as a single unit coal-fired (1,000 megawatt) power plant under Scenario II. Washington County, located between these two counties, would have a two-unit coal-fired power plant under both Scenarios I and II.

At present St. Clair has power generating facilities totaling less than 145 megawatts, while Perry and Washington Counties have no power plants.

St. Clair County, bordering the Mississippi River, is part of the St. Louis SMSA. Directly east is rural Washington County, having only one sizable community, Nashville (3,027). Most residents of this county, at least in the western half, would have direct routes to the SMSA by Highways 64 or 460 and less than 50 miles to drive. The Kaskaskia River runs along the northern border of Washington County and if a plant were sited along this river in the Western half of the county, access to the SMSA would be even better than described above. In the eastern half of the county, any development would be likely to have direct impact upon Centralia (15,217), just across the county line between Marion and Clinton Counties.

Perry County, just south of Washington County, has two sizable communities, Du Quoin (6,691) and Pinckneyville (3,377), both located in the center of the county 6 miles apart on State Highway 127. Residents of these communities are about 60 miles from the St. Louis urban areas but less than 25 miles south are Murphysboro (10,013) and Carbondale (22,816) in Jackson County.

The residents of all three counties are well located for easy access to outdoor recreation facilities. In addition to the Shawnee National Forest with its northern edge in Jackson County, there are two large lakes nearby (Carlyle and Rend) with several state parks attached, and there are numerous other state parks and conservation areas in these and nearby counties.

6.4.1. LAND USE

Washington County has over 90% of its land in farms, but the proportions in Perry and St. Clair Counties are close to three-fourths. Perry County has slightly more land in forest (22% as opposed to 14%

for the other two counties). Each of the counties has some recreational acreage as well:

St. Clair	1,129	acres
Washington	1,383	"
Perry	2,525	"

All three counties are underlain by coal bearing rock but only in St. Clair and Perry Counties was coal produced during 1974. All three counties produced some petroleum as well and in St. Clair County over 3,259,000 short tons of sand and gravel were quarried.

Urban related uses of land in St. Clair County must be relatively large.

6.4.2. RESIDENCE

All three counties experienced moderate to small gains in population during the sixties although in St. Clair County the growth occurred in spite of a low level of out-migration. Since 1970, the out-migration rate has accelerated so the population is now falling. Growth in Washington County, on the other hand, has accelerated since 1970. As in most counties in the ORBES region, the farm sector is declining. The trend is especially rapid in Perry County (-35.3) as opposed to St. Clair (-12.7) and Washington (-14.6) counties.

Table III-D-70

IL-4 POPULATION SHIFTS

	St. Clair	Washington	Perry
1960-70			
Pop. Change	8.6	1.6	3.0
Net Migration	-3.3	1.1	.2
1970-74			
Pop. Change	-1.7	5.1	1.6
Net Migration	-5.2	6.1	0.4

St. Clair, as might be expected in an urban county, has fewer residents who are natives of Illinois and higher levels of residential mobility than the other two counties.

Table III-D-71

IL-4 RESIDENTIAL STABILITY

	St. Clair	Washington	Perry
% Residing in:			
Birth state	61.7	89.6	88.3
Same state, 1965	83.1	95.5	93.3
Same county, 1965	79.6	83.6	84.8

The distribution of the population among the residential sectors varies among these three counties. St. Clair is overwhelmingly urban with a very small percentage of the population living on farms. Approximately a third of Washington County residents live on farms, about a fifth in the one town and the rest in small villages or in the open countryside. Just over a half of Perry County's residents live in small towns. The rest are distributed about two to one between rural non-farm and rural farm residences. Taking into consideration the numbers of farms and the density, after correcting for the location of the towns, it appears that the rural populations are similar in Washington (19 per sq. mile) and Perry (22 per sq. mile) Counties. Both of these counties contrast sharply with densely urban St. Clair County.

Table III-D-72

IL-4 POPULATION DISTRIBUTION

	St. Clair	Washington	Perry
Density per sq. mi.	424	24	45
% urban	83	22	51
% rural non-farm	14	43	34
% rural farm	3	35	15

6.4.3 AGE STRUCTURE

Washington and Perry Counties contrast with St. Clair County in median age:

St. Clair	26.9
Washington	37.9
Perry	35.2

The pattern of relatively large numbers of the elderly and few children, though true for both Perry and Washington, are especially marked for Washington County. St. Clair County, on the contrary, has relatively more children and young adults and numbers in the older age cohorts decrease rapidly. The largest adult cohort for both Washington and Perry Counties is that for people between 55 and 59. The largest cohort for St. Clair County is for those aged 40 and 45.

6.4.4. MARITAL STRUCTURE

As a consequence of the young population of St. Clair County, there are few widows and relatively large numbers of families with children under 18. A low percentage of families are intact, however, and relatively large percentage of families have female heads. This is apparently due to the high percentage of divorced women in this county. The low percentage of adult males in this county indicates that remarriage is less likely for these women.

Washington County, on the other hand, has relatively few divorced women and relatively low percentages of families with a female head. There are few divorced men in this population as well. Most men and average numbers of women marry, but because of the older population, high percentages (especially of men) are widowed and low percentages of families have children under 18.

The marital structure of Perry County is similar to that in Washington except that distributions are somewhat closer to average. There is, however, a relatively low percentage of adult men, especially single ones, in the population. In general, these two rural counties are characterized by families in later stages of the family cycle with the attendant larger numbers of the widowed and families without children living at home.

6.4.5 EDUCATION

Educational levels for these counties range from moderate (St. Clair) to relatively low. The median number of school years completed, even for St. Clair County is less than 12. In spite of a young population, a resident college population of 7,283, and the urban character of this county, 57% of the population has not completed high school, and less than 7% have completed college. The other counties, as expected, have even lower levels. Over 60% of the population in these counties are without high school diplomas and only 4% have completed college.

6.4.6 HOUSING

Small gains in numbers of households and housing units and moderate levels of building activity are in line with population changes in Washington and Perry counties during the sixties. The relatively high percentages of one-unit structures, home-owners, and units lacking plumbing (for Illinois) are expected in these rural southern counties. The house values and rents, although lower than in St. Clair County, are not out of line with those in the north western parts of Illinois.

Table III-D-73

IL-4 HOUSING - 1970

	St. Clair	Washington	Perry
% Change 1960-70			
Households	11.4	4.8	6.8
House units	12.1	9.6	7.4
% of Units:			
One-unit structure	75.3	91.3	87.2
Built since '60	21.2	15.2	14.3
Home owners	67.2	77.1	79.8
Lacking plumbing	5.3	16.4	13.1
Average:			
Median value	$12,970	$10,118	$9,877
Median rent	107	70	77

St. Clair, in spite of a population decline, has shown an increase in numbers of households and housing units, indicating a breaking up of household units. There has also been relatively more building activity. In character with the more urban environment, fewer units are occupied by the owner, fewer are in one-unit structures, and fewer lack some plumbing.

6.4.7 ECONOMIC ACTIVITIES

St. Clair County, of course, has the highest level of economic activity in all categories and it is diversified. The three major types of manufacturing activity in this county are related to: 1) primary metals, 2) chemicals, and 3) foods. There is also manufacturing relating to: 4) apparel and textile products, 5) paper products, 6) printing and publishing, 7) leather products, 8) stone, clay and glass products, 9) fabricated metal products, and 10) electrical equipment.

Perry County's economic activity is centered around manufacturing, the major industry producing 1) food products, with smaller industries dealing in: 1) apparel, 2) primary metals, 3) fabricated metals, and 4) electric equipment.

Washington County, for its size, has very few non-agricultural jobs, and they are varied. Small industries produce 1) food and 2) machinery.

All three counties have out-commuting, ranging from 21% (Perry) to 33% (St. Clair).

Table III-D-74

IL-COUNTY BUSINESS PATTERNS - 1973

	St. Clair	Washington	Perry
Tot. Pop.	285,176	13,780	19,757
In CBP	51,849	1,810	5,031
Agriculture	124	-	-
Mining	602	116	-
Construction	3,419	86	275
Manufacturing	14,116	314	2,607
Transportation	4,052	109	154
Trade	13,784	617	947
Finance	2,854	112	120
Services	12,702	435	674

It is consistent with what we know of the age and marital structures of these counties that females form a relatively high percentage of the work force in St. Clair County and that there are fewer than average numbers of working wives in Washington and Perry Counties.

All three counties had some farm consolidation during the late sixties. For those who have potentially full-time farming operations (Class I-V) farming appears to be a viable economic activity. It should be noted, however, that a much smaller proportion of farms are potentially full-time in Perry County. Consistent with this figure is the larger percentage in that county who work at least 100 days off the farm per year. Perhaps this is related to the different balance of farming operations in this county, since there seems to be little difference in average return per farm.

Slightly over half of the Class I-V farms in Perry County are devoted to either livestock or dairy farming, both labor intensive operations, which earn 68% of the return from farming. These figures indicate that cash grain crops may be relatively unprofitable in this county. Unwillingness or inability to commit the labor necessary for a full time viable farming operation and possibly the presence of options for economic activity may be factors contributing to the larger numbers of farmers working off the farm (50.3) and the low proportion of Class I-V Farms.

Farms in St. Clair County are smaller, but the return per acre is higher than in the other two counties. A factor which may be keeping down number of Class VI and part-time farms in this county is the high cost of farm land. This may also encourage more intensive practices, thus providing a higher return per acre.

Table VII-75

IL-4 FARMING 1969

	St. Clair	Washington	Perry
Changes 1964-69			
Farms	-2.7	-3.8	-4.6
Acreage	.8	1.3	-1.2
Class I-V farms:			
Number	1,267	1,065	564
Avg. acres	234	283	333
Avg. return	$17,702	$16,927	$17,520
Other Farms			
Number	395	321	367
Avg. acres	46	76	80
Avg. return	$1,115	$1,173	$1,052
Average value land & building per acre	501	297	251
Average return per acre	73	57	47
Farming operations:			
Cash grain nos.	720	469	233
% cash grain ret.	54%	41%	31%
Dairy nos.	56	210	36
% Dairy ret.	6%	21%	7%
Livestock nos.	347	276	258
% Livestock ret.	33%	33%	61%

6.4.8. INCOME

Median family income in 1969 and 1974 EBI figures place St. Clair County above average and the other two counties about in the middle for the region. Per capita incomes for both 1969 and 1973 are very close for all three counties, however. Increases in family income as measured by "effective buying power" may indicate the greater numbers of women in the labor force in urban St. Clair County.

Table III-D-76

IL-4 INCOME

	St. Clair	Washington	Perry
Family:			
1969 Medium	9,540	7,577	7,880
1969 Farm Med.	8,914	7,163	7,238
1974 EBI	11,833	8,709	8,771
Per Capita:			
1969	3,210	2,939	3,163
1973	4,386	4,805	4,693

6.4.9 IMPACT ASSESSMENT

The Illinois counties of St. Clair, Washington and Perry, while in geographical proximity vary widely in likely environmental orientations, though the latter two are quite similar.

St. Clair, urban and urbanizing, may be characterized as instrumental in orientation with a heavy emphasis on the economic benefit sub-orientation. Being a coal-producing county, it is a logical site for coal conversion and coal-fired power plants. Moreover, unless the plants are sited in the eastern part of the state, no boom town syndrome would be expected given the proximity of St. Louis. Even if a plant were cited in the eastern part, Centralia would probably be the focus of boom effects and leave the county unaffected. Given these conditions, we would expect plant siting and development to be unproblematic and welcomed by residents of the county.

Washington and Perry counties represent the sentimental orientation, though the primordial belonginess sub-orientation would be much stronger in Washington County, given the percentage of land in farms and the elderliness of the population. High incomes for both counties indicate the prestige sub-orientation is present as well.

Perry County, a coal-producing county, 60 miles from St. Louis, seems a more receptive site than Washington County. However, the aesthetic sub-orientation is there as well, given the recreational and forested areas. The movement from farm to rural non-farm and the decline in land devoted to farming suggest that land for plant siting would be readily available. We suggest that public opinion would be split about the desirability of a plant, because the older population and rural population are generally not favorable to such development. The nearness to St. Louis on the other hand, suggests urban influences and receptivity to development.

Washington County would seem to be non-receptive to power-plant development since it is highly agrarian in nature and likely subject to boomtown conditions with which it is unprepared to cope, since it lacks economic diversification. Its location on a major interstate might allow for commuting workers, thus mitigating some boom effects. By and large, however, the county's characteristics would indicate negativity about that kind of development.

6.5 PULASKI COUNTY (8,741)

At the southwestern tip of Illinois, Pulaski County is slated to receive a 2 unit coalfired power plant under either of the high energy scenarios. There are no power generating facilities in the county at the present time.

This small county is located above the confluence of the Ohio and Mississippi Rivers. Interstate Highway 57 will cross the river into Missouri at this point. At present U.S. Highway 51 crosses into Kentucky and U.S. Highway 62 forks into Missouri at the confluence. In this southern part of the county where both rivers and highways converge are the two major towns in the county, Mounds (1718) and Mound City (1177). The closest Illinois towns of any size are Anna (4766) 37 miles north in Union County, and Marion (11, 724) 57 miles north in Williamson County. Cape Girardeau, Missouri, is only a little over 30 miles north west of Mounds and Mound City is connected directly by State Highway 3. Paducah, Kentucky, only a little further to the east, is probably not an urban center that would be visited frequently by any but the residents of the eastern parts of the county because of indirect highway access.

Pulaski County is almost surrounded by recreational areas. The Shawnee National Forest stretches from neighboring Alexander County in a semi-circle through Union, Johnson, Pope and Hardin Counties. There are also many parks, conservation areas and wild life refuges in this area. In addition, just south of Paducah in Kentucky is the large "Land Between the Lakes" recreation area. One would also expect that the rivers would provide water recreation facilities.

6.5.1. LAND USE

Smaller proportion of the land is devoted to farming in the southern Illinois Counties than in the northern part of the state. In Pulaski, 60% of the land is in farms. Slightly less than a quarter of the land is forested. Pulaski County is outside the areas of coal and oil production but there is a small amount of quarrying of clay, stone, sand and gravel.

6.5.2. RESIDENCE

This county is predominantly rural, non-farm (84%). Only 16% live on farms and this sector has been declining rapidly (-62.7% between 1960 and 1970). The population in general has been declining as well, although not as rapidly as the farm sector. Between 1960 and 1970 the population decline by over 16% with out-migration of over 19%. Both towns declined in size as well (Mounds - 6.4, Mound City - 29.4). Since 1970 the population appears to have stabilized with a growth of 0.6% and in-migration of slightly over 1%.

As one would expect from its location, only 71% of the residents of Pulaski County were born in Illinois. Most of those born in other states appear to be from southern states.

The population does not appear to be more mobile residentially, however. Almost 90% of the residents lived in Illinois in 1965 and a little over 81% lived in Pulaski County.

6.5.3. AGE STRUCTURE

Median age in this county is relatively high (34.2) with over 17% of the population over 64. As a consequence, death rate is high. The age profile is characterized by a very sharp decline in the size of age cohorts older than 19. Consequently less than 17% of the population is between 20 and 40. The middle aged and elderly are predominant in this population.

6.5.4. MARITAL STRUCTURE

Following from the age structure, there are high percentages of widowed men and women in the population and relatively low percentages of families with children under 18 and few intact families. Higher death rates among men combined with the above factors explain the low percentage of adult males in the population and the high percentages of families with female heads.

6.5.5. EDUCATION

Given the age structure, it is also not surprising that educational levels in Pulaski County are among the lowest in Illinois, and more on a par with rural Kentucky Counties. Over 68% of the population have not finished high school and less than 4% have finished college. There is a small community college, Shawnee, with an apparent enrollment of 126 or less.

6.5.6. HOUSING

Along with the decline in population during the sixties was a decline in the numbers of households (-9.9) and housing units (-12.0). Few houses were built during this period (12.9%) although the percentage lacking some plumbing was relatively high (32.5), especially for Illinois. Housing units are overwhelmingly in one-unit structures (91%) although only a little over two-thirds (69.9%) are owner occupied. House values are low (median - $5,259) as are rents (median - $51).

6.5.7. ECONOMIC ACTIVITIES

Pulaski is one of the few counties where jobs related to providing services comprise the largest type of economic activity. It is possible that there are some public service institutions in this county but, if

so, they have not been identified. A sizeable percentage of workers (27.4) also commute out for work, many probably to Alexander County.

Table III-D-77

IL-5 COUNTY BUSINESS PATTERNS, 1973

Total Population	8,741
In CBP	1,266
Construction	77
Manufacturing	40
Transportation	86
Trade	251
Finance	37
Services	674

Farming operations in Pulaski County are about evenly divided between livestock raising and cash crops. As the following figures indicate, farming, although not as profitable as in northern Illinois, is a more viable activity than in much of Kentucky.

Table III-D-78

IL-5 FARMING, 1969

Average value of land & buildings per acre		$355
Average return per acre		52
Class I-V Farms:		
Number	253	
Avg. acres	280	
Avg. return	$15,414	
Other Farms:		
Number	100	
Avg. acres	76	
Avg. return	$1,450	

Over a third of the farms are not potential full-time economic activities, however. The probably marginal nature of farming in this county may be indicated by the large decreases in both numbers of farms (-31.6) and farm acreage (-25.9) during the sixties.

6.5.8. INCOME

Income in this, as in some of the other southern counties of Illinois, is on a par with the neighboring Kentucky counties and is low. Figures for 1973 and 1974 do not reflect any change in its relative position. In 1969, median family income was $4931 and per capita in-

come was $2,129. By 1973 the latter figure had increased to $2,958. Farm family income was slightly higher than the median for all families ($5,423) but was still low. Median family EBI in 1974 was $4,316, one of the lowest in the ORBES region.

6.5.9. IMPACT ASSESSMENT

Pulaski County, Illinois, in the heart of a rather large recreational area, probably has a symbolic orientation to the environment. The elderliness of the population and mixed-origin character suggest it is a retirement community and thus also characterized by the primordial belongingness sub-orientation. It is poor, suggesting perhaps, as in Eastern Kentucky, there is natural beauty to offset the relative poverty of the area. Also, older people generally have low incomes. Given these prevailing orientations, we would expect considerable opposition to a power plant site in this county. Moreover, if our assessment of aesthetic qualities is correct, it seems likely that outside environmentalists would join in an opposition movement, increasing its effectiveness.

6.6. HAMILTON (8,665), WHITE (17,312), LAWRENCE (17,522), JASPER (10,741), AND CLARK (16,216) COUNTIES

Five counties in southeastern Illinois are slated for coal-fired power plant development. Jasper County will have a three-unit (550 megawatts per unit) power plant located at Newton which will go into operation in 1977, 1981 and 1984. By 1985 the power generating capacity of Jasper County will equal 1,650 megawatts.

The other four counties will receive power plants under the high energy scenarios. Under Scenario I a two-unit (2,000 megawatt) plant will be built in each of the four counties: Hamilton, White, Lawrence, and Clark. Under Scenario II two-unit plants will be built in Hamilton, Lawrence and Clark.

At present, Hamilton, White and Clark have very small power generating facilities totaling 4.6, 16.7 and 5.6 megawatts, respectively. Lawrence and Jasper Counties have no generating facilities.

White, Lawrence and Clark all border on the Wabash River and each is fairly close to a major urban area in Indiana.

A little over a third of the residents of White County live in the major town, Carmi (6,033), in the center of the county. There is one other town, Norris City (1,319), and the rest of the people live in the countryside or in places smaller than 1,000. Carmi is 42 miles west of Evansville, Indiana, but the distance from the river to Evanesville is less than 30 miles. A plant sited along the river could be within commuting distance from parts of this city. There are no comparably sized Illinois cities in the area. Mt. Vernon (15,980) in Jefferson County, 48 miles from Carmi, and Marion (11,724) about the same distance in Williamson County are the closest sizeable towns.

Vincennes, Indiana, is just across the river from Lawrence County, and is 11 miles from Lawrenceville (5,863) the major town in the county. Lawrence County has two other communities with over 1,000 residents: Bridgeport (2,262) and Sumner (1,201). The surrounding counties show similar population distributions: one sizeable and several smaller communities, but no cities.

Clark County is close to Terre Haute, Indiana, but it also is located on the fringes of the urbanized swath across northern Illinois. Clark County itself only has three communities with over 1,000: Marshall (3,468), Casey (2,994), and Martinsville (1,374). Terre Haute is only 16 miles east and Effingham (9,468) and Danville (42,570) are each about 50 miles away.

Hamilton County, just west of White, has one small town of less than 3,000, McLeansboro, located at the junction of the several highways crossing the county. Approximately 25 miles in any direction are regional population centers: Carmi (20 miles east), Mt. Vernon (15,980, 28 miles northwest), Benton (6,833, 24 miles west), and Harrisburg (9,535, 33 miles south).

Jasper County, southwest of Clark County, like Hamilton, has only one sizeable community, Newton (3,024), site of the new plant. Newton is only 24 miles southeast of Effingham (9,458) and 37 miles south of Charleston (16,421). Although only Effingham and Terre Haut are close enough to provide commuting workers, both these large towns are on the major highway networks that characterize the northern Illinois urbanized strip.

Although these five counties are not contiguous, they are all part of an area along the Wabash River which, according to our sociographic maps seems to have some unity. In addition, the counties can be characterized as being off the major transportation routes through the state, and the major urban areas in Illinois. Although not isolated, access to urban amenities, for many of the residents, may involve crossing into Indiana at one of the infrequent bridges along this stretch of the river.

Residents of the southern two counties, Hamilton and White, may have easy access to the recreation areas in the Shawnee National Forest about 30 miles south or those around Lake Rend to the west in Jefferson and Franklin Counties. The residents of the other counties are not as well placed for easy access to outdoor recreation facilities as are those in the southwestern corner of Illinois. There are several state parks and conservation areas scattered throughout the area, but the large lakes are outside this area. Of course, urban recreational facilities would be available to those living close to the Indiana cities.

6.6.1. LAND USE

Although considered part of the forested area of Illinois, none of these counties have more than 22% of the land in forest. Land is largely devoted to farming, although percentages range from 70% to over 90%.

Table III-D-79

IL-6 LAND USE

	% farm land 1969	% forest 1962	recreational acreage 1973
Hamilton	78.9	19.5	1,686
White	88.2	11.4	-
Lawrence	70.9	18.2	993
Jasper	89.5	13.9	1,630
Clark	91.2	21.2	975

All of these counties are underlain by coal bearing rock but none show any coal production for 1974. There was, however, oil production in all counties and for Hamilton, White, Lawrence and Jasper, this was the major extractive industry. The major extractive industry in Clark County was the quarrying of stone. Petroleum was second in importance. Sand and gravel mines were present in all but Hamilton County. To give a rough idea of the relative magnatude of mineral extraction in these five counties, figures are given for the value of the minerals produced in 1973. Among the Illinois impact counties profiled for this study, only St. Clair and Perry Counties in southwestern Illinois, rivaled this group of counties in mineral extraction. In all the other counties, mineral production was either very small or information was withheld to prevent disclosing information about a single company.

Table III-D-80

IL-6 MINERAL PRODUCTION, 1973

	Value in $1,000
Hamilton	$ 4,055
White	16,260
Lawrence	16,674
Jasper	2,840
Clark	W

6.6.2. RESIDENCE

All of the counties have a density of less than 50 per square mile. Even accounting for the locations of the small towns, the rural populations of Hamilton and Jasper, the two counties not on the river, were the most sparsely settled. Lawrence County, just across the state line from Vincennes, Indiana, is the most densely populated. Hamilton and Jasper Counties have especially high percentages of the population living on farms.

Table III-D-81

IL-6 DISTRIBUTION OF THE POPULATION

	Density	Urban	Rural non-farm	Farm
Hamilton	20	30%	37%	33%
White	34	35	48	19
Lawrence	47	34	50	16
Jasper	22	28	24	48
Clark	32	40	35	25

Residentially, Hamilton and Jasper Counties appear to be somewhat more stable than the three border counties. As expected, they have more residents who are natives of Illinois, but they also have higher percentages of the population who lived in the same state or the same county in 1965. The difference is not large but the pattern is consistent. The counties as a group should be considered residentially stable, nevertheless.

Table III-D-82

IL-6 RESIDENTIAL STABILITY

	Hamilton	White	Lawrence	Jasper	Clark
% residing in:					
birth state	89.7	78.9	74.2	88.6	75.8
county, 1965	85.3	80.9	82.1	83.8	80.8
state, 1965	91.7	89.5	88.2	92.5	88.1

These counties experienced both moderate to small population losses and out-migration during the sixties. Since 1970, they, like many other counties in the ORBES region have begun to stabilize, and trends have, at times, reversed. The most interesting reversal concerns the two rural counties, Hamilton and Jasper. Both had comparable levels of out-migration in the sixties which has apparently ceased. Hamilton is now growing and has a small amount of in-migration. White and Clark Counties do not show much change in trends for the early 1970's. With one exception, all of the counties have been losing population from the farm sector at a rate which is characteristic for the ORBES region. The farm population of Jasper County is declining very slowly. This may mean that conditions here are more favorable for farming. The somewhat lower than usual loss in neighboring Clark County incline one to suspect such a condition there as well.

Table III-D-83

IL-6 POPULATION SHIFTS

	Hamilton	White	Lawrence	Jasper	Clark
% change, 1960-70					
population	-13.4	-10.6	- 5.5	-5.3	-2.0
net migration	-10.9	-11.5	- 7.3	-9.2	-3.6
farm population	-36.0	-35.8	-36.8	-5.1	-18.1
% change, 1970-74					
population	2.7	- 5.1	2.3	0.6	-0.4
net migration	4.5	- 3.8	3.0	0.1	-

6.6.3. AGE STRUCTURE

These counties are all located in an area running across southern Illinois along the Ohio and Wabash Rivers, and having exceptionally high median ages. Jasper is the only county with a median age less than 35. Looking at the profiles, this appears to be due to the relatively larger numbers of children in this population. Otherwise, age profiles of these counties are very similar with large numbers of the middle aged and elderly in the population. This tendency is most marked in Hamilton County where the age cohorts between 50 and 70 have almost as many individuals as those under 20. Median ages are:

Hamilton	40.2
White	37.3
Lawrence	35.4
Jasper	32.9
Clark	35.7

6.6.4. MARITAL STRUCTURE

Marital structure is predictable from the age structure and the generally greater longevity of women. There are low percentages of adult males, low percentages of single men or women, relatively high percentages of widows, and few families with children under 18. Jasper County, consistent with its slightly lower median age, exhibits these trends to a slightly more moderate extent than the other counties.

In these rural counties, it is not surprising that relatively low percentages of families have female heads and relatively high percentages of families are intact.

6.6.5. EDUCATION

Educational levels are, for Illinois, relatively low in these counties. Lawrence County has the highest and Hamilton the lowest median number of school years completed. Similar small variations are apparent when looking at those who have not finished high school and those who have completed college. Lawrence, perhaps because of the presence of Vincennes just across the river, has a slightly higher proportion of the better educated and almost half of the population has finished high school. There are no significant college populations in these counties.

6.6.6. HOUSING

In Hamilton and Jasper, the two most rural counties, a high proportion of housing units are occupied by the owner, but the other counties all have over 70% home ownership. Houses are overwhelmingly in one-unit structures.

Table III-D-84

IL-6 HOUSING, 1970

	Hamilton	White	Lawrence	Jasper	Clark
Change 1960-70:					
Households	-5.7	-3.6	-1.0	-3.6	2.9
Housing units	-9.7	-2.8	1.2	- .9	3.1
Average:					
House value	$6,812	$7,964	$8,722	$10,433	$9,846
Rent	69	75	77	73	79
% Units					
One unit structures	93.4	88.3	89.8	93.6	87.6
Built since 1960	11.3	11.1	13.1	15.7	15.8
Owner occupied	80.5	71.2	76.9	84.0	77.1
Lack some plumbing	18.7	8.1	7.5	13.2	12.0

For Illinois, several of the counties (Clark, Jasper, Hamilton) have relatively high percentages of housing units which lack some plumbing. Examination of maps in Appendix A will show that there is a relationship between rents, house values and houses lacking plumbing. These counties are in a strip of counties running diagonally southwest to northeast across the middle of the ORBES region with moderately valued housing and moderate levels of housing units which lack some plumbing. Only Clark County had any increase in the number of households or housing units in the sixties. Clark County also had the smallest population loss during this period. Considering the declines in population, the building rates representing a relatively low level of replacement are understandable.

6.6.7. ECONOMIC ACTIVITIES

All of these counties have substantial proportions of workers who commute out (15 to 22%). Of the jobs available in these counties and listed in County Business Patterns, few are in manufacturing. The largest categories in Clark and Jasper Counties are related to trade.

Table III-D-85

IL-6 COUNTY BUSINESS PATTERNS, 1973

	Hamilton	White	Lawrence	Jasper	Clark
Total population	8,665	17,312	17,522	10,741	16,216
In CBP	865	3,236	3,755	1,169	2,670
Agriculture	6	-	-	-	-
Mining	56	463	261	39	102
Construction	48	112	501	97	99
Manufacturing	316	481	931	237	607
Transportation	53	205	73	108	267
Trade	257	1,119	894	496	1,041
Finance	48	127	421	71	112
Services	77	702	663	110	425

Several things can be seen on this table. Manufacturing is not diversified. In Hamilton, White, and Jasper Counties, the only sizeable industries produce apparel, probably accounting for the relatively high percentage of women in the White County labor force. Lawrence County has small manufacturing establishments producing: 1) petroleum and coal products and 2) electrical equipment. Clark County also has an electrical equipment industry as well as a small chemical industry. The importance of mining, as mentioned earlier under "land use" can be seen, especially in White and Lawrence Counties.

White and Lawrence Counties have the highest ratio of jobs to population and Hamilton the lowest. This does not correlate with persons who commute out, but there is a rough correlation with the percentage of the population living on farms. The larger numbers of potential full-time (Class I-V farms) operations, in Jasper County and Clark County compensate for the relatively few non-agricultural jobs. This is not true for Hamilton County.

Hamilton County has the lowest return per farm and per acre of these five counties. The land is also markedly lower in value, perhaps indicating lower productivity, perhaps greater difficulty in marketing. Productivity is higher and land more valuable in the northern counties. Hamilton County also has a more even balance between cash grain crops and livestock raising. In all counties, cash grain crops are first in importance and livestock secondary. Otherwise, there is little to distinguish these counties from one another in farming.

Table III-D-86

IL-6 FARMING STATISTICS, 1969

	Hamilton	White	Lawrence	Jasper	Clark
Change 1964-69					
Farms	-9.2	-6.3	-9.3	-9.1	-6.3
Acreage	1.0	.9	-5.6	- .6	1.6
Average:					
Land value	$244	$309	$339	$353	$352
Return per acre	39	48	57	55	63
Class I-V farms:					
Number	657	699	502	1,040	934
Avg. acres	303	382	315	261	296
Avg. return	$12,540	$18,938	$18,759	$17,402	$19,464
Other farms:					
Number	303	234	210	254	312
Avg. acres	68	71	54	49	59
Avg. return	$ 1,078	$ 1,103	$ 1,079	$ 1,011	$ 1,081

All the counties had some farm consolidation with little change in acreage except for Lawrence County.

6.6.8. INCOME

The relative poverty of Hamilton County is clearly demonstrated in income figures. The relative unprofitability of farming in this county is also apparent from the larger difference between median incomes for total families and for farm families. By 1974, incomes had increased very little in this county compared to the other counties. The per capita income in

Table III-D-87

IL-6 INCOME

	1969 Median Family	1969 Median Farm Family	1969 Per capita	1973 Per capita	1974 Median Family EBI
Hamilton	$5,870	$4,760	$2,132	$4,721	$5,761
White	7,201	6,929	2,958	4,637	7,770
Lawrence	7,538	7,333	2,977	5.055	8,774
Jasper	7,945	7,774	2,690	6,379	5,871
Clark	8,045	8,159	3,235	5,871	9,097

White County is about the same but the difference in family incomes here may be due to the larger percentage of women in the work force. This may be a factor affecting family income figures in the three northern counties as well.

6.6.9. IMPACT ASSESSMENT

The Illinois counties of Hamilton, White, Lawrence, Jasper and Clark, while homogeneous with respect to predominant environmental orientation (sentimental), exhibit rather interesting variations in the sub-orientations. For instance, Jasper County, a stable prosperous farming community with families in the child-bearing and rearing cycles contrasts sharply with Hamilton County with its remarkably elderly population and its poverty. In the former, the prestige sub-orientation as well as an economic benefit/instrumental orientation is probably dominant; in the latter, primordial belonging.

All these counties, with the exception of Lawrence, are not boom-town condidates. There are cities in Indiana providing most of the work force, but those farthest away from cities may have "boomlets." Lawrence County seems likely to experience a boom and seems not too well equipped to provide needed services and amenities. The larger nearby city of Vincennes in Indiana seems to be the most likely recipient of the boom, however, possibly mitigating local effect.

In terms of local acceptance of development, we would expect Jasper and Hamilton Counties to be the least receptive, for the differing reasons described above. Clark, being the most urban would seem the most accepting, though farming is a prosperous occupation there. White County, being close to Evansville, Indiana should experience little negative impact from power plant construction and possibly welcome the infusion of money to the county.

7. DEMOGRAPHIC PROFILES AND IMPACT ANALYSIS: INDIANA

7.1. JASPER COUNTY

Jasper County, although not slated for any power development under the scenarios, will have extensive power development prior to 1985. This county has two plants, a small 20 megawatt plant which will be increased to 25 megawatts by 1985 and a large coal-fired plant with one unit under construction and two in the planning stages. The unit under construction will have a capacity of 520 megawatts and the additions will have 477 and 527 megawatts, respectively. The generating capacity of this county will be 1548 megawatts by 1985. This plant is located close to the Kankakee River near Wheatfield (679) in the northern part of the county.

Jasper County is fairly close to the Gary-Hammond urban areas south of Chicago and Lake Michigan. I-65, running along the western border of the county, goes to this metropolitan area. Jasper County itself is sparsely settled and serviced by minor U.S. and state highways. From Wheatfield, however, it is only 20 miles north to I-30 at Valparaiso (20,020) and a major highway network. No other cities of any consequence are close. Jasper County has three communities over 1,000:

Rensselaer	(4,688)
DeMotte	(1,697)
Remington	(1,127)

Rensselaer and Remington are in the southern half of the county, 17 and 25 miles away respectively. DeMotte is just 7 miles west of Wheatfield.

7.1.1. LAND USE

Almost 90% of the land in this county is in farmland and 7% is forested. The county is outside the coal producing areas but there is stone, sand and gravel quarrying. Urban use of the land is probably minimal.

7.1.2. RESIDENCE

This county has been growing at a modest rate since 1960, in spite of some out-migration during the sixties. Gains in the 1970

Table III-D-88

IN-1 POPULATION SHIFTS

	Growth	Migration
1960-70	8.4	- 4.3
1970-74	7.6	11.0

population are to the rural non-farm sector of the population, both the single urban community, Rensselaer, and the farm sector (-26.3) having declined. Nevertheless 22% of the population lived on farms in 1970 and 23% in Rensselaer. The remaining 55% lived in small communities or the open countryside.

Jasper is one of the few counties in the ORBES Region which has a significant proportion of residents who are foreign born or of foreign/or mixed parentage (9.1%). It also has fewer than the average percentage of residents who were born in Indiana (69.9). In spite of the fact that more of the residents come from elsewhere, this does not appear to be a county with excess transience or residential mobility, although it has slightly above the average. Just over 76% of the population lived in Jasper County in 1965 and a further 11% lived in other counties in Indiana.

7.1.3 AGE STRUCTURE

The median age in this county is rather low (24.3) and the age profile reflects this. There are relatively large numbers of children but the numbers in age cohorts decline sharply between 19 and 20 and again between 24 and 25. A probable explanation for this two step decline is the presence of a college population of 1,145. There is a small college, St. Joseph's, in Rensselaer. Age cohorts for ages 25 through 50 are roughly equal in size. After this, numbers begin to decline regularly. The consequence is a population dominated by the young and middle-aged, many of whom must have children.

7.1.4 MARITAL STRUCTURE

This county is one of the few in the region with above average numbers of adult males in the population, a larger than average proportion of whom appear to be single. This is a largely Catholic population and the name of the college in Rensselaer suggests that this is a men's college or seminary. The fact that the numbers living in group quarters is somewhat larger than the college population supports this contention. The balance of the population appears to be predominantly married couples in the early or middle stages of the family cycle with children at home. Most women are married, high percentages of families are intact and have children under 18. There are few widows or families with a female head.

7.1.5 EDUCATION

Educational levels in this county are relatively high for the ORBES region in terms of average level of attainment. Median number of school years completed is 12.0 and over 58% of the adult population have completed high school. For such a rural county, the percentage who have completed college (6.2) is respectable. Of course this figure may have been inflated by the presence of the faculty and administrative personnel of the college.

7.1.6 HOUSING

Like the population, numbers of households and housing units have grown since 1960. One-fifth of the housing units were built between 1960 and 1970, indicating a moderate level of building activity. Housing values($13,176) and rents ($102) are relatively high. Housing units are overwhelmingly in one-unit structures (87.1) although only 71% are occupied by the owner. Few (6.7%) lack any basic plumbing.

7.1.7 ECONOMIC ACTIVITIES

The non-agricultural economic activities of this county are diversified and a small percentage commute out for work.

Table III-D-89

IN-I COUNTY BUSINESS PATTERNS, 1973

Total Population	20,429
In CBP	3,777
Agriculture	4
Mining	43
Construction	499
Manufacturing	956
Transportation	138
Trade	1,318
Finance	128
Services	663

The value added by manufacturing for 1972 is higher than one would expect, looking at the few manufacturing jobs in this county. The reason may lie in the type of manufacturing done. The 1972 Census of Manufacturing lists four large plants, employing over 250 persons each for Jasper County as well as 18 smaller plants. Although these numbers are not in accord with those in County Business Patterns (possibly due to differences in collection methods, categories and year) together they provide some indication of the situation. The most important industry is in 1) fabricated metals but there are also industries producing: 2) lumber and wood products; 3) electrical equipment; and 4) transportation equipment. This many large plants is uncharacteristic of the other rural counties profiled for the ORBES study.

Examination of the work force composition reinforces two characteristics of the population suggested earlier. Relatively small percentages of women and working wives are in the work force. Also, a relative high percentage of the work force is engaged in educational services, probably as a consequence of 1) a population of children and 2) the presence of a college.

Farming is a very profitable economic activity in this county. Farms are relatively large and land values are moderately high, most of them are, at least potentially, full-time operations. In the late sixties there was a small amount of farm consolidation but no loss in the total amount of land devoted to farming.

Table III-D-90

IN-1 FARMING, 1969

Changes 1964-69		
Farms		- 3.2
Acreage		0.1
Average:		
Value of land	$	420
Return per acre		116
Class I-V Farms:		
Number		952
Avg. acres		328
Avg. return	$	38,936
Other Farms:		
Number		242
Avg. acres		47
Avg. return	$	1,537
% Return from:		
Crops		48
Dairy		1
Livestock		46
Poultry		5

The largest number of farms (620) are primarily devoted to raising cash grain crops. There are fewer livestock farms (251) but the general return from livestock is almost as high. The vegetable (13) and fruit farms (7), although not numerous, are more than most counties have.

7.1.8. INCOME

Income levels in Jasper County are above average and this relative position has persisted through 1974.

Table III-D-91
IN-1 INCOME

1969:	
Median Family	$ 8,776
Median Farm Family	7,978
Per capita	3,543
1973:	
Per capita	5,628
1974:	
Median family EBI	11,135

7.1.9. IMPACT ASSESSMENT

Jasper County, Indiana, being affluent and rural and populated by families in the child-rearing phase of the life cycle, would probably be receptive to development of power plants, largely because it can avoid the boomtown syndrome. The environmental sub-orientations predominant here are prestige and economic benefit. There is the possibility of conflict should large portions of prime farm land be required for plant siting, however, the nature of the population would indicate favorable attitudes toward power plant development.

7.2. TIPPECANOE (109,378), FOUNTAIN (18,257), WARREN (8,705) AND VERMILLION (16,793) COUNTIES

Four counties in northwestern Indiana along the Wabash River will have power plants, both coal-fired and nuclear, under the scenarios. At the present time the only county having generating facilities is Vermillion with a coal-fired plant at Cayuga capable of generating 1,073 megawatts. No new facilities are planned for this area before 1985.

Under the high energy Scenario I, each of the four counties will have a single unit (1,000 megawatt) coal-fired plant and in addition, Fountain County will have a single-unit (1,000 megawatt) nuclear fueled plant.

Scenario II, also a high energy scenario, would provide for three coal-fired single unit plants and three nuclear-fueled single-unit plants. Coal-fired plants would be built in Warren, Fountain and Vermillion Counties. Nuclear plants would be built in Tippecanoe, Fountain and Vermillion Counties.

The Wabash River runs through the two major urban areas in this area: Lafayette/West Lafayette (64,112) in the middle of Tippecanoe County, and Terre Haute (72,990) just a few miles south of the Vermillion-Vigo County line. These cities, at the northern and southern ends of the area, are both connected by interstate highways with Indianapolis, 75 miles away in the center of the state. Running about half way between, and crossing Fountain and Vermillion Counties, a third major highway route, I-74, connects Indianapolis with Danville (42,570) and Champaign-Urbana in Illinois. That highway passes Crawfordsville (13,842) in neighboring Montgomery County, the next largest community in the area.

Except for Lafayette/West Lafayette in Tippecanoe County, there are only seven communities over 1,000 in these four counties, three of them less than 2,000. They are:

Warren County - Williamsport (1,661)
Fountain - Attica (4,262), Covington (2,641), Veedersburg (1,837)
Vermillion - Clinton (5,340), Cayuga (1,090), Fairview Park (1,067),

As indicated above, however, the location of the two Illinois cities and Danville, Indiana is such that any resident of these counties would be less than 50 miles from an urban area.

7.2.1. LAND USE

Vermillion County has the largest proportion of land in forest and the smallest proportion in farmland. It also has the largest amount of coal production as well as some sand, gravel and clay quarrying. Fountain also has some coal mining but it is less important than the quarrying of sand and gravel. Tippecanoe and Warren also have some sand and gravel quarries.

Table III-D-92

IN-2 LAND USE

	Tippecanoe	Warren	Fountain	Vermillion
% Land In:				
Farms, 1969	85.8	88.9	91.2	66.6
Forest, 1967	6.0	8.6	10.7	20.8
1973 Mineral Production Value	W	W	W	$15,706,000

Tippecanoe County must have a substantial proportion of the land in urban use. Although Vermillion County is included in the Terre Haute SMSA, current information only shows a concentration of small communities in the southern third of the county. These may be satellite communities of Terre Haute but whether they are dormitory communities or areas of industrial expansion has not been determined.

7.2.2. RESIDENCE

Tippecanoe, the only urban and densely settled county of the four, has been the most dynamic residentially. During the sixties, the population grew substantially and exclusively in the urban sector, the rural sector having declines. Part of this urban growth, of course, may be due to reclassification in the 1970 census and incorporation of fringe areas into urban areas. There was a corresponding level of in-migration. Over 30% of the population over 5 are in-migrants. Tippecanoe County also has, relatively speaking, fewer people who lived in the same county or in Indiana in 1965 as well as a lower percentage of Indiana natives.

Table III-D-93

IN-2 RESIDENTIAL STABILITY

	Tippecanoe	Warren	Fountain	Vermillion
Density	219	24	46	64
% Residing in:				
Birth state	67.9	69.1	72.4	72.7
County, 1965	62.8	77.6	84.7	83.5
State, 1965	80.4	90.5	91.2	90.4
Change, 1960-70				
Population	22.7	1.9	- 2.4	- 5.0
Migration	6.5	- 5.1	-10.3	- 4.4
Farm population	-36.7	-32.9	-29.0	-35.7
Change, 1970-74	- 1.7	- 3.9	0.1	1.8
Migration	2.6	- 2.3	1.9	1.9

Since 1970, in-migration has continued, but not at a high enough rate to offset decrease from natural causes.

The other three counties have populations which are somewhat more stable residentially, Fountain and Vermillion being the most stable and Warren County having a slightly higher level of mobility within the state than the other two. Warren County, in contrast to Fountain and Vermillion Counties, did not experience a reversal of the out-migration trend during the early seventies.

7.2.3. AGE STRUCTURE

Tippecanoe can be contrasted with the other counties in median age:

Tippecanoe	23.5
Warren	30.1
Fountain	30.5
Vermillion	35.7

The very low median age in Tippecanoe County is due to the large percentage (29%) of the population who are between 15 and 25, accounted for in large part by the presence of Purdue University in West Lafayette with almost 20,000 students.

Only in Vermillion County is there a marked difference in the sizes of the young adult and middle-aged cohorts. There are larger numbers of the middle aged. Vermillion County also has relatively small numbers of children. Both Fountain and Warren Counties show moderate decreases in cohort size between ages 19 and 20. After that cohorts are roughly similar in size until age 55 when they begin to decrease gradually. All of these counties are similar to many Illinois counties in having higher than average percentages of the elderly.

7.2.4. MARITAL STRUCTURE

With its differences in age structure and the prestige of a major university, Tippecanoe County also exhibits differences in marriage patterns. There are higher than average percentages of adult males, and single men and women. Conversely, the percentages of married and widowed individuals are relatively low. Relatively high percentages of families are intact and relatively few families have a female head.

Vermillion County, on the other hand, has relatively high percentages of the widowed and the divorced in the population. This latter characteristic is possibly related to the nature of the satellite communities in the southern part of the county. There are relatively few single men and women in this county. The lower than average proportion of adult males in the population is characteristic of counties with high median age.

Fountain and Warren Counties are similar. High (males) or relatively high (females) percentages of the adult population are married and the percentages of intact families are also relatively high. Few are single and there are not excessive proportions of the divorced or widowed. As a consequence, there are relatively few families with a female head.

7.2.5. EDUCATION

The presence of a large university in Tippecanoe plus the urban nature of the county are evident in educational levels. Very few (32%) have not completed high school and over 20% have completed college.

The other counties are typical of the region in that median school years completed is over 12. In Fountain and Warren Counties, approximately half of the population have finished high school (52% and 49.8% respectively), but the figure for Vermillion is lower (43.3%). All have low percentages (less than 5%) who have finished college and no substantial (less than 200) college population.

7.2.6. HOUSING

In housing patterns, Tippecanoe County is also distinctive. Owner-occupied dwellings are worth much more, but fewer dwellings are occupied by the owner and few are single unit structures.

In Warren, Fountain, and Vermillion Counties, housing values are relatively low and relatively large numbers are owner-occupied and in single unit structures. Again, Fountain and Warren Counties are intermediate between Tippecanoe and Vermillion.

Table III-D-94

IN-2 HOUSING, 1970

	Tippecanoe	Warren	Fountain	Vermillion
Change 1960-70				
Households	29.7	6.8	9.9	0.2
Housing units	30.2	11.6	3.1	0.9
Average:				
House value	$17,557	$9,561	$9,842	$6,454
Rent	122	88	90	74
% Units				
One unit structures	66.2	91.5	88.1	88.7
Built since 1960	31.0	18.0	13.6	9.5
Owner occupied	62.2	73.2	74.6	80.0
Lack some plumbing	2.4	10.9	8.8	15.8

Tippecanoe has been building new units at the highest and Vermillion at the lowest rate. This proportion of new structures is consistent with the percentages of housing lacking plumbing, as well as the increases in numbers of new households and housing units. Since only Tippecanoe County experienced an increase in population during the sixties, these latter figures also indicate that households must be smaller now.

7.2.7. ECONOMIC ACTIVITIES

The magnitude of all types of economic activity is greatest in Tippecanoe County. This is also the only county with net in-commuting also. Taking into consideration the relatively high percentage of the labor force working in government, the high percentages in professions or management, categories with many jobs not listed in County Business Patterns, and the low ratio between population and workers listed in County Business Patterns, the commuting pattern is easily understandable. Tippecanoe County is also characterized by relatively high percentages of women and working wives in the work force. This county has diversified industrial activity. The most important industry, employing 1,159 people, produces electrical equipment. The second largest industry produces fabricated metal products. Other smaller manufacturing industries deal in: 1) food products, 2) lumber and wood products, 3) printing and publishing, 4) chemicals, 5) rubber and plastics, 6) primary metals, 7) machinery, 8) transport equipment, and 9) instruments.

Table III-D-95

IN-2 COUNTY BUSINESS PATTERNS, 1973

	Tippecanoe	Warren	Fountain	Vermillion
Total Population	109,378	8,705	18,257	16,793
In CBP	32,797	930	4,075	2,099
Agriculture	39	-	9	-
Mining	87	-	-	-
Construction	1,789	81	73	176
Manufacturing	12,594	-	2,241	717
Transportation	915	72	143	249
Trade	8,807	222	1,094	645
Finance	2,521	241	141	93
Services	5,988	106	348	204

The predominant economic activities in Fountain County are manufacturing of: 1) electrical equipment, 2) primary metals and 3) rubber and plastics

Vermillion County, with almost as large a population, has only about half the number of jobs listed in County Business Patterns. Only a third of them are in manufacturing. The sizeable industry (employing over 250 people) produces rubber and plastics.

Warren county has less than 1,000 jobs listed in County Business Patterns and no industry employing over 20 people.

The nature of the industrial activity in Fountain and Vermillion Counties helps to explain the relatively high percentages of craftsmen and foremen in the civilian work force. The relatively high percentage of those in Warren County who work in manufacturing may form a large segment of the out-commuting workers going to Tippecanoe or Fountain Counties.

The characteristics of farming in Warren, Fountain and Vermillion Counties differ from Tippecanoe in a few ways. Land is less expensive, return per acre is lower, farms are larger and part time farming is not so profitable.

All four counties show similar returns on full time farming operations. Cash grain farming is the most prevalent type of farming operation and livestock raising is second. Crops account for slightly over half of the return and livestock accounts for slightly over 40% (exception: Warren: 73% crops, 26% livestock) of the return.

Warren and Fountain Counties had a small amount of farm consolidation. In Vermillion County, land appears to have been converted to other uses. This may be related to urban expansion from the south.

Regardless of the small percentage living on farms, farming involves larger numbers of people and farms in Tippecanoe than in the other counties. Farms are smaller, but return per acre is higher as is the average return per class I-V farm. In this county, part-time farming appears to be especially profitable as well. However, since definitions of Class VI and part-time farms preclude this high return per farm, we surmise that there may be some large "abnormal" farms, perhaps conected with Purdue Agricultural College which are inflating this figure. Tippecanoe is the only county showing gains in number of farms during the latter part of the sixties. This gain was slightly suggesting several possible factors. The cost of land may discourage consolidation and enocourage more intensive farming practices. Both profitability and rural life style may be factors encouraging individuals to buy farms.

Table III-D-96

IN-2 FARMING, 1969

	Tippecanoe	Warren	Fountain	Vermillion
Change 1964-69:				
Farms	6.3	-2.9	-5.9	-11.6
Acreage	5.7	2.6	1.8	-15.8
Average				
Land value	$519	$397	$347	$347
Return per acre	84	61	65	71
Class I-V farms:				
Number	882	534	673	315
Avg. acres	287	369	320	325
Avg. return	$24,254	$23,695	$22,121	$24,935
Other farms:				
Number	305	161	258	157
Avg. acres	70	77	64	62
Avg. return	$ 5,077	$ 999	$ 1,056	$ 1,032

7.2.8. INCOME

Income levels could be predicted from the foregoing profiles, high in Tippecanoe, moderate in the other counties.

Table III-D-97

IN-2 INCOME

	1969 Median Family	1969 Median Farm Family	1969 Per capita	1973 Per capita	1974 Median Family EBI
Tippecanoe	$10,118	$9,156	$3,433	$4,683	$12,184
Warren	8,338	8,011	3,282	5,838	10,962
Fountain	8,416	7,699	3,388	5,169	9,878
Vermillion	8,245	8,015	3,046	4,454	7,764

7.2.9. IMPACT ASSESSMENT

Tippecanoe, Warren, Fountain and Vermillion Counties in Western Indiana present a mix of environmental orientations and likely reactions to power plant development.

Tippecanoe County presents a rather complicated picture. The economic diversity and progressive urban character of Tippecanoe County suggest a strong economic benefit sub-orientation and thus, receptivity to development. However, the Lafayette/West Lafayette urban complex

does not appear able to contribute many workers to power plant construction, so a boom or "boomlet" situation seems likely and there may be negative reaction to that. The prestige sub-orientation is also present in this county and opposition to the plant might come from groups that have a stake in keeping things as they are. Opposition groups would also be likely to emerge from Purdue University too. We would suggest that receptivity to power plant development would be mixed and conflict-laden given the mix of orientations.

Vermillion County, too, has mixed orientations. The urban influence spreading from Terre Haute suggests the beginning of an instrumental orientation, however, many other sub-orientations are present and much stronger. There is the aesthetic sub-orientation and the age, stability and occupational structures present in the population suggest a primordial belongingness sub-orientation as well. The decline in relative wealth bodes well for receptivity to power plant development, however, the aesthetic and belongingness sub-orientations suggest there will be considerable opposition to the plant. Nearness to Terre Haute means a boomtown situation is unlikely. We suspect that the instrumental orientation will become dominant and receptivity to power plant development will increase.

Warren and Fountain Counties are candidates for a boomtown situation and, given their location and the lack of economic diversification, will have difficulty in coping with the syndrome. The primary orientation is sentimental and we would predict considerable opposition to the power plant, given the rural nature of the population.

7.3. SULLIVAN (19,889), GREENE (26,894), KNOX (41,546), DAVIESS (36,602), MARTIN (10,969), GIBSON (30,444), PIKE (12,281) AND DUBOIS (30,934) COUNTIES

In the southwestern quarter of Indiana are a cluster of eight counties which will be subject to heavy impacts from power plant development in the next twenty-five years.

At present, three counties, Sullivan, Gibson and Pike have large power generating facilities with additions in the planning stages. Sullivan has, at present, two small plants with a total generating capacity of 510 megawatts. In 1981 and 1984 respectively, two coal-fired units, 490 megawatts each, will go into operation at Merom on the Wabash River.

Gibson County already has 2,672 megawatts of generating capacity from a coal-fired plant at East Mount Carmel. A three-unit (650,668 and 668 megawatts respectively) plant is planned for Princeton.

Pike County has a plant at Petersburg generating 1,741 megawatts. Two additions to this facility will bring the generating capacity to 2,805 by 1982.

Greene and Martin Counties have no present facilities. Knox, Daviess and Dubois have small generating plants.

Under Scenario I, 11,000 megawatts will be divided among the eight counties. Scenario II divides 8,000 megawatts among seven counties. Each of the low energy scenarios would add one unit to the generating capacity of this area. Because of the concentration of facilities in this area, distribution of plants will be shown in chart form.

These eight counties are clustered in a rough rectangle bounded on the west by the Wabash River and on the east by the Hoosier National Forest. In the neighboring counties to the north and south are Terre Haute and Evansville. About halfway between the two larger cities on U.S. 41 is Vincennes in Knox County. Bloomington in Monroe County to the northeast of the cluster is the fourth regional urban center. Thus, although this cluster of counties is by-passed by all but one of the many major highway routes crossing Indiana, most residents are within 50 miles of one of the secondary cities.

Each of the counties has several communities of over 1,000 and excluding Vincennes, four have over 5,000 residents:

Washington (11,358) in Daviess County
Jasper (8,641) in Dubois County
Princeton (7,431) in Gibson County
Linton (5,450) in Greene County

Table III-D-98

IN-3 POWER GENERATING CAPACITY, SOUTHWESTERN INDIANA

	1975	1985	2,000 Scenario I	2,000 Scenario II	2,000 Scenario III	2,000 Scenario IV
Sullivan:						
Fossil	501	1,481	2,481*	2,481*	1,481	1,481
Nuclear				1,000*		
Greene						
Fossil			1,000*			
Nuclear			1,000*	1,000*		
Knox						
Fossil	146	146	1,146*	146	146	146
Nuclear						
Daviess						
Fossil	15	15	2,015**	1,015*	15	1,015*
Nuclear			1,000*	1,000*		
Martin						
Fossil			1,000*	1,000*	600*	
Nuclear						
Gibson						
Fossil	2,672	4,622	5,622*	5,622*	4,622	4,622
Nuclear						
Pike						
Fossil	1,741.8	2,805	2,805	3,805*	3,805*	2,805
Nuclear						
Dubois						
Fossil	16	16	1,016*	16	16	16
Nuclear						

* = new unit

There are several rivers near which plants could be built. The Ohio River is the largest waterway and forms the western border of Sullivan, Knox and Gibson Counties. The new Sullivan County plant at Merom Station is close to the river and one would expect that other plants would be similarly located. The White River crosses Greene County and forms the border between Knox and Daviess Counties. The Pike County plant at Petersburg is on the White River. On the same river where it joins the Wabash is the East Mount Carmel Plant in Gibson County. Princeton is on Pigeon Creek. The East Fork River crosses Martin County and the Patolea crosses Dubois. With this complex pattern of water ways, it is impossible to speculate about which parts of the county are likely to be most directly affected by development.

7.3.1. LAND USE

The proportion of land which is forested varies widely among these counties. There is an inverse relationship between proportions of forested land and farm land. Knox, Daviess, and Gibson have the highest proportions of land in farms and the lowest in forest.

Table III-D-99

IN-3 LAND USE

	% Land in Forest, 1967	% Land in Farms, 1969	Coal Production, 1974 (1,000 tons)	Valuable Mineral Production (thousands)
Sullivan	18.5	68.6	3,189	$27,778
Greene	28.4	65.2	822	7,162
Knox	11.9	90.7	770	576
Daviess	15.2	83.3	-	102
Martin	50.3	38.1	-	W
Gibson	15.3	80.6	-	W
Pike	37.2	53.3	5,088	W
Dubois	34.9	77.6	-	W

Martin and Pike have the largest amount of land in forest and the lowest in farm land. The unusually low proportion of land in farms in Martin County may be partly due to the Crane Naval Ammunition Depot which covers about a fourth of the county. There is also a similarly sized part of the Hoosier National Forest in the southern part of the county. The Hoosier National Forest appears to be the major locus for outdoor recreation in this area.

Sullivan and Gibson Counties are part of SMSA's but both are the loci of satellite development, however, the extent to which land is in urban use is undetermined.

Both Sullivan and Pike have substantial coal production in addition to some stone, sand and gravel quarrying. Since figures are withheld, it is not possible to gauge the size of mineral extraction industries in most of the other counties. In all except Knox and Daviess Counties, however, coal is most important. Second in importance (except for Knox and Daviess where it is most important) is the quarrying of sand and gravel.

7.3.2. RESIDENCE

The density of all of these counties is low. The population is mixed and residentially stable, with Dubois showing the highest level of stability.

Table III-D-100

IN-3 DISTRIBUTION OF POPULATION

	Density	% Urban	% Rural non-farm	% Rural farm
Sullivan	44	24	59	17
Greene	49	30	51	19
Knox	81	57	31	12
Daviess	62	43	34	23
Martin	32	27	53	20
Gibson	61	44	41	15
Pike	37	22	64	14
Dubois	71	43	42	15

All counties except Greene experienced moderate to low levels of out-migration during the sixties. In several counties the loss of population due to out-migration was offset by natural increase and the counties still gained in population. This effect was especially marked in Dubois County which had a low level of out-migration but a net increase of over 12%.

Table III-D-101

IN-3 RESIDENTIAL STABILITY

	Birth State:	Same State, 1965	Same County, 1965
Sullivan	82.7	91.6	83.2
Greene	88.7	92.0	81.5
Knox	82.8	91.3	82.6
Daviess	88.2	92.5	84.8
Martin	84.7	93.9	83.8
Gibson	83.9	92.8	85.3
Pike	89.4	93.2	83.9
Dubois	92.0	95.4	89.9

Greene County, with a very small amount of in-migration, maintained its population at about the same level.

In the early seventies, the levels of out-migration were reduced or reversed and natural increase seems to have slowed down as well. As a consequence, populations are relatively stable or declining slightly. Greene County, again, was attracting migrants at a higher rate than the other counties. This may be due to the location of Bloomington in nearby Monroe County.

Table III-D-102

IN-3 POPULATION SHIFTS

	1960-70		1970-74	
	[Population	Migration]	[Population	Migration]
Sullivan	-8.4	-9.9	-2.1	-2.3
Greene	2.2	0.1	3.8	4.6
Knox	-	-4.2	-1.8	-1.5
Daviess	-0.1	-6.9	-1.3	0.3
Martin	3.4	-11.6	-3.8	0.2
Gibson	1.7	-3.6	2.6	3.2
Pike	-4.0	-5.4	-1.2	-1.3
Dubois	12.6	-2.6	0.2	3.1

As was true through the ORBES region, all counties lose disproportionately from the farm sector of the population. The percentages from Sullivan and Pike Counties were particularly large.

7.3.3. AGE STRUCTURE

Median ages in these counties varied from a low of 25.0 in Dubois County to a high of 35.0 in Sullivan County:

Sullivan	35.0
Greene	34.4
Knox	31.4
Daviess	30.0
Martin	26.5
Gibson	31.0
Pike	34.7
Dubois	25.0

The age profiles for Sullivan, Greene and Pike Counties are similar with relatively few children and young adults but relatively large numbers of the middle-aged and elderly. Knox and Daviess Counties exhibit a similar pattern but there are relatively more children so the sudden decrease in the size of cohorts over 19 is more marked.

Gibson's profile is characterized by young adult and middle-aged cohorts which are roughly equal in size. The profile of Dubois is interesting in that it exhibits an almost perfect pyramidal shape. After age 19, size of cohorts gradually and regularly decreases. The low out-migration from this county, if it has been a sufficiently long trend, and stable birth rate, might help to account for this profile. The profile for Martin County approaches this same shape with only a small increase in size of cohorts for ages 50 to 59. This county had a net out-migration of 11.6% during the sixties.

7.3.4. MARITAL STRUCTURE

Greene and Sullivan are included in an area covering much of Illinois, southwestern Indiana, and western Kentucky which have relatively few adult males and median ages are high. This usually means that there are few single men and women in the population, higher than average numbers of widows, and fewer than average percentages of families with children under 18. This same pattern is true in general for Pike and Gibson.

Martin and Dubois, on the other hand, with lower age levels, have more families in early stages of the life cycle with children under 18 and fewer widows. In all counties except Knox, moderate to high percentages of the population are married, especially males. Divorced women tend to concentrate in Knox and to a lesser extent in Greene Counties. Dubois County, on the other hand, has relatively few divorced people.

7.3.5. EDUCATION

Knox and Greene have the highest educational levels for the counties in this cluster. Of course Knox County has the only city, Vincennes, in this area and Greene County is close to Bloomington, location of Indiana University. There is a college population in Vincennes of over 2,000. These factors probably affect educational levels.

In general, the counties of this cluster are about average for the ORBES region. Median school years completed are less than 12, less than half of the the population have finished high school (except for Knox and Greene Counties) and between 4% and 6% have finished college. Knox and Greene Counties have slightly higher (6.2% and 6.3%) percentages of the adult population who have college degrees.

7.3.6. HOUSING

Housing patterns indicate that Dubois County is the most dynamic. This county has the greatest increase in households and housing units, the highest level of building activity, the most expensive units and the fewest units lacking some plumbing. Recalling that this county also has the highest level of residential stability and the highest level of population growth coupled with a low level of out-migration which apparently has not depleted the young adult population, (judging by age profile and low median age), we would speculate that something is occuring in Dubois County which encourages most of the young to remain in the county, marry and establish households. Furthermore, whatever is keeping the residents is not a large enough attraction to pull in migrants. In essence, this looks like an unusually self-contained county. Martin County with its young population may have some of the same characteristics.

Considering the high median age, the higher levels of out-migration and population decline, it is not surprising that Sullivan County has fewer households and housing units than in 1966 and the lowest building rate among the counties. It also has a high proportion of one-unit structures. In general these counties exhibit variation in these characteristics which place them in the middle range for ORBES counties. The major exception is that, except for Knox County, this is a region with high levels of home-ownership. Building rates in this area are also moderate to low.

Table III-D-103

IN-3 HOUSING, 1970

	Sullivan	Greene	Knox	Daviess	Martin	Gibson	Pike	Dubois
Change 1960-70:								
Households	-4.6	5.9	1.8	6.3	12.4	6.2	1.9	16.7
Housing Units	-1.3	7.1	2.1	6.3	11.6	6.6	7.1	16.8
Average:								
House Value	7,103	7,975	8,854	10,035	8,241	9,959	7,133	13,331
Rent	80	77	76	75	75	80	79	83
% Units:								
One-Unit Structures	91.7	87.9	86.8	86.3	80.7	86.2	89.5	85.4
Built Since 1960	10.6	15.6	12.7	17.2	18.6	16.0	13.3	21.6
Owner Occupied	82.6	82.2	73.8	78.6	76.2	78.4	81.9	83.9
Lack Some Plumbing	15.8	13.7	9.0	10.2	17.9	8.8	17.4	7.6

7.3.7. ECONOMIC ACTIVITIES

The primary non-agricultural economic activity in Dubois and Martin Counties is manufacturing. In Knox County, trade is most important. The other counties have more balanced job distributions. Looking at the number of jobs in Dubois County compared with the size of the population, it is easy to see why this county has atypical age and housing patterns. It is also apparent why this county is a focus for in-commuting. More than half of the manufacturing activity, which is so important in this county is in 1) furniture (employing 3,484 persons). Industries producing wood products 2),(with 903 employees) and 3) food (with 350 employees) are responsible for a large part of the remaining employment. There are also industries employing over 100 people and producing: 4) apparel or textiles, 5) rubber and plastics, 6) stone, clay and glass products and 7) transportation equipment.

Although Martin County appears similar on the maps, the magnitude of the differences serves to distinguish these counties sharply. Martin County industry is primarily in: 1) textiles and apparel and secondarily in 2) stone, clay and glass products. The importance of the textile industry, which usually employees a large percentage of women, is responsible for the large percentages of women and working wives in the work force. Martin County should also be noted for the high percentages of Federal employees in the civilian labor force. Many of these may be employed at the Crane Naval Ammunition Depot.

Knox, Gibson, Daviess and Greene Counties all have more manufacturing activity than Martin County. Gibson and Greene Counties both produce electrical equipment. Gibson also has a rubber and plastics industry. Greene County has a furniture industry. The following industries in Knox County employ over 100 persons: 1) peper and printing, 2) stone, clay and glass products, 3) fabricated metals, 4) electrical equipment, 5) lumber and wood products, 6) primary metals. The industries employing over 100 in Daviess County are: 1) apparel and textiles, 2) machinery, 3) food, 4) transportation equipment.

Manufacturing in Pike County is negligible but Sullivan produces: 1) lumber and wood products, 2) instruments, 3) apparel or textiles and 4) rubber and plastics.

Dubois County has exceptionally profitable farming, measured both in average return per acre and per farm. Interestingly enough land values are relatively low. The figures in the table indicate that in farming, as in other areas, the other counties vary around the average for the ORBES region. Generally Daviess, Knox and Gibson are above and Sullivan, Greene, Martin and Pike, a bit below average.

Table III-D-104

IN-3 COUNTY BUSINESS PATTERNS, 1973

	Sullivan	Greene	Knox	Daviess	Martin	Gibson	Pike	Dubois
Population	19,889	26,894	41,546	26,602	10,969	30,444	12,281	30,934
In CBP	3,417	4,109	9,135	4,875	1,624	6,720	1,268	11,368
Agriculture	-	-	20	15	-	12	-	-
Mining	-	122	68	-	-	-	82	-
Construction	86	321	663	178	68	356	129	519
Manufacturing	661	1,522	2,183	1,831	806	2,611	42	6,538
Transportation	220	142	701	202	65	-	185	244
Trade	1,018	1,286	3,351	1,642	463	1,688	463	2,417
Finance	109	182	550	203	92	261	72	238
Services	321	492	1,579	750	125	1,015	286	1,364

Table III-D-105

IN-3 FARMING, 1969

	Sullivan	Greene	Knox	Daviess	Martin	Gibson	Pike	Dubois
Change 1964-69:								
Farms	-7.9	-6.4	-8.4	-9.9	-5.6	-5.7	-16.2	-11.0
Acreage	-3.0	1.3	.8	-2.9	-7.1	3.4	- 0.7	- 2.0
Average:								
Land Value	$349	$273	$431	$396	$202	$372	$267	$286
Return per Acre	61	52	86	93	52	84	70	130
Class I-V Farms:								
Number	641	695	1,005	1,029	933	909	399	896
Avg. Acres	288	268	289	205	212	266	250	211
Avg. Return	$18,563	$16,283	$25,309	$20,431	$16,245	$23,316	$19,274	$30,623
Other Farms:								
Number	329	526	187	346	327	310	270	284
Avg. Acres	49	81	50	51	48	49	54	92
Avg. Return	$ 987	$ 978	$ 1,172	$ 1,037	$ 604	$ 1,128	$ 954	$ 1,351
% Return From:								
Crops	65	43	60	36	18	55	41	8
Dairy	4	6	2	7	6	3	3	5
Livestock	30	49	36	42	61	35	36	41
Poultry	2	1	1	15	14	7	20	46

One distinctive characteristic of farming in Dubois County is the low percentage return from crops and the high return from dairy farming. However, there is nothing to indicate that this is a factor related to the higher profitability. Generally counties in this area show considerable variation in types of farming operations.

Except for Martin County, counties have all experienced some farm consolidation with little or no loss of farm acreage.

7.3.8. INCOME

Income levels in these counties are moderate for the ORBES region. There is little difference between median family income and median farm family income and little variation among counties. By 1973, income had not risen as rapidly in Martin County as in the others. Sullivan County, however, had improved its position in relation to the others.

Table III-D-106

IN-3 INCOME

	1969 Median Family	1969 Median Farm family	1969 Per capita	1973 Per capita	1974 Median Family EBI
Sullivan	$7,427	$6,895	$3,060	$4,594	$8,504
Greene	8,190	8,080	2,885	4,014	9,640
Knox	7,859	8,637	3,059	4,623	9,386
Daviess	8,131	7,478	3,194	4,521	9,080
Martin	7,894	8,557	3,102	3,781	8,599
Gibson	7,950	8,403	3,259	4,987	10,181
Pike	7,524	6,818	3,076	5,369	9,620
Dubois	8,997	8,146	3,377	4,698	11,240

7.3.9. IMPACT ASSESSMENT

Sullivan, Greene, Knox, Daviess, Martin, Gibson, Pike and Dubois Counties form a large block of counties slated for power plant development in southwestern Indiana. They vary greatly in terms of boomtown potential and predominant environmental orientations.

The counties which have already experienced considerable power plant development (Gibson, Pike and Sullivan) are all within commuting distance of a construction workforce and are likely to be amenable to further development. Two of these counties also produce coal and two are part of SMSA's. The orientation of Gibson and Sullivan Counties would appear to be primarily instrumental. Pike County too has this predominant orientation as well as an aesthetic sub-orientation, given the high proportion of the land devoted to forest.

Candidates for the boomtown syndrome include Dubois, Daviess, and Greene Counties, and possibly Martin County as well. Dubois and Martin are the most economically diversified of these four and better able to cope with boomtown demands. However, Dubois County, being affluent, and self-contained, probably has a high sentimental environmental orientation as well as the aesthetic sub-orientation. It is likely to be highly resistant to power plant development. This is generally true for Martin County as well. However, Martin County has had previous experience with large-scale development and might be slightly more receptive, but still basically a likely locus of opposition.

Daviess and Greene Counties have different environmental orientations, with Daviess being characterized as having the primoridal sub-orientation and Greene having a mix of the instrumental, the aesthetic and the prestige sub-orientations. Greene is a coal county, near a major university, and has an older population so we would expect the conflict of orientations to manifest itself in this county. The instrumental orientation and attendant power plant development will probably prevail. In Daviess County, residents would probably be opposed to development and ineffective in their protests. The community would seem to be inept in coping with boomtown strains as well.

Knox County has a mix of orientations present, primarily prestige and instrumental, and lies within commuting distance from Evansville and hence is not a boomtown candidate. Unless college students organize opposition groups, we would expect little resistance to power plant development and that the county would prosper from a plant.

7.4. LAWRENCE (38,038) AND JACKSON (33,187) COUNTIES

Two counties in south-central Indiana with no current power generating facilities will receive one single-unit coal-fired plant under Scenario I. The east fork of the White River converges with the Muscatatuck River in Jackson County and continues across Lawrence County towards the Wabash. These adjacent counties, about 75 miles south of Indianapolis, are each connected to that metropolitan area by a major highway (State 37 and U.S. 65). In addition, 27 miles north on State 37 from central Lawrence County is Bloomington (42,890). On U.S. Highway 65, about 25 miles north of eastern Jackson County is Columbus (27,141).

The largest town in Jackson County is Seymour (13,352), close to both the above highway and the river, but there are also two other communities over 1,000: Brownstown (2,376) and Crothersville (1,663).

Lawrence County has a similar distribution of communities: Bedford (13,087), Mitchell (4,092), Englewood (1,219) and Oolitic (1,155).

7.4.1. LAND USE

Both Jackson and Lawrence Counties have similar proportions of land in farms (69.9% and 60.1% repectively) and in forest (36.8% and 43.4%). In addition to commercial forest, Lawrence contains a large section of the Hoosier National Forest in its southwest corner. Another section of the Hoosier National Forest covers the top parts of these counties where they meet.

Both counties are outside the coal producing region but have some quarrying of sand and gravel, stone, cement and clays.

7.4.2. RESIDENCE

Jackson and Lawrence predominantly are rural with relatively sparse settlement and a relatively stable population.

Both counties experienced out-migration during the sixties and a reversal of the trend in the early seventies. Losses from the farm population were disproportionately large, especially in Lawrence County. In spite of the losses due to out-migration, both counties grew moderately in the sixties. With the reversal of migration trends, Lawrence County is experiencing growth but Jackson is not quite maintaining its size.

Table III-D-107

IN-4 POPULATION DISTRIBUTION, SHIFTS AND STABILITY

	Jackson	Lawrence
Density per square mile	64	83
% Urban	40	45
% Rural non-farm	45	42
% Farm	15	13
Changes 1960-70		
Population	8.6	4.0
Migration	-2.1	-4.6
Farm sector	-21.0	-42.0
Changes 1970-74		
Population	-0.4	4.2
Migration	3.0	7.0
% Residing in		
Birth state	81.4	84.2
Same state, 1965	92.2	92.2
Same County, 1965	84.7	85.5

7.4.3. AGE STRUCTURE

Median ages in these counties are:

Jackson	28.8
Lawrence	30.4

The age profiles are similar and do not show any striking characteristics.

7.4.4. MARITAL STRUCTURE

These counties have few single people and the percentages of the widowed are moderate to low. Over 70% of men and over 65% of the women are married. As would be expected from age levels, many families are probably in the middle and early stages of the family cycle so there are above average percentages of families with children under 18.

7.4.5. EDUCATION

Less than half the adult population have finished high school, the median school years completed being slightly less than 12. A small percentage of the resident population have gone to college (Jackson 5.3%, Lawrence 4.8%). These counties are in the middle range for the ORBES region. Neither county has any substantial college population.

7.4.6. HOUSING

These counties are in an area where an overwhelming percentage of housing units are occupied by the owner. Increases in numbers of households and housing units have been somewhat larger than would have been expected from population growth figures, but not excessively so. Building rates have been moderate. There is a marked difference in housing values between the two counties but this may be related to the differences in building rates and percentages of houses lacking plumbing. That is, in Jackson County the larger percentage of new houses which would tend to have all plumbing facilities would bring the median value of houses up as well.

Table III-D-108

IN-4 HOUSING, 1970

	Jackson	Lawrence
Changes 1960-70		
Households	14.4	11.6
Housing Units	16.4	14.3
Average		
House Value	$12,138	$19,761
Rent	92	88
% Units:		
In One-Unit Structures	88.2	86.0
Built Since 1960	23.4	19.6
Owner-Occupied	80.8	81.2
Lack some plumbing	10.5	13.1

7.4.7. ECONOMIC ACTIVITIES

The predominant non-agricultural activity in both counties is manufacturing. The most important industry in Jackson County is fabricated metal and in Lawrence County it is stone, clay and glass products.

Table III-D-109

IN-4 COUNTY BUSINESS PATTERNS, 1973

	Jackson	Lawrence
Total		
In CBP	9,153	8,226
Agriculture	16	49
Mining	-	-
Construction	328	413
Manufacturing	4,704	3,730
Transportation	414	285
Trade	2,496	2,198
Finance	299	372
Services	819	1,120

Jackson County also has the following industries employing over 100 persons: 1) rubber and plastics, 2) transportation equipment, 3) leather products, 4) apparel and textiles, 5) paper products and 6) food. Lawrence County has the following industries: 1) apparel and textiles, 2) primary metal, 3) fabricated metal, 4) transportation equipment, and 5) food.

This industrial emphasis is consistent with the high percentages of craftsmen and foremen in these counties.

The presence of options may be one of the reasons that such small percentages of the farms are potentially full-time operations (class I-V) in Lawrence County (48%) although the low profitability is undoubtedly a factor as well.

Table III-D-110

IN-4 FARMING, 1969

	Jackson	Lawrence
Average		
Land Value	$ 330	$ 186
Return Per Acre	89	39
Changes 1964-69		
Farms	-1.2	-18.6
Acreage	1.4	-7.0
Class I-V Farms		
Number	898	483
Avg. Acres	227	270
Avg. Return	$ 22,444	$ 12,967
Other Farms		
Number	445	521
Avg. Acres	65	88
Avg. Return	$ 1,022	$ 1,019
% Return From:		
Crops	29	22
Dairy	6	11
Livestock	41	60
Poultry	23	6

The lower profits from farming are reflected in the large decrease in both farms and acreage and the low cost of farm land in Lawrence County. Although there is some consolidation in both counties, substantial acreages are being removed from farming in Lawrence County. The differing emphasis on types of farming operations are not enlightening.

7.4.8. INCOME

Income levels are moderate in these counties with Jackson County consistently the higher.

Table III-D-111

IN-4 INCOME

	Jackson	Lawrence
1969		
Median Family	$ 9,007	$ 8,559
Median Farm Family	9,761	8,342
Per Capita	3,533	3,290
1973		
Per Capita	4,760	4,327
1974		
EBI	11,231	10,688

Few in these counties are below poverty income levels.

7.4.9. IMPACT ASSESSMENT

Lawrence and Jackson Counties in Indiana have a rural non-farm, stable population comprised mainly of married people with children. The people work primarily in the manufacturing and trade areas. The predominant orientation is sentimental but both counties have a substantial aesthetic sub-orientation. Lawrence is a boomtown candidate county while Jackson might possibly escape this if workers commute from Louisville and if the plant were sited in the southern part of the county. Lawrence County, being the poorer of the two, is likely to be more receptive to power plant development.

The economic infrastructure for coping with the boomtown syndrome is relatively well-developed compared to other rural areas in the region in both these counties and we suspect opposition to the plant would be minimal so long as the aesthetic sub-orientation did not come into conflict with the instrumental one.

7.5. POSEY (21,740), WARRICK (27,972), SPENCER (17,134), PERRY (19,075), CRAWFORD (8,033) AND HARRISON (20,423) COUNTIES

Most counties along the Ohio River are slated for power plant development by the year 2000. In the western half of the state there are six such counties. At present only two have generating facilities. At West Franklin on the Ohio River, a few miles west of Evansville, is a coal-fired plant with a present capacity of 225 megawatts and two units of 265 and 350 megawatts in the planning stage. The generating capacity by 1985 should be 870 for Posey County. Warrick has a coal-fired plant at Yankeetown, about 15 miles east of Evansville, with a generating capacity of 1,145 megawatts. None of the other counties have power plants operating at present although a 980 megawatt plant which was originally planned for Sullivan County will now be built in Spencer County.

Under all scenarios, this area will have new power plants. Scenario I posits eight coal and three nuclear units for the area. Two-unit (2,000 megawatts) coal-fired plants will be sited in Perry and Harrison Counties. Single-unit coal-fired plants will be built in Posey, Warrick, Spencer and Crawford Counties. Single-unit nuclear plants will be built in Spencer, Perry and Harrison Counties.

Under Scenario II there will be seven coal and six nuclear units. Perry and Harrison Counties will each have a two-unit coal and a two-unit nuclear plant. Spencer and Crawford will each have a single-unit coal and a single-unit nuclear plant. Posey will have a single-unit coal-fired plant.

Under each of the low energy Scenarios III and IV, this area will have two single-unit plants. Scenario III would site them in Posey and Crawford Counties. Scenario IV would site them in Perry and Harrison Counties.

Because of the heavy concentration of plants in this area, the above information will be presented in a chart.

These counties form a string along the Ohio River from west to east broken only once, by Vanderburgh County, site of Evansville. Posey County, in the southwestern tip of the state is bordered on the west by the Wabash and on the south by the Ohio River. Seventeen miles directly east of the major town, Mount Vernon (6,770), is Evansville. The other counties stretch from Evansville to the Louisville/New Albany SMSA. In Warrick and Perry Counties there are also population centers with a little over 5,000 people: Boonville (5,736) in Warrick, and Tell City (7,933) in Perry. Seven communities have between 1,000 and 3,000 residents.

Table III-D-112

IN-5 POWER GENERATING CAPACITY

	Posey	Warrick	Spencer	Perry	Crawford	Harrison
1975: Fossil	225	1,145				
Nuclear						
1985: Fossil	870**	1,145	980			
Nuclear						
2000 (Scenario I)						
Fossil	1,870*	2,145*	1,980*	2,000**	1,000*	2,000**
Nuclear			1,000*	1,000*		1,000*
2000 (Scenario II)						
Fossil	1,870*	1,145	1,980*	2,000**	1,000*	2,000**
Nuclear			1,000*	2,000**	1,000*	2,000**
2000 (Scenario III)						
Fossil	1,520*	1,145	980		650	
Nuclear						
2000 (Scenario IV)						
Fossil	870	1,145	980			
Nuclear				1,000*		1,000*

* = new unit

A major highway, I-64, crosses the northern parts of these counties going from Louisville to southern Illinois and crossing U.S. 41 just north of Evansville. Otherwise this area is serviced only by minor highways.

In Kentucky, south of Spencer County, is Owensboro. As a consequence of the location of the urban centers and the highway system, residents in all but the southern part of Perry County should have easy access to one of the urban centers along the river. There are few other urban areas in the southern interior of the state.

7.5.1. LAND USE

Two of these counties, Perry and Crawford, have over half of their land in forest and less than half in farmland, most of the counties being inside the Hoosier National Forest. Posey and Spencer Counties, on the other hand, have most of their land devoted to farming. Nevertheless, substantial portions of the land are forested. The other three counties are between these two extremes.

Table III-D-113

IN-5 LAND USE

	% Land In [Farms, 1969	Forest, 1967]	1974 Coal Production 1,000's Tons	1973 Mineral Production: Value
Posey	87.4	16.0	-	W
Warrick	52.4	30.5	9,263	$ 51,204,000
Spencer	80.1	27.5	561	2,826,000
Perry	40.4	58.4	-	W
Crawford	42.9	56.8	-	W
Harrison	63.6	42.9	-	1,260,000

Posey, Warrick and Spencer Counties are all underlain by coal bearing rock but only Warrick and Spencer produced coal in 1974. Warrick's production was high, this being the most important mineral in the county. Stone, sand and gravel were quarried in varying amounts in all counties.

7.5.2. RESIDENCE

Warrick and Posey are part of the Evansville SMSA, although the population in both counties is predominantly rural. Crawford County is completely rural in residence and the other counties are mixed but predominantly rural.

Table III-D-114

IN-5 POPULATION DISTRIBUTION

	Density	% Urban	% Rural non-farm	% Rural farm
Posey	53	31	49	20
Warrick	72	21	68	11
Spencer	43	15	56	29
Perry	50	42	47	11
Crawford	26	0	75	25
Harrison	43	13	59	28

Higher than average proportions of the population in Spencer, Crawford and Harrison Counties live on farms, but as in other counties in the ORBES region, the farm population is declining disproportionately. These counties have especially high rates of decline.

Table III-D-115

IN-5 POPULATION SHIFTS

	[Population	1960-70: Farm Population	Net Migration]	[Population	1970-74: Net Migration]
Posey	13.1	-21.3	4.9	3.3	5.3
Warrick	18.6	-41.2	9.5	14.8	19.0
Spencer	6.6	-.418	.2	2.5	3.4
Perry	10.7	-40.6	.4	-2.6	-0.1
Crawford	-4.1	-53.7	-8.0	6.6	8.3
Harrison	6.3	-29.4	-2.3	10.4	13.2

As can be seen in the table, except for Crawford County, these counties grew during the sixties and in all but Harrison County, the growth was to some extent due to in-migration. Only Posey and Warrick, the two SMSA counties, had substantial in-migration, however. By 1974 there had been changes. The trends in Posey and Warrick Counties continued, somewhat accelerated in the latter. Crawford County had begun to grow and receive in-migrants. Harrison County had also begun to have in-migration, thus increasing the rate of growth. Perry had begun to lose population. Spencer is manufacturing its growth rate but in-migration seems to form a larger proportion of this growth.

Table III-D-116

IN-5 RESIDENTIAL STABILITY

% Residing in:	Birth State	Same State, 1965	Same County, 1965
Posey	74.1	89.6	81.0
Warrick	78.9	92.1	80.0
Spencer	76.7	90.5	82.1
Perry	80.8	92.1	84.6
Crawford	83.8	92.9	83.1
Harrison	76.4	88.7	83.1

These, like many border counties, tend to have slightly higher percentages of the population who come from other states. In this case, most of the migrants come from the south, probably Kentucky. Nevertheless, these counties are relatively stable in residence and, even in the SMSA counties, over 80% of the population were residing in the same county for a period of five years or more.

7.5.3. AGE STRUCTURE

Median ages in all these counties are about average for counties in the ORBES region:

Posey	29.1
Warrick	28.1
Spencer	29.0
Perry	28.0
Crawford	31.9
Harrison	28.7

Examination of age profiles indicates that Warrick has an almost perfect age pyramid with age cohorts gradually decreasing in size from childhood. Since most counties profiled for the ORBES study exhibit relatively small cohorts for young adults, we suggest that the in-migration to this county is disproportionate to these age groups.

Posey, Spencer, Perry and Harrison Counties show characteristic profiles for the region, a sharp decline in relative numbers after the teens, and a small increase in relative sizes of middle-aged groups. The profile of Crawford County differs in that the increase begins later, at age 55 or older.

7.5.4. MARITAL STRUCTURE

Marital structure varies but generally, this is an area where most people are married, more than average numbers of families are in the middle stages of the family cycle and most families are intact and many children are still at home. This is not a locus for settlement of divorced people and there are relatively few families with a female head.

7.5.5. EDUCATION

Educational levels in the SMSA counties are somewhat higher than in the other counties in that median numbers of school years completed is somewhat higher. Even in Warrick County, however, with the highest educational level, only 6.4% have completed college. In all the other counties, less than 5% have completed college and less than half have completed high school. There are only very small resident college populations.

7.5.6. HOUSING

In these counties there have been substantial gains in the numbers of households and housing units, but the building of new units has not been especially rapid although it has been high enough to accommodate growth and provide for some replacement. It should be noted that the percentage of housing units which lack some plumbing is especially high in Crawford County. Generally, median values and rents for housing units are low in this area, but especially marked in Crawford County. This is likely related to the large proportion of houses lacking plumbing or other conveniences.

Table III-D-117

IN-5 HOUSING, 1970

	Posey	Warrick	Spencer	Perry	Crawford	Harrison
Changes 1960-70						
Households	15.1	23.4	8.8	16.3	0.5	12.4
Housing Units	15.9	20.0	10.4	16.7	12.9	16.3
Average:						
House Value	$11,638	$12,414	$9,182	$11,134	$6,851	$12,051
Rent	86	80	73	76	63	76
% Units						
One-Unit Structures	87.4	88.5	89.1	81.5	89.9	89.2
Built Since 1960	21.6	26.9	20.8	22.2	14.6	21.0
Owner-Occupied	76.2	80.8	79.4	80.9	85.8	84.6
Lack Some Plumbing	9.0	10.1	13.9	13.8	30.0	17.8

7.5.7. ECONOMIC ACTIVITY

Manufacturing is the most important non-agricultural activity in Posey, Warrick, Perry and Harrison Counties. Crawford County has more of its few workers involved in trade than in anything else, although a relatively high percentage are in construction. Perry is the only county which attracts in-commuters although Warrick has about the same ratio of jobs to population.

Table III-D-118

IN-5 COUNTY BUSINESS PATTERNS, 1973

	Perry	Warrick	Spencer	Perry	Crawford	Harrison
Total Population	21,940	27,972	17,134	19,075	8,033	20,423
In CBP	4,272	7,968	2,449	5,111	600	3,248
Agriculture	-	-	-	-	-	42
Mining	102	677	-	-	113	81
Construction	314	1,160	71	200	80	179
Manufacturing	1,938	4,005	582	3,165	48	1,312
Transportation	165	354	110	132	-	164
Trade	1,207	1,023	744	795	190	865
Finance	108	210	96	307	41	108
Services	403	499	488	358	57	486

The most important industry of Warrick County is in: 1) primary metals, but there are also factories producing, 2) apparel or textiles and 3) electrical equipment.

Perry County, with the next largest number of manufacturing employees, has factories making: 1) furniture, 2) electrical equipment, 3) lumber and wood products, and 4) stone, clay and glass products.

Posey County produces: 1) chemicals and allied products, 2) petroleum and coal products and 3) fabricated metal products.

Harrison County produces: 1) furniture, 2) food and 3) lumber and wood products.

Spencer County industry is almost completely in stone, clay and glass products, employing 559 persons. The rest of the manufacturing jobs are in printing or publishing. It should be noted that for Spencer County, which is known to have high coal production, the number of miners is withheld. There are, however, 358 jobs unaccounted for and many of them are likely to be in mining.

The three eastern counties and the three western counties are easily distinguished in farming. Posey, Warrick and Spencer have experienced some farm consolidation during the late sixties but there has been little or no loss in farm acreage. Farming is more profitable in these counties and grain crops are emphasized to a greater extent than in the other counties.

Perry, Crawford, and Harrison Counties have apparently experienced a large diversion of farmland to other uses. The farming that is done is more heavily involved with livestock and poultry raising and is less profitable than in the counties to the west. Land is also less valuable.

Although experiencing the same trends, Harrison County has not lost land at the same rate and land values are not as low as in Perry and Crawford Counties. It is possible that the farm acreage is being diverted to forest in these latter two counties since the greater part of these two counties are within the boundaries of the national forest.

Table III-D-119

IN-5 FARMING, 1969

	Posey	Warrick	Spencer	Perry	Crawford	Harrison
Change: 1964-69						
Farms	-4.6	-5.8	-6.3	-29.8	-29.9	-12.9
Acreage	4.4	-0.4	1.2	-27.9	-20.0	-12.7
Average:						
Land Value	$378	$348	$281	$171	$184	$241
Return per acre	66	58	64	36	36	58
Class I-V Farms						
Number	696	444	766	297	228	836
Avg. Acres	314	249	230	226	231	159
Avg. Return	$21,627	$16,320	$16,263	$11,119	$12,288	$12,509
Other Farms:						
Number	215	322	370	285	315	841
Avg. Acres	53	64	73	112	105	74
Avg. Return	$1,112	$1,066	$1,595	$997	$906	$1,005
% Return From:						
Crops	65	52	38	18	10	17
Dairy	3	9	8	15	13	15
Livestock	30	31	45	54	36	41
Poultry	2	9	9	13	39	27

7.5.8. INCOME

Income levels are higher in the two SMSA counties and in Harrison County which is close to the Louisville SMSA, and lowest in Crawford County. This pattern persisted through 1974. Generally, income levels are in the middle range for the ORBES region.

Table III-D-120

IN-5 INCOME LEVELS

	1969 Median Family	1969 Median Farm Family	1969 Per Capita	1973 Per Capita	1974 Median Family EBI
Posey	$ 8,483	$ 7,777	$ 3,407	$ 4,805	$10,824
Warrick	9,162	8,808	3,354	4,324	12,060
Spencer	7,785	7,042	2,518	3,968	10,696
Perry	8,003	5,543	2,733	3,602	10,887
Crawford	6,655	6,288	2,399	3,259	8,266
Harrison	8,478	8,263	2,975	3,953	10,318

7.5.9. IMPACT ASSESSMENT

None of the six counties under consideration here, Posey, Perry, Warrick, Spencer, Crawford, or Harrison, is a candidate for the boom-town syndrome because of proximity either to Evansville or Louisville. They do, however, differ in their environmental orientations and likely receptivity to power plant development.

Perry and Crawford Counties both have primarily an aesthetic sub-orientation, being scenic forested areas. Moreover, Perry is the site of a seminary, suggesting the moral-religious sub-orientation is present there as well. The population here is somewhat older and this factor and the predominant orientation suggest that there would be considerable opposition to power plant development in these counties, both from within the county and from residents of nearby counties as well.

Posey and Warrick Counties, on the other hand, being part of SMSA's and being affluent, seem to have both the instrumental and sentimental (prestige) orientations but which are not in conflict. We predict that a power plant would be easily accepted by the residents.

Spencer County, by virtue of being a coal-producer, is probably instrumental in predominant orientation though the rural residents probably have a sentimental orientation as well. We would expect conflict between these orientations and the people holding them, but that the instrumental one would prevail.

Harrison County, which appears to be urbanizing but as a suburban community, probably has the prestige sub-orientation as its predominant mode of relating to the environment. We would expect opposition to the plant on these grounds unless it were sited in a very rural area.

7.6. CLARK (75,876), JEFFERSON (27,006), SWITZERLAND (6,306), OHIO (4,289) AND DEARBORN (29,430) COUNTIES

Five counties along the Ohio River north of the Louisville/New Albany SMSA will have new power plants in the next twenty-five years. Two counties, Clark and Switzerland, each have small plants with generating capacities of less than 65 megawatts. Ohio has no present power facility. Both Jefferson and Dearborn already have coal-fired plants generating over 1,000 megawatts each, and Jefferson County is the planned site of the controversial Marble Hill nuclear power plant. Each of these counties will receive some new facility under the high energy scenarios. For simplicity, the distribution is presented in table form.

Table III-D-121

IN-6 POWER GENERATING CAPACITY

		Clark	Jefferson	Switzerland	Ohio	Dearborn
1975:	Fossil		1,303			1,098
	Nuclear					
1985:	Fossil		1,303			1,098
	Nuclear		2,260**			
2000 Scenario I						
	Fossil	1,000*	1,303	1,000*	1,000*	2,098*
	Nuclear		2,260	1,000*		
2000 Scenario II						
	Fossil	1,000**	1,303	1,000*		1,098
	Nuclear	1,000	3,260*	1,000*	1,000*	1,000*

(* = new unit)

These five counties stretch in a string from the Louisville/New Albany SMSA to the Cincinnati SMSA. Half-way between, and also on the river, is Madison (13,081) in Jefferson County. This is the largest community in this area outside the SMSA's. There are several other communities with over 4,000 residents but these are either in Clark County, close to the urban area, or in Dearborn County, close to Cincinnati. There are three other communities over 1,000 in the area. Since major highways in Indiana tend to lead to Indianapolis in the center of the state, counties along this stretch of the river, are serviced by minor highways.

7.6.1. LAND USE

Ohio County has the largest percentage of land in farms, but in these counties in general, about two-thirds of the land is farmland and from a fifth to a third of the land is forested.

Both Clark and Dearborn Counties are included in SMSA's but it is impossible to describe the extent and kind of urban land use.

Part of northern Jefferson County is included in the Jefferson Proving Ground, a military installation.

These counties are all outside the coal producing areas of Indiana, although there is a small amount of quarrying for clays, sand, gravel and stone. This area also does not appear to have many outdoor recreational facilities. There is a falls near Madison and in neighboring Jennings County is a wildlife refuge. Most residents, at least of Clark and Jefferson Counties, should find the Hoosier National Forest reasonably accessible for a long day or a weekend.

Table III-D-122

IN-6 LAND USE

	% Farm Land	% Forest
Clark	60.6	37.6
Jefferson	68.2	26.6
Switzerland	69.0	27.8
Ohio	78.6	24.2
Dearborn	62.5	21.3

7.6.7 RESIDENCE

Jefferson and Clark Counties are predominantly urban, but the other counties have predominantly or completely rural residence patterns.

Table III-D-123

IN-6 POPULATION DISTRIBUTION, 1970

	Density (per square mile)	% Urban	% Rural Non-Farm	% Rural Farm
Clark	198	69	24	7
Jefferson	74	60	21	19
Switzerland	29	0	50	50
Ohio	49	0	72	28
Dearborn	96	43	42	15

Variation in density is striking but a large part of the population of Clark County is concentrated in the southernmost tip, close to the urban area.

During the sixties, the two western counties close to the Louisville SMSA grew and had moderate to high in-migration. Switzerland had a similar rate of decline. Ohio and Dearborn grew slightly even though losing residents through out-migration.

Table III-D-124

IN-6 POPULATION SHIFTS

	Clark	Jefferson	Switzerland	Ohio	Dearborn
1960-70					
Population	20.8	12.2	-11.1	3.0	2.6
Migration	7.9	2.5	-14.0	-3.7	-7.3
Farm sector	-13.8	-14.1	-22.5	-6.6	-37.1
1970-74					
Population	2.7	0.5	5.1	6.4	2.4
Migration	6.7	2.8	5.3	7.1	4.5

Since 1970, all five counties have been growing and have had low to moderate levels of in-migration. As in the rest of the ORBES region, losses from the farm sector were the pattern.

Table III-D-125

IN-6 RESIDENTIAL STABILITY

	Clark	Jefferson	Switzerland	Ohio	Dearborn
% Residing in:					
Birth State	74.1	69.9	77.2	75.5	65.7
Same County, 1965	75.5	77.7	85.0	77.3	83.1
Same State, 1965	83.5	87.8	91.6	92.7	87.6

Dearborn has the greatest proportion of residents who were born in another state. Nevertheless, it does not appear to be any less stable residentially than the other counties. As expected, the two rural counties are slightly more stable residentially.

7.6.3. AGE STRUCTURE

Median ages, though slightly higher in the two rural counties of Switzerland and Ohio, are not particularly high for the region:

Clark	26.4
Jefferson	28.2
Switzerland	33.9
Ohio	30.4
Dearborn	28.9

Examination of age profiles indicates that although median ages are similar, composition varies. Jefferson, Dearborn and Switzerland have the usual characteristics of age profiles in this region. There is a sharp decrease in size of cohorts after the teens and the middle-aged cohorts are larger than young adult cohorts. The major difference among these three counties is the age of the largest adult cohort. In Jefferson and Dearborn Counties, it is the age 45 to 49 cohort, while in Switzerland County it is the age 55-59 cohort, thus, accounting for the higher median age.

The profile of Clark County shows a much more regular decrease in size of cohorts from childhood to old age with no sharp decreases or increases. Ohio County has an atypical profile. Age cohorts for ages 20 through 49 are roughly equal, then there is a sudden decrease and cohorts for ages 50 through 74 are roughly equal. Since Ohio is a very small county in area as well as population, it is possible that this unusual profile represents local residential patterns of distribution.

7.6.4. MARITAL STRUCTURE

Age structures and degree of urbanization appear to be factors, correlating with marital structure. Rural Switzerland and Ohio have relatively few single people. Jefferson County is a locus for single people. Both Jefferson and Clark Counties are part of an urban cluster with high percentages of divorced women. The moderate age levels militate against excess numbers of the widowed except in Switzerland and Ohio (relatively high percentages of widowed men). As a consequence, except for Jefferson County, married individuals predominate. Except for Switzerland County, which has an older population, above average numbers of families have children under 18.

7.6.5. EDUCATION

Educational levels are higher in the counties close to the SMSA's and lower in the two rural counties, especially Switzerland. Median levels range from 9.6 in Switzerland to 11.8 in Jefferson, but in all counties, less than half of the adult population has finished high school. Both Clark and Jefferson Counties have college populations of over 1,000, indicating the presence of small colleges and attendant faculties. In Jefferson County, this "educated" segment of the population may have inflated the percentage having attended college, but in the populous Clark County, this small number of people is unlikely to have affected the percentage greatly. These percentages, which are still relatively low, are characteristic of many of the more urbanized counties for which power plants are being suggested.

Table III-D-126

IN-6 EDUCATION

	Median School Level	% Without High School Diploma	% Completed College	College Population
Clark	11.5	53.4	5.6	1,370
Jefferson	11.8	51.3	7.2	1,065
Switzerland	9.6	65.5	3.8	14
Ohio	10.9	55.7	3.8	-
Dearborn	11.3	54.7	4.2	177

7.6.6. HOUSING

Population trends are related in changes to numbers of households and housing units during the sixties. Switzerland was losing households. There was still some building in this county but whether this low level of replacement activity was cause or consequence of the large numbers of housing units which lack plumbing is an open question. House values were above average in Clark, Jefferson and Dearborn. Rents and building activity were high in Clark County. This area has higher than average levels of home-ownership for the ORBES region. Other wise, there is little that distinguishes these counties which are generally in the middle range for ORBES region.

Table III-D-127

IN-6 HOUSING, 1970

	Clark	Jefferson	Switzerland	Ohio	Dearborn
Changes 1960-70:					
Households	30.5	18.7	-4.8	5.7	7.8
Housing Units	26.6	20.1	-2.1	10.5	9.3
Median					
House Value	13,287	13,015	11,189	13,667	14,104
Rent	109	95	75	75	84
% Housing Units:					
One-Unit Structures	78.8	81.6	89.5	80.0	80.2
Built since 1960	32.9	25.0	15.3	19.0	16.3
Owner Occupied	72.6	74.9	79.5	75.1	77.7
Lack Some Plumbing	6.2	8.9	28.3	13.0	10.9

7.6.7. ECONOMIC ACTIVITIES

In the three large counties, the major non-agricultural activity is manufacturing. The magnitude of manufacturing activity varies and is greatest in Clark County. The major industries in this county produce: 1) furniture or fixtures, 2) stone, clay and glass products, 3) lumber and wood products, 4) chemicals, 5) rubber and plastics, 6) fabricated metal, and 7) transportation equipment. Dearborn County produces: 1) food, 2) lumber and wood products, 3) stone, clay and glass products, 4) primary metals, and 5) machinery. The industries of Jefferson County are in: 1) electrical equipment, 2) machinery, 3) leather products, 4) apparel or textiles, and 5) food.

Table III-D-128

IN-6 COUNTY BUSINESS PATTERNS, 1973

	Clark	Jefferson	Switzerland	Ohio	Dearborn
Total Population	75,876	27,006	6,306	4,289	29,430
In CBP	20,617	7,682	713	339	7,699
Agriculture	27	-	-	-	-
Mining	-	-	-	-	-
Construction	826	251	14	35	526
Manufacturing	10,388	3,429	-	94	4,018
Transportation	1,396	606	13	47	486
Trade	4,945	2,081	125	99	1,417
Finance	600	214	30	23	417
Services	2,271	1,078	38	20	794

Switzerland and Ohio each have less than a thousand jobs listed in County Business Patterns with no category of job emphasized. There are 493 jobs in Switzerland County, however, which are not accounted for. They are unlikely to be in mining. These two counties also have a substantial percentage of their population commuting out for work.

Examination of the civilian labor force figures for 1970 points out several other characteristics. Clark, Jefferson and Switzerland Counties have relatively large numbers of females and working wives in the labor force. Jefferson County has relatively high percentages of workers employed in professions or management and/or the federal government. The latter category may be largely due to the presence of the Jefferson Proving Ground mentioned earlier.

Farming in these counties is just barely a viable economic activity and in these counties there are almost as many or more "Other" farms as class I-V farms. Also, Switzerland and Dearborn had large percentages of farmland diverted to other uses in the late sixties. The other three

counties maintained about the same farm acreage although some farm consolidation occurred in Clark County. Farming is fairly evenly balanced between crops and livestock with dairy farming a close third. Over half the farmers in all but Switzerland County work at least 100 days off the farm in this area.

Table III-D-129

IN-6 FARMING, 1969

	Clark	Jefferson	Switzerland	Ohio	Dearborn
Changes, 1964-69:					
Farms	-5.8	2.3	-21.2	3.4	-17.9
Acreage	2.9	-0.3	-18.9	2.8	-14.3
Average:					
Land Value	334	254	221	237	252
Return per Acre	50	46	44	45	37
Class I-V Farms					
Number	549	694	469	169	410
Avg. Acres	206	170	157	185	162
Avg. Return	$ 12,642	$ 9,511	$ 8,283	$ 10,307	$ 9,323
Other Farms					
Number	494	622	316	161	659
Avg. Acres	73	67	76	77	85
Avg. Return	$ 1,131	$ 1,263	$ 1,302	$ 1,334	$ 1,051
% Return From:					
Crops	36	44	46	35	22
Dairy	17	14	24	21	24
Livestock	39	39	28	39	47
Poultry	9	3	2	5	6

7.6.8. INCOME

Switzerland has the lowest income levels of these counties. In this county the median farm family's income is also slightly higher than median family income.

Table III-D-130

IN-6 INCOME

	Clark	Jefferson	Switzerland	Ohio	Dearborn
1969:					
Per Capita	$ 3,756	$ 3,003	$ 2,504	$ 3,020	$ 3,630
Family	9,899	8,556	7,793	8,310	8,901
Farm Family	9,330	7,839	7,804	7,628	8,257
1973:					
Per Capita	4,723	4,102	3,778	4,289	4,796
1974:					
Family EBI	12,719	9,942	8,374	10,548	10,929

By 1974 the relative poverty of Switzerland County was apparent. Income had risen much more rapidly in the other counties.

7.5.9. IMPACT ASSESSMENT

None of the Indiana counties, Clark, Jefferson, Switzerland, Ohio or Dearborn, are likely to be boomtown recipients though the relative isolation of Switzerland County suggests the possibility of a temporary work force staying during the week and returning home on weekends during the construction phase.

The urban counties, Clark, Jefferson and Dearborn, would appear to have both the instrumental orientation and the prestige sub-orientation. If proposed power plant construction in Dearborn County is an addition to the existing plant, we would expect no opposition from and minimal disruption to the residents. Clark County too would appear receptive to power plant development. We suggest that the considerable opposition to the proposed Marble Hill plant has its roots in a relative shift of orientations from instrumental (economic benefit) to prestige. Having previously experienced considerable development (the proving ground and existing power plant), and possibly having had negative experiences, we would expect less enthusiasm for further development. Moreover, as people continue to make this area their home, the sentimental orientation tends to take hold, and given the relative affluence of the area, and likely commitment to current prestige and stratificational patterns, the plant is seen as not needed. The fact that it is a nuclear plant is, of course, a factor as well.

The rural counties of Switzerland and Ohio may be characterized by the primordial belonging sub-orientation. The rurality of the residents and their relative elderliness suggest that they would not be in favor of power plant development, though Ohio County would probably suffer fewer impacts due to its proximity to the Cincinnati SMSA.

8. DEMOGRAPHIC PROFILES AND IMPACT ANALYSIS: OHIO

8.1. HAMILTON (924,018), BUTLER (226,207), WARREN (84,925), MONTGOMERY (606,148), MIAMI (84,342) and CLARK (156,946) COUNTIES

A strip of urbanized counties along the Miami and Mad Rivers in western Ohio are slated for power related developments in the next twenty-five years. All of the counties have some power facilities at present but, except for Hamilton and Montgomery Counties, facilities are small (less than 600 megawatt total per county). Hamilton County has two very small plants, one medium (438 megawatts) and one moderately large plant (1064 megawatts). With the loss of three units from these plants and the building of a new unit (557 megawatts) at the larger plant, Hamilton County will have a generating capacity of 1516 megawatts by 1985. Montgomery County has several plants with a total generating capacity of 1,051 megawatts. All the extant or planned plants in these counties are fossil-fueled.

Concentration of power plants in these counties will be heavy under either of the high-energy scenarios or under the 100% coal low-energy scenario. Warren County is the only county which will not have a new plant under each of the first three scenarios. The distribution will be displayed in chart form for simplicity. All units are coal-fired.

Table III-D-131

O-I POWER PLANT DISTRIBUTION
(Megawatts)

	Hamilton	Butler	Warren	Mont-gomery	Miami	Clark
1975:	1309	389	581	1051	74	117
1985:	1516	374	581	1051	74	117
Scenario I	3516**	3374***	3581***	3051**	2074**	2117**
Scenario II	2516*	2374**	581	3051**	2074**	2117**
Scenario III	2116*	974*	1181*	1651*	674*	717*
Scenario IV	1516	374	581	1051	74	117

* = new unit

These counties extend in a northward direction from the Ohio River at Cincinnati. Cincinnati, in Hamilton County, is one of the major cities in Ohio and the ORBES region. Highways run from this city toward other major cities of the region. I-75 runs north through these counties to Toledo and on to Detroit, with connections all along the way to secondary urban centers. Butler has two medium-sized cities, Hamilton (72,354) and Middletown (48,767). The largest communities in Warren County, just east of Butler, are Lebanon (7,934) and Franklin (10,075) but Montgomery County to the north contains Dayton (243,601) as well as ten other communities with over 10,000 residents. Miami County, like Warren, has two sizeable towns, Piqua (20,741) and Troy (17,186). Springfield (81,926) is in Clark County.

The distance from Cincinnati to Springfield is 71 miles. This figure provides a good indication of the urban concentration in these six counties. In addition to the above cities and large towns, there are numerous communities classified by the census as urban. The transportation network is such that one can go in almost any direction with ease.

8.1.1 LAND USE

In spite of the highly urbanized nature of this area, over half of the land in all but Hamilton County is devoted to agriculture. Hamilton, on the other hand, has a slightly larger proportion of its land in forest.

Table III-D-132

O-1 LAND USE

	%Forest	%Farmland	Mineral Production 1973
Hamilton	17.2	16.7	$7,170,000
Butler	12.6	65.2	4,787,000
Warren	11.2	69.0	W
Montgomery	6.5	50.4	W
Miami	4.4	86.1	W
Clark	* 5.0	82.5	W

These counties lie outside the coal producing area of Ohio but both Hamilton and Butler Counties had substantial mineral production, comprised mostly of sand and gravel, although stone also was quarried in Butler County. The same types of quarrying were done in the other counties but production figures were withheld.

Recreational acreages vary greatly in these counties. There are three state parks. Hueston Woods, on the border between Preble and Butler Counties covers 3584 acres, 625 of them water acres. Caesar's Creek on the border between Warren and Clinton Counties, is under development. Buck Creek in Clark County covers 3778 acres, most of them under water. However, the many cities in this area are likely to have provided municipal, county, and private outdoor recreational facilities as well as the indoor recreational and cultural amenities associated with urban environments. Total acreage devoted to recreational usage is largest in Hamilton County.

Table III-D-133

O-1 RECREATIONAL LAND

	Total	Public	Private
Hamilton	25,437	20,675	4,762
Butler	6,770	4,785	1,985
Warren	14,384	10,475	3,909
Montgomery	8,802	5,010	3,792
Miami	3,374	939	2,363
Clark	7,528	6,210	1,327

8.1.2 RESIDENCE

The high density of settlement and the predominantly urban population of these counties distinguish this area from other areas of potential power related development.

Table III-D-134

O-1 POPULATION DISTRIBUTION

	Density (per sq. mi.)	% Urban	%Rural Non-farm	%Rural Farm
Hamilton	2230	96	4	0
Butler	480	78	19	3
Warren	210	43	48	9
Montgomery	1326	92	7	1
Miami	207	58	32	10
Clark	391	67	29	4

The area has higher than average percentages of migrants from other states and exhibits a somewhat higher level of residential mobility than mnay other high impact counties. Nevertheless, the differences are not as marked as one might expect. Approximately 77% of the population lived in the same county in 1965 and another 10% lived in another county in the same state.. Hamilton County which retained the largest proportion of its residents for five years, seems to draw the smallest proportion of its new residents from other communities in Ohio. One reason for this is the net out-migration from Hamilton County during the sixties. All the other counties experienced small to moderate in-migration. Due to natural increase, they all grew. The unusually high rates of growth and in-migration in Warren County should be noted, even though most of the counties grew substantially. This growth did not affect the farm sector, which decreased sharply in all counties.

Table III-D-135

O-1 RESIDENTIAL STABILITY

	Residing in: Birth State	Same County 1965	Same Stat 1965
Hamilton	66.6	82.2	85.9
Butler	64.4	76.6	86.3
Warren	65.1	72.7	88.6
Montogomery	62.4	78.2	84.3
Miami	79.0	79.6	90.2
Clark	74.2	78.1	87.8

By the early seventies, all but Butler County were experiencing out-migration. Only in Warren and Miami Counties was natural increase sufficient to conterbalance this loss.

Table III-D-136

O-I POPULATION SHIFTS

	Hamilton	Butler	Warren	Montgomery	Miami	Clark
1960-70:						
Population	6.8	13.6	30.1	15.4	15.7	19.5
Migration	-4.7	.7	12.1	1.2	4.5	8.2
Farm sector	-45.6	-20.6	-23.9	-32.8	-29.0	-21.6
1970-74:						
Population	-2.4	7.1	1.6	-2.1	3.4	-1.1
Migration	-5.0	3.2	-3.0	-5.7	-0.1	-4.2

8.1.3 AGE STRUCTURE

Median ages are relatively low in these counties:

Hamilton	- 28.3	Montgomery	- 27.4
Butler	- 25.5	Miami	- 28.1
Warren	- 24.3	Clark	- 27.8

Examination of age profiles indicates that, with small variations, the pattern is similar in the six counties. Size of age cohorts declines steadily after about age 50. Although there are slightly smaller numbers in the adult cohorts age 25 to 40, (exception Warren County) the difference is not large. The largest adult age cohorts are between ages 40 and 50. Again the exception is Warren Count which has an almost perfect pyramidal shape. The size of cohorts does not drop sharply after age 19, probably due to the presence of sizeable college populations. There is a decline, though not so sharp, after age 24.

8.1.4 MARITAL STRUCTURE

Except for Hamilton and Clark Counties, this area has few widows or widowers. There are substantial numbers of divorced women in all but Warren County, the most rural in character. Distribution of single people varies from county to county. Hamilton and Butler counties have more than the average numbers of single men, Miami has few. Consistent with the age levels, all counties have above average to high percentages of families with children.

In regard to married couples and families, the composition varies from county to county. Hamilton County, with its many divorced women and above average numbers of single men, has a low percentage of intact families and relatively high percentages of families with a female head. In Butler County, the pattern is similar but not so marked.

Warren County, on the other hand has a high percentage of intact families and relatively few with a female head. This is also a county where very high percentage of women are married. Miami County presents a pattern similar to that in Warren County but less marked.

Montgomery and Clark have fairly well balanced proportions of their populations in the different marital categories.

8.1.5 EDUCATION

Median levels of schooling place Montgomery, Miami and Clark in the highest range for the ORBES region, and the other counties in the middle range. The percentages of those who have finished high-school are consistent with this division. The segment of the population which has completed college, however, appears to correlate most closely to large urban centers and to the presence of sizeable college populations.

Table III-D-137

O-1 EDUCATIONAL LEVELS

	Hamilton	Butler	Warren	Montgomery	Miami	Clark
% Without high-school diploma	49.1	52.2	54.6	44.5	44.3	49.2
% Completed college	12.7	8.5	5.9	11.2	6.9	7.2
College population	34,976	12,830	1,036	18,684	670	4,492

8.1.6 HOUSING

Not surprisingly, house values in these urban counties are among the highest in the ORBES region. Also, relatively few houses lack plumbing. Hamilton County should be noted for the low percentages of home owners and one-unit structures. Warren County, on the other hand, has the highest percentages of home owners and one-unit structures, with the percentages in Miami County being almost as high.

All counties gained substantial numbers of households and housing units and had moderate to high levels of building activity during the sixties. These figures are consistent with the population growth during the same period.

Table III-D-138

O-1 HOUSING - 1970

	Hamilton	Butler	Warren	Montgomery	Miami	Clark
Changes 1960-70:						
Households	11.7	19.9	33.5	23.2	18.6	23.9
Housing units	11.8	18.8	31.3	21.6	17.6	22.7
Median:						
House values	18,710	17,195	17,171	18,775	16,517	16,400
Rent	97	109	110	120	97	96
%Housing units:						
In one-unit struc.	53.9	76.4	84.8	71.6	82.2	74.3
Built since 1960	22.2	22.6	30.4	27.2	22.4	23.0
Home owners	56.3	69.4	73.6	64.1	73.2	68.0
Lack some plumbing	3.1	5.5	7.4	2.3	3.1	3.8

8.1.7. ECONOMIC ACTIVITIES

These counties with the possible exception of Warren, have large numbers of jobs listed in County Business Patterns and the distribution shows a diversified economy with an emphasis on manufacturing.

Table III-D-139

O-1 COUNTY BUSINESS PATTERNS, 1973

	Hamilton	Butler	Warren	Montgomery	Miami	Clark
Tot. Pop.	924,018	226,207	84,925	606,148	84,342	156,946
In CPB	383,753	60,578	9,539	227,873	23,760	40,801
Agric.	518	67	67	262	20	79
Mining	385	88	16	374	51	53
Const.	18,378	3,252	676	10,946	838	1,665
Manuf.	145,379	29,930	2,801	104,304	13,439	17,863
Transp.	24,401	1,968	399	10,680	540	1,669
Trade	98,968	12,919	2,925	52,678	4,806	10,076
Finance	24,081	3,292	---	9,506	1,007	1,961
Services	70,843	8,878	---	38,714	2,992	7,344
No. manuf. establishments employing 100 or more	237	44	7	111	26	26

As can be seen there are many manufacturing establishments making a variety of products in these counties.

Hamilton and Montgomery Counties, with the largest number of jobs and the highest ratio of jobs to population have workers commuting to the county for work. All the other counties have net out-commuting.

Examination of the composition of the 1970 labor force adds little to the picture. Hamilton and Montgomery Counties have the highest percentages of women as well as federal civil servants and professional or managerial people in the work force.

Figures indicate that land in the four southern counties is being diverted to other uses with an especially high rate in Hamilton County. In Miami and Clark Counties, on the other hand, both the number of farms and farm land is increasing. The profitability of farming is also somewhat higher in these two counties, both per acre and per farm. Hamilton County farming also appears to be profitable for those few farmers who have full time operations but the very high price of land and the probable competition for other uses must be factors in keeping this activity at a low level of magnitude. Note the unusually small average acreages in Hamilton and in Montgomery Counties, the most urbanized counties in this group. Farmers in Hamilton also emphasize vegetables and fruits, more than in the other counties.

Table III-D-140

O-1 FARMING, 1969

	Hamilton	Butler	Warren	Montgomery	Miami	Clark
Change 64-9:						
Farms	-19.4	-2.0	-7.5	-8.5	13.2	5.3
Acreage	-17.0	-4.0	-3.4	-5.3	3.5	1.5
Average:						
Land value	803	639	611	873	583	533
Ret. per acre	129	70	72	91	102	108
Class I-V Farms:						
Number	244	792	729	729	1,070	795
Ave. acres	136	205	197	155	185	245
Ave. return	$22,636	$16,580	$16,859	$17,404	$20,574	$28,292
Other Farms:						
Number	247	544	536	747	645	429
Ave. acres	45	53	59	47	40	40
Ave. return	$780	$1,038	$1,429	$1,103	$1,144	$1,032
% Return from:						
Crops	70	24	47	43	45	36
Dairy	10	23	11	10	9	9
Livestock	14	51	37	43	40	50
Poultry	6	2	5	4	7	4

Dairy farming is more important in Butler and Warren counties than in the other counties. Otherwise there is a substantial amount of crop farming and livestock raising, sometimes one being emphasized, sometimes the other.

8.1.8 INCOME

Income levels are similar in these counties and moderate to high for the region.

Table III-D-141

O-1 INCOME LEVELS

	Hamilton	Butler	Warren	Montgomery	Miami	Clark
1969:						
Med. family	$10,485	$10,388	$10,679	$11,412	$10,231	$ 9,994
Med. Farm Family	10,381	10,230	11,131	11,110	9,972	10,235
Per cap.	4,153	3,539	3,219	4,247	4,114	3,560
1973:						
Per capita	5,441	4,489	4,395	5,367	5,325	4,765
1974:						
Family EBI	13,145	13,736	14,717	14,240	12,606	13,481

8.1.9 IMPACT ASSESSMENT

For these Ohio Counties, Hamilton, Butler, Warren, Montgomery, Miami and Clark, the predominant environmental sub-orientations are clearly the economic benefit and prestige components. Warren and Miami counties are the only ones likely to have the additional but secondary sub-orientation of primordial belongingness, and Butler, Warren and Clark to have the aesthetic sub-orientation.

Hamilton, Montgomery and Clark, being SMSA counties, are probably not only receptive to power plant development but will also experience minimal impact. There are no boomtown candidates in this group of counties. This is generally true for Butler County as well. The more mixed orientational character of Warren and Miami Counties suggest possible community conflict concerning the desirability of power plants, however the general prediction is eventual acceptance, though Warren County is likely to be more tenacious in its resistance.

8.2 ADAMS (18,957), CLERMONT (95,725), AND BROWN (26,635), COUNTIES

Three counties along the Ohio River east of Cincinnati are due for power related development. Two of these counties already have large generating facilties. Adams County has a coal-fired plant at Aberdeen and another at Wrightsville producing a total of 3,771 megawatts. Two new coal-fired units are planned for the latter plant which will bring generating capacity up to 5,093 by 1985. Clermont County has a 1,442 megawatt coal-fired plant at New Richmond. A nuclear plant is located at Moscow with one 878 megawatt unit in operation and another scheduled to go into operation in 1979. The total generating capacity for Clermont County will then be 3,198. There are no plants in Brown County at present.

Adams County will receive no new units under the scenarios. Both Brown and Clermont will receive a three-unit (3,000 megawatt) coal-fired plant under Scenario I and in addition Brown will have a single-unit nuclear plant. Clermont will have only a two-unit coal-fired plant. Under Scenario III there would be a two-unit (1200 megawatts) coal-fired plant in Brown and a one-unit (600 megawatts) coal-fired plant in Clermont County. Under Scenario IV only one plant would be built, a single unit (1,000 megawatt) nuclear plant in Brown County.

These three counties border the Ohio River between Cincinnati and Portsmouth, Ohio. There is one town, Milford (4,776) in Clermont County with a population over 3,000. Adams and Brown Counties have three communities each with a population between 1,000 and 3,000 and Clermont has six. Much of the population of Clermont County, including Milford, is located in the western half of Clermont County close to Cincinnati. The distance between Cincinnati and Portsmouth is 100 miles so most residents should be able to go to one or the other city for urban amenities. Within the area, communities are small although not far apart. In addition, although an extensive network of highways, state and federal, link the communities, no major highways cross the area. U.S. 52 which goes along the river, however, is likely to prove an important route for any power plant development.

Residents of at least the western two counties are fortunate in having access to stretches of the Wayne National Forest which extends northward from Scioto County just east of Portsmouth. There are also a lake and several state parks in Highland and Pike Counties to the north.

8.2.1 LAND USE

Clermont, with so much of the county urbanized, has the smallest proportion of land devoted to agriculture. Adams and Brown Counties both have over 70% of the land in farms. Adams also has large areas of forest. Adams and Clermont both have state parks, although acreage is minimal, slightly over a thousand acres in Clermont and less than a hundred acres in Adams County. Total recreational acreage in these two counties is substantial, however.

There is some stone quarrying in Adams and Clermont Counties. Both Clermont and Brown Counties have some quarrying of sand and gravel. None of these counties are underlain by coal deposits, however.

Table III-D-142

O-2 LAND USE

	Clermont	Brown	Adams
% Forest	31.0	24.5	49.8
% Farm land, 1969	55.4	83.9	72.0
Value of Minerals Produced, 1973	W	W	$ 1,790,000
Recreational acreage:	15,577	4,279	23,744
Public	12,861	2,190	20,041
Private	2,716	2,089	3,703

8.2.2 RESIDENCE

Clermont, unlike neighboring Hamilton County, grew substantially during the sixties and the trend continued into the seventies. The other counties had different patterns. Brown County grew at a moderately low rate in the sixties even though there was a small amount of out-migration. Since 1970 the growth rate has accelerated, partly due to a reversal of the migration trend. Adams County lost population and had moderate out-migration during the sixties. Since then the trend has not only reversed, but growth has been rapid. Farm sector losses are characteristically large.

Table III-D-143

O-2 POPULATION SHIFTS

1960-70 changes:	Clermont	Brown	Adams
Population	19.1	5.8	-5.1
Migration	4.4	-1.5	-10.7
Farm sector	-26.3	-20.9	-37.5
1970-74:			
Population	9.7	10.8	19.9
Migration	5.2	7.9	18.1

In spite of the high density in Clermont County, less than a third of the residences are classified as urban. This area is predominantly rural non-farm with substantial proportions of the population living on farms, especially in Brown and Adams Counties. Even the lower percentage in Clermont County with its larger population, means significant numbers.

Table III-D-144

0-2 DISTRIBUTION OF THE POPULATION

	Clermont	Brown	Adams
Density, per sq. mi.	209	54	32
% Urban	30	21	0
% Rural Non-farm	61	52	72
% Rural Farm	9	27	28

These counties are neither exceptionally stable nor exceptionally mobile for the ORBES region. Clermont exhibits a slightly greater degree of residential mobility than the two other counties but this is to be expected with its higher level of urbanization.

Table III-D-145

0-2 RESIDENTIAL STABILITY

	Clermont	Brown	Adams
Residing in:			
Birth State	79.6	70.0	74.9
Same State, 1965	92.2	88.8	91.7
Same County, 1965	81.9	75.4	78.9

8.2.3 AGE STRUCTURE

Median ages in these counties range from moderate to low in Clermont County:

Clermont	24.9
Brown	29.0
Adams	31.9

Clermont County is characterized by adult cohorts which are roughly equal in size until age 50 when they begin to decrease rapidly in size. In addition there is a sharp decline in size of cohorts between ages 19 and 20. Age profiles for Brown and Adams Counties are similar in that decreases in relative size of the older cohorts are gradual and the largest adult cohorts are between ages 40 and 65. The smaller size of young adult cohorts is more marked in Adams County.

To recap, Clermont County is settled by people who are for the most part young adults or those in early middle-age. Brown and Adams County have populations with many more of the elderly and the older middle-aged are predominant.

8.2.4 MARITAL STRUCTURE

In Clermont County high percentages of both men and women are married, relatively large proportion of families are intact and have children under 18. The low median age militates against an excess of the widowed in the population.

Adams County is similar in the proportion of married couples but a relatively high percentage of divorced women and widowed men plus the higher age levels mean that intact families and families with children under 18 form a less prominant part in the population composition.

Brown as well as Adams County has an above average number of divorced women in the population.

8.2.5 EDUCATION

Educational levels decline from west to east. Most urbanized Clermont has the highest level, although all three counties are in the middle range for the ORBES region, the level of Adams being low for Ohio. There are no student populations large enough to affect these figures.

Table III-D-146

O-2 EDUCATIONAL LEVELS

	Clermont	Brown	Adams
% Without high-school diploma	56.7	58.8	66.8
% Completing college	5.5	3.9	3.0
College population	950	244	151

8.2.6 HOUSING

In all the housing variables these three counties form a continuum with urbanized Clermont having more growth and building activity, higher rents and fewer houses without all necessary plumbing. Adams is at the other end with almost no growth, little building activity and low house values. This pattern is consistent with the population growth pattern for these counties.

Table III-D-147

0-2 HOUSING PATTERNS, 1970

	Clermont	Brown	Adams
Changes 1960-70:			
Households	25.1	9.6	0.3
Housing Units	21.9	12.4	4.2
Median			
House value	$16,219	$11,995	$8,893
Rent	111	81	75
% of Units:			
One unit structures	84.5	85.5	90.6
Built since 1960	25.9	19.4	13.8
Home Owners	79.8	74.2	72.1
Lack some plumbing	9.8	26.1	34.4

8.2.7 ECONOMIC ACTIVITIES

The primary non-agricultural activity in Clermont and Brown Counties is retail trade. The primary activity in Adams County is manufacturing but Clermont County has more manufacturing.

Table III-D-148

COUNTY BUSINESS PATTERNS, 1973

	Clermont	Brown	Adams
Total Population	95,725	26,635	18,957
In CBP	10,029	3,026	2,216
Agriculture	43	17	---
Mining	98	---	---
Construction	1,181	138	63
Manufacturing	2,274	643	914
Transportation	731	162	282
Trade	3,312	1,105	560
Finance	527	336	108
Services	1,696	582	198

The manufacturing industries in Clermont County produce: 1) machinery; 2) printing or publishing; 3) paper products; and 4) textiles. Those in Adams County are in: 1) machinery; 2) fabricated metals; and 3) apparel or textiles. Brown County has only one factory employing over 100 and it makes leather products.

The unusually large percentage of the jobs in construction in Clermont County should be noted. This characteristic does not show up in the 1970 labor force figures and suggests the presence of some large construction project. This county should also be noted for the relatively high percentage of working wives.

Farming in these counties is not a profitable economic activity. This suggestion is supported by the large number of part time and other small farms. The price of farm land is not low but it varies from west to east, the land in Clermont being more valuable, although not more productive. The important factor here is probably competition for other uses of the land in a rapidly urbanizing county.

Table III-D-149

O-2 FARMING STATISTICS

	Clermont	Brown	Adams
Changes 1964-9			
Farms	-5.1	4.7	4.9
Acreage	-1.0	5.0	6.7
Average			
Land value	442	302	193
Return per acre	46	50	36
Class I-V Farms			
Number	645	1,218	882
Avg. acres	160	162	206
Avg. return	$ 10,059	$ 9,724	$ 9,637
Other Farms			
Number	963	1,034	1,088
Avg. acres	51	54	82
Avg. return per acre	$ 1,033	$ 1,217	$ 1,113
% Return from:			
Crops	54	46	36
Dairy	16	20	28
Livestock	25	32	35
Poultry	5	2	1

The emphasis on crops in Clermont is due, in part, to a large number of tobacco farms (84) in this county.

8.2.8 INCOME

Income levels range from relatively high in Clermont County to relatively low in Adams County. This pattern has persisted through 1974 but the differences between Clermont and the other two counties are more marked.

Table III-D-150

0-2 INCOME

	Clermont	Brown	Adams
1969			
Median Family	$10,203	$ 7,674	$ 5,563
Median farm family	9,228	7,304	5,142
Per capita	3,125	2,673	2,358
1973			
Per capita	4,137	3,433	2,991
1974			
Family EBI	14,603	8,190	6,407

8.2.9 IMPACT ASSESSMENT

Clermont, Brown and Adams Counties in Southern Ohio are clearly not boomtown candidates, though it appears Adams County has recently experienced a modest boom due to power plant construction. However, it has not yielded great economic returns as yet. This may be due to the relative elderliness of the population since older people tend not to benefit greatly from plant construction. Moreover, the rurality of the county means the economic infrastructure to create additional benefits was probably weak. The recreational facilities and the rurality and age of the populace suggest the dominant orientations are aesthetic and primordial belongingness. These orientations militate against favorability toward future power plant development.

Clermont county, the richest, most diversified, and urban of these three, has already experienced power plant construction and probably would welcome more due to its instrumental orientation and strong economic infrastructure.

Brown County seems to have a strong primordial belongingness sub-orientation, given its rurality and older population. Impact of a power plant would probably be minimal though we would expect considerable opposition. On the other hand, Brown may wish to imitate its Clermont neighbor and become more instrumental in orientation and welcome power plant development.

8.3 FRANKLIN (833,249), PICKAWAY (40,071), ROSS (61,211), PIKE (19,114) AND SCIOTO (76,951) COUNTIES

Five counties extending in a line from central Ohio to the Ohio River are slated for power development by A.D. 2000. At present there are no power plants in Pickaway, Pike or Scioto Counties. Ross County has a small 67 megawatt plant and in Franklin there are four small fossil-fueled plants with a total generating capacity of 495 megawatts. With one addition and several removals, the total for Franklin County will be 468.5 in 1985.

Under the high-energy scenarios all counties will be affected. Under low-energy Scenario III, only Franklin and Ross Counties will be affected.

Scenario I proposes two-unit (2,000 megawatt) coal-fired plants for both Franklin and Pickaway Counties, one-unit nuclear plants for Ross, Pike and Scioto Counties and an additional three-unit (3,000 megawatt) plant for Ross County.

Under Scenario II, Franklin would have a two-unit (2,000 megawatt) coal-fired plant. Pickaway would have a one-unit (1,000) coal-fired plant. Ross would have two 2,000 megawatt plants, one coal and one nuclear fueled. Pike and Scioto would each have a single-unit (1,000 megawatt) nuclear plant.

Under Scenario III, Franklin and Ross Counties would each have a single-unit (600 megawatt) coal-fired plant.

The Scioto River runs south through these counties to the Ohio River. Columbus (539,637) the state capital, is in Franklin County, the northernmost one of the group. This almost completely urban county also contains eight other communities with over 10,000 residents and numerous smaller communities. This Central Ohio City is the nucleus of a highway network extending to all the other major population concentrations.

U.S. 23 follows the Scioto River and connects the other counties in this group with Columbus. The major towns are located on this highway. Halfway to the River is Chillicothe (24,842) in Ross County, and in Scioto County on the Ohio River is Portsmouth (27,633). Between these larger population centers are the towns of Circleville (11,689) in Pickaway County, Waverly (4858) in Pike County and Lucasville in Scioto County. Otherwise, these counties contain only communities with less than 2,000 residents.

8.3.1 LAND USE

The proportions of land in farms and in forest vary considerably. One factor affecting these land uses is the stretch of national forest covering substantial portions of Pike and Scioto Counties. Ross County contains several large state parks as well as part of the national forest in its southeast corner.

Table III-D-151

O-3 LAND USE

	% Forest	% Farmland	Value 1973 Mineral Production
Franklin	5.0	46.8	$12,534,000
Pickaway	4.4	96.7	W
Ross	38.7	65.2	W
Pike	59.7	44.5	1,045,000
Scioto	66.7	29.7	1,425,000

These counties are outside the coal-producing region but all have some quarrying of sand, gravel, stone and clays.

As indicated above, the southern three counties are on the edge of Appalachian Ohio and parts are covered by national forest, state parks and forests. In addition, the "Mound City National Monument" is close to Chillicothe in Ross County. These and nearby counties also have a number of parks, memorials and tourist attractions. Total recreational acreages in all of these counties are large and, in Franklin and Scioto Counties, the proportion in private hands is substantial.

Table III-D-152

O-3 RECREATIONAL ACREAGE

	Total	Public	Private
Franklin	24,440	17,173	7,267
Pickaway	8,788	7,892	896
Ross	28,939	28,091	848
Pike	13,374	11,133	2,241
Scioto	74,528	62,885	11,518

8.3.2 RESIDENCE

There is a difference in residential stability between the two northern and the three southern counties. The southern counties have higher levels of stability as measured by 1965 residence.

Table III-D-153

O-3 RESIDENTIAL STABILITY

	Franklin	Pickaway	Ross	Pike	Scioto
% Residing in:					
Birth state	68.0	76.2	81.1	74.2	74.7
Same State, 1965	83.1	87.3	91.7	92.9	91.9
Same County, 1965	74.4	73.4	83.6	80.2	85.7

The above figures are also affected by migration. A net migration represents only the balance of residential change, not magnitude of change. Examination of 1965 residence is an attempt to assess magnitude. In this case these three southern counties had moderate levels of out-migration during the sixties high enough to more than counterbalance any growth through natural increase. Nevertheless fifteen to twenty percent of the population lived in another county in 1965 and approximately eight percent lived in another state. Some people are moving into these counties. It is tempting to speculate on whether these 1965 residence figures represent a base level of residential change within a static population in this society. That is, the lower levels of residential stability in Franklin and Pickaway counties may simply represent the fact that, in balance they had more in-migrants than out-migrants in the sixties.

Table III-D-154

O-3 POPULATION SHIFTS

	Franklin	Pickaway	Ross	Pike	Scioto
1960-1970:					
Population	22.0	11.8	-	-1.4	-8.6
Farm sector	-37.2	-34.2	-43.2	-49.0	-46.5
Migration	6.8	.6	-10.8	-11.6	-15.8
1970-74:					
Population	3.1	-.9	-0.8	6.7	2.4
Migration	-1.0	5.8	-3.5	4.4	0.5

As usual, disproportionate numbers of those who change residence come from farm families.

By the early 1970's Ross was the only county which continued to lose population largely through out-migration. Franklin County had stabilized. There were a few more people leaving the county than moving to Franklin County but the trend reversal was not dramatic. Pickaway County seems to be the focus of new growth and in-migration.

In general, the farm sector of the population in these counties is small, ranging from one to eleven percent. Except for metropolitan Franklin County which is almost exclusively urban, all counties have substantial segments of both urban and non-farm populations.

Table III-D-155

O-3 POPULATION DISTRIBUTION

	Franklin	Pickaway	Ross	Pike	Scioto
Density, per sq. mi.	1549	80	89	43	127
% Urban	96	29	41	25	50
% Rural non-farm	3	60	52	66	46
% Rural farm	1	11	7	9	4

8.3.3 AGE STRUCTURE

Median ages vary but in general are in the middle range for the ORBES region:

Franklin	25.8
Pickaway	27.0
Ross	30.0
Pike	27.9
Scioto	31.1

Examination of age profiles shows two basic patterns. Both Franklin and Pickaway have almost perfect age pyramids with gradual decrease in size of age cohorts from childhood through old age. For both there is a period of stability in cohort sizes from ages 30 through 50. The three southern counties show a marked decrease in size of age cohorts after the teens. In Pike County the sizes of the adult cohorts are roughly equal until age 60 when attrition due to age sets in. Ross and Scioto exhibit, to a slight degree, the pattern where middle-aged cohorts are larger than young adult cohorts.

In general the pattern in the two northern counties is for the young adult and early middle aged segments of the population to predominate over the older middle-aged and elderly portions of the population. In the other counties, the young adult population is relatively less important.

An additional point should be made about Franklin County. Probably because of the presence of the Ohio State University, the 20 to 24 age group is the largest single cohort.

8.3.4 MARITAL STRUCTURE

Franklin, an urban county with a relatively low median age, has an unusually large proportion of divorced women and thus, families with a female head. Consequently there is a low proportion of intact families. Families with children under 18 form a larger than average part of the population.

Pickaway County appears to have more of the suburban characteristics of relatively high percentages of intact families and families with children under 18. Pickaway also has relatively large numbers of single women.

Ross County also has relatively high percentages of families with children under 18 but relatively few unattached women.

Scioto County apparently attracts divorced women and there is a correspondingly high percentage of families with a female head, and low percentage of intact families. This county has an unusually low ratio of men to women but of the men in residence, relatively high percentages are married.

Pike County presents an anomaly. There are above average numbers of widowers and below average numbers of widows in this county. This is consistent with the below average numbers of intact families but it is difficult to envision a situation which would promote this configuration. Perhaps it is a retirement community.

8.3.5 EDUCATION

The presence of the Ohio State University in Columbus is clearly evident in the educational levels for Franklin County. Over 60% of the adults have completed high school and almost 15% have completed college.

Table III-D-156

O-3 EDUCATIONAL LEVELS

	% Without high school diploma	% Finished college	College Population
Franklin	38.9	14.5	49,754
Pickaway	47.4	5.9	500
Ross	55.2	5.8	593
Pike	61.7	6.7	89
Scioto	60.0	4.6	711

Levels of educational attainment are clearly lower in the three southern counties when measured by median years completed and by the percentage of high school graduates. However, the counties south of Franklin are all comparable in the percentages of their populations which have received higher education. In general, these counties are in the middle range for the ORBES region.

8.3.6 HOUSING

Franklin and Pickaway Counties exhibited the greatest growth in numbers of households and housing units, the most building activity, the highest rents and house values and the lowest percentages of homes which lack some plumbing.

Ross, perhaps due to the presence of Chillicothe, was in some respects intermediate between the northern and southern counties. The number of housing units increased by a modest proportion and the moderate building rate was consistent. House values, rents and relative numbers of houses lacking some plumbing were intermediate as well.

Pike exhibited the most typically rural traits, a low level of building activity, lower house values, and a much higher percentage of houses which lack some plumbing. Surprisingly, in this county the increases in households and housing units were inconsistent. Although there are substantially more households, housing units have increased very slightly. This occurred in conjunction with a small population loss but the significance of this change is unexplained.

Table III-D-157

O-3 HOUSING, 1970

	Franklin	Pickaway	Ross	Pike	Scioto
Changes 1960-70					
Households	29.2	20.2	8.6	10.4	-1.2
Housing units	27.0	19.5	9.7	1.3	-1.2
Median					
House value	$18,735	$15,425	$13,333	$9,147	$9,906
Rent	115	88	84	77	71
% of units					
in one-unit structures	64.8	80.1	84.5	89.8	85.5
built since '60	31.6	27.2	18.4	12.4	12.6
lack plumbing	2.0	9.6	13.6	29.2	13.7
home owners	58.1	67.4	66.6	69.9	71.4

Scioto County lost a substantial proportion of its population during the sixties and this is reflected in the losses in households and housing units, the low level of building activity, low house values and rents. Perhaps the percentage of housing units which lack plumbing is lower than in Pike County, in part, because households may be in a position to refuse inadequate housing if there is little housing demand.

8.3.7 ECONOMIC ACTIVITIES

The primary economic activity in Pickway and Pike Counties is manufacturing although these are the counties with the smallest amount of manufacturing. The others have more balanced mixes of job categories listed in County Business Patterns.

Table III-D-158

O-3 COUNTY BUSINESS PATTERNS, 1973

	Franklin	Pickaway	Ross	Pike	Scioto
Tot. Population	833,249	40,071	61,211	19,114	76,951
In CBP	310,629	7,402	11,800	3,236	15,755
Agriculture	716	33	---	---	---
Mining	571	69	58	---	46
Construction	21,747	387	626	128	749
Manufacturing	80,973	3,993	4,497	1,833	5,739
Transportation	19,904	347	635	75	811
Trade	90,508	1,724	3,707	750	4,688
Finance	29,762	272	462	91	746
Services	65,860	571	1,778	318	2,928

The large number of jobs in the trade and services category in Franklin County are especially notable. This is also the only county with net in-commuting for work.

Obviously, with the magnitude of manufacturing activity in Franklin County, it would be meaningless to list the types of manufacturing. It is highly diversified, only two of the standard industry groups, tobacco and coal or petroleum products, not having at least one plant which employs over 100 persons. There are eighty-one plants employing 100 to 249 employees and fifty-three plants employing over 249 as well as over eight hundred smaller manufacturing plants.

Manufacturing in the other counties tends to have one major and several minor industries. Pickaway County's major industry, rubber and plastics, employed 1,473 in 1973. Other industries are: 1) food; 2) paper products; 3) chemicals; 4) stone, clay and glass products; 4) fabricated metal; 5) electrical equipment. All of these industries employ at least 100 persons.

Pike County industries are in: 1) chemicals; 2) lumber and wood products; and 3) fabricated metal.

The industries of Ross County are: 1) paper products; 2) leather products; 3) fabricated metal; and 4) stone, clay and glass products.

Scioto County has industries producing: 1) primary metals and employing 2708; 2) food and employing 454; 3) stone, clay and glass products and employing 369; 4) textile mill products; 5) printing and publishing; 6) chemicals; 7) leather products.

Examination of the labor force composition adds a few details to this picture. Franklin County has a very high percentage of women in the work force, many of them working wives. This county also has especially high percentages of the labor force working in professions, managerial positions or in the federal civil service. Ross County also has an unusually high percentage of the work force in federal civilian employment.

Farming is moderately profitable in the two northern counties and becomes less profitable to the south, both per acre and per farm. Also, relatively more farming is done in the northern counties, judging from the numbers of farms, in spite of high land values. The relative emphasis on crops in Franklin County distinguishes the farming in this county. We surmise that this reflects an emphasis on truck farming around the city, especially since the average size of the farm is smaller than in the other counties. There are sixteen vegetable or fruit farms but 289 cash grain farms in the Class I-V categories. Without knowing the size of these operations, it is impossible to say whether these few farms (admittedly more than any of the other counties) had an important effect on these figures.

Only Pickaway has shown any increase in farm land or acreage in the late sixties. Diversion of farm land to other uses was the pattern in these counties, especially in the south where farming was least profitable. Of course it is possible that the land is being incorporated into the National Forest rather than being developed for other uses.

Table III-D-159

0-3 FARMING - 1969

	Franklin	Pickaway	Ross	Pike	Scioto
Changes 1964-9					
Farms	-11.0	8.0	-10.2	-21.2	-25.0
Acreage	- 8.9	4.9	- 4.6	- 5.8	-13.2
Average					
Land value	951	410	274	167	220
Ret. per acre	88	78	49	34	46
Class I-V Farms					
Number	607	925	716	269	313
Avg. acres	230	313	335	308	223
Avg. ret.	$21,690	$25,977	$18,549	$14,707	$15,445
Other Farms					
Number	355	292	481	339	471
Avg. acres	60	76	97	129	98
Avg. return	2,738	970	1,287	987	909
% Return from:					
Crops	55	36	29	21	31
Dairy	11	6	7	14	19
Livestock	32	55	61	41	28
Poultry	2	4	3	21	21

8.3.8 INCOME

Income levels range from high in Franklin to below average in Pike County. This same pattern has persisted through 1974.

Table III-D-160

INCOME LEVELS

	Franklin	Pickaway	Ross	Pike	Scioto
1969:					
Median family	$10,579	$ 8,705	$ 8,617	$6,546	$7,544
Med. farm family	10,760	10,063	8,149	5,583	7,465
Per capita	3,758	3,023	2,045	2,337	2,793
1973:					
Per capita	5,031	4,248	3,866	3,185	3,540
1974:					
Family EBI	13,567	11,519	10,581	7,583	9,161

8.3.9. IMPACT ASSESSMENT

Franklin, Pickaway, Ross, Pike and Scioto Counties present a complex picture of environmental orientations. Franklin and Pickaway, being urban, are likely to be instrumental in orientation, though the latter county, being a suburban county, has a strong prestige sub-orientation. Generally, there should be little impact from or reaction to power plant siting due to a commuting labor force. Farmers, however, are likely to be opposed because the plant would likely absorb some profitable farmland. Some suburbanites may also be opposed.

Ross, Pike and Scioto Counties, although fairly distant from major urban centers, are on a major four-lane highway which should mitigate any major boomtown effects. However, it seems likely that during the construction phase, much of the labor force would be work week residents of local communities, except for Ross County. This means a strain on local temporary housing. The communities in these counties are fairly diversified but Pike County, being the poorest and least diversified, would be most hard pressed to cope with development. If a commuting laboring force from Portsmouth and neighboring Ashland is sufficient to meet construction phase demands, then Scioto County, being fairly economically diversified, should be able to cope with its "boomlet." All these counties have substantial symbolic orientations due to the presence of forests, recreational areas and Indian sites. The rurality and elderliness of the population also suggests a strong primordial belongingness sub-orientation as well. Opposition to plants in these counties, thus, is likely to be intense.

8.4 LAWRENCE (56,868), GALLIA (25,239), MEIGS (19,799), ATHENS (54,889), WASHINGTON (57,160), MONROE (15,739), BELMONT (80,917) AND JEFFERSON (96,196), COUNTIES

Appalachian Ohio is scheduled for intensive power related developments. At present three of the counties have generating capacity in excess of 1,000 megawatts and by 1985 four of the counties will have attained this level. All plants are fossil-fueled.

Table III-D-161

O-4 PRESENT GENERATING CAPACITY
(megawatts)

	1975	Planned Units	1985
Lawrence	14	-	14
Gallia	3,725	-	3,725
Meigs	25	-	25
Athens	290	750*	1,040
Washington	1,798	-	1,798
Monroe	-	-	-
Belmont	552	-	550
Jefferson	4,816	1,230**	6,046

* = No. of new units

This area will have further development under all scenarios. For simplicity, developments under the various scenarios are presented in table form. Only Jefferson County will receive no new units after 1985 but by that time it will already have a generating capacity of over 6,000 megawatts.

All of these border counties are across the Ohio River from West Virginia and except for Steubenville in Jefferson County, the West Virginia cities along the Ohio provide the closest urbanized areas for the residents of these counties. Huntington is directly south of Lawrence County, as is Ashland, Kentucky. Parkersburg is across the river from Washington County. Wheeling is across from Belmont County and Weirton is part of the same urban area as is Steubenville.

The nearest Ohio cities are Portsmouth, in Scioto County, and Zanesville (33,045), seventy-five miles from the river. The only interstate highways serving this region are I-70 which crosses Belmont County going from Columbus to Wheeling; and I-77 which runs south from the Cleveland Area across Washington County and into West Virginia. Gallia, Meigs and Monroe Counties each have only one town with over 1,000 residents:

Gallia	-	Gallipolis	(7,490)
Meigs	-	Middleport	(2,784)
Monroe	-	Woodsfield	(3,239)

The first two are on the river. All the other counties have at least four communities with over 1,000 residents, one of them with over 15,000 residents. Except for Athens County, most major communities are along the river. The population in Athens County is in the western half of the County around the city of Athens. Highways tend to run from the river toward central parts of the state. Only minor routes follow the river.

Residents of this area are fortunate in the ready availability of outdoor recreational facilities. Various sections of the Wayne National Forest parallel the river in the Appalachian Mountains and cover parts of these and adjacent counties. Within these forested areas are numerous parks and recreation areas plus several lakes.

Table III-D-162

O-4 GENERATING CAPACITY IN A.D. 2000
(Megawatts)

	Scenario I	Scenario II	Scenario III	Scenario IV
Lawrence	C-3,014***	C-1,014*	C-14	C-14
	N-1,000*	N-2,000**		N-1,000*
Gallia	C-6,725***	C-4,725*	C-3,725	C-3,725
	N-1,000*	N-4,000****	-	N-1,000*
Meigs	C-3,025***	C-2,025**	C-625*	C-25
	N-1,000*	N-4,000****	-	N-1,000*
Athens	C-4,040***	C-3,040**	C-2,040*	C-1,040
	-	-	-	-
Washington	C-4,798***	C-3,798**	C-1,798	C-1,798
	N-1,000*	N-1,000*	*	N-1,000
Monroe	C----	----	----	----
	N-1,000*	N-4,000****	***	N-1,000*
Belmont	C-550	C-550	C-550	C-550
	N-1,000*	N-4,000****	N ---	N-1,000*
Jefferson	C-6,046	C-6,046	C-6,046	C-6,046
	----	----	---	---

* = no. of new units

8.4.1 LAND USE

Large stretches of Wayne National Forest cover parts of these counties, partially accounting for the relatively low percentages of land devoted to farming, and the relatively large expanse of recreational land.

Table III-D-163

O-4 LAND USE

	% Forest	% Farm Land	Recreational Acreage
Lawrence	71.4	31.3	52,054
Gallia	52.8	53.5	6,799
Meigs	60.3	42.9	7,122
Athens	67.5	35.7	31,094
Washington	61.2	42.4	18,776
Monroe	63.0	46.6	9,262
Belmont	46.3	43.7	10,863
Jefferson	56.4	28.9	19,883

These counties are all underlain by coal bearing rock and in all but Washington County, coal was mined in 1974. The value of the mineral production, when disclosed, the tonnage of coal produced and the most important minerals mined are presented in Table IV.

Table III-D-164

O-4 MINERAL PRODUCTION

	Min. Prod. 1973 (dollars)	Coal Prod. 1974 (tons)	Mineral in order of importance
Lawrence	W	92,000	Cement, clays, sand & gravel, stone, coal
Gallia	W	110,000	Stone, sand & gravel, coal
Meigs	5,294,000	784,000	Coal, sand & gravel, salt
Athens	987,000	37,000	Stone, sand & gravel
Washington	782,000	---	Sand & gravel, stone
Monroe	W	824,000	Coal, stone, sand & gravel
Belmont	W	15,905,000	Coal, stone, sand & gravel
Jefferson	34,758,000	5,132,000	Coal, clays

One implication of this coal mining information is that the control of mining must be very concentrated in Belmont County. The large amount of coal produced and the fact that value is supressed supports this contention. The same situation, though on a much smaller scale, appears to be true in Monroe County.

8.4.2 RESIDENCE

Athens County shows the most dynamic residence pattern, possibly due to the presence of Ohio University. This county grew substantially in the sixties, in part from in-migration, and had a high level of residential mobility with almost 40% of the population having lives in another county in 1965. By the middle seventies this situation had changed and the county was losing population and experiencing out-migration.

Table III-D-165

O-4 RESIDENTIAL STABILITY

	% In birth State	% In same County '65	% In same State '65
Lawrence	66.5	85.3	87.8
Gallia	70.6	82.2	91.1
Meigs	69.3	84.3	91.6
Athens	73.5	62.5	82.5
Washington	65.9	80.6	86.4
Monroe	77.9	84.5	92.4
Belmont	76.6	88.6	92.5
Jefferson	76.1	88.1	91.4

Table III-D-166

O-4 POPULATION SHIFTS

	1960-1970		1970-1974	
	Pop.	Migration	Pop.	Migration
Lawrence	2.6	-7.8	6.4	3.3
Gallia	-3.4	-9.0	9.0	6.7
Meigs	-10.7	-13.2	8.4	7.3
Athens	18.6	8.6	-4.6	-6.6
Washington	10.6	2.0	3.5	1.1
Monroe	3.1	-4.4	0.2	-1.6
Belmont	-3.5	-6.7	2.0	1.3
Jefferson	-3.0	-9.4	---	-1.5

The other counties exhibited higher levels of residential stability, although unusually low percentages in Lawrence and Washington counties were natives of Ohio. During the sixties, half of the counties grew and half lost population although all but Washington sustained at least a small loss through out-migration. By the middle seventies all the populations had stabilized or begun to grow and only Monroe County was still experiencing out-migration.

The distribution of the population among the urban, rural non-farm and rural farm sectors reflects the distribution of communities and level of urbanization discussed earlier. Meigs, Gallia and Monroe appear to be the most rural counties.

Table III-D-167

O-4 DISTRIBUTION OF POPULATION

	Density	% Urban	% Rural Non-farm	% Rural Farm
Lawrence	125	51	42	7
Gallia	54	30	56	14
Meigs	45	28	60	12
Athens	111	51	45	4
Washington	89	42	52	7
Monroe	35	21	58	21
Belmont	152	51	41	8
Jefferson	234	58	38	4

8.4.3 AGE STRUCTURE

Median ages are, with the exception of Athens County, within a fairly small range, 28 to 34:

Lawrence - 28.7
Gallia - 30.5
Meigs - 32.3
Athens - 22.0
Washington- 28.1
Monroe - 29.6
Belmont - 34.0
Jefferson - 31.2

The low median age in Athens County is largely a consequence of extremely large cohorts for ages 20 through 29. As mentioned earlier, there is a large college population in this county. Profiles for Meigs, Belmont and Jefferson Counties are similar in that middle-aged cohorts are substantially larger than young adult cohorts. In the other counties, adult cohorts are roughly equal in size until they begin to decline due to age.

8.4.4 MARITAL STRUCTURE

The presence of a large college population (14,033) in Athens County so affects the demographic profile of marital status that it is impossible to say much about the non-student population of this county.

Gallia County, although it does not have a large college population, exhibits some of the same traits in a less marked way. This county also has relatively high percentages of single people and relatively low percentages of married people.

High or relatively high percentages of men in all the other counties are married although only moderate percentages of the women are. The moderate median ages argue against any excess in numbers of the widowed except in Monroe County (relatively high percentage of widowers). Numbers of divorced are also low.

These are counties with at least moderate percentages of intact families and families with children under 18. The one exception to the latter characteristic is Belmont County which has an older population, probably many of whom have finished raising their families.

8.4.5 EDUCATION

Educational levels in all but Athens and Washington Counties are somewhat lower than in the northern ORBES region counties. Athens county is predictably atypical. Over half of the adult population has finished high school and almost 15% have finished college. The effects of a university community on these percentages is inflationary. It is likely that the non-university residents are similar in composition to the other counties in Appalachian Ohio.

Three other counties, Washington, Belmont and Jefferson have modest college populations but only in Washington county does the number appear to have been sufficient to affect percentages noticeably. This is most likely due to a smaller total population.

Generally, these counties have large proportions of adults who have not finished high school and less than 5% have attended college. It is probable that those children who go away to college tend to settle elsewhere.

Table III-D-168

0-4 EDUCATIONAL LEVELS

	% Without high-school diploma	% Finished College	College Population
Lawrence	56.3	4.2	602
Gallia	62.0	5.0	718
Meigs	60.3	2.9	133
Athens	42.2	14.8	14,033
Washington	54.8	7.8	1,981
Monroe	55.0	4.0	72
Belmont	55.4	4.2	1,234
Jefferson	54.1	4.8	2,249

8.4.6 HOUSING

One county, Meigs, showed a loss in numbers of households and housing units during the sixties. This is consistent with the high population losses during the same period. Housing values were also lowest in this county. Although the other counties all gained in numbers of households and housing units, the growth was most rapid in Athens and Washington Counties. These are also the counties that grew most during the period. Rents and housing values varied from moderate to low but are fairly uniform throughout the area with the exception of Meigs County.

Table III-D-169

O-4 HOUSING VALUES AND CHANGES

	Median Value	Median Rent	Change, 1960-1970 Households	Housing Units
Lawrence	$12,790	$79	10.8	12.8
Gallia	12,384	77	7.1	10.0
Meigs	7,698	70	-2.2	-1.0
Athens	11,633	107	21.4	23.7
Washington	15,302	89	14.9	15.3
Monroe	10,823	70	6.1	4.9
Belmont	11,366	75	1.9	1.6
Jefferson	14,420	89	3.6	2.7

Building rates varied as well with the greatest activity occurring in those counties which were growing most rapidly. Surprisingly, Athens and Washington Counties did not have noticeably fewer housing units which lack some plumbing. Athens county did have more multi-unit structures.

Table III-D-170

O-4 HOUSING CHARACTERISTICS, 1970

	%One-unit Structures	%Built since 1960	%Home Owners	% Lack some Plumbing
Lawrence	86.0	23.8	72.2	15.6
Gallia	83.4	22.3	73.4	21.6
Meigs	86.6	13.8	75.4	24.3
Athens	72.0	26.2	73.7	14.9
Washington	82.1	23.2	74.5	10.4
Monroe	88.6	16.6	80.7	21.2
Belmont	78.0	12.9	73.7	10.0
Jefferson	79.0	16.8	72.6	6.2

8.4.7 ECONOMIC ACTIVITIES

Non-agricultural economic activity in these counties is balanced among the various categories listed in the County Business Patterns and the number of jobs listed for each county varies over a fairly wide range as well.

The only one of the four southern Appalachian counties in which manufacturing is of much significance is Lawrence County. These jobs are primarily in: 1) chemicals; 2) primary metals; and 3) fabricated metals.

Gallia has more jobs in trade and in construction than in manufacturing. The manufacturing in Athens County is in: 1) machinery; 2) leather products; and 3) printing and publishing. The industrial activity in Gallia County is in: 1) primary metals and 2) food.

Meigs County only has a few small industries employing less than 100 people each.

The sizeable number of jobs in Washington County are mainly in trade and the services, and there are more jobs in construction than in the two populous northern counties.

Definite statements cannot be made about the jobs in Monroe County but by comparing sources some inferences can be made. The number of jobs unaccounted for is over 3,000. Since few of these are likely to be in agriculture, we must assume that they are in manufacturing. Examination of the 1972 Census of Manufacturing, Table 9, shows that Monroe County has fourteen plants employing between 1 and 19 people each. The maximum number this could account for is 266 people. There is, however, one primary metals plant employing over 290 people (the largest category). Since Monroe is also the only one of these counties with new in-commuting and this county is smaller than the surrounding counties and apparently has less to offer in economic opportunities, we suggest that the economy of this county must be dominated by one very large primary metals plant which must employ close to 3,000 people.

Belmont County has almost as many people involved in mining as in manufacturing and trade. The large coal production in this county probably provides for the bulk of these jobs. The manufacturing activity in this county is in: 1) fabricated metals, employing 1,530; 2) stone, clay and glass products, employing 577; 3) food, employing 369; 4) apparel and textile products; 5) primary metals; 6) machinery; and 7) transportation equipment.

Jefferson County, the largest of the eight, also has a substantial number of jobs in mining, coal for the most part. The manufacturing industry in this county is not diversified, 7,915 of the jobs being in the primary metals industry. The other industries with plants employing over 100 are: 1) stone, clay and glass products, employing 294; 2) machinery, employing 210; 3) paper products; 4) fabricated metals; and 5) printing and publishing.

Table III-D-171

0-4 COUNTY BUSINESS PATTERNS, 1973

	Lawrence	Gallia	Meigs	Athens	Washington	Monroe	Belmont	Jefferson
Total population	56,868	25,239	19,799	54,889	57,160	15,739	80,917	96,196
In CBP	7,712	5,097	2,122	7,948	15,013	4,132	18,109	23,987
Agriculture	17	7	---	43	18	---	55	12
Mining	77	79	121	103	169	36	3,624	1,248
Construction	350	932	116	467	1,465	333	622	869
Manufacturing	3,014	712	207	1,331	2,801	---	4,929	9,486
Transportation	582	463	209	833	1.025	61	1,256	1,937
Trade	2,322	1,168	977	2,917	3,698	510	4,375	5,622
Finance	343	206	102	536	473	44	610	327
Services	989	1,321	367	1,681	3,062	93	2,591	2,273

All of these counties are losing agricultural land which is being diverted to other uses. The losses are just slightly less in the southern counties. Farming is only marginally profitable and onlh provides a minority of the farmers in these counties with a potentially viable full-time farming operation. The ratio of Class I-V farms to "other" farms is very low.

Table III-D-172

O-4 FARMING, 1969

	Lawrence	Gallia	Meigs	Athens	Washington	Monroe	Belmont	Jefferson
Changes 1964-9								
Farms	-26.2	-19.2	-29.0	-23.4	-28.0	-27.4	-31.3	-36.8
Acreage	-10.7	-11.8	-18.8	-16.6	-19.4	-20.7	-23.0	-32.1
Average								
Land value	$ 208	171	155	149	179	122	155	160
Ret. per acre	36	31	33	25	32	25	42	34
Class I-V Farms								
Number	178	396	254	218	444	309	433	206
Avg. acres	237	214	234	237	201	218	223	206
Avg. Ret.	$15,829	10,016	14,049	11,032	11,078	9,348	13,204	11,056
Other Farms								
Number	524	818	508	458	752	596	534	298
Avg. acres	94	93	118	139	113	115	100	112
Avg. return	$ 914	1,167	851	1,155	912	892	1,013	928
% Return from:								
Crops	19	21	18	8	21	9	12	25
Dairy	27	35	43	46	30	50	50	42
Livestock	27	40	22	31	43	29	32	24
Poultry	26	3	17	15	4	10	5	9

Dairy farming seems to be especially important in these counties and the second most important type of operation is livestock raising. Since this is the Appalachian part of Ohio, it is likely that the terrain does not encourage the growing of cash crops.

8.4.8 INCOME

In 1969 income levels were moderate to relatively low in all but Belmont and Jefferson Counties. By 1974, the family income in Washington County was on a par with these two northern counties.

Table III-D-173

O-4 INCOME

	1969 Med. Fam.	1969 Med. Farm Fam.	1969 Per Cap.	1973 Per Cap.	1974 Fam. EBI
Lawrence	7,708	6,792	2,860	3,675	9,210
Gallia	6,909	4,952	2,290	4,081	8,596
Meigs	6,485	7,661	2,192	3,422	7,750
Athens	7,628	6,190	2,594	3,217	9,207
Washington	8,568	6,980	2,962	3,823	10,651
Monroe	7,630	6,223	2,715	3,295	9,938
Belmont	8,450	7,519	3,110	4,438	10,116
Jefferson	9,341	8,429	3,247	4,530	11,257

8.4.9 IMPACT ASSESSMENT

Lawrence, Gallia, Meigs, Athens, Washington, Monroe, Belmont and Jefferson counties in Appalachian Ohio differ widely in their environmental oreintations. Jefferson and Belmont Counties, with their reliance on coal and related industries, high incomes, older and urban populations have mixed orientations. The instrumental orientation is dominant and possible the territorial one is present if coal is strip mined, and there is a healthy prestige sub-orientation. Jefferson County's previous experience with a large power plant, and it recreational areas suggest that previous contact with instrumental and territorial orientations and the presence of the aesthetic sub-orientation might work against ready acceptance of further development. Belmont, on the other hand, appears ready and welcoming. Neither county would experience strong boomtown effects for Wheeling and Steubenville should be able to provide the needed labor force.

The profile of Washington County is similar to that of Jefferson though we suggest that the aesthetic and prestige sub-orientations are stronger there, and the people less amenable to power plant development.

Lawrence County probably has the strongest aesthetic sub-orientation of all. It is probably used by nearby Huntington and Ashland residents as a major recreational area. Plant siting here would conflict with the predominant sub-orientation, though no boom would occur.

Gallia, Meigs and Monroe are the most rural counties and the first two are boomtown candidates, being rather isolated and poorly served by highways. Their lack of economic diversification bodes ill for coping with power plant development. As with most rural counties, with older populations, the sentimental orientation is predominant. Gallia probably has already experienced a boom due to power plant construction and may or may not be eager for more though its unusual population structure may work for acceptance. Monroe county, however, appears to need further economic diversification, and would presumably welcome a plant. Meigs, the most rural, would probably be opposed to a power plant, given the age structure of the population.

Athens County presents a very mixed picture, as counties housing universities often do. The mining of coal and percentage urban suggest instrumental and territorial orientations. The out-migration suggests that it is possibly those with a primordial belongingness sub-orientation that are leaving. The aesthetic sub-orientation is present too. It is our prediction that reaction to the power plant would be mixed and conflictful. The instrumental orientation will probably win out. There is also a likelihood of a boom, given Athens' relative isolation, however, the infrastructure seems diverse enough to handle it.

8.5 MORGAN (12,375), MUSKINGUM (77,826) AND COSHOCTON (33,486) COUNTIES

Three interior counties in eastern Ohio will have power related development before the year 2000. Morgan has no power plants at present and Muskingum has a small 295 megawatt coal-fired plant. Coshocton, however, has a 2,094 megawatt coal-fired plant at Conesville in the southern part of the county on the Muskingum River. By 1978 two more coal-fired units (375 megawatts each) will be completed, bringing the total capacity for this plant to 2,844 megawatts.

Coshocton will receive no new units but under the scenarios, Morgan and Muskingum Counties will. Both high energy sceanrios posit the building of four units (4,000 megawatts) in Morgan County and one unit (1,000 megawatts) in Muskingum County. Under Scenario I, Morgan would have three coal and one nuclear units. Under Scenario II Morgan would have two coal and two nuclear units. Muskingham would have a single nuclear unit under either scenario. Scenario III proposes a single unit coal-fired plant for Morgan (600 megawatts). Scenario IV suggests a single unit nuclear unit for Muskingum County (1,000 megawatts).

The Muskingum River runs from Coshocton County through both Muskingum and Morgan Counties before emptying into the Ohio River. This river also runs through Zanesville (33,045), the largest city in the area. Any plant located near the river in these counties could not be more than 35 miles from this Muskingum County city. In addition State Highway 60 follows the river south of Zanesville. I-70 runs through Zanesville going from Wheeling, West Virginia, to Columbus, 54 miles west in the center of the state.

Morgan is a completely rural county with only two small communities with over 1,000 residents, Malta (1,017) and McConnelsville (2,107). Muskingum, in addition to Zanesville, has four communities with between 2,000 and 4,000 residents. Coshocton also has a sizeable town, Coshocton (13,185), and one small community, West Lafayette (1,719).

8.5.1. LAND USE

Between 45 and 60 percent of the land of these counties is in farm land and just over 40 percent is forested.

Table III-174

O-5 LAND USE

	% Farm Land	% Forest	Recreational Acreage
Morgan	47.8	43.7	50,417
Muskingum	59.9	41.1	22,077
Coshocton	54.5	41.3	10,385

As can be seen, these counties also have sizeable portions of their land devoted to recreational use. There are state parks in both Morgan and Muskingum counties and a section of national forest is just west and south of the county lines of Morgan County.

The most important mineral produced in three of these counties is coal, the largest amount being in Muskingum County. Sand, gravel, stone and clays are also quarried in all three counties.

Table III-D-175

O-5 MINERAL PRODUCTION

	1973 Mineral Value	1974 Coal Production Tons
Morgan	W	531,000
Muskingum	$47,812,000	4,471,000
Coshocton	W	1,893,000

8.5.2 RESIDENCE

All three counties experienced out-migration during the sixties although the population in Coshocton County grew in spite of this migration rate. In the early seventies trends reversed and in-migration led to a small growth in the population.

Table III-D-176

O-5 POPULATION SHIFTS

	Morgan	Muskingum	Coshocton
1960-70:			
Population	-2.9	-1.7	3.9
Farm sector	-47.2	-43.3	-26.1
Migration	-7.2	-10.8	-3.1
1970-74:			
Population	8.2	2.9	3.3
Migration	6.4	0.6	1.4

The composition of the populations as to residential stability was similar in these counties. All were stable. The comparative rurality of Morgan and Coshocton are evident from figures on density and distribution among the different sectors of the population.

Table III-D-177

0-5 POPULATION STABILITY AND DISTRIBUTION

	Morgan	Muskingum	Coschocton
% Residing in:			
Birth State	87.7	86.5	85.0
Same county, 1965	82.3	85.5	86.1
Same state, "	93.8	92.6	93.7
Density per sq. mi.	29	120	60
% Urban	0	47	41
% Rural Non-Farm	82	48	45
% Rural Farm	18	5	14

8.5.3 AGE STRUCTURE

Median age is only slightly lower in more urbanized Muskingum County. Muskingum and Coshocton have very similar profiles with small young adult cohorts and the largest adult cohorts in the 40 through 50 age range. Morgan County is characterized by roughly equal adult cohorts through age 55. After that decline is very gradual so that this county has relatively more of the elderly than the other two counties. Median ages are:

Morgan - 31.3
Muskingum - 28.8
Coshocton - 31.0

8.5.4 MARITAL STRUCTURE

Most men are married in these counties. There are few single men. On the other hand the numbers of married women are not especially high, particularly in Coshocton County. This may be a consequence of higher percentages of women in the population. This low ratio of men to women is especially marked in Muskingum County. Nevertheless there are also relatively few single women. High or relatively high percentages of divorced women live in Muskingum and Coshocton Counties, probably because of the urban areas. In spite of this, Coshocton County still has relatively large numbers of intact families and few with a female head.

Morgan County is characterized by relatively large numbers of widowed men. Recalling the unusually large numbers of the elderly in that population and the more rural character of this county, this consequence might be anticipated although usually one would expect an excess of widows as well.

8.5.5 EDUCATION

Only one of these counties, Muskingum, has any substantial college population (2,087). This factor may be reflected in the slightly higher percentage of the adult population who have finished college.

In general, these counties are characteristic of the northern ORBES region, with educational levels being slightly lower in rural Morgan County but no great variation among the three.

Table III-D-178

O-5 EDUCATIONAL LEVELS

	Morgan	Muskingum	Coshocton
% Without high school diploma	52.2	50.0	48.2
% Finished college	3.6	5.9	5.1

Median school levels are slightly over 12 years for Muskingum and Coshocton and slightly under 12 years for Morgan County.

8.5.6 HOUSING

These counties are not characterized by any of the extremes in housing patterns. There has been a modest growth in new households and housing-units since 1960 in spite of a small decline in population in the two southern counties. From this we infer a break up of households into smaller units. Building rates have been similarly low in all three counties.

Degree of urbanization seems to correlate with house values and percentages of units lacking plumbing and in one-unit structures. The more rural character of Morgan County is clear.

Table III-D-179

O-5 HOUSING, 1970

	Morgan	Muskingum	Coshocton
Change 1960-70:			
Households	3.3	3.1	7.9
Housing Units	10.2	4.3	10.1
Percentage of Units:			
In one-unit structures	83.6	80.5	83.9
Built since 1960	15.7	16.4	15.4
Occupied by owner	76.3	74.2	76.8
Lack some plubming	17.4	8.7	10.0
Median:			
House value	$10,948	$12,172	$12,195
Rent	72	76	84

8.5.7 ECONOMIC ACTIVITIES

The primary economic activities in these counties is manufacturing but they differ greatly in the amount of industry.

Table III-D-180

O-5 COUNTY BUSINESS PATTERNS, 1973

	Morgan	Muskingum	Coshocton
Total population	12,375	77,826	33,486
In CBP	2,084	22,255	10,549
Agriculture	---	119	---
Mining	123	386	1,144
Construction	51	748	309
Manufacturing	1,043	9,141	5,254
Transportation	121	1,603	658
Trade	416	5,778	1,682
Finance	72	797	296
Services	253	3,665	1,155

Morgan county has only three industries employing over 100 persons: 1) furniture and fixtures; 2) fabricated metals; and 3) transportation equipment. The mining is mostly for coal.

Muskingum County has the greatest amount of manufacturing activity: 1) electrical equipment, employing 2,198; 2) stone, clay and glass products, employing 2,167; 3) primary metals employing 1,393; 4) printing and publishing; 5) chemicals; 6) fabricated metals; 7) machinery; and 8) transporation. All of these industries employ over 100 persons. The mining in Muskingum County also is primarily of coal. Zanesville probably accounts for the large numbers employed in trade and services.

Coshocton has the largest mining industry, mainly coal, of any of the three counties. The manufacturing activity is primarily in: 1) primary metals and 2) rubber and plastics; but there are also industries in: 3) printing and publishing; 4) apparel and other textiles; 5) fabricated metals; and 6) electrical equipment.

Examination of the work force composition adds only a little to this picture. Muskingum, as expected in a county with a small city, has an above average percentage of women in the work force. This county also has an above average number of civilian employees of the federal government.

Farming is only marginally profitable in these counties, being especially poor in Morgan County. The losses in numbers of farms and farm acreage mirror this level of productivity. Although there appears to be some consolidation, farm land is also being diverted to other uses.

Table III-D-181

O-5 FARMING, 1969

	Morgan	Muskingum	Coshocton
Changes 1964-9			
Farms	-22.6	-23.5	-13.5
Acreage	-18.1	- 9.7	- 4.3
Average			
Land value	$ 120	$180	$218
Return per acre	21	36	45
Class I-V farms			
Number	252	605	626
Avg. acres	281	249	247
Avg. return	$9,062	$12,432	$14,527
Other farms			
Number	462	686	545
Avg. acres	125	111	111
Avg. return	$1,015	$981	$1,036
% Return from			
Crops	9	18	18
Dairy	31	23	30
Livestock	53	53	48
Poultry	5	3	3

The comparison of numbers of Class I-V to other farms gives an indication of the unprofitability of farming. Livestock raising and dairy farming are clearly the most important types of farming operation in these counties.

8.5.8 INCOME

Income levels are in the middle range for the ORBES region. Also, farm families have distinctly lower incomes than other families in the population. The pattern of variation among these counties persists through 1974.

Table III-D-182

O-5 INCOME LEVELS

	Morgan	Muskingum	Coshocton
1969			
Median Family	$7,171	$8,313	$8,343
Median Farm Family	6,580	7,932	6,907
Per capita	2,800	3,000	3,308
1973			
Per capita	3,950	4,100	4,691
1974			
Median Family EBI	$8,544	$10,103	$10,717

8.5.9 IMPACT ASSESSMENT

Coshocton, Muskingum and Morgan counties in Ohio's interior would react differently to power plant siting. The very rural and poor Morgan County would be ill-equipped to deal with a likely boomtown situation. Moreover, the predominant enviornmental orientation is primordial belongingness with the aesthetic sub-orientation, meaning there would be considerable resistance to development.

Coshocton and Muskingum counties, being more urban and economically diversified could cope with a boom, but that is unlikely given their proximity to large urban areas. Being coal-producing counties as well, the predominant orientation is probably instrumental. Farming appears to be declining and not very profitable with a corresponding decline in the sentimental orientation. We would expect these counties to be receptive to power plant development and capable of benefiting from it.

8.6 MAHONING COUNTY (303,424)

Mahoning is the only county in the highly industrialized and urbanized northeastern corner of Ohio which has been scheduled for power related development. At present there are two small plants with a total capacity of 76 megawatts. Under each of the first three scenarios, coal-fired plants will be built in Mahoning County. Under Scenario I it will be a three-unit (3,000 megawatts) plant, under Scenario II a two-unit (2,000 megawatts) plant, and under Scenario III a single unit (600) plant.

Youngstown (139,759) is located in Mahoning county as well as Struthers (15,343), and Campbell (12,577), and two large unincorporated places, Austintown (29,393) and Boardman (30,852), as well as seven smaller communities. This urbanized county is directly connected by major highways with the other large cities in this area, Cleveland and Akron, as well as with Pennsylvania just east across the county line. Suburbs of Youngstown extend north into Trumbull County so the extent of the immediate urban environment is larger than the population figures for this county would suggest.

8.6.1 LAND USE

As expected in this urban county, only a little over a third (36.5%) of the land is farmed. Slightly over 21% is forested and 22,298 acres, mostly public, are devoted to recreational use, nevertheless.

Mahoning has a not insignificant amount of mining. The mineral production, valued in 1973 at $9,377,000, consisted of the extraction of stone, coal, clays, sand, gravel, and peat. In 1974, 482,000 short tons of coal were mined.

8.6.2 RESIDENCE

This county has had net out-migration since 1960. (1960-70, -6.1%; 1970-74, -2.2%). Population size has remained fairly constant, however. The population also appears to be relatively stable. Over 86% of the population were residing in Mahoning County in 1965 and a further 4% lived in another county in Ohio.

In spite of the urban nature of this densely settled (734 per square mile) SMSA county, 2% of the population live on farms and a further 14% live in the countryside or in rural (less than 2,500) communities.

8.6.3 AGE STRUCTURE

Median age is 30.5, and the largest adult age cohorts are for ages 40 through 55 with significantly fewer in the young adult cohorts. The decrease between ages 19 and 20 is not as sharp as in many impacted counties, however, there is another similarly sized

decrease between 24 and 25. The interpretation offered is that this intermediate step represents in large part the presence of a student population at Youngstown University.

8.6.4 MARITAL STRUCTURE

Not unexpectedly for this urban county, the only characteristics of the marital structure which are especially noticeable are the relatively high percentage of single men and divorced women. Possibly, men who do not wish to marry and divorced women gravitate to a city where they can pursue a satisfying life style. The relatively low percentages of intact families might be expected as a consequence of high numbers of divorced women.

Relatively high percentages of men tend to marry in this as in many counties in the ORBES region. However, the generally greater tendency for men to remarry coupled with the lower percentage of males and the larger proportion of single men in this population is consistent with the relatively low percentage of married women.

In general, this county is characterized by higher than average numbers of households not organized around a married couple.

8.6.5 EDUCATION

Mahoning County is characteristic of the northern ORBES region in having a median school level in excess of 12 years. Just over half of the adult population (51%) have completed high school but only 7% have completed college. In a county of this size, the college population of 9,962 and the attendant faculty and support personnel have not noticeably inflated this figure.

8.6.6 HOUSING

Surprisingly, the percentages of home owners and single-unit dwellings in Mahoning County is relatively high. Of course house values ($15,939) and rents ($100) are relatively high as well. The housing market appears to be reasonably stable in this county. The number of households increased by 8% between 1960 and 1970 while the number of units grew by 7%. The fact that the size of the population has remained stable indicates the breaking up of households into smaller units, possibly an accompaniment of a higher divorce rate and more single individuals establishing their own households. The building rate (16.5%) was sufficient to provide the needed new units and a moderate level of replacement.

8.6.7 ECONOMIC ACTIVITIES

The primary non-agricultural activity in Mahoning County is manufacturing but trade is a close second in importance.

Table III-D-183

O-6 COUNTY BUSINESS PATTERNS, 1973

Total Population	303,424
In CBP	94,322
Agriculture	117
Mining	252
Construction	4,866
Manufacturing	37,764
Transportation	4,577
Trade	25,639
Finance	4,422
Services	16,528

Half of the manufacturing is in the primary metals industry (18,911 employees). There are several other important industries; 1) electrical equipment, employing 2,366; 2) fabricated metals, employing 2,129; 3) machinery; and numerous other plants representing all categories listed in the manufacturing census except for tobacco products and textiles.

For that portion of the population who have potentially full-time farms, farming is a moderately profitable economic activity. Nevertheless, the number of farms and farm acreage have been decreasing.

Farms are relatively small and the type of operation varies.

Table III-D-184

O-6 FARMING, 1969

Changes 1964-9	
Farms	-17.3
Acreage	- 8.0
Average	
Land value	$422
Return per acre	89
Class I-V farms	
Number	412
Avg. acres	160
Avg. return	$20,029
Other Farms	
Number	474
Avg. acres	65
Avg. return	$828
% Return from:	
Crops	28
Dairy	34
Livestock	20
Poultry	19

8.6.8 INCOME

Income levels are high in this county and the difference between farm families and the rest of the population is almost non-existent.

Table III-D-185

O-6 INCOME LEVEL

1969	Median Family	$10,095
	Median Farm Family	10,099
	Per capita	3,640
1973	Per capita	4,795
1974	Median Family EBI	13,277

8.6.9 IMPACT ASSESSMENT

Mahoning County in Ohio seems strongly instrumental in orientation and the effects of siting a power plant there minimal, given the highly industrial/urban nature of the county. The only opposition to be expected is possibly from those landowners who have to give up their land and do not wish to do so.

9. SUMMARY

Inquiry thus far into the social aspects of power plant siting has given us a singular and somewhat isolated picture of plausible general impacts on a county-to-county basis. We have purposely skirted the complex and vexing question of interactive effects of simultaeous planning, construction and operation of power plants in geographically proximate areas.

Our paradigm and hypotheses have provided guidelines for assessing likely impacts in a case study situation as well, but they too are of limited usefulness in assessing interactive effects.

The Bureau of Mines (high) and the Ford Tech-Fix (low) energy scenarios represent differing levels of magnitude of interactive effects and make the general remarks which follow in this summary contingent on these varying degrees of magnitude. One generalization about interactive effects is virtually a truism: the larger the number of plants being sited in geographically proximate areas, the greater the number of potential conflicts between environmental orientations.

Social fragmentation into opposition and proponent groups, possible accompanying acrimony and interpersonal conflict among impacted groups should pose a problem for planners if they are confronted with this situation and if they wish to take ameliorative or preventive steps to mitigate some the these negative impacts. Moreover, at the more socio-structural level interactive effects are important, particularly in the construction phase, for a large, specialized migrant labor force with several years of future job security in plant construction may decide to reside in geographically convenient communities that seem able to provide some amenities as well. These quasi-permanent residents may cause a real boom in their chosen community, even if that county itself is not slated for development.

From a social scientists' point of view, these possible interactive effects are important in a strictly "social" as opposed to "socio-economic" point of view for the basic patterns of human interaction in boom and even "boomlet" communities are fundamentally and irreversibly changed and in many ways for the worse among the community's original residents. Gold's ethnographic study of western boomtowns sheds a great deal of light on social and cultural disruption due to power plant development (1). Oldtimer residents may suddenly find their basic values and traditional behaviors questioned by or interfered with by the newcomers. Gold reports that local bars, for instance, which previously were the locus of frequent interaction among oldtime residents are often taken over by the newcomers, who differ fundamentally in lifestyle and values, and that oldtime residents quit going there. Often there is no other locus of interaction to take the place of the bar, and consequently, familiar interactions no longer occur as regularly nor in such cohesive groups.

The loss of familiar social ties to the community is usually seen as a negative impact for oldtime residents. This, coupled with forced interaction in public places with the newcomers, tends to have an anomic effect on the oldtimers. New residents, too, particularly those in temporary housing communities, also face many social strains in a boom situation. Women with children and nothing to do, rejection by oldtimers, crowded housing and housing communities, the lack of a supportive network of friends and families among the newcomers, all these factors contribute to a social malaise among new residents as well. These are some of the true social costs that can be visited upon those impacted by power plant development.

We stress these matters because we feel altogether too little attention has been paid to negative social costs in the literature on impacts of developmental forces on communities. It indeed seems possible that these kinds of impacts, if large enough and stressful enough, may become life-threatening for some people.

We have suggested earlier those groups most likely to be negatively effected in boomtown situations - the old, the poor, the ill-educated, the unskilled, and those on fixed incomes - yet we have seen little effort on the part of development industries and agencies to make some systematic effort to ameliorate these negative effects.

The high energy scenarios (though we consider them implausible, at best) if enacted, would cause fundamental and serious changes in the quality of life and future expectations for a very large number of people. The previously rural countryside along major rivers (themselves drastically changed by man) would take on the industrial/urban, instrumental orientation with predictable changes in social and economic activities. Should accompanying industrial growth occur with power plant development, the decline in the rural way of life will be extremely rapid and irreversible and be of very large scale.

The lower energy scenarios essentially mean the effects described above will be more localized and the urban/industrial effects somewhat less pervasive in total magnitude. Nonetheless, where rural land is converted into industrial use, the way of life, the possible loss of prime agricultural land, and the very residents are shifted into an entirely different frame of reference. The people as individuals adapt better, we think, to irreversible change, but when a way of life tied to a specific locale is changed or land changed from agricultural to industrial use, the original pattern or use is irretreviably lost.

This report ends on a note of caution for we see not enough attention being paid to the social effects of the energy development enterprise compared to the myriad other facets. This is generally true of all large scale development and perusual of almost any Environmental Impact Statement will confirm this. Though we have been tied to secondary data and know of no individuals personally impacted by power plant development, we do see the real likelihood of social and cultural disruption and fragmentation in some possible plant site areas and have some vision of the enormity of the personal social costs involved. We are not unaware of the benefits that usually eventually accrue to communities that have large-scale installations, however, we feel more attention has been paid to the benefit rather than the cost dimension.

The description of likely impacts should provide some information to policy-makers if the social cost dimension is considered important by them. The general demographic makeup of a county can only be suggestive of what kinds of people live there and what their values and attitudes toward power plant development might be. It is also only suggestive of receptiveness to externally-imposed change. However, given our time and money constraints, we feel it is better than nothing.

REFERENCES

1. Institute for Social Science Research. A Comparative Case Study of the Impact of Coal Development on the Way of Live of People in the Coal Areas of Eastern Montana and Northeastern Wyoming. Final Report, Missoula, University of Montana, June 1974, 2nd Ed.

APPENDIX A

MAPS

MAP OF ORBES REGION

MAP III-D-1

OHIO RIVER BASIN STUDY (ORBS) REGION

OHIO RIVER DRAINAGE BASIN

COUNTIES NOT IN REGION

0 100 200

Scale in Miles

SOURCE: U.S. Bureau of the Census

Prepared by Cartographic Laboratory and
Energy Resources Center, U I C C

INSTRUMENTAL ORIENTATION MAPS

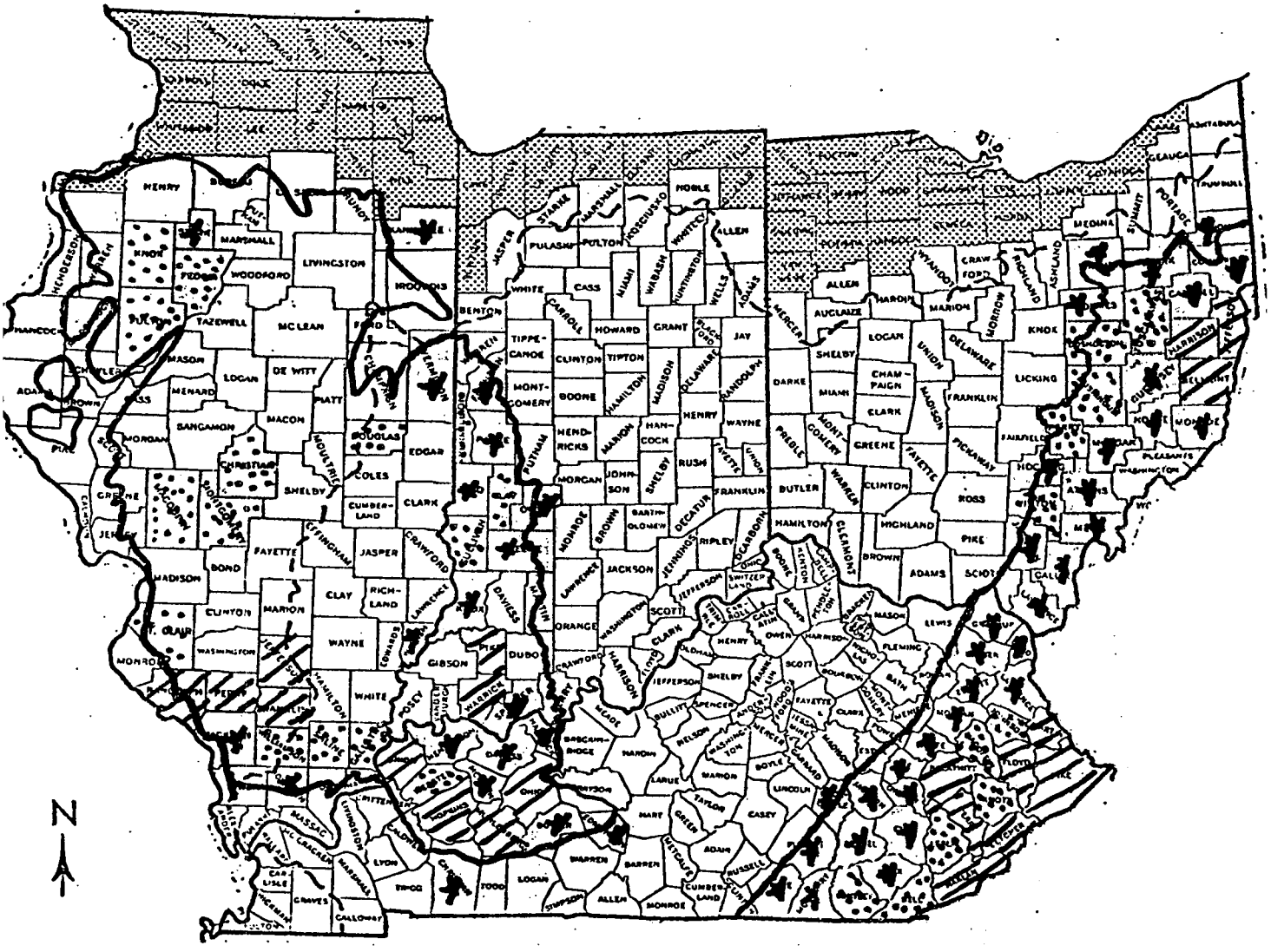
Technological Feasibility Sub-Orientation
Map III-D-2

Economic Benefit Sub-Orientation
Maps III-D-3 through III-D-7
(See also Maps III-D-50 through III-D-53,
III-D-57 through III-D-78,
III-D-86 through III-D-94)

Map III-D-2

COAL PRODUCING COUNTIES, 1974

SOURCE: Mineral Industry Surveys, 1976, pp. 25 - 28



Limits of coal bearing rock

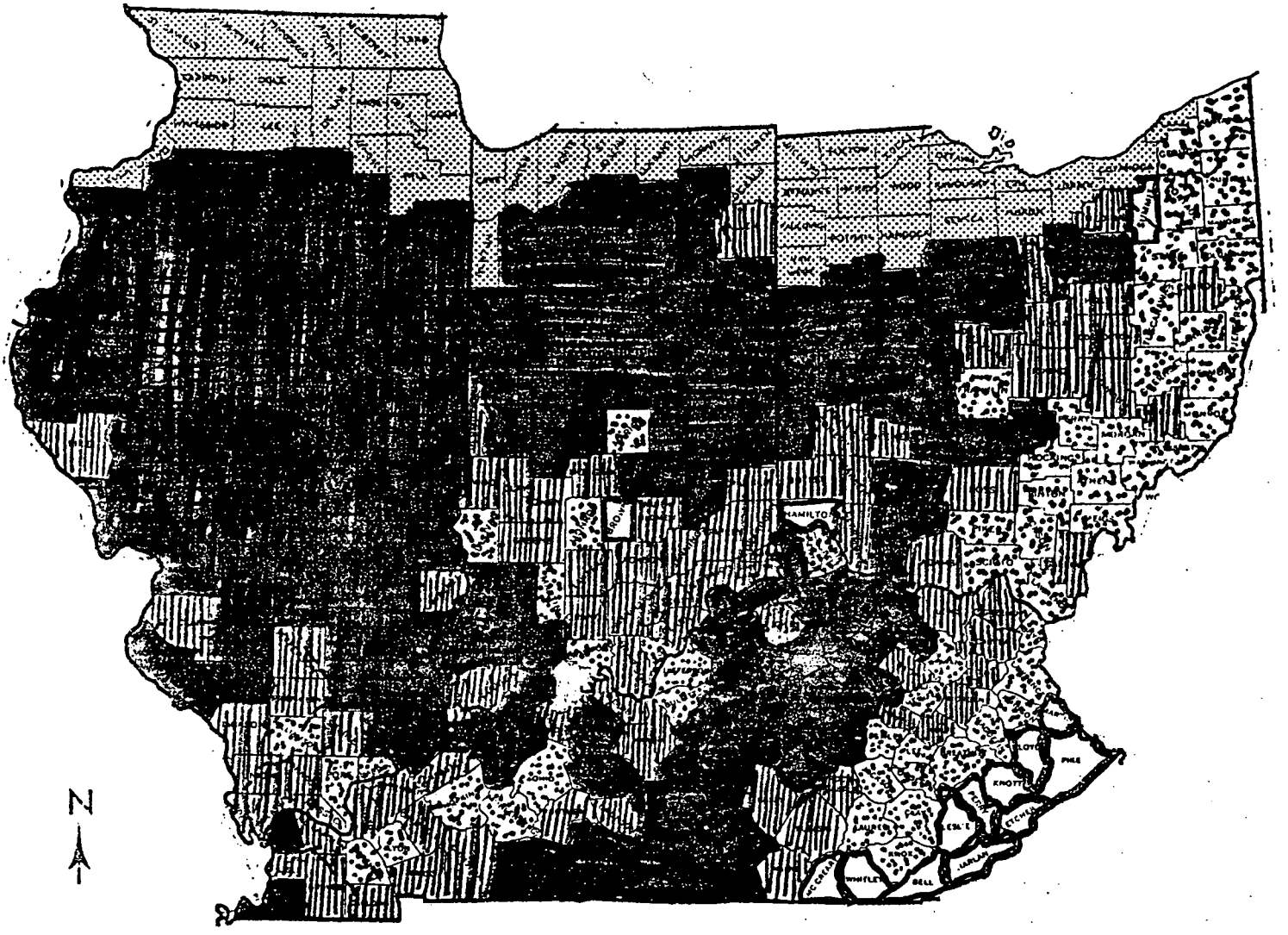
Counties with less than 1.0 million short tons

Counties producing 1.0 - 4.9 million short tons

Counties producing 5.0 million short tons or more

MAP III-D-3

PERCENTAGE OF LAND IN FARMS, 1969
SOURCE: 1969 Census of Agriculture



Less than 25.0

25.0 - 49.9

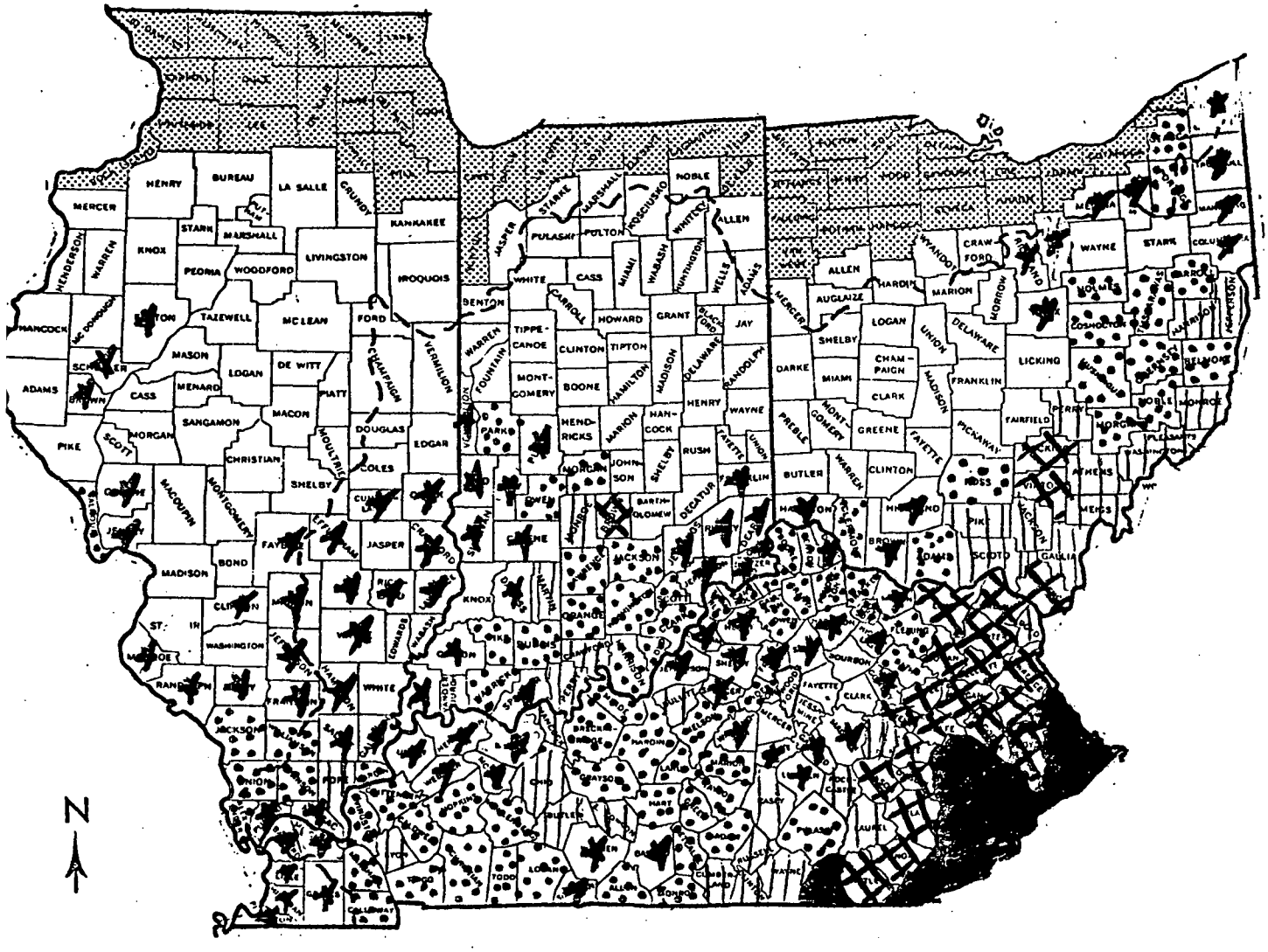
50.0 - 74.9

75.0 - 100

MAP III-D-4

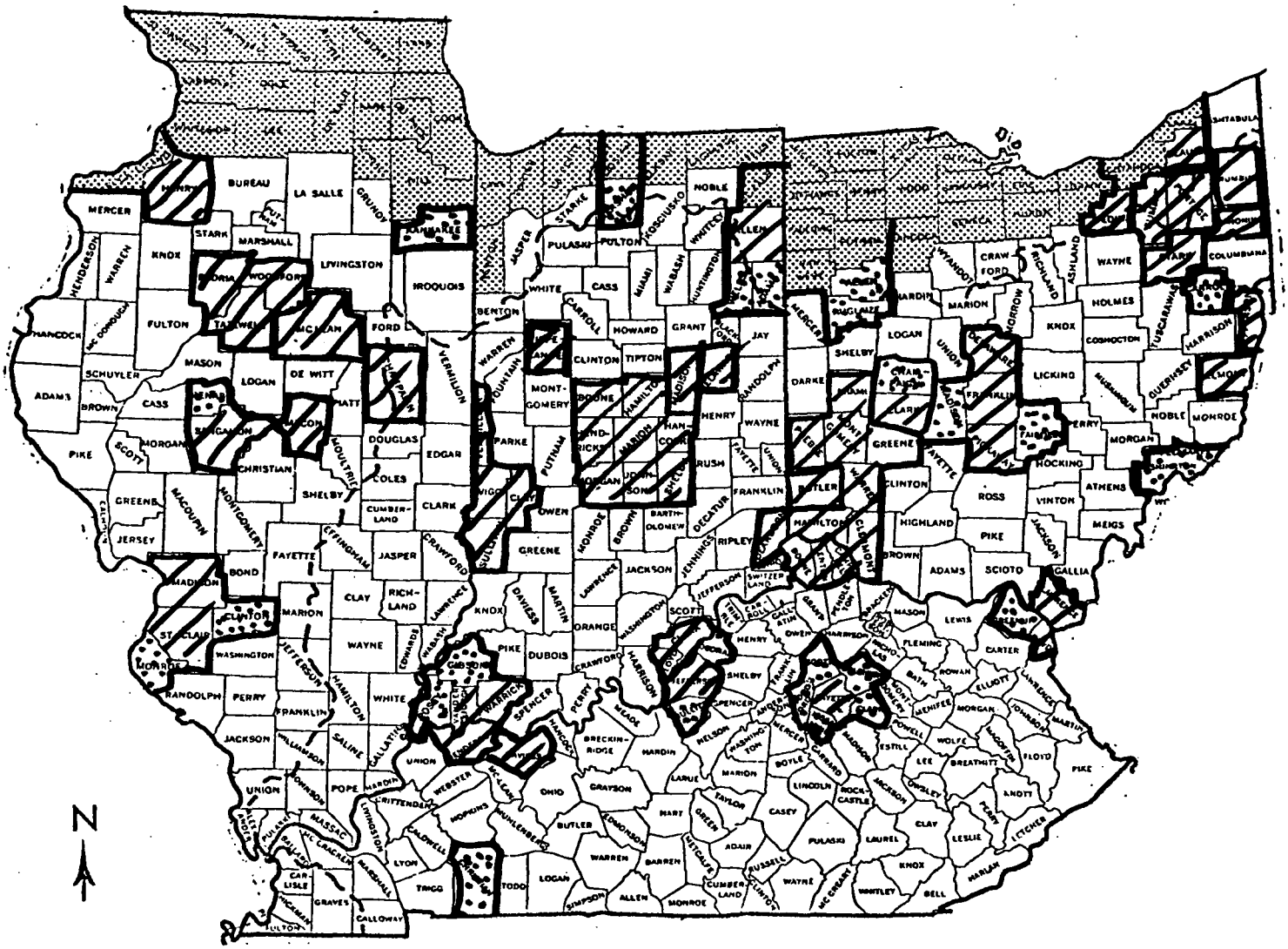
PERCENTAGE OF LAND IN FOREST

SOURCES: U.S. Forest Service, Resource Buls. LS-3, NE-19, NC-7, Unpub.



MAP III-D-5

SMSA'S, 1970 AND 1974
SOURCE: Current Population Reports, Series P-26 - Population Estimates

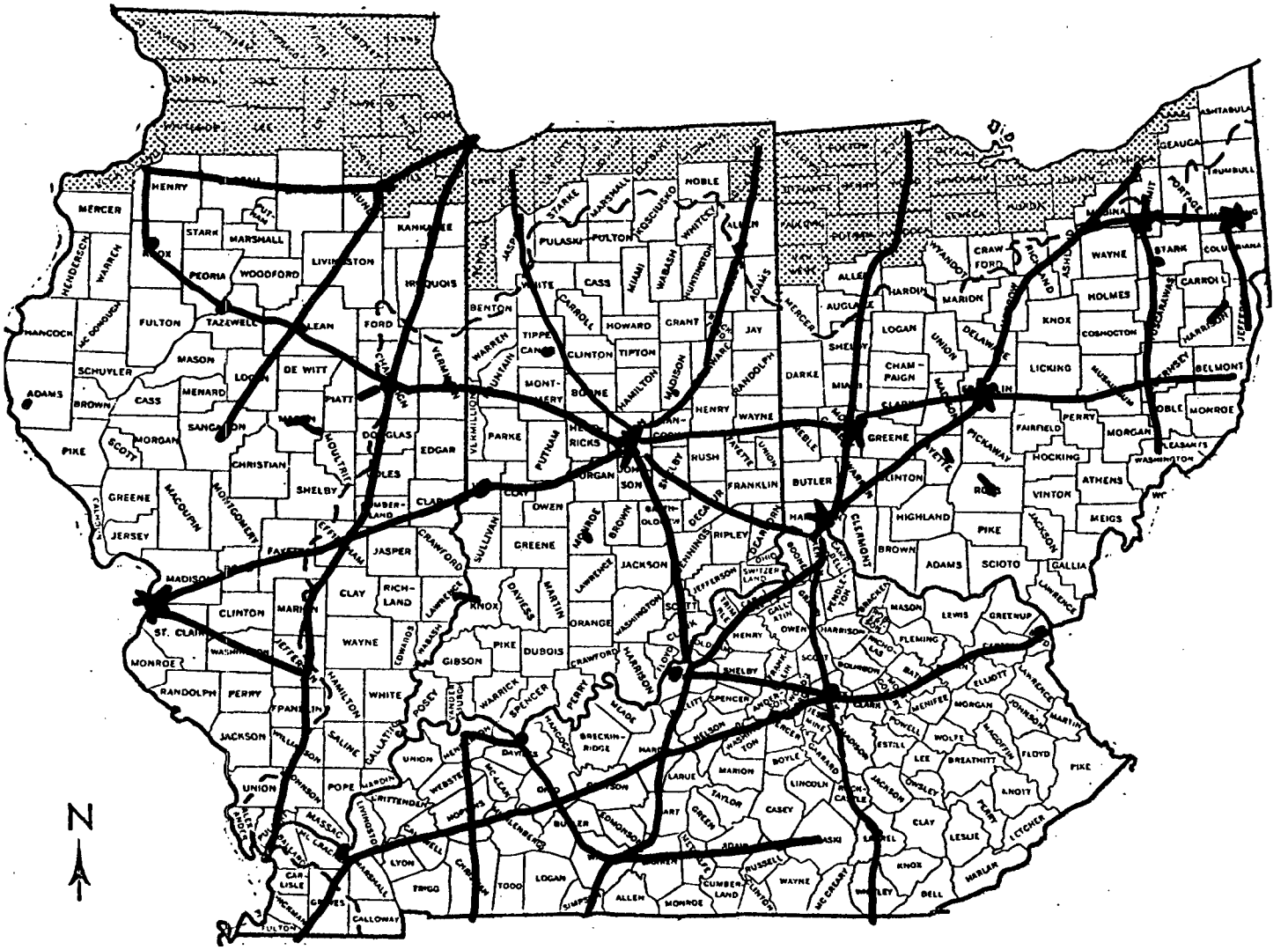


SMSA County, 1970

SMSA County, 1974

MAP III-D-6

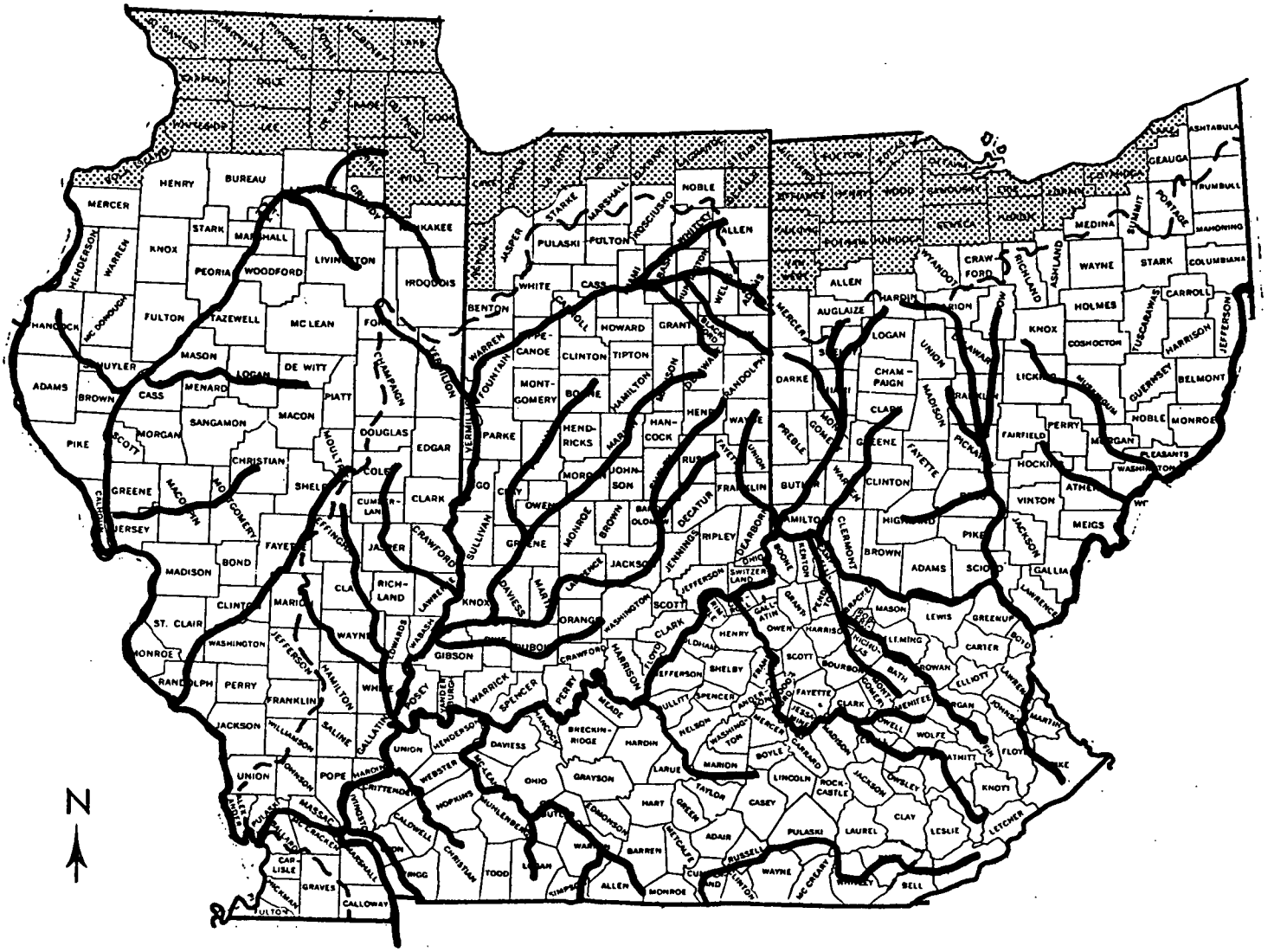
MAJOR HIGHWAY TRANSPORTATION ROUTES



OHIO RIVER BASIN STUDY (ORBS) REGION

MAP III-D-7

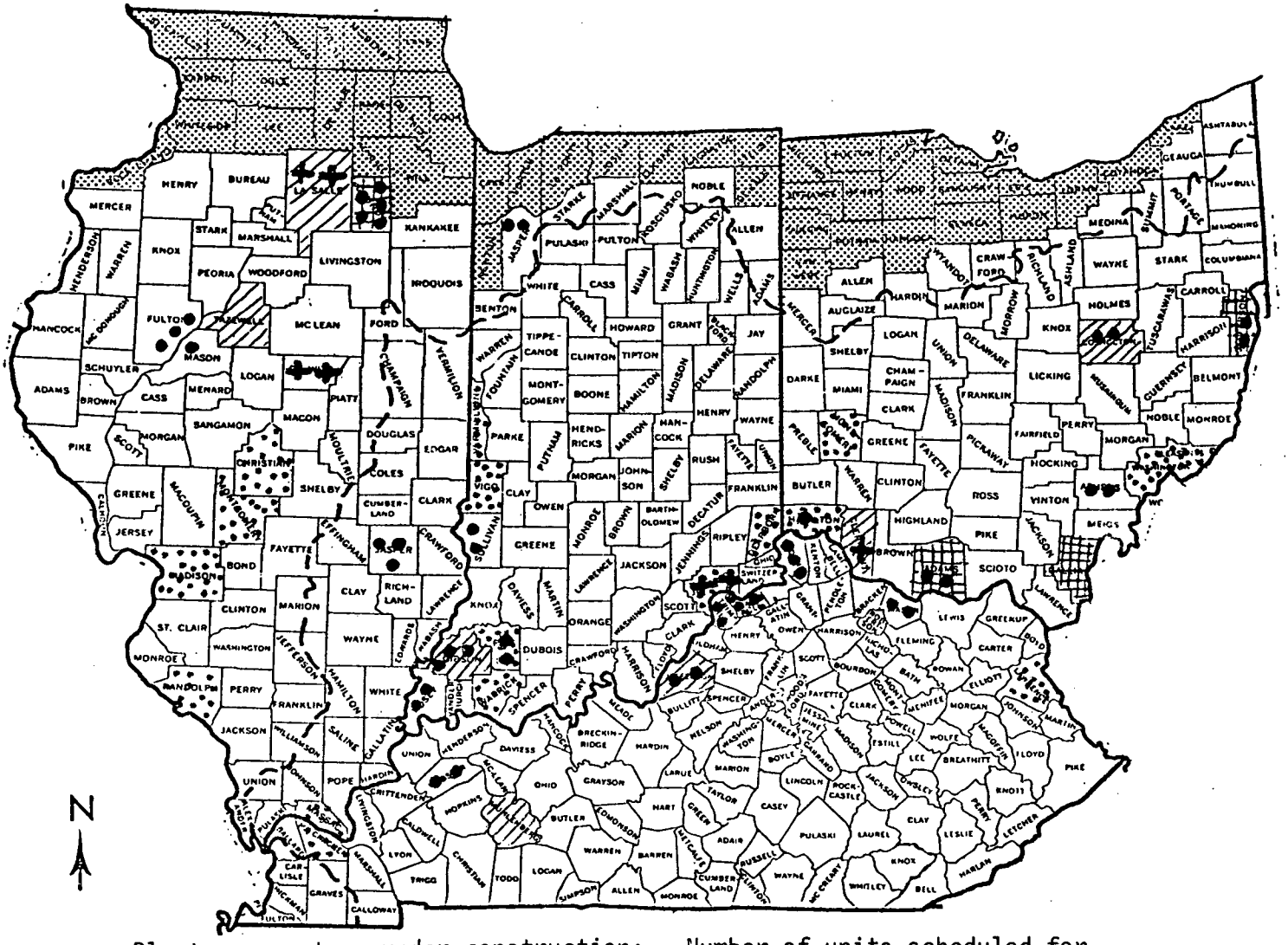
MAJOR RIVERS


N
OHIO
MERCER
HENRY
BUREAU
STARK
KNOX
PEORIA
WOODFORD
MARSHALL
LIVINGSTON
IROQUOIS
HENDERSON
WARREN
HANCOCK
MC DONOUGH
FULTON
TAZEWELL
MC LEAN
FORD
CHAMPAIGN
VERMILION
MASON
DE WITT
PIATT
ADAMS
BROWN
CASS
MENARD
LOGAN
SANGAMON
MACON
DOUGLAS
EDGAR
PIKE
SCOTT
MORGAN
CHRISTIAN
MOULTRIE
COLES
GREENE
CALHOUN
JERSEY
MACOUPIN
MONTGOMERY
EFFINGHAM
CUMBERLAND
CLARK
FAYETTE
JASPER
CRAWFORD
SULLIVAN
MADISON
BOND
CLINTON
MARION
CLAY
RICHLAND
LAWRENCE
KNOX
ST. CLAIR
WASHINGTON
JEFFERSON
WAYNE
EDWARDS
WABASH
GIBSON
POSEY
RANDOLPH
PERRY
FRANKLIN
HAMILTON
WHITE
VANDERBURGH
WARRICK
SPENCER
JACKSON
WILLIAMSON
SALINE
GALLATIN
UNION
HENDERSON
DAVIESS
MARTIN
PIKE
DUBOIS
CRAWFORD
HARRISON
PERRY
MEADE
BRECKINRIDGE
HARDIN
NELSON
WASHINGTON
MARION
LARUE
TAYLOR
CASEY
PULASKI
LAUREL
CLAY
LESLIE
LETCHER
KNOTT
JOHNSON
MARTIN
FLOYD
PIKE
WOLFE
MORGAN
POWELL
CLARK
MADISON
ESTILL
LEE
OWSLEY
JACKSON
ROCKCASTLE
LINCOLN
BOYLE
MERCER
GARRARD
JESSAMINE
FAYETTE
SCOTT
BOURBON
WOODFORD
FRANKLIN
SHELBY
OLDHAM
HENRY
TRIMBLE
CARROLL
GALLATIN
OWEN
GRANT
BOONE
KENTON
CAMPBELL
PENDLETON
BRACKEN
MASON
LEWIS
GREENUP
CARTER
ELLIOTT
ROWAN
BATH
MENIFEE
MONTGOMERY
BOYD
LAWRENCE
JOHNSON
MARTIN
FLOYD
PIKE
ATHITT

TERRITORIAL ORIENTATION MAPS

Maps III-D-8 through III-D-12

MAP III-D-8
1975 GENERATING CAPACITY



Plants present or under construction:

(Total megawatt capacity)

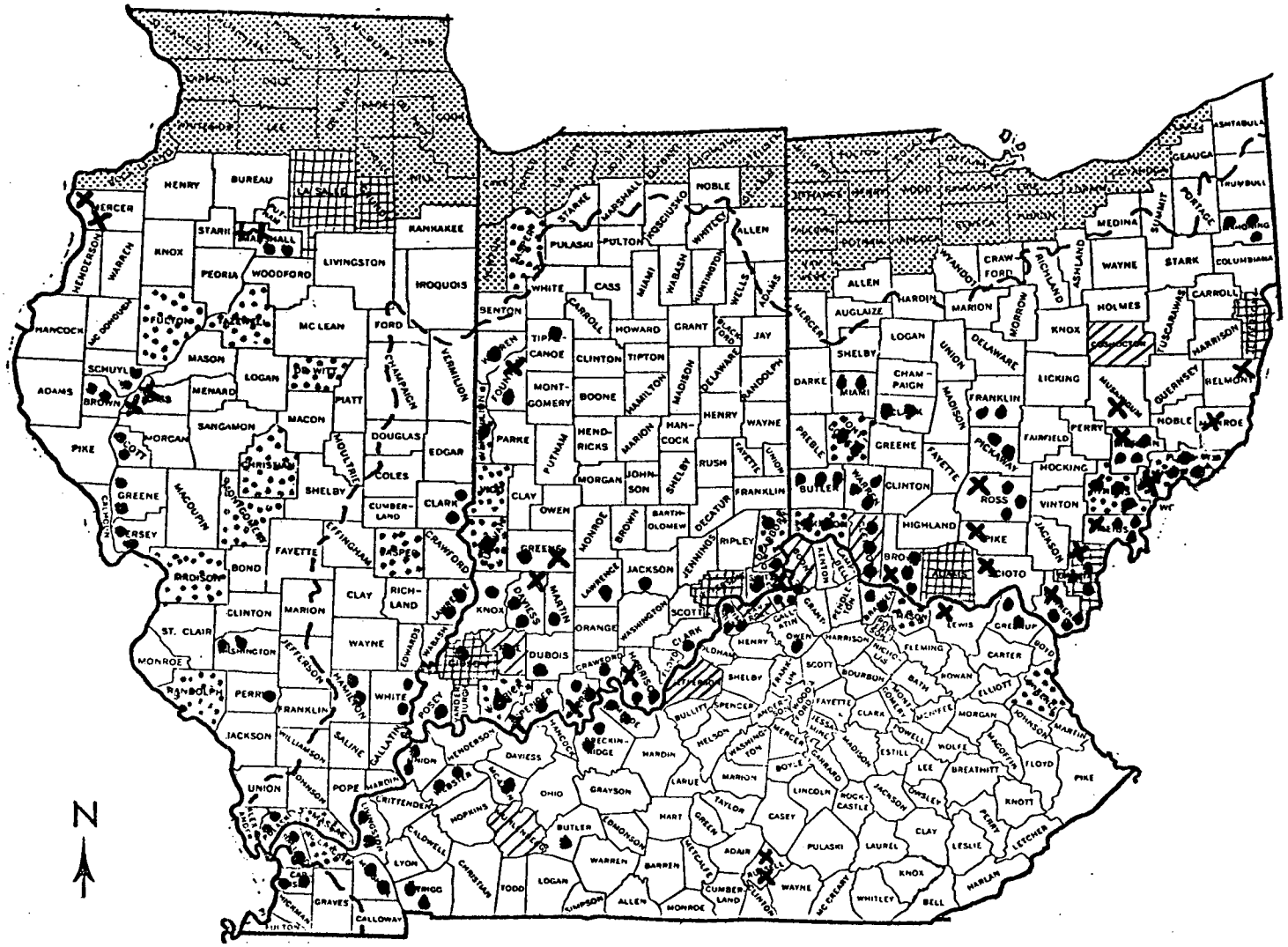
- Less than 1,000
- 1,000 - 1,999
- 2,000 - 3,499
- 3,500 or more

Number of units scheduled for operation by 1985:
(Megawatts per unit = 200 or more)

- ● Fossil fuel
- ✕ Nuclear fuel

MAP III-D-9

1985 GENERATING CAPACITY WITH SCENARIO I NEW UNITS



1985 Megawatt capacity:

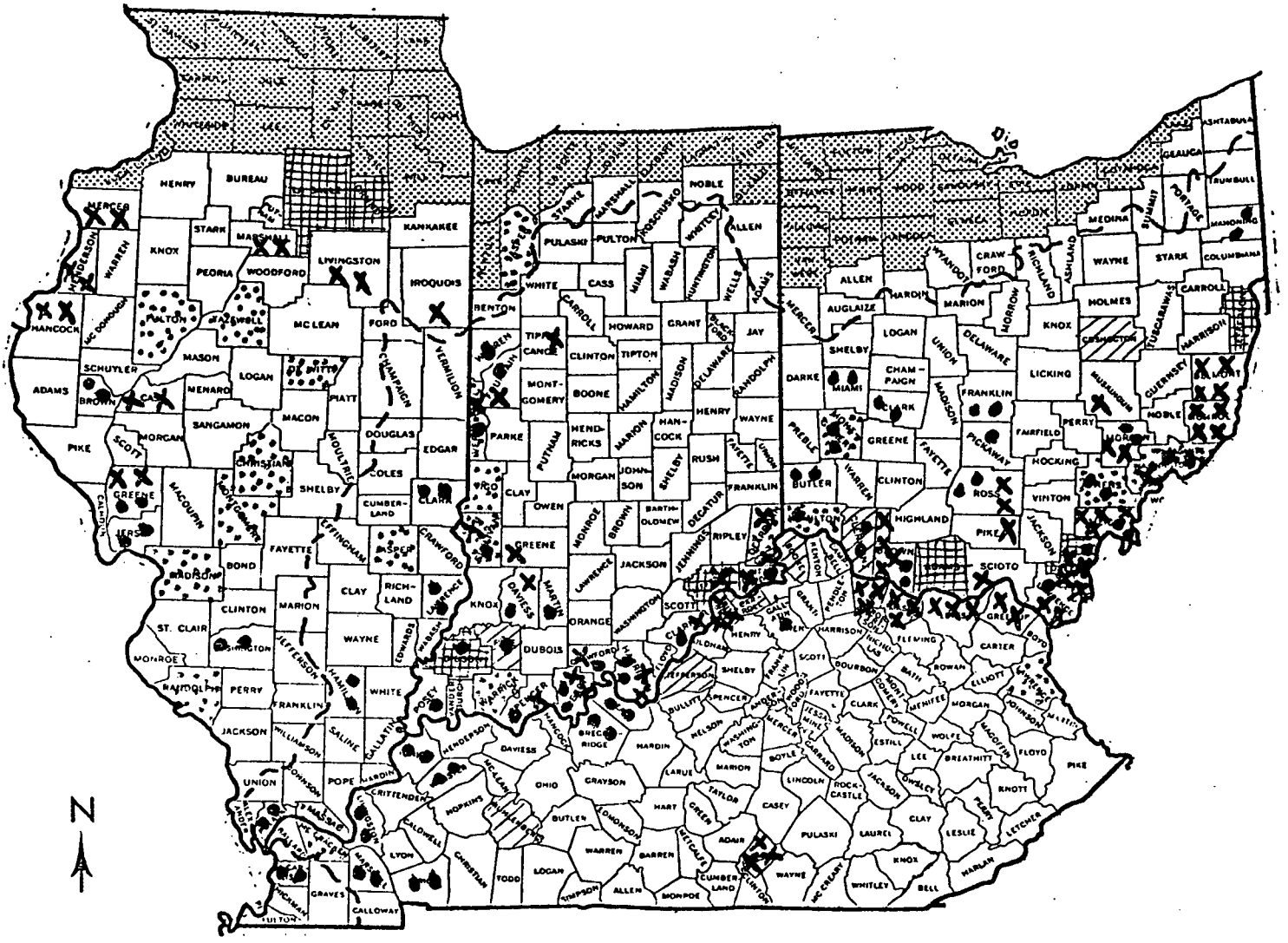
- Less than 1,000
- 1,000 - 1,999
- 2,000 - 3,499
- 3,500 or more

Additional 1,000 megawatt units:

- Coal
- Nuclear

MAP III-D-10

1985 GENERATING CAPACITY WITH SCENARIO II NEW UNITS



1985 Megawatt capacity:

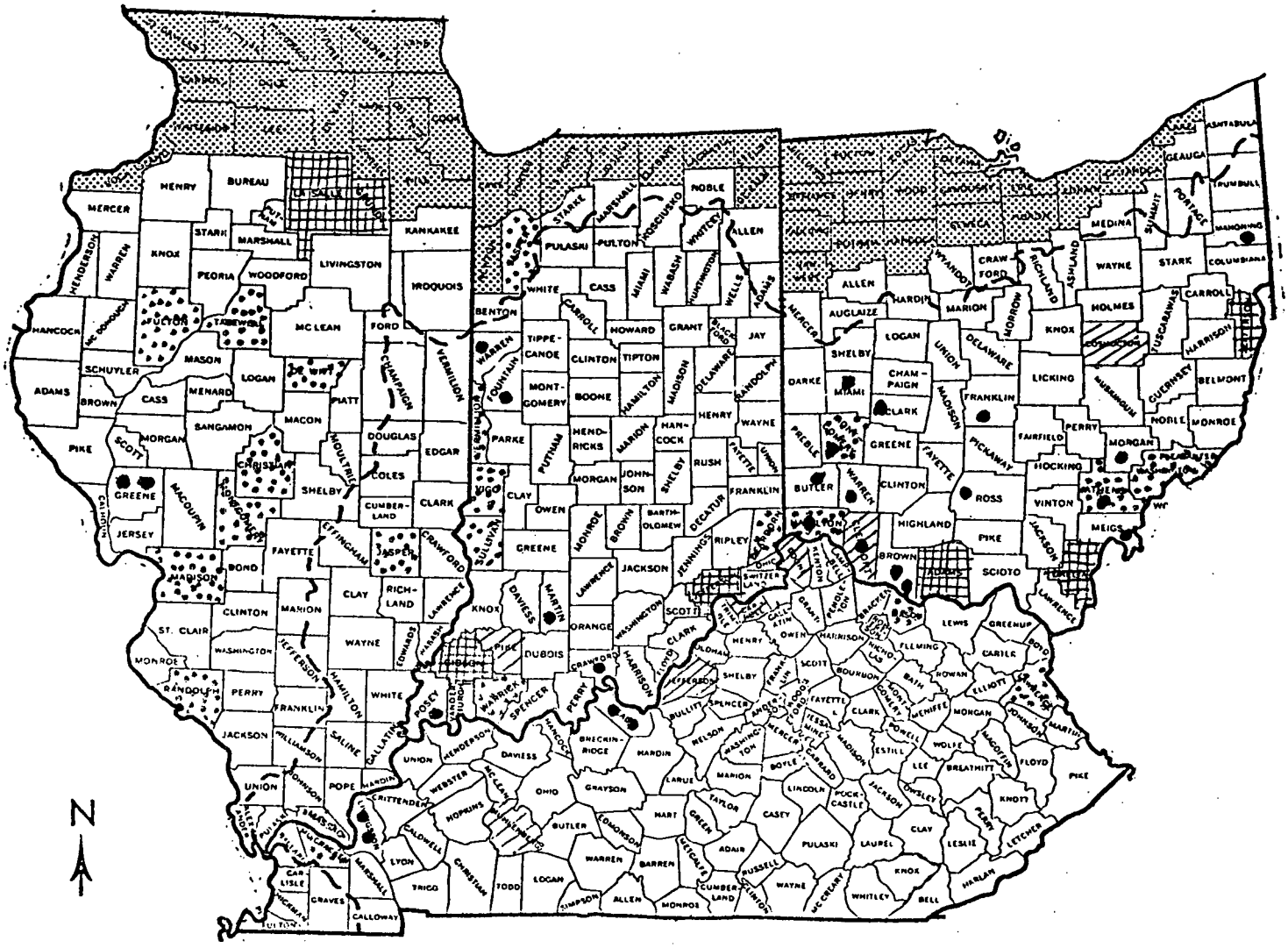
- Less than 1,000
- 1,000 - 1,999
- 2,000 - 3,499
- 3,500 or more

Additional 1,000 megawatt units:

- Coal
- Nuclear

MAP III-D-11

1985 GENERATING CAPACITY WITH SCENARIO III NEW UNITS



1985 Megawatt capacity:

Less than 1,000

1,000 - 1,999

2,000 - 3,499

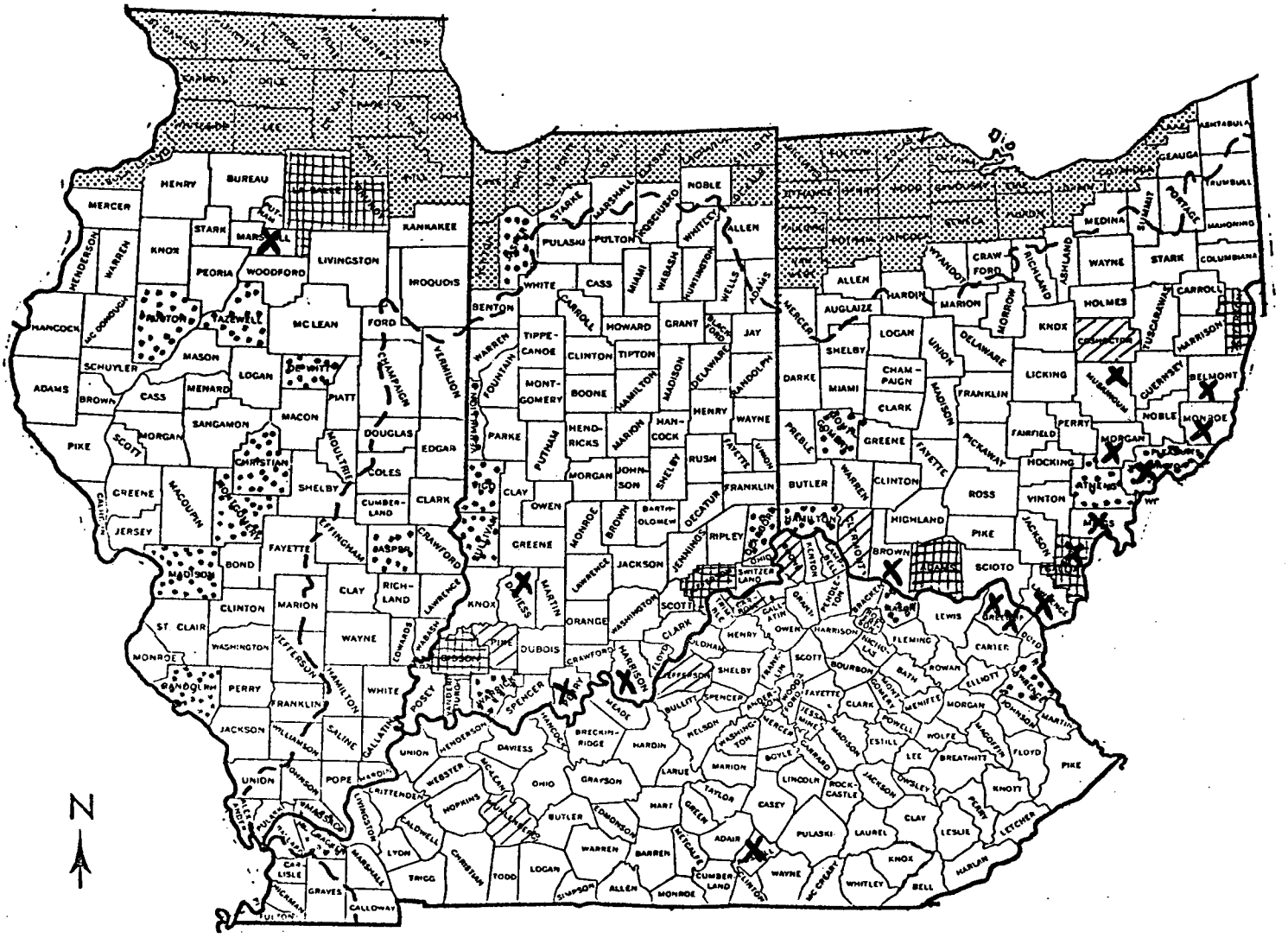
3,500 or more

Additional 600 megawatt units:

Coal

MAP III-D-12

1985 GENERATING CAPACITY WITH SCENARIO IV NEW UNITS



1985 Megawatt capacity:

Less than 1,000

1,000 - 1,999

2,000 - 3,499

3,500 or more

Additional 1,000 megawatt units:

Nuclear

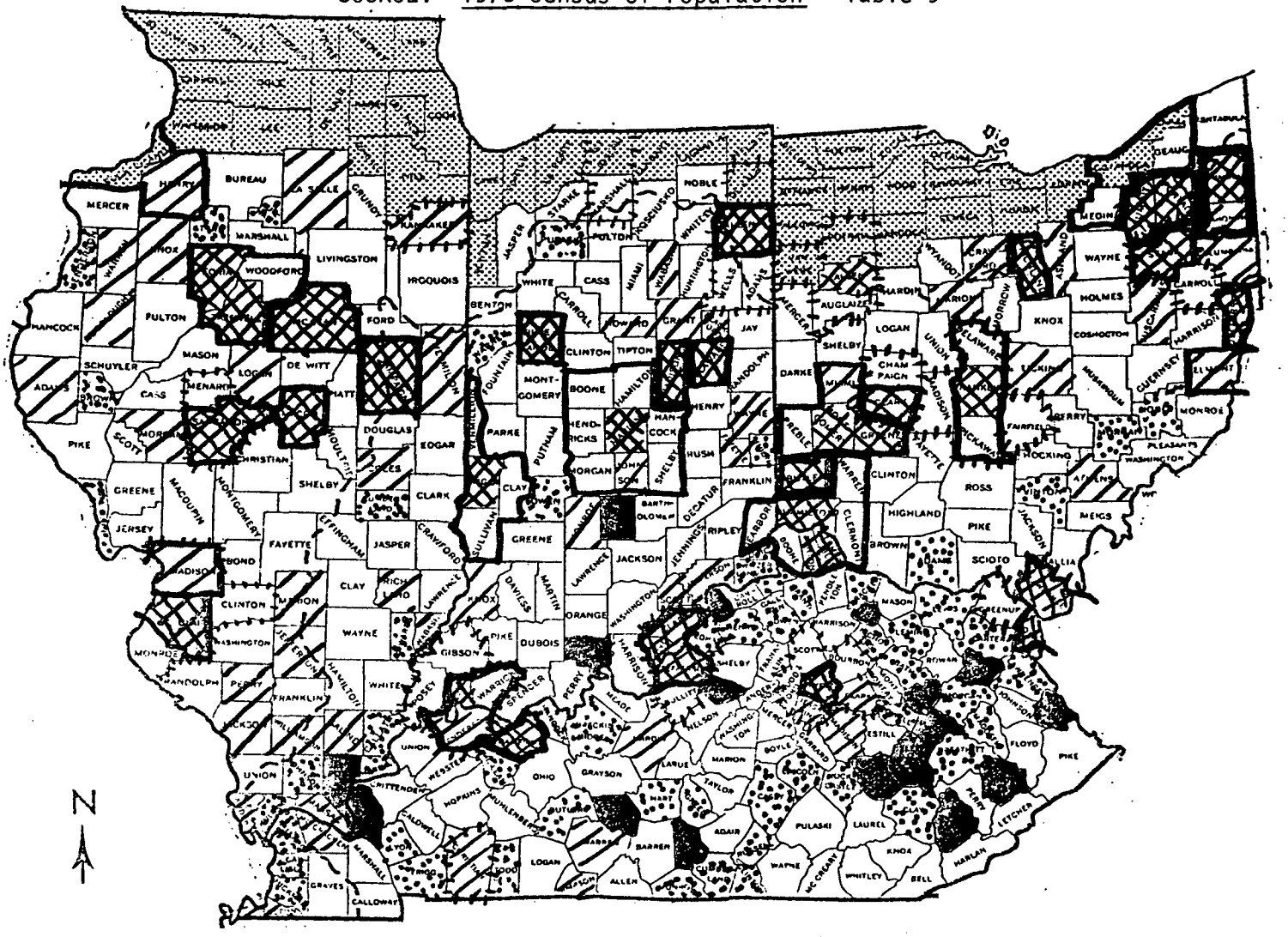
SENTIMENTAL ORIENTATION MAPS

Primordial Belongingness Sub-Orientation
Maps III-D-13 through III-D-47

Prestige Sub-Orientation
Maps III-D-48 through III-D-94

MAP III-D-13

RESIDENCE OF POPULATION IN 1970
SOURCE: 1970 Census of Population - Table 9



SMSA's, 1970

URBAN (50% or over), predominantly in urbanized areas

URBAN (50% or over), predominantly other urban

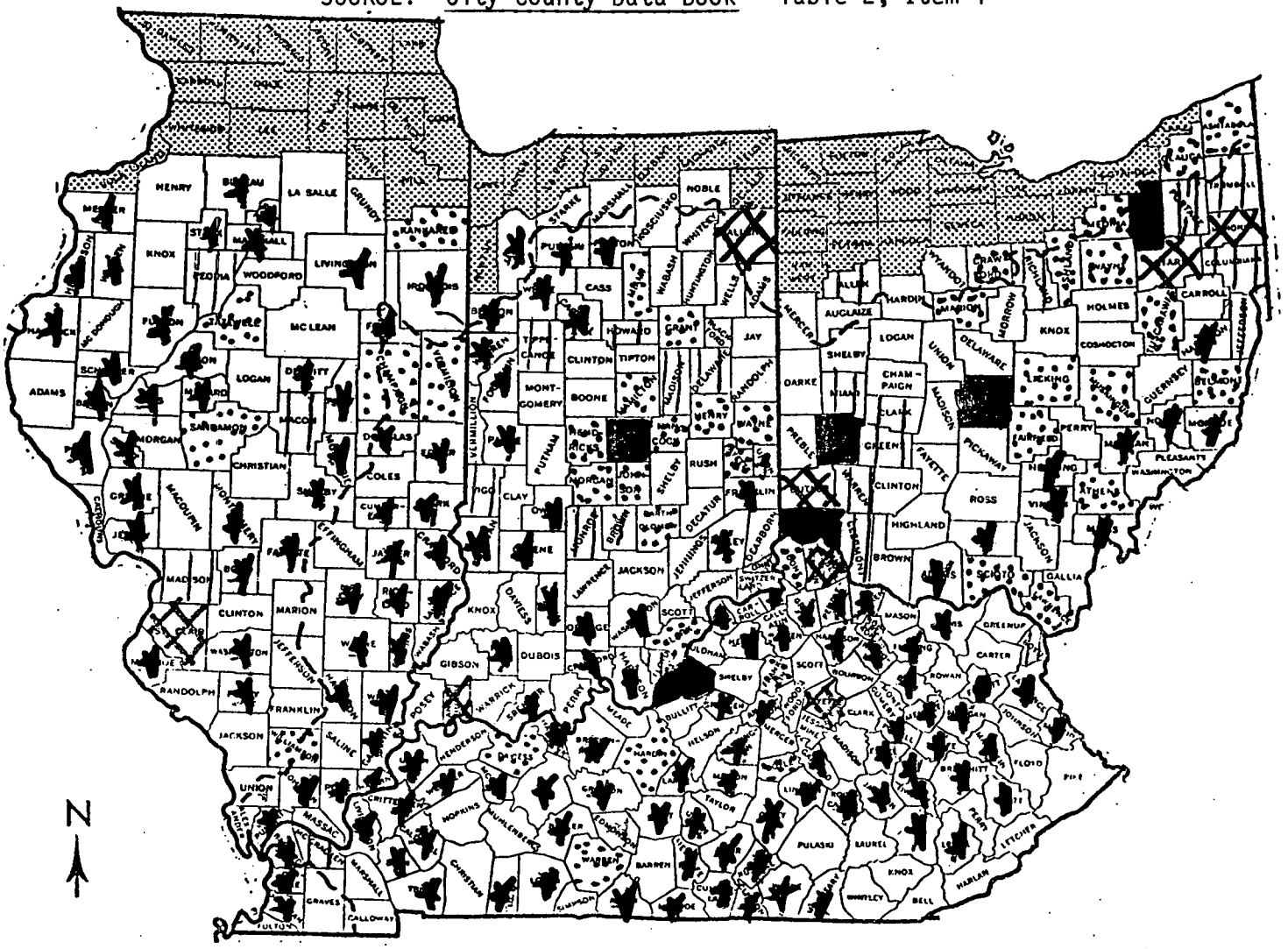
Mixed RURAL (over 50%) and URBAN

RURAL (100%) in places of less than 2,500

RURAL (100%) in places of less than 1,000

Changes in SMSA's, 1974

MAP III-D-14
POPULATION DENSITY
SOURCE: City County Data Book - Table 2, Item 4



1,000 or more per sq. mile

400 - 999 " " "

200 - 399 " " "

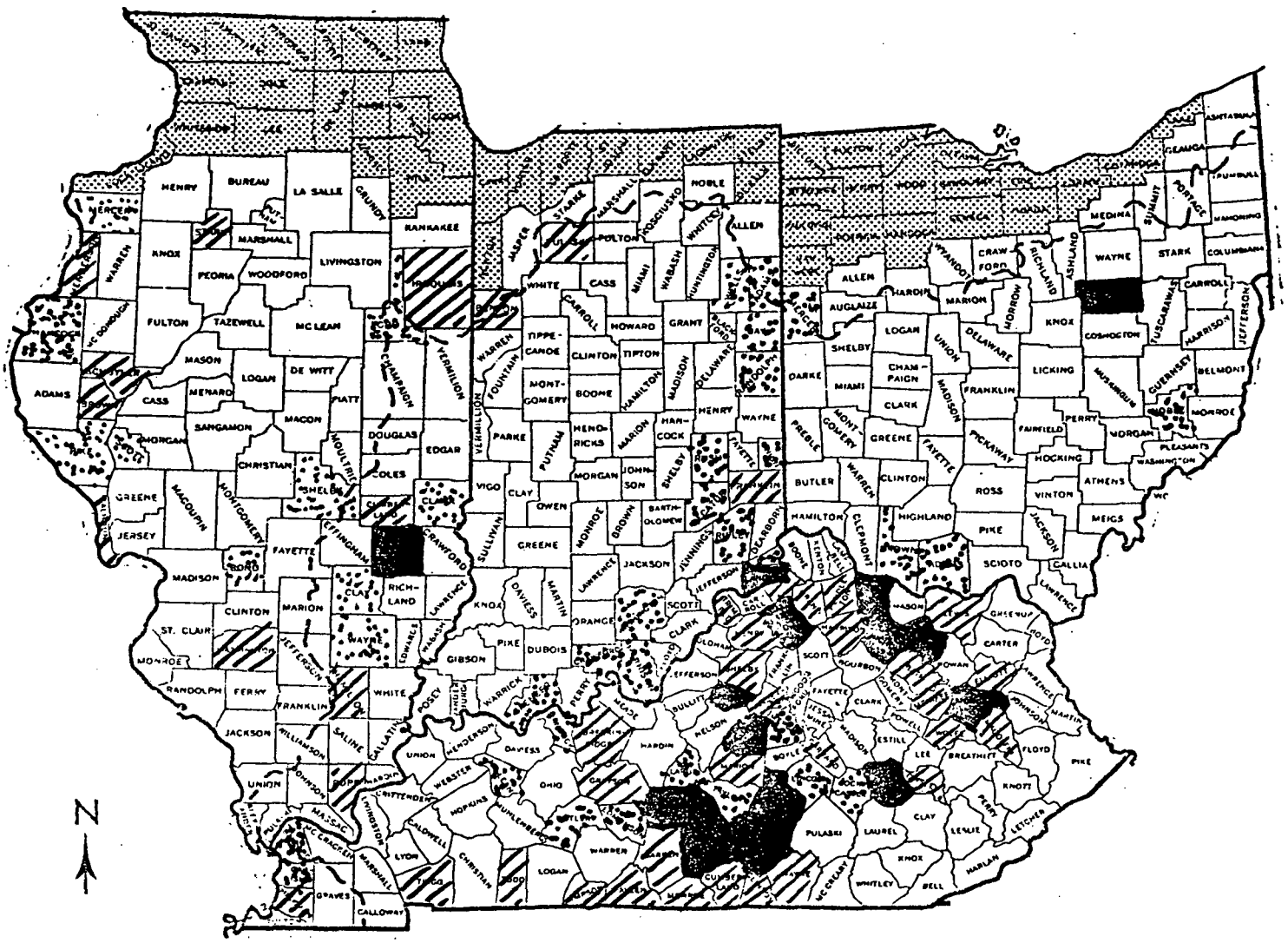
100 - 199 per sq. mile

50 - 99 " " "

Less than 50 per sq. mile

MAP III-D-15

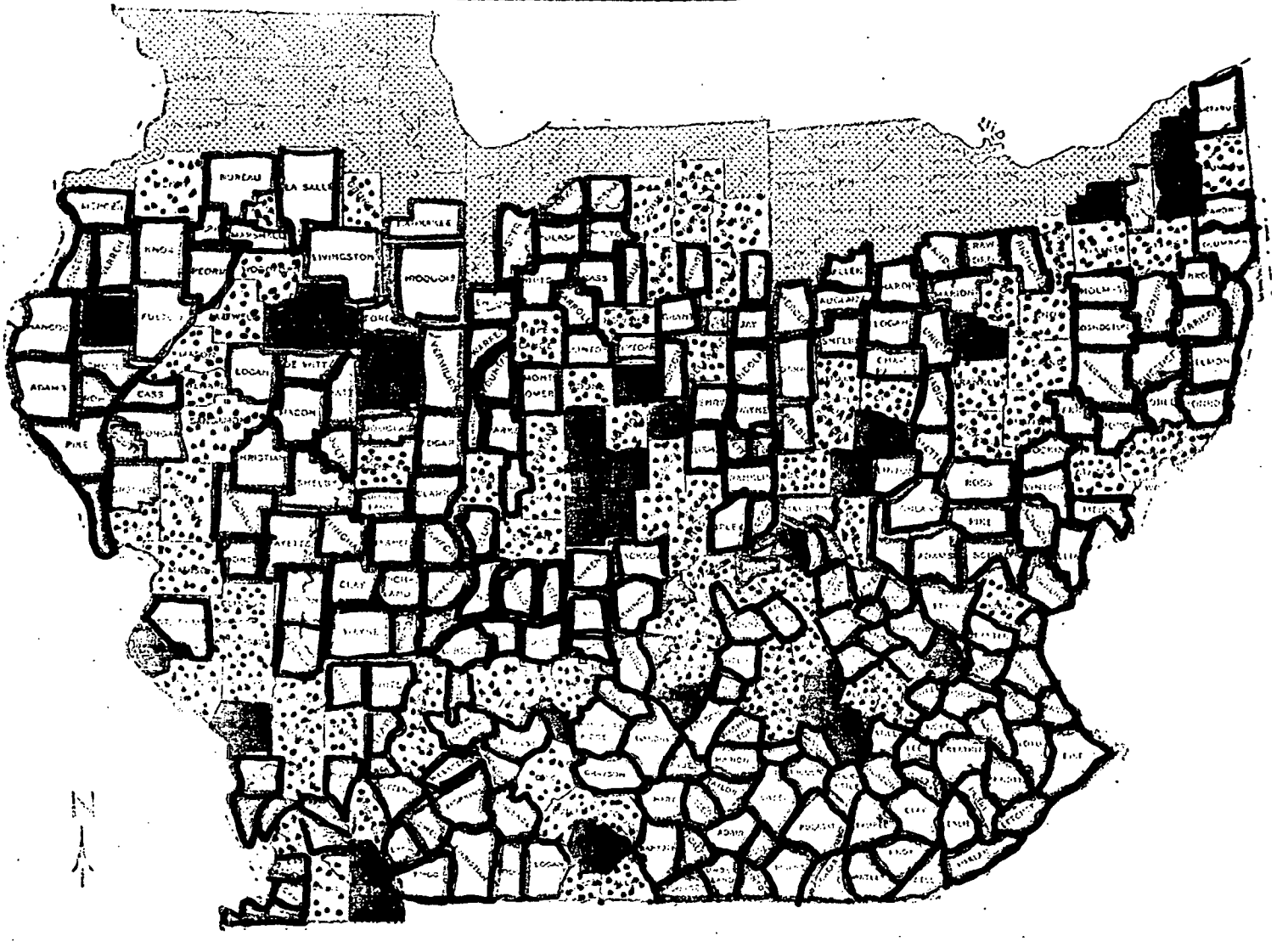
PERCENTAGE OF POPULATION LIVING ON FARMS
SOURCE: 1970 Census of Housing - Table 60



MAP III-D-16

NET MIGRATION, 1960 - 1970

SOURCE: City County Data Book - Table 2, Item 6



Loss

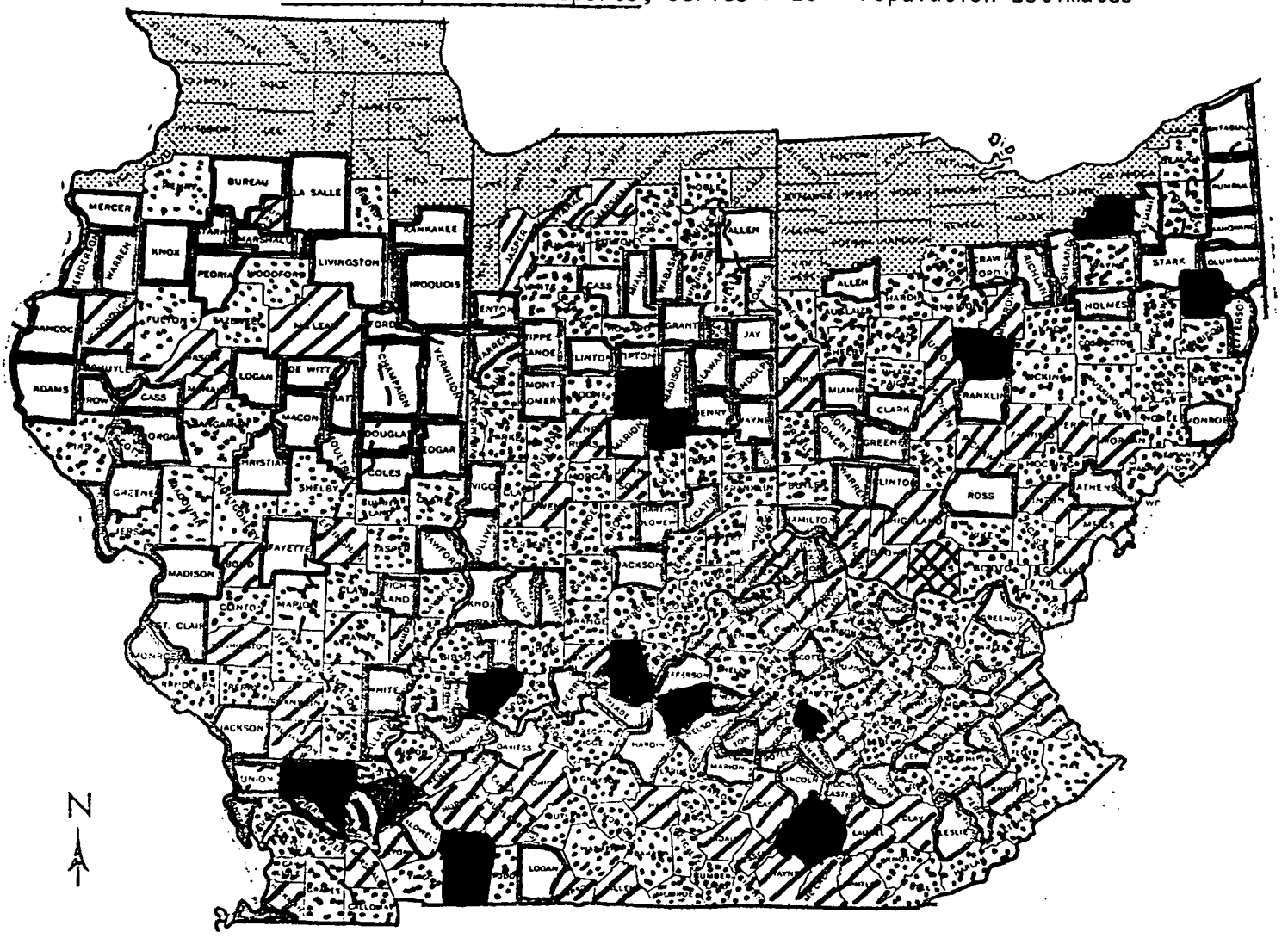
Gain, 0 - 9.9

Gain, 10.0 or more

MAP III-D-17

NET MIGRATION, 1970 - 1974

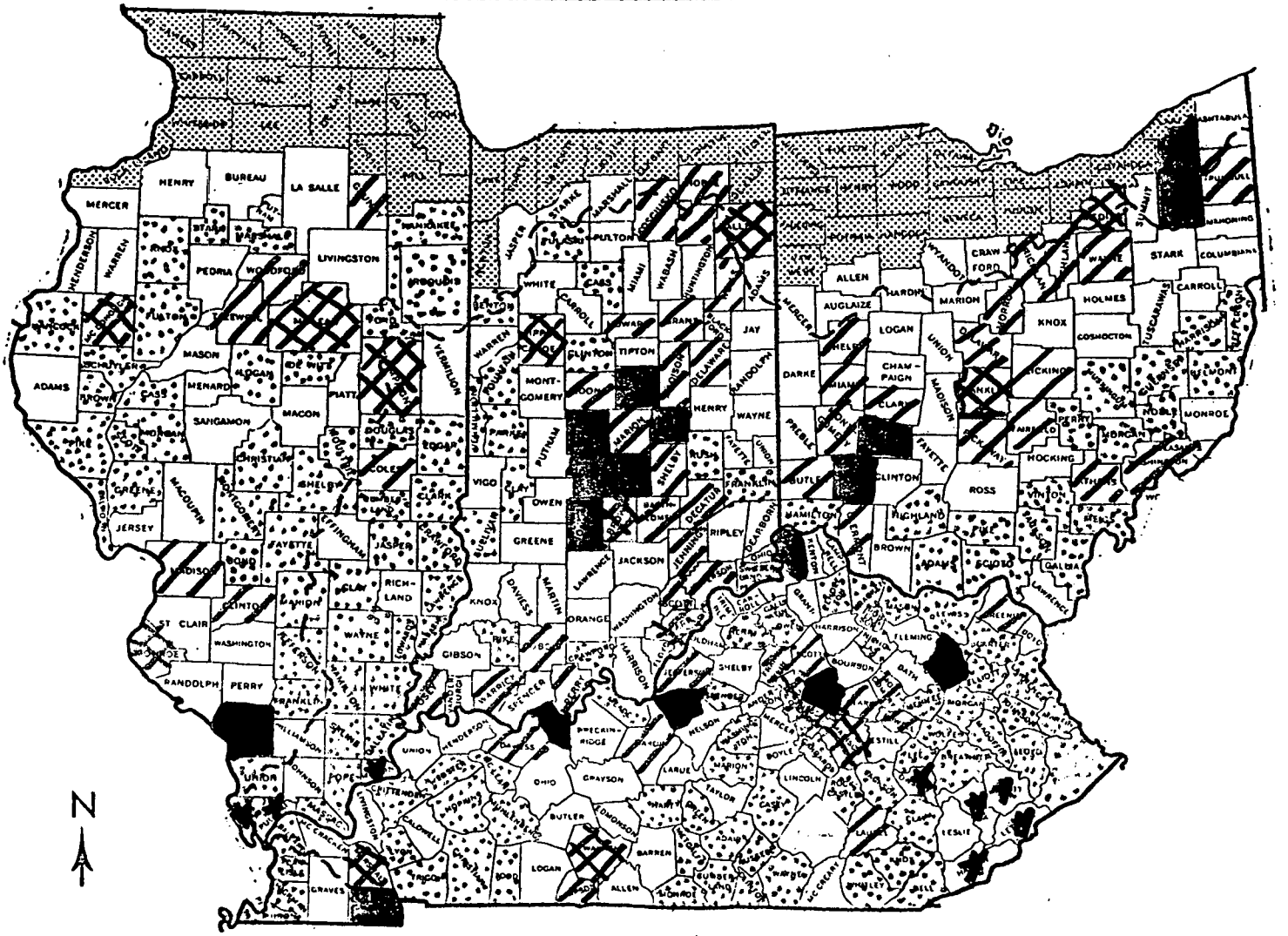
SOURCE: Current Population Reports, Series P-26 - Population Estimates



MAP III-D-18

POPULATION CHANGE, 1960- 1970

SOURCE: City County Data Book - Table 2, Item 5



Loss, 15.0 or greater

Loss, less than 15.0

Gain, less than 5.0

Gain, 10.0 - 19.9

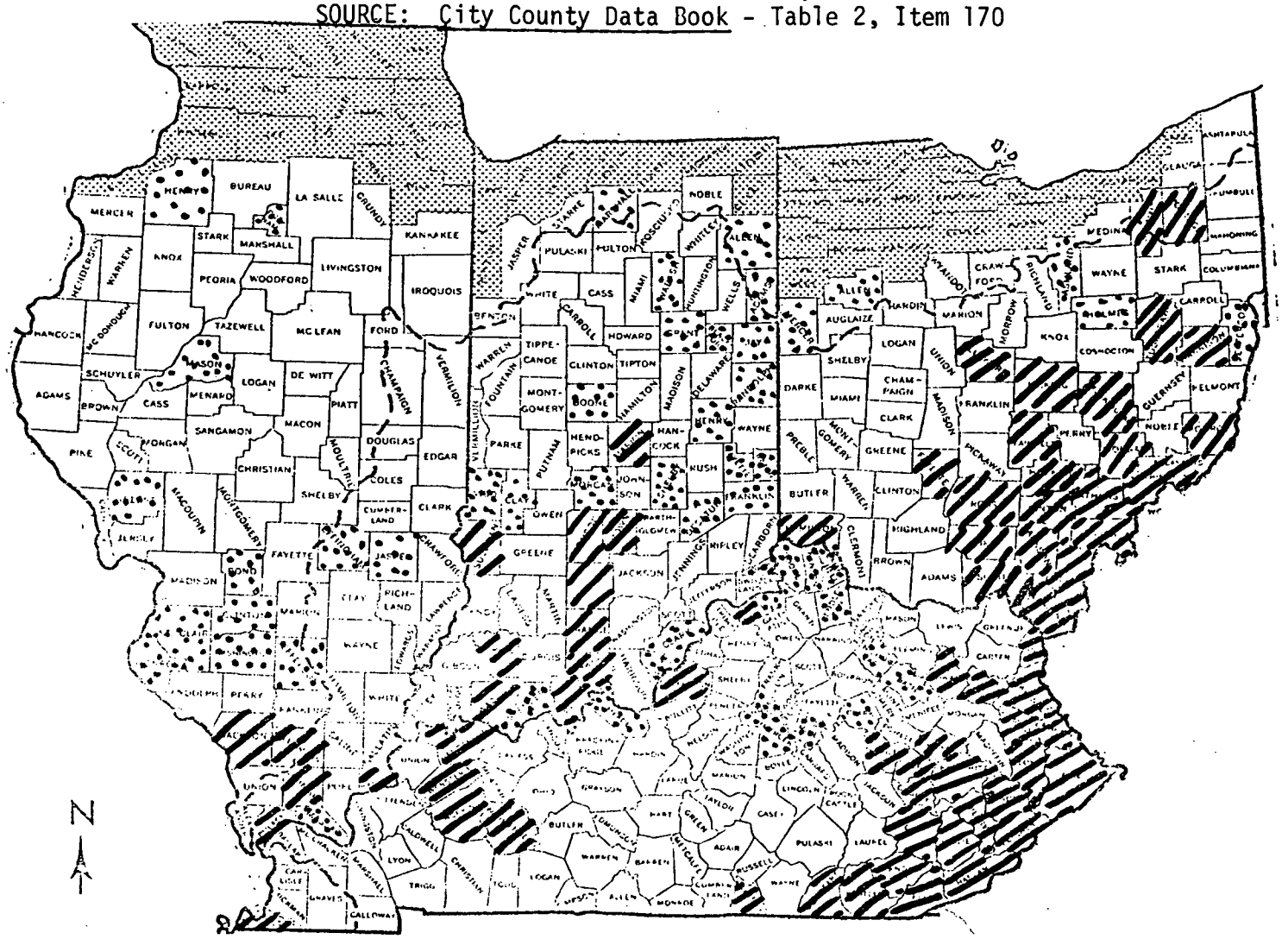
Gain, 20.0 - 29.9

Gain, 30.0 or more

MAP III-D-19

PERCENTAGE CHANGE IN FARM POPULATION, 1960 - 1970

SOURCE: City County Data Book - Table 2, Item 170



Loss, 40.0 or more

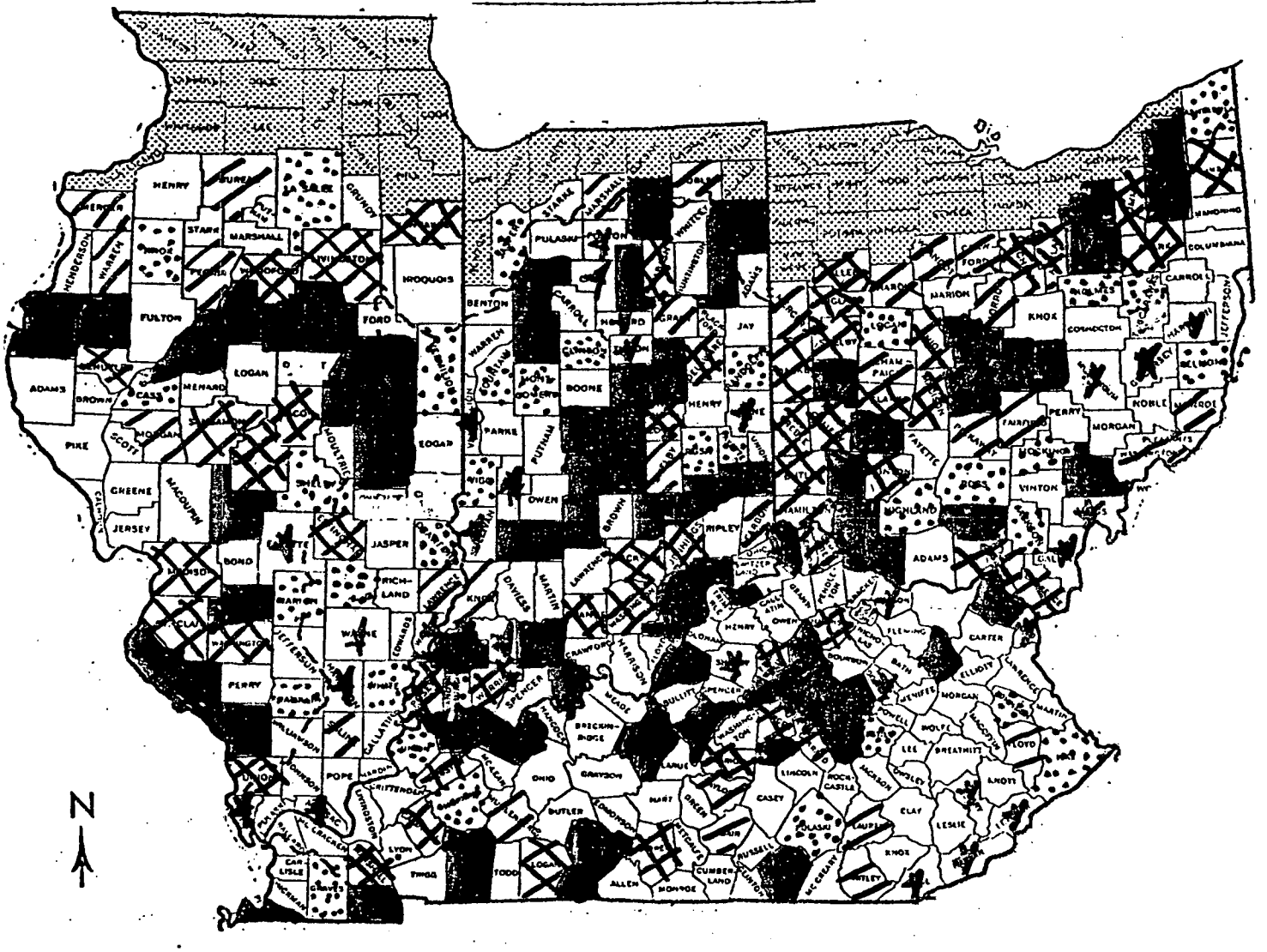
Loss, 15.0 - 39.9

Gain*, or loss of less than 15.0

*The only gain was in Massac County, Illinois.

MAP III-D-20

PERCENTAGE CHANGE IN URBAN POPULATION, 1960 - 1970
SOURCE: 1970 Census of Population - Table 9



Loss, 0 - 4.9

Loss, 5.0 or more

Gain, 0 - 4.9

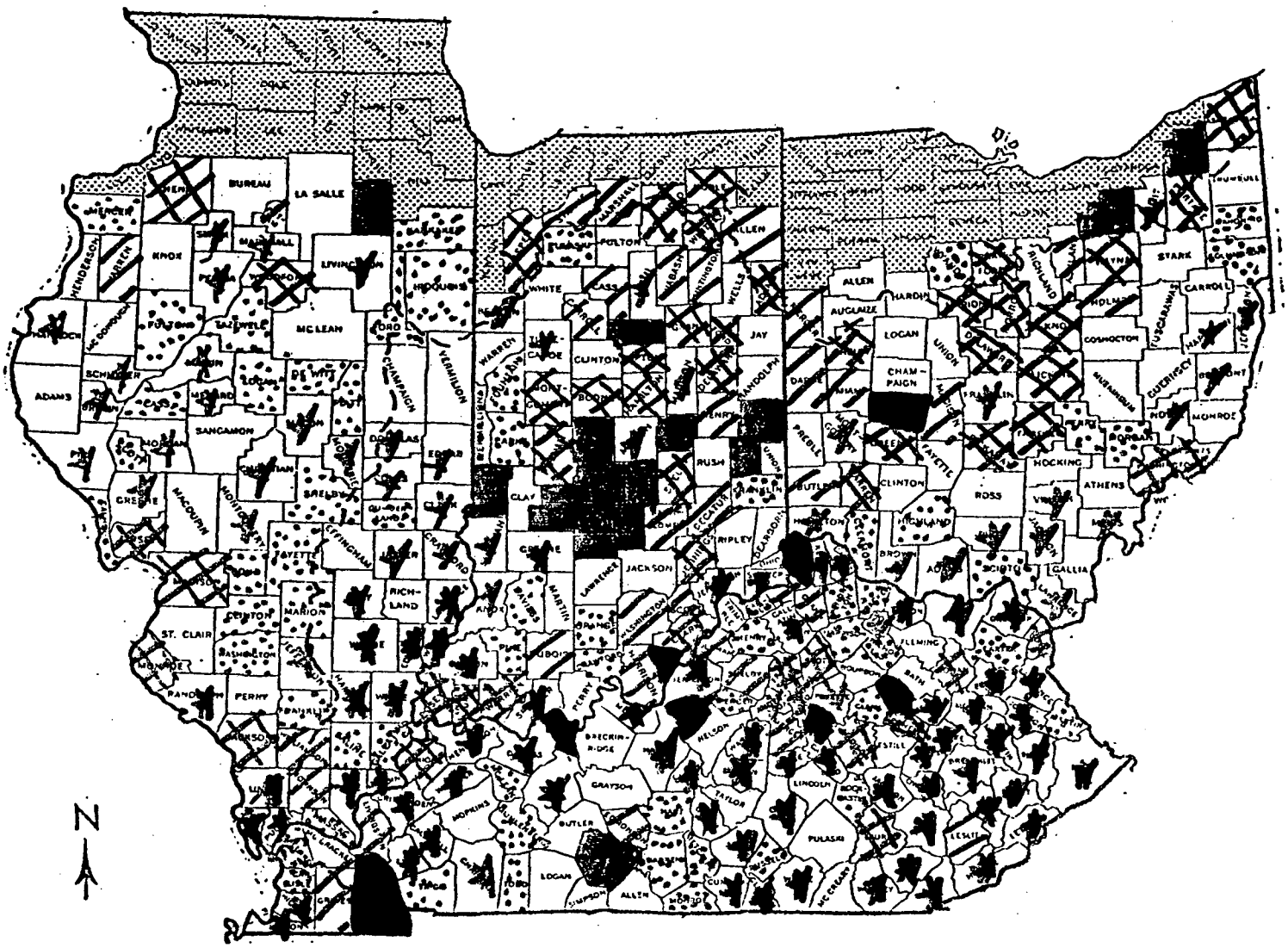
Gain, 5.0 - 9.9

Gain, 10.0 - 19.9

Gain, 20.0 or more

MAP III-D-21

PERCENTAGE CHANGE IN RURAL POPULATION, 1960 - 1970
SOURCE: 1970 Census of Population - Table 9



Loss, 0 - 4.9

Loss, 5.0 or more

Gain, 0 - 4.9

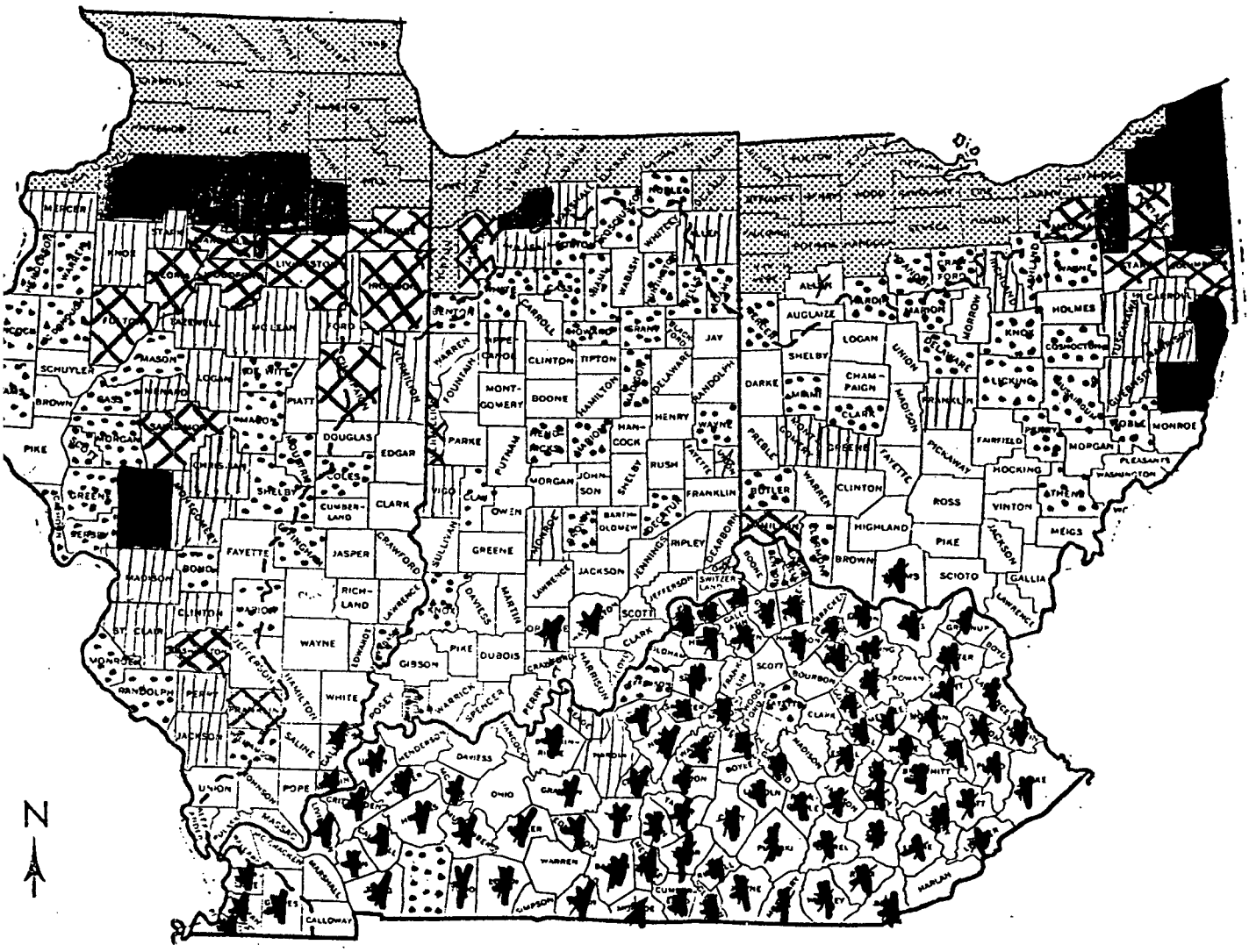
Gain, 5.0 - 9.9

Gain, 10.0 - 19.9

Gain, 20.0 or more

MAP III-D-22

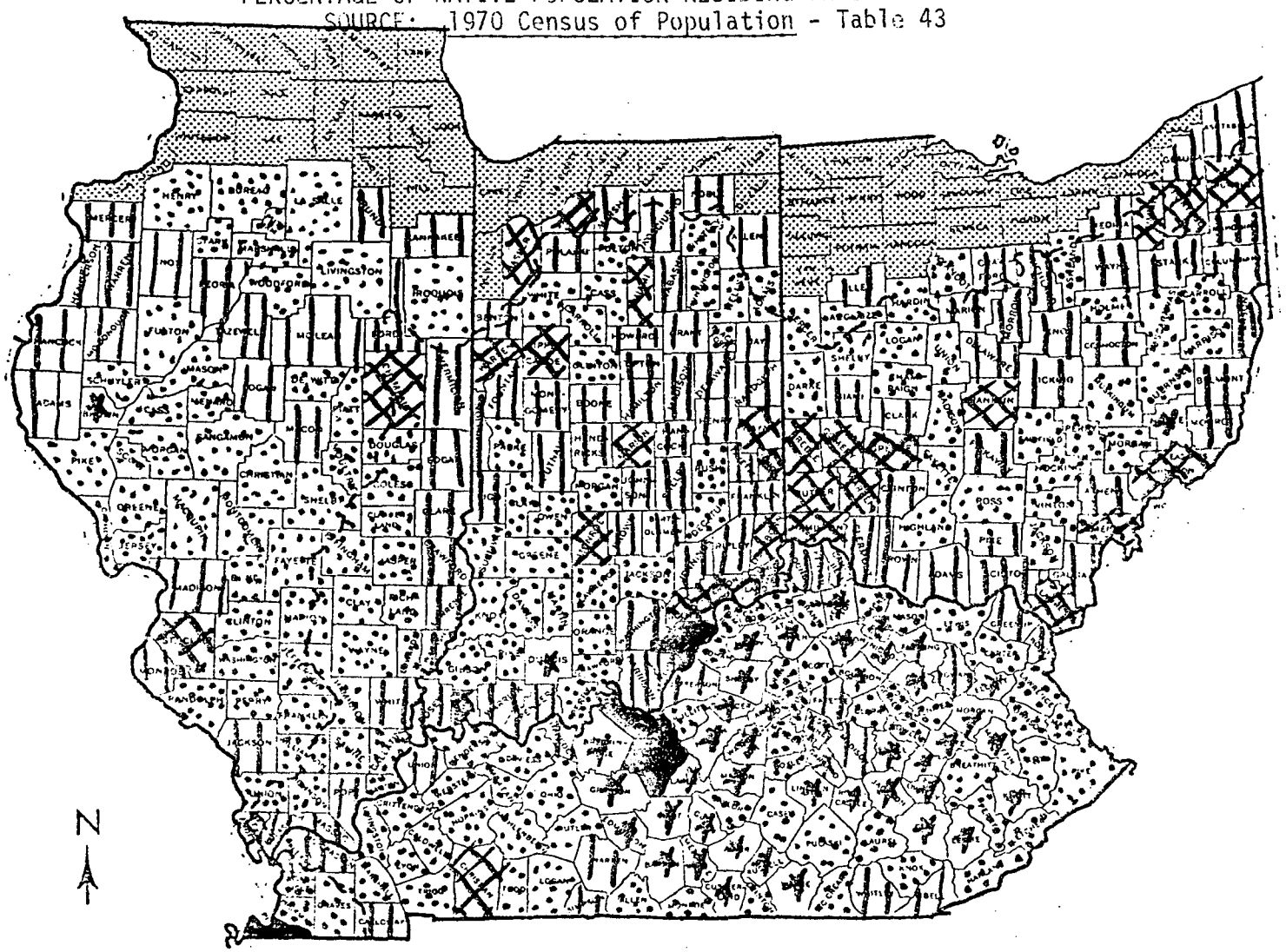
PERCENTAGE OF POPULATION FOREIGN BORN OR OF FOREIGN OR MIXED PARENTAGE
SOURCE: 1970 Census of Population - Table 43

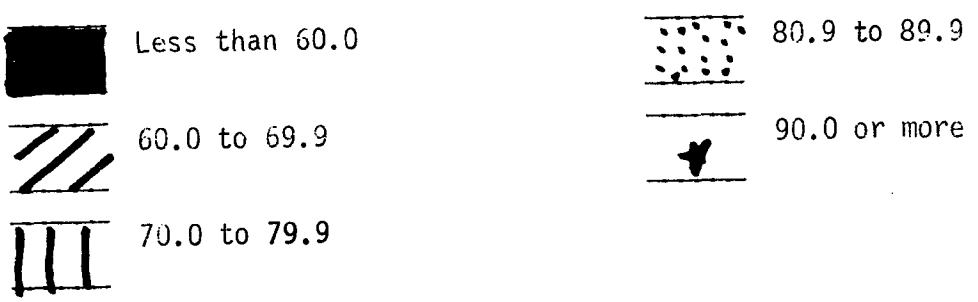


MAP III-D-23

PERCENTAGE OF NATIVE POPULATION RESIDING IN STATE OF BIRTH

SOURCE: 1970 Census of Population - Table 43

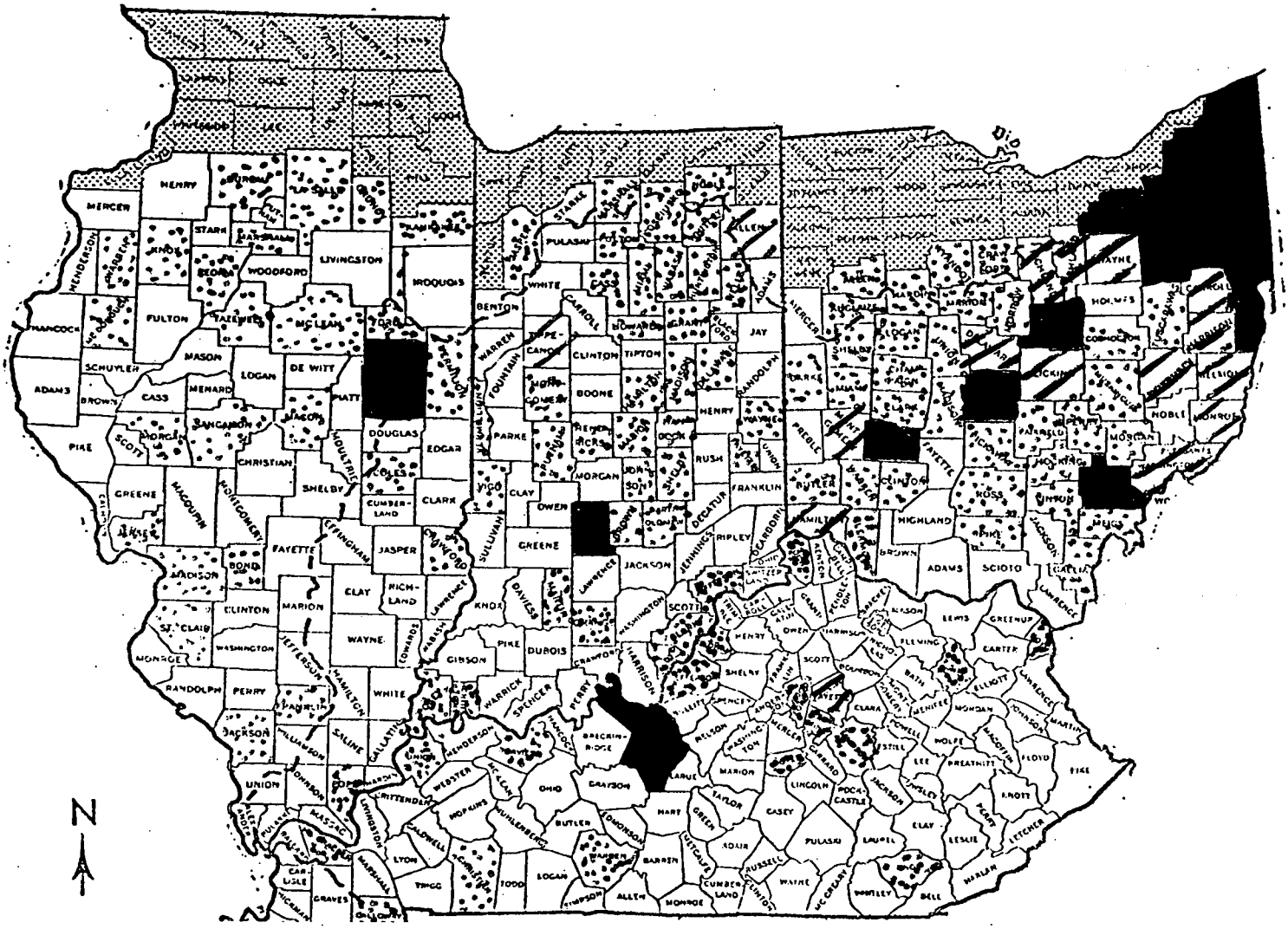




MAP III-D-24

PERCENTAGE OF NATIVE POPULATION BORN IN NORTHEAST

SOURCE: 1970 Census of Population - Table 119



Less than 1.0

1.0 - 2.9

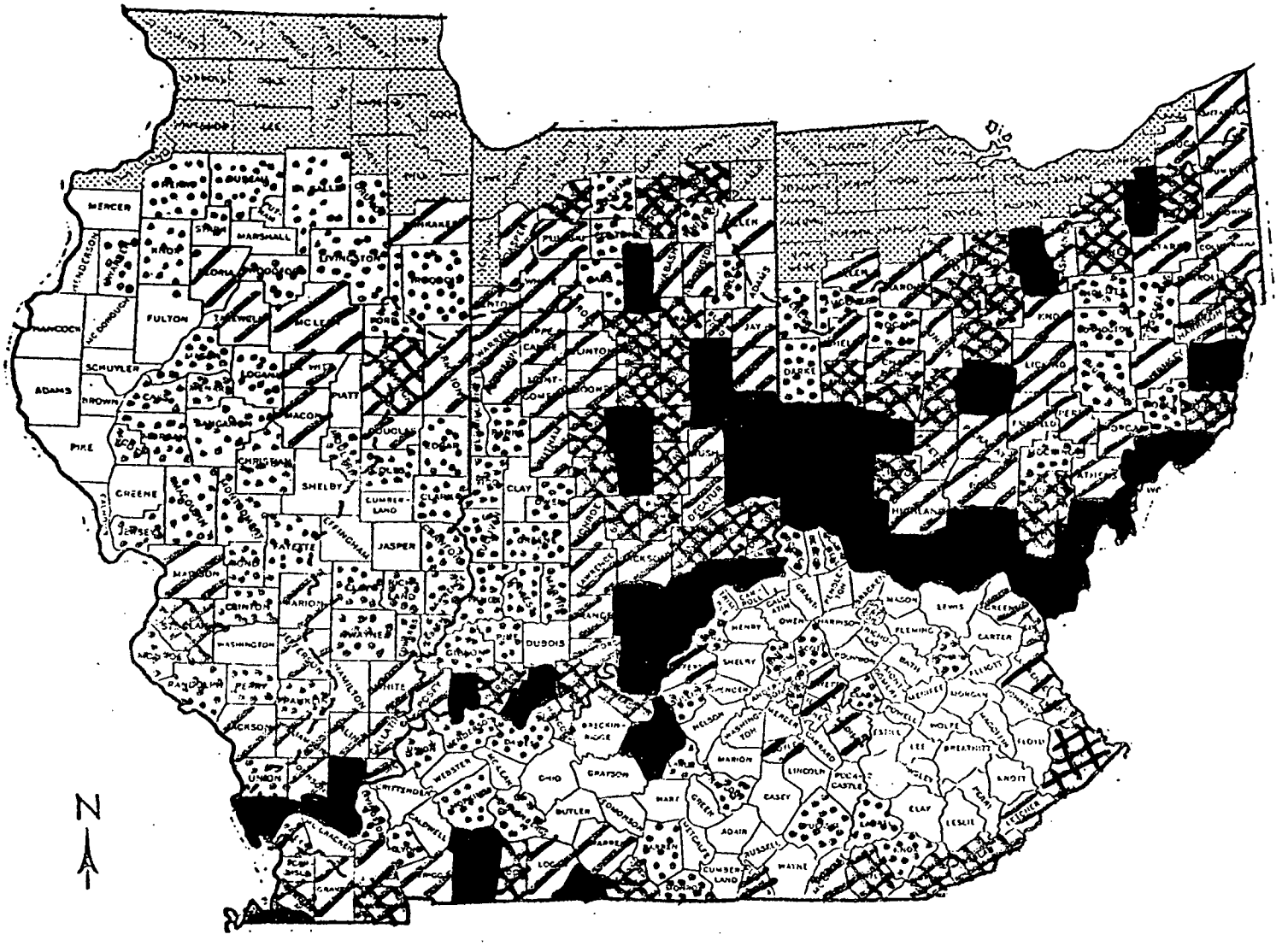
3.0 - 4.9

5.0 or more

MAP III-D-25

PERCENTAGE OF NATIVE POPULATION BORN IN THE SOUTH

SOURCE: Census of Population - Table 119



Less than 3.0

3.0 - 5.9

6.0 - 9.9

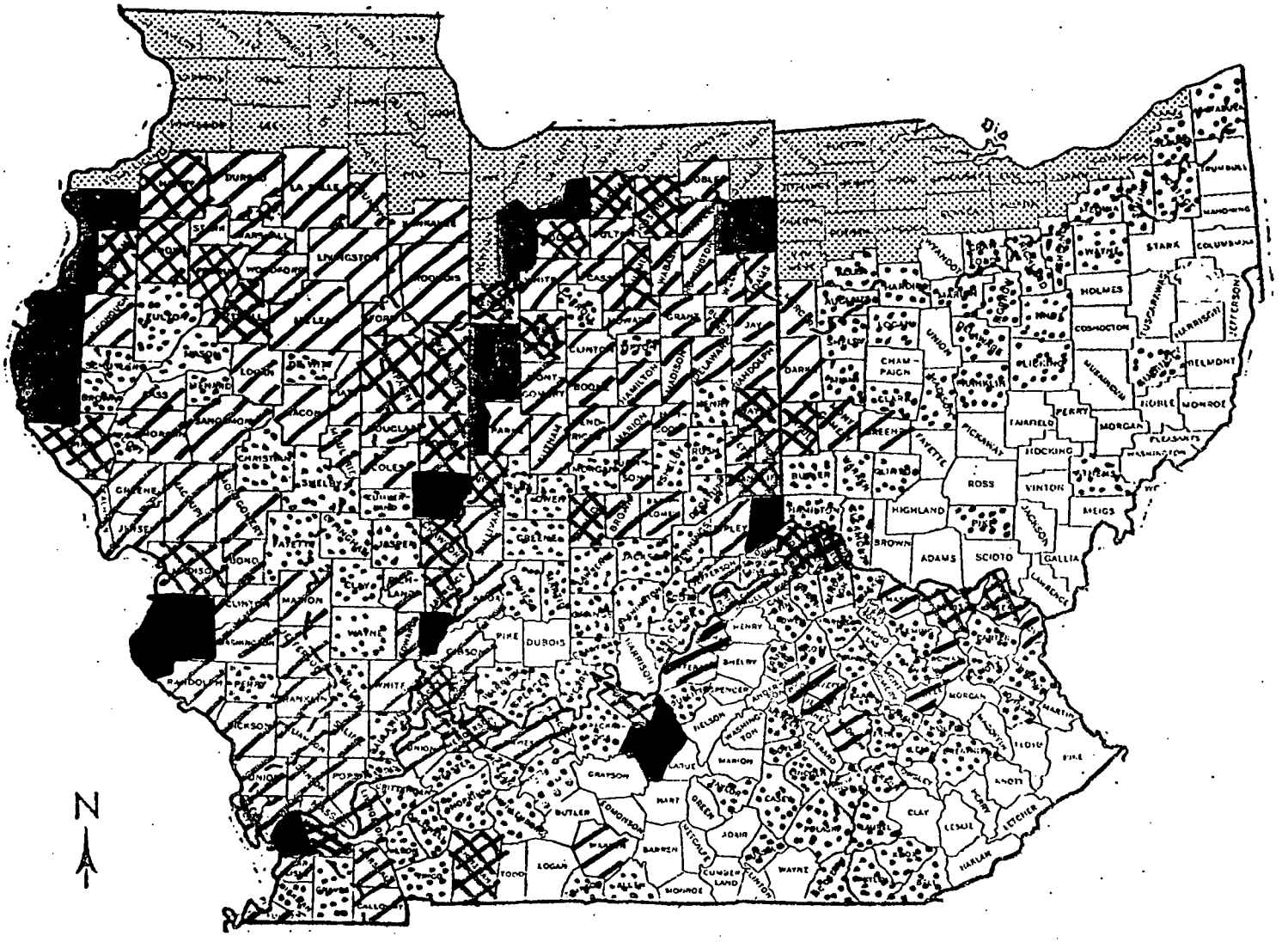
10.0 - 13.9

14.0 or more

MAP III-D-26

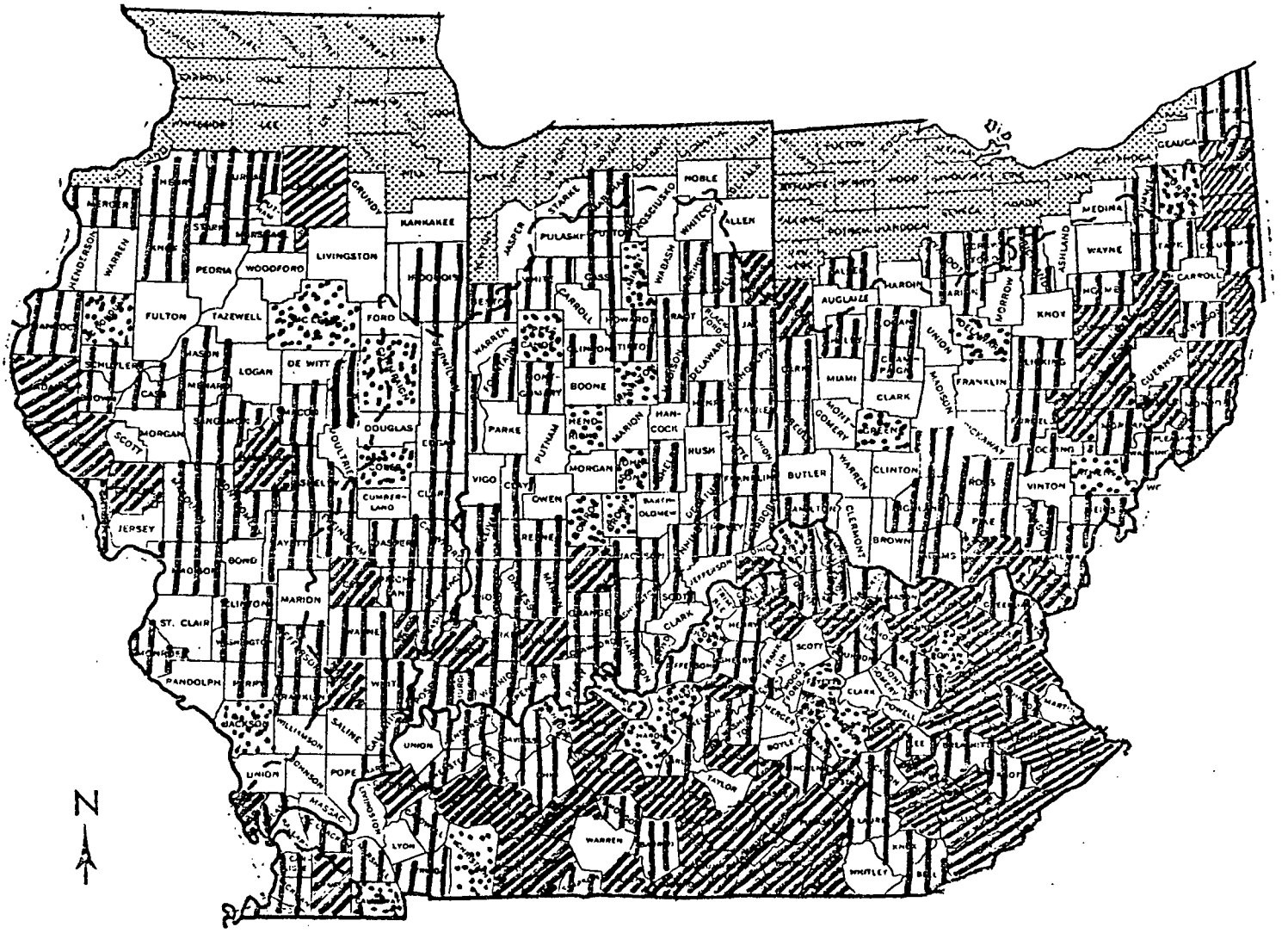
PERCENTAGE OF NATIVE POPULATION BORN IN NORTH CENTRAL U.S.

SOURCE: 1970 Census of Population - Table 119



MAP III-D-27

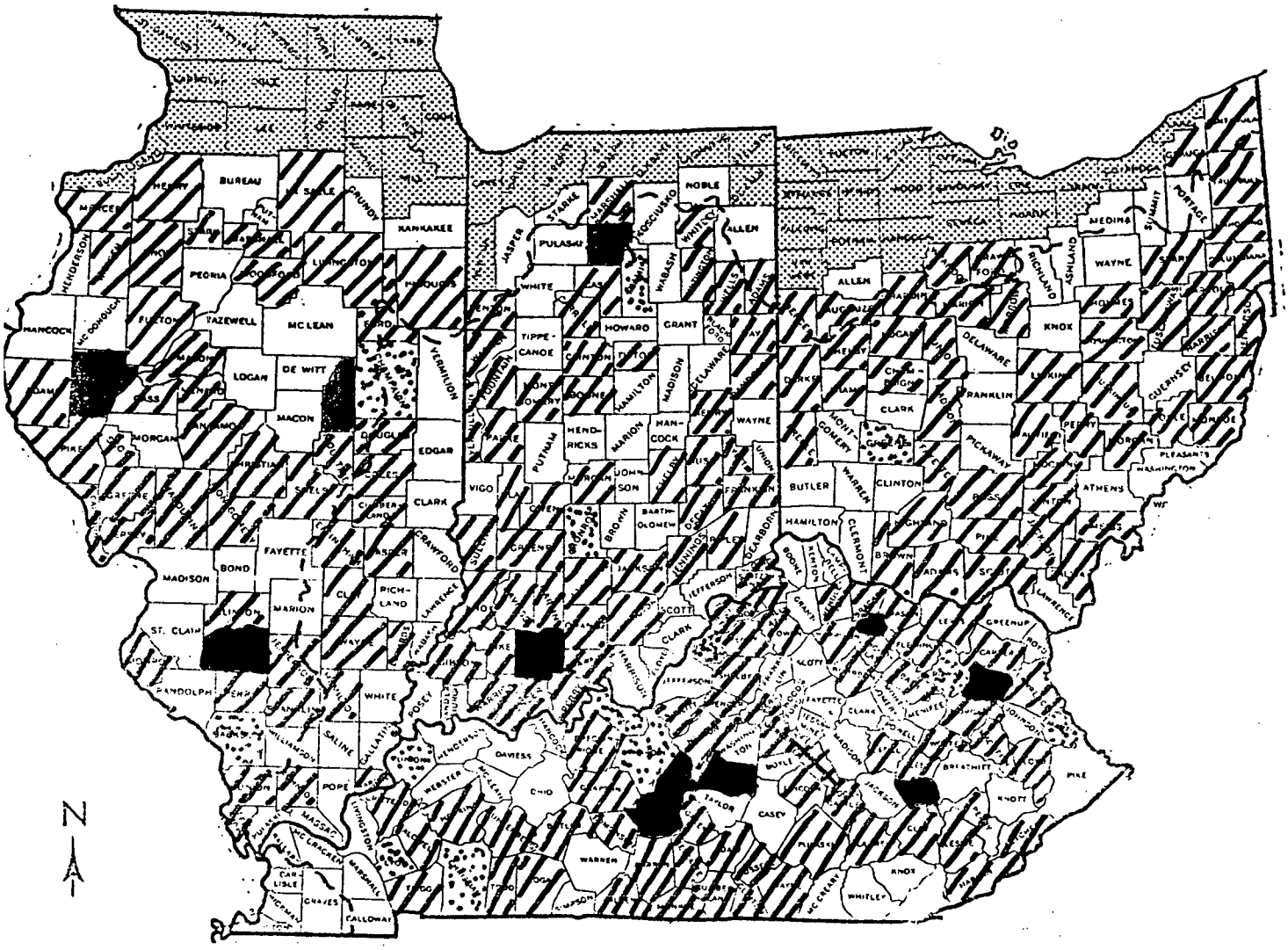
PERCENTAGE OF POPULATION RESIDING IN SAME COUNTY IN 1965
SOURCE: 1970 Census of Population - Table 119



MAP III-D-28

PERCENTAGE OF POPULATION RESIDING IN SAME STATE IN 1965

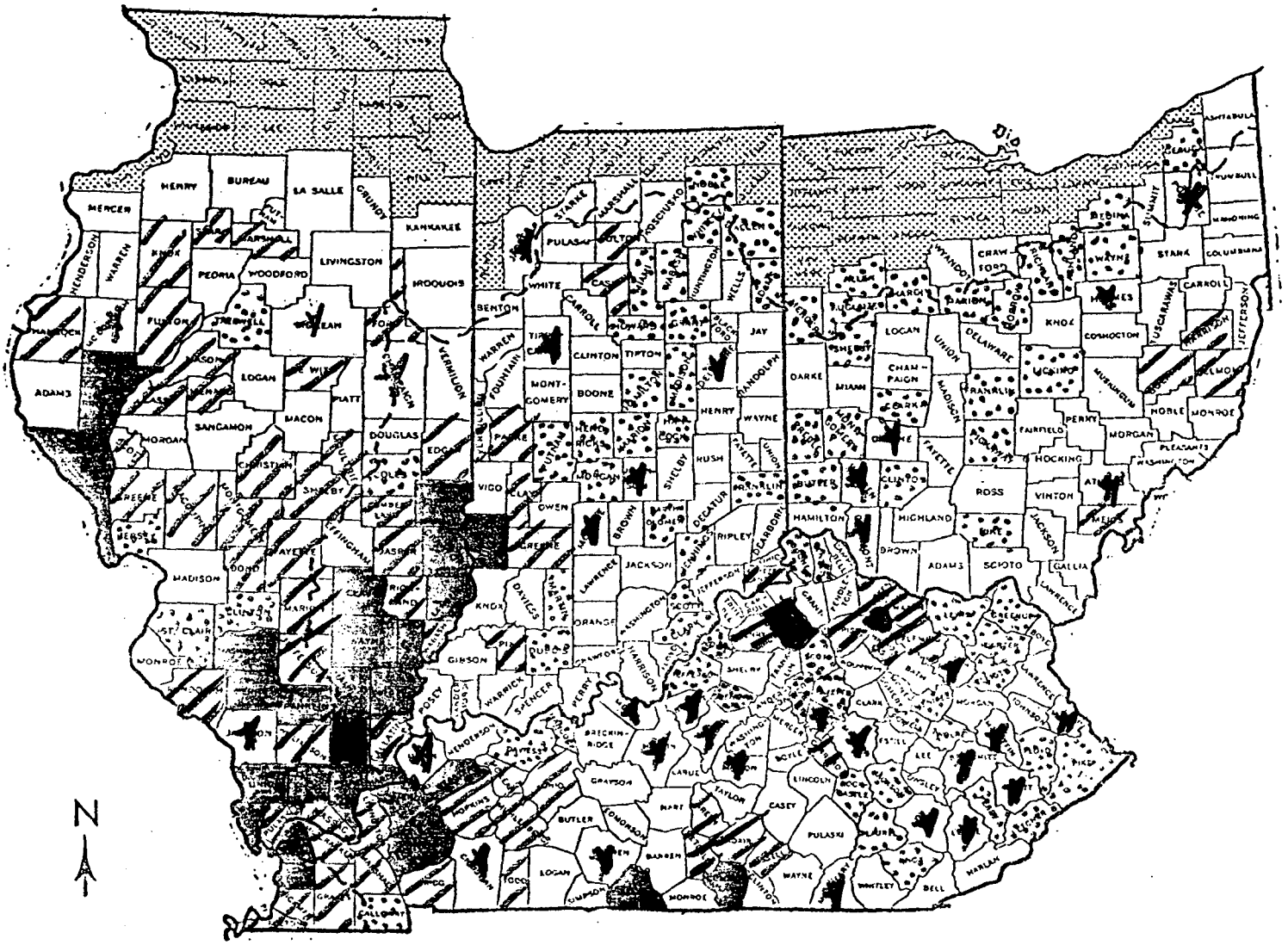
SOURCE: 1970 Census of Population - Table 119



MAP III-D-29

MEDIAN AGE, 1970

SOURCE: City County Data Book - Table 2, Item 15



Less than 25.0

25.0 - 27.9

28.0 - 31.9

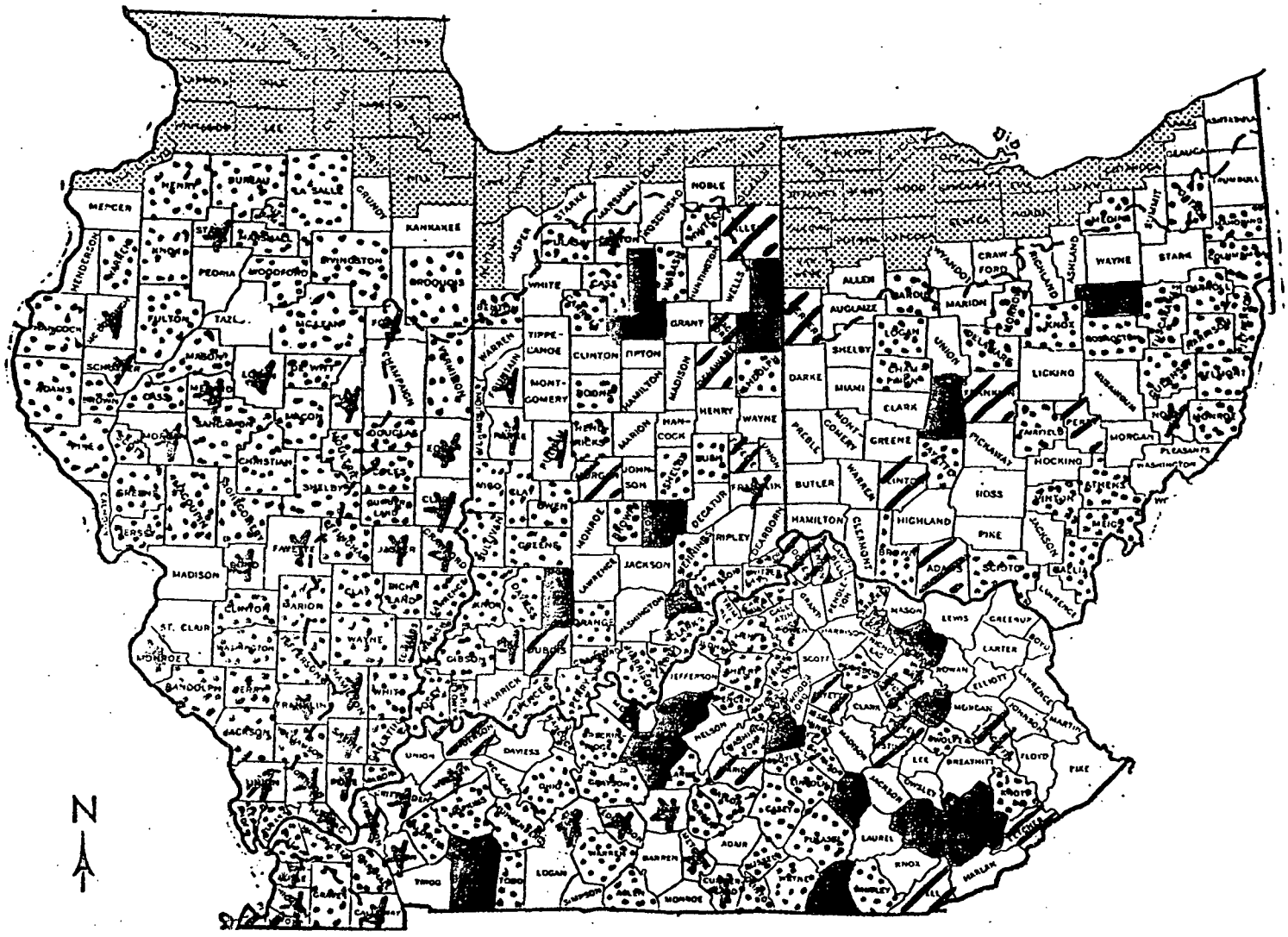
32.0 - 34.9

35.0 or older

MAP III-D-30

BIRTH RATE PER THOUSAND, 1968

SOURCE: City County Data Book - Table 2, Item 21



Less than 14.0

14.0 - 16.9

17.0 - 18.9

19.0 - 19.9

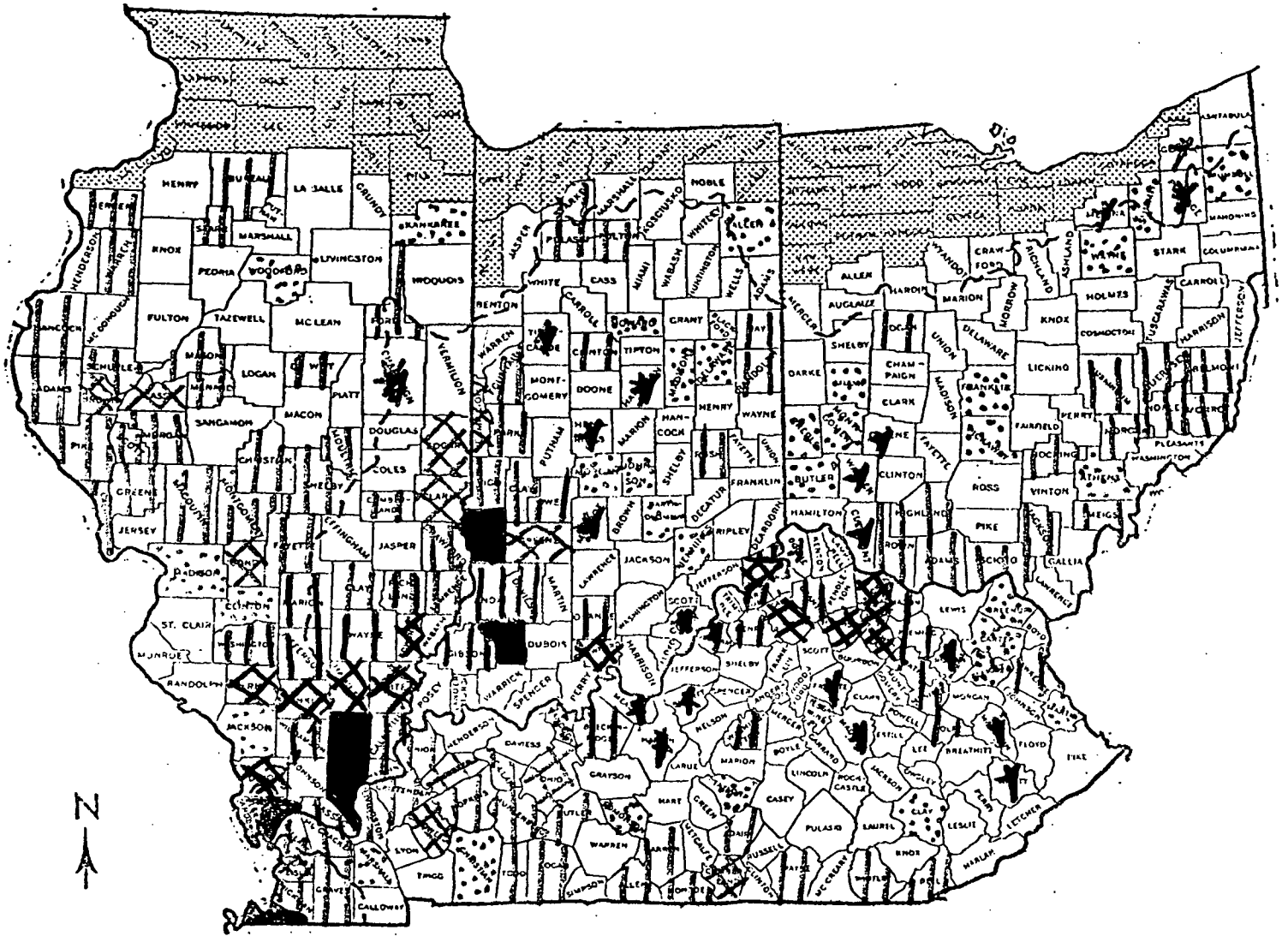
20.0 or more

(State Birth Rates: Illinois - 17.7, Indiana - 17.9, Kentucky - 17.7, Ohio - 17.7)

MAP III-D-31

DEATH RATE PER THOUSAND, 1969

SOURCE: City County Data Book - Table 2, Item 22



Less than 8.0

8.0 - 8.9

9.0 - 11.9

12.0 - 14.9

15.0 - 16.9

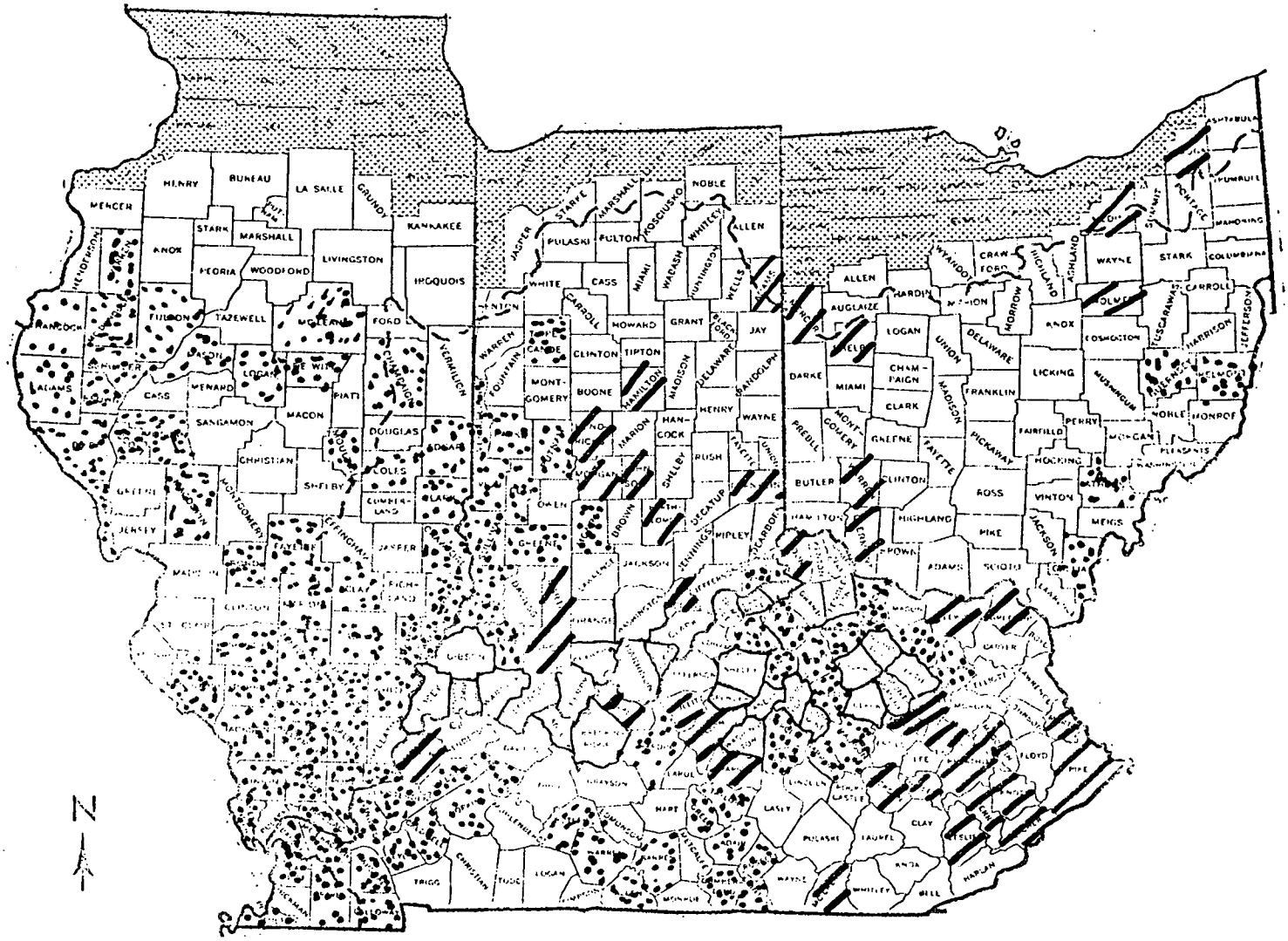
17.0 or more

(State Death Rates: Illinois - 10.1, Indiana - 9.6, Kentucky - 10.3, Ohio - 9.6)

MAP III-D-32

PERCENTAGE OF POPULATION UNDER 18, 1970

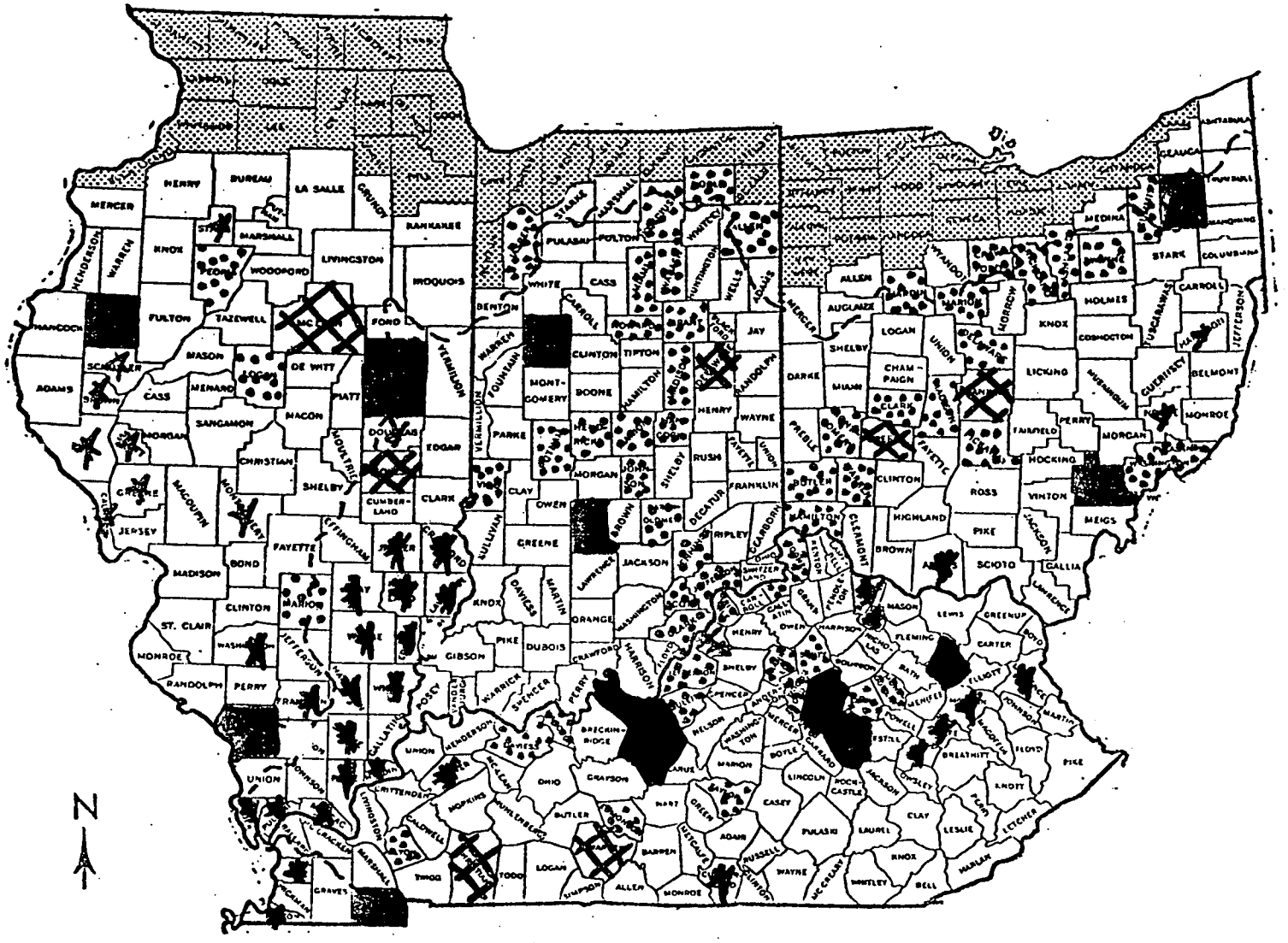
SOURCE: City County Data Book - Table 2, Item 13



MAP III-D-33

PERCENTAGE OF POPULATION AGED 20 TO 29

SOURCE: 1970 Census of Population - Table 35



Less than 11.0

11.0 - 13.9

14.0 - 16.9

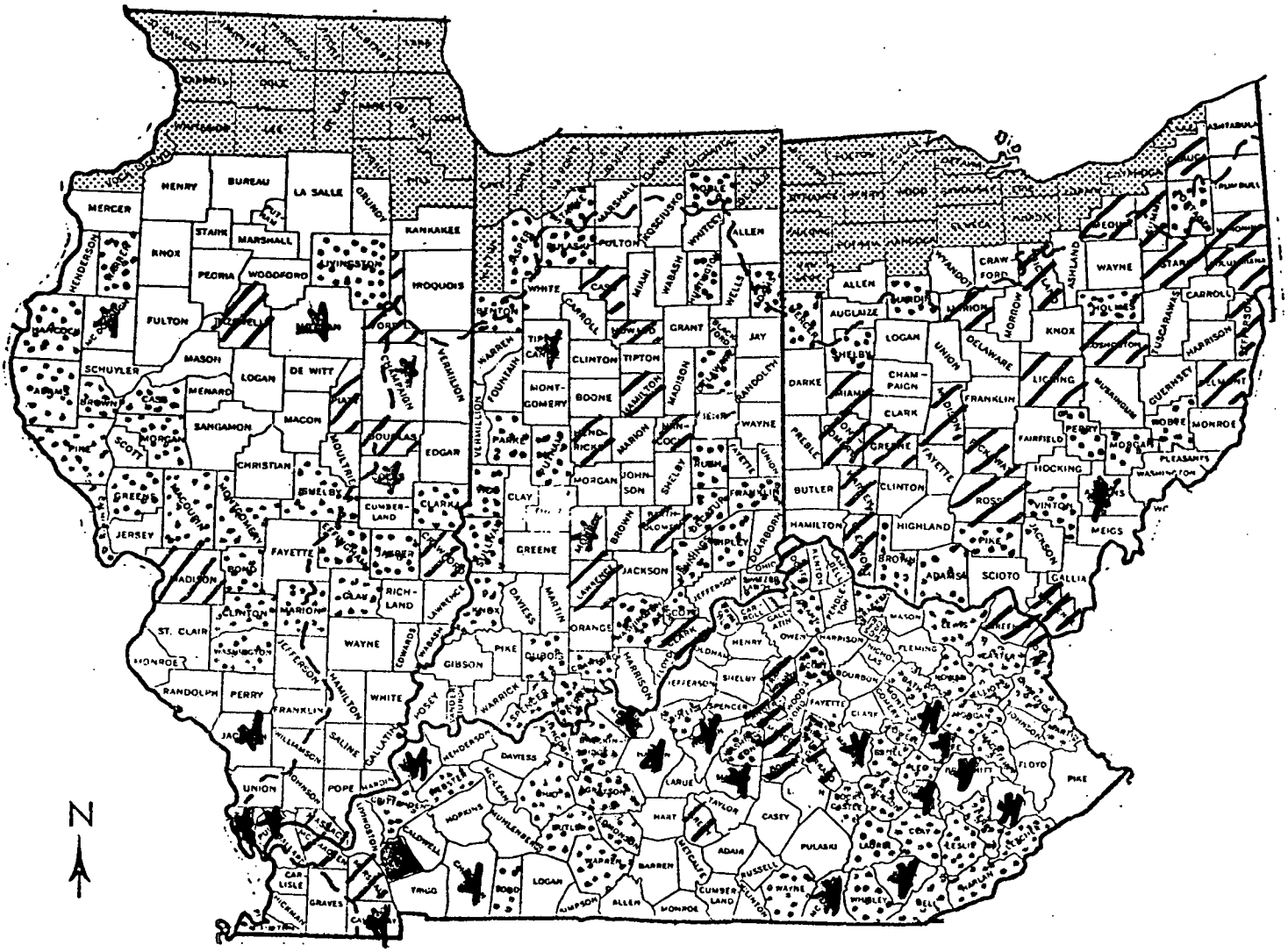
17.0 - 19.9

20.0 or more

MAP III-D-34

PERCENTAGE OF POPULATION AGED 30 TO 54

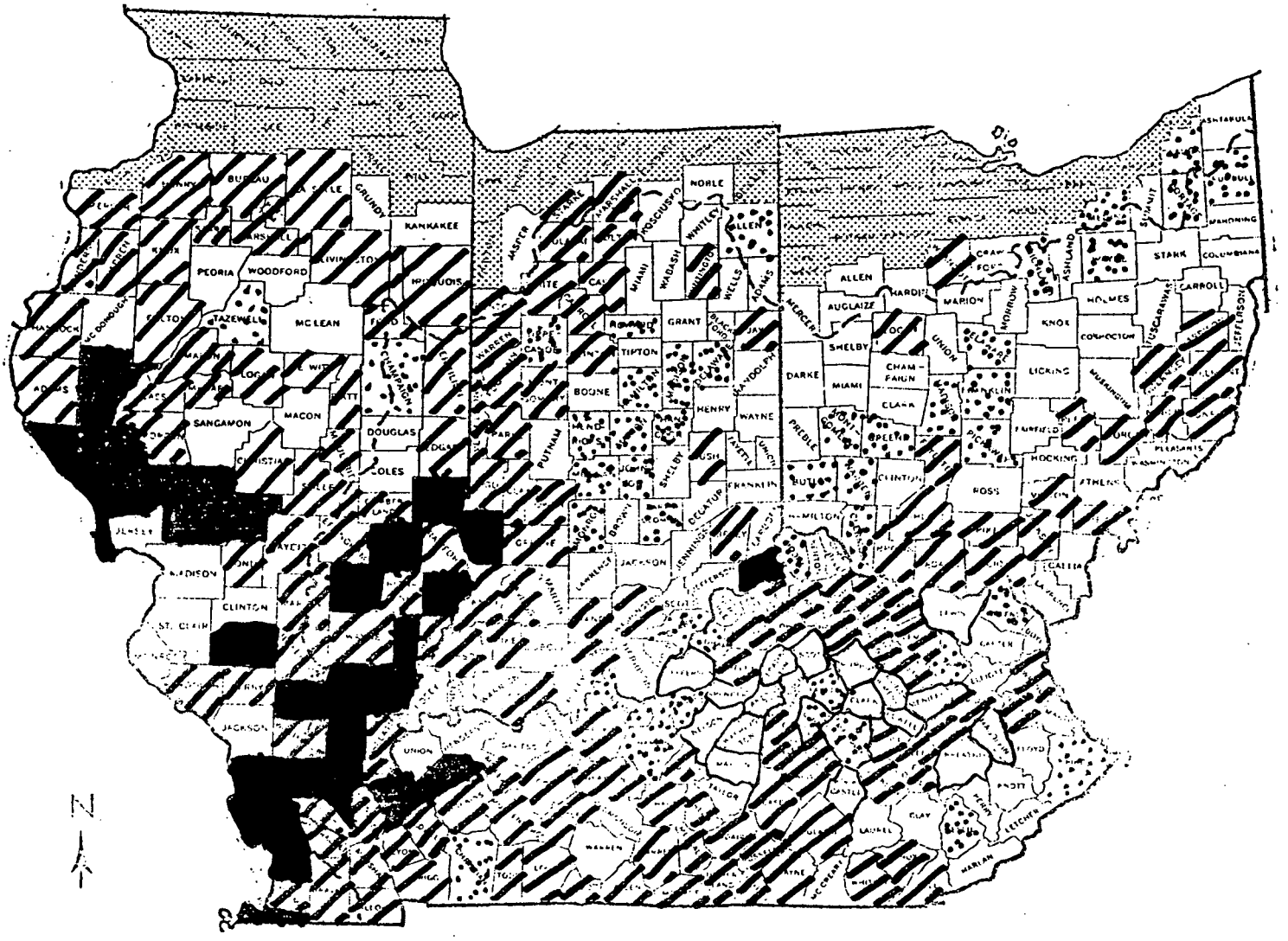
SOURCE: 1970 Census of Population - Table 35



MAP III-D-35

PERCENTAGE OF POPULATION 65 OR OLDER, 1970

SOURCE: City County Data Book - Table 2, Item 14



Less than 9.0

9.0 - 11.9

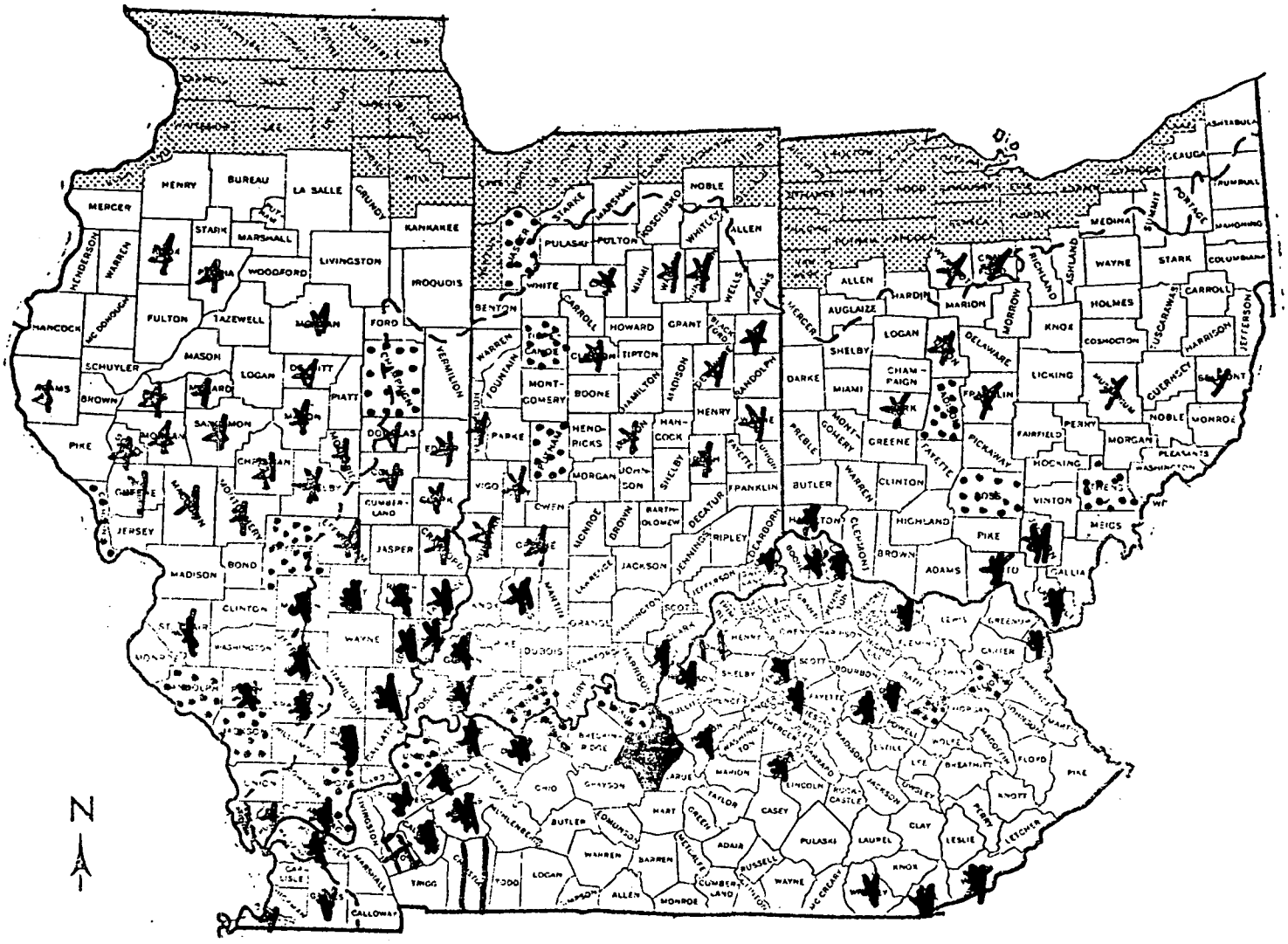
12.0 - 15.9

16.0 or more

(State percentages: Illinois - 9.9, Indiana - 9.5,
Kentucky - 10.5, Ohio - 9.4)

MAP III-D-36

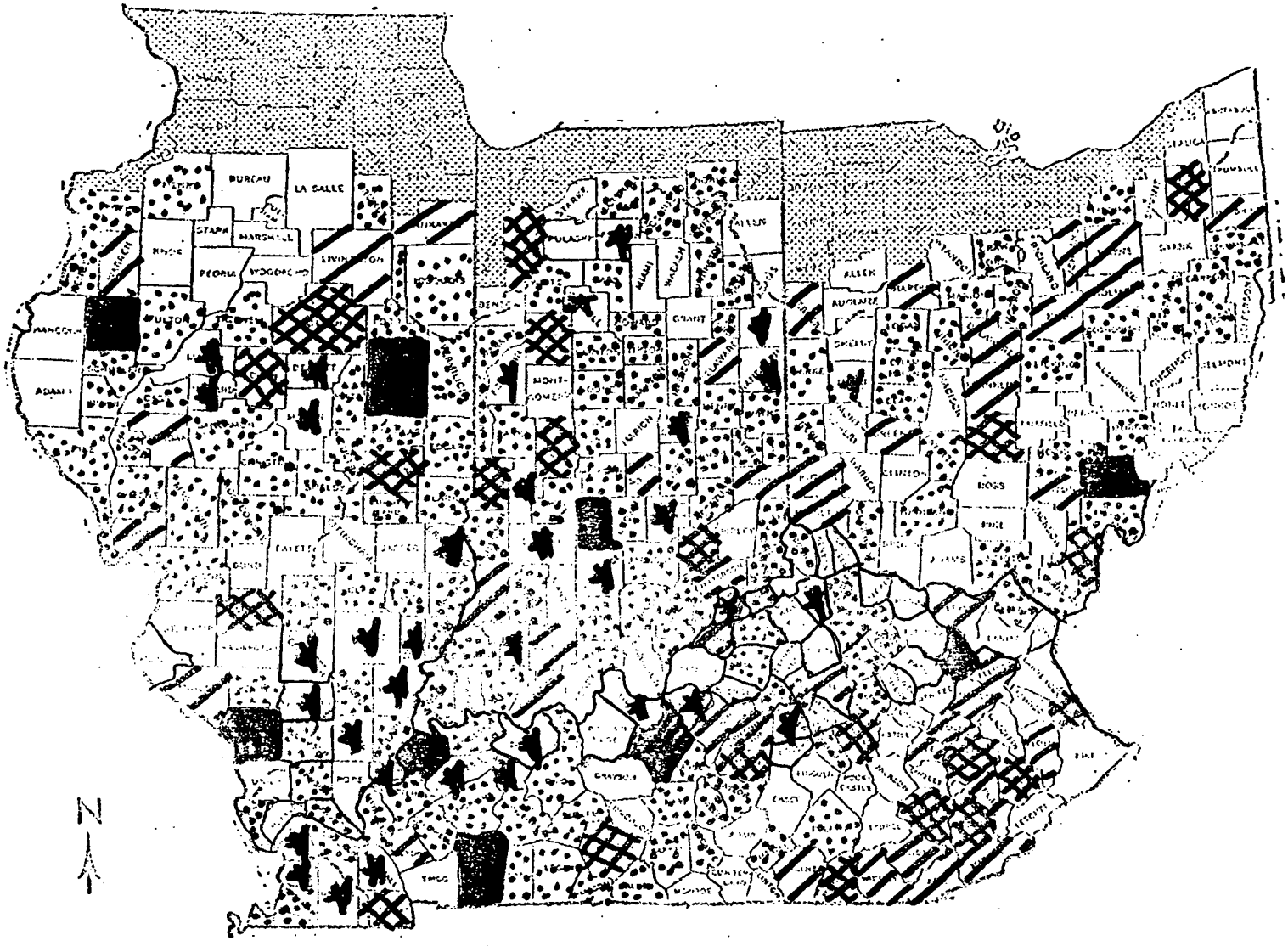
MALES AS A PERCENTAGE OF POPULATION 18 OR OVER
SOURCE: 1970 Census of Population - Table 16



MAP III-D-37

SINGLE MEN AS PERCENTAGE OF MALE POPULATION 14 OR OLDER

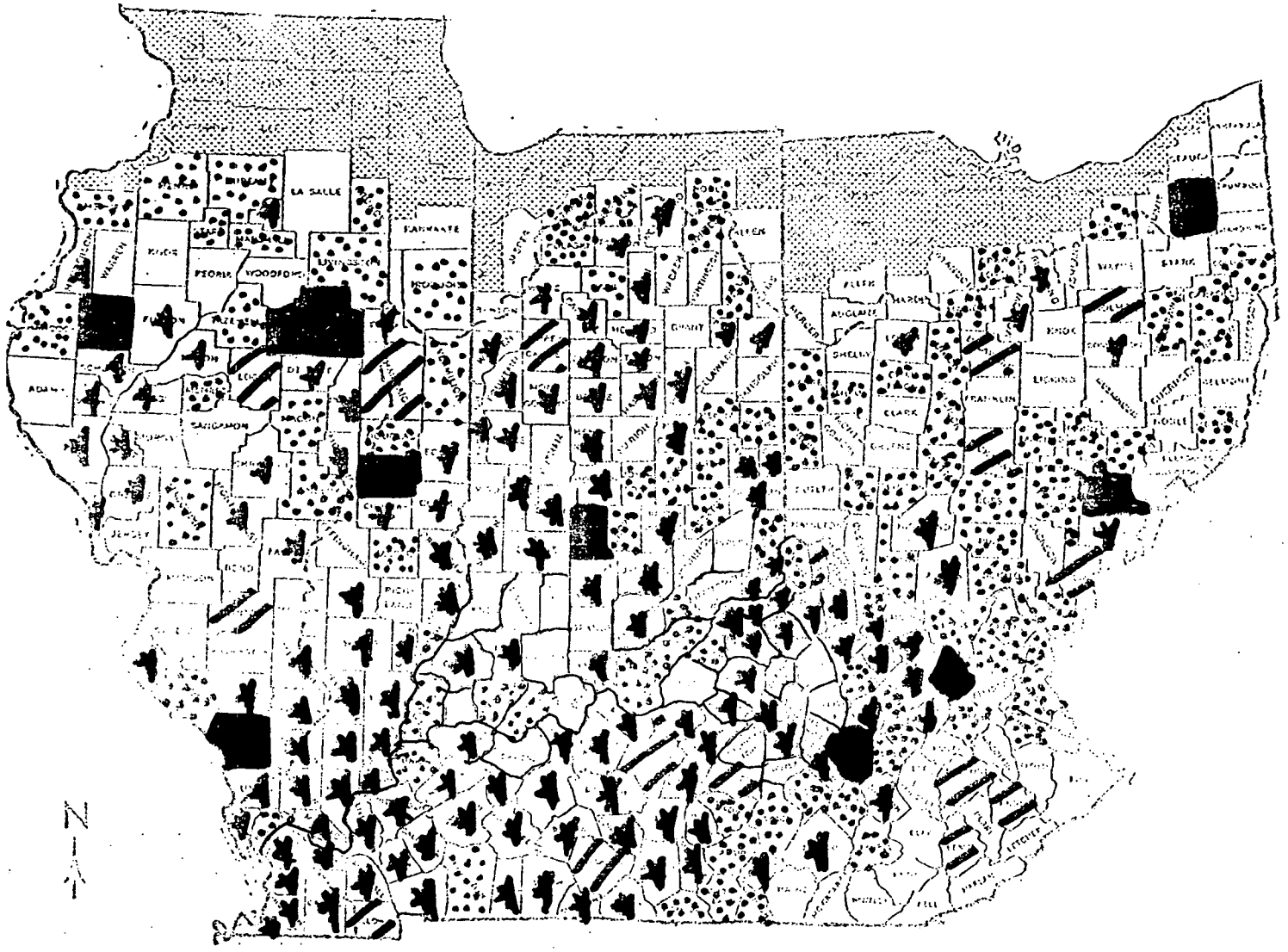
SOURCE: 1970 Census of Population - Table 37


BUREAU
LA SALLE
PEORIA
FULTON
KNOX
HENRY
WARREN
MERCER
ROCK ISLAND
HANCOCK
ADAMS
SCHUYLER
BROWN
CASS
MORGAN
SCOTT
CALHOUN
GREENE
JERSEY
MACOUPIN
MONTGOMERY
CHRISTIAN
SHELBY
MACON
PIATT
CHAMPAIGN
VERMILION
EDGAR
CLARK
CUMBERLAND
COLES
DOUGLAS
EDGAR
CLARK
CRAWFORD
CLAY
RICHLAND
LAWRENCE
EFFINGHAM
FAYETTE
JASPER
CLAY
WAYNE
EDWARDS
WABASH
WHITE
HAMILTON
FRANKLIN
JEFFERSON
WASHINGTON
RANDOLPH
PERRY
JACKSON
UNION
ALEXANDER
PULASKI
MASSAC
POPE
HARDIN
GALLATIN
WILLIAMSON
SALINE
GRUNDY
KENDALL
KANE
DEKALB
LEE
OGLE
WINNEBAGO
BOONE
MCHENRY
LAKE
DUPAGE
COOK
WILL
KANKAKEE
IROQUOIS
FORD
LIVINGSTON
MCLEAN
DEWITT
LOGAN
MASON
TAZEWELL
WOODFORD
MARSHALL
STARK
PUTNAM
BUREAU
LA SALLE
HENRY
STARK
MARSHALL
PUTNAM
BUREAU
LA SALLE
KNOX
HENRY
STARK
MERCER
ROCK ISLAND
WARREN
HENDERSON
KNOX
GALESBURG
PEORIA
TAZEWELL
WOODFORD
LIVINGSTON
MCLEAN
FULTON
SCHUYLER
BROWN
CASS
MORGAN
SCOTT
CALHOUN
GREENE
JERSEY
MACOUPIN
MONTGOMERY
CHRISTIAN
SHELBY
MACON
PIATT
CHAMPAIGN
VERMILION
EDGAR
CLARK
CUMBERLAND
COLES
DOUGLAS
EDGAR
CLARK
CRAWFORD
CLAY
RICHLAND
LAWRENCE
EFFINGHAM
FAYETTE
JASPER
CLAY
WAYNE
EDWARDS
WABASH
WHITE
HAMILTON
FRANKLIN
JEFFERSON
WASHINGTON
RANDOLPH
PERRY
JACKSON
UNION
ALEXANDER
PULASKI
MASSAC
POPE
HARDIN
GALLATIN
WILLIAMSON
SALINE
GRUNDY
KENDALL
KANE
DEKALB
LEE
OGLE
WINNEBAGO
BOONE
MCHENRY
LAKE
DUPAGE
COOK
WILL
KANKAKEE
IROQUOIS
FORD
DEWITT
LOGAN
MASON
PIKE
ADAMS
HANCOCK

MAP III-D-38

SINGLE WOMEN AS PERCENTAGE OF FEMALE POPULATION 14 OR OLDER

SOURCE: 1970 Census of Population - Table 37



Less than 18.0

18.0 - 19.9

20.0 - 24.9

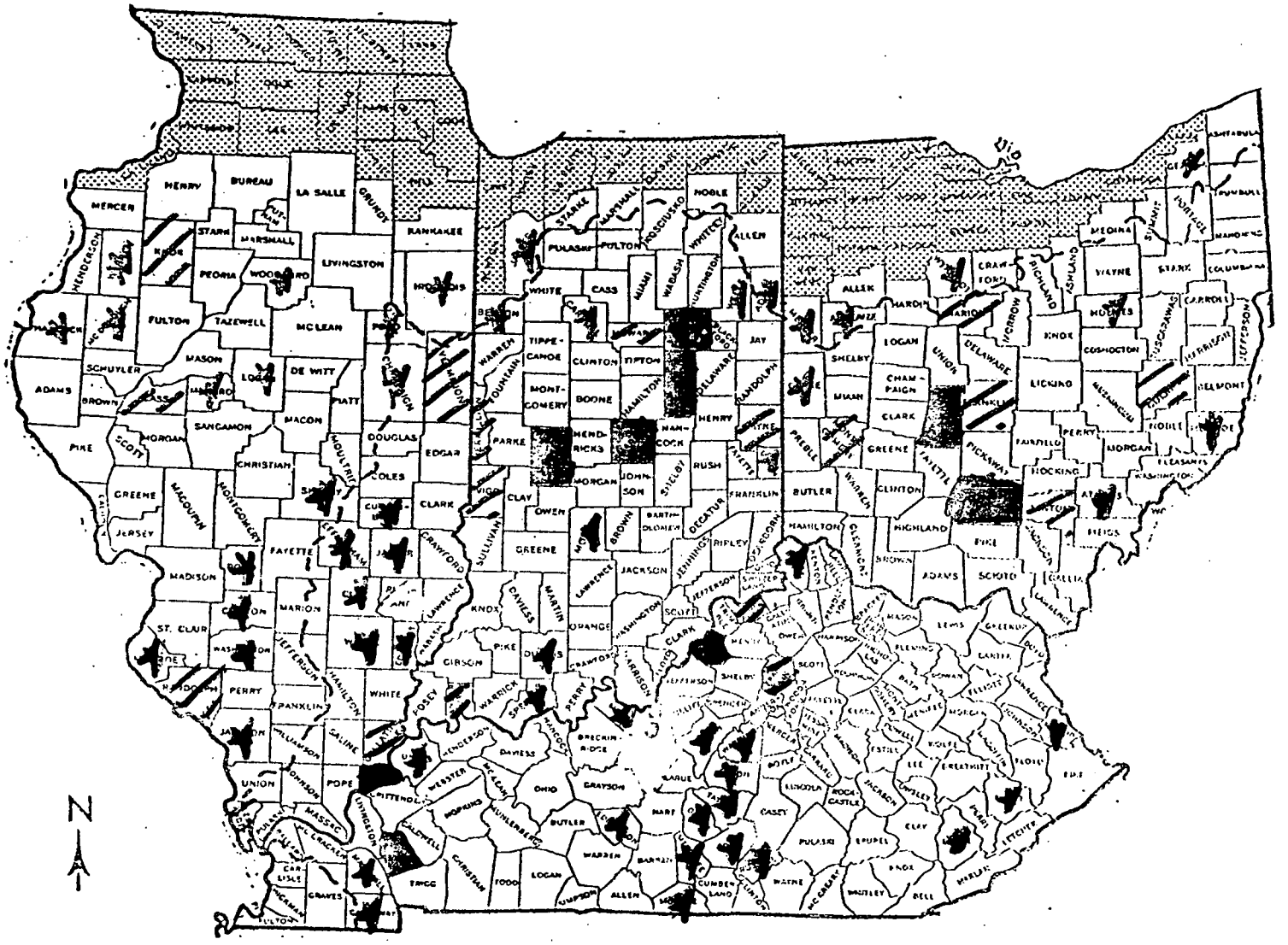
25.0 - 29.9

30.0 or more

MAP III-D-39

DIVORCED MEN AS PERCENTAGE OF MALES 14 OR OVER

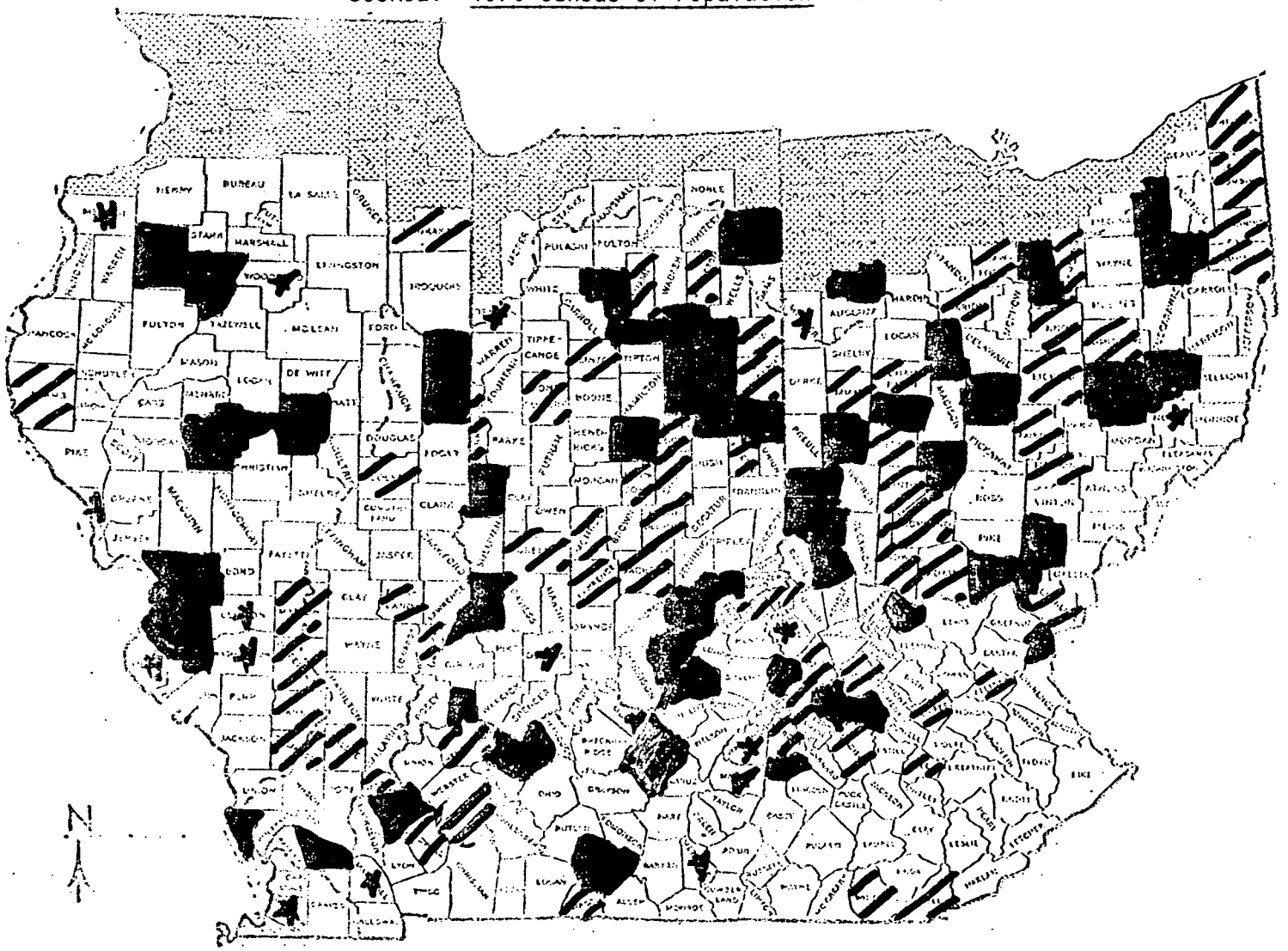
SOURCE: 1970 Census of Population - Table 37



MAP III-D-40

DIVORCED WOMEN AS PERCENTAGE OF FEMALES 14 OR OLDER

SOURCE: 1970 Census of Population - Table 37



Less than 2.0

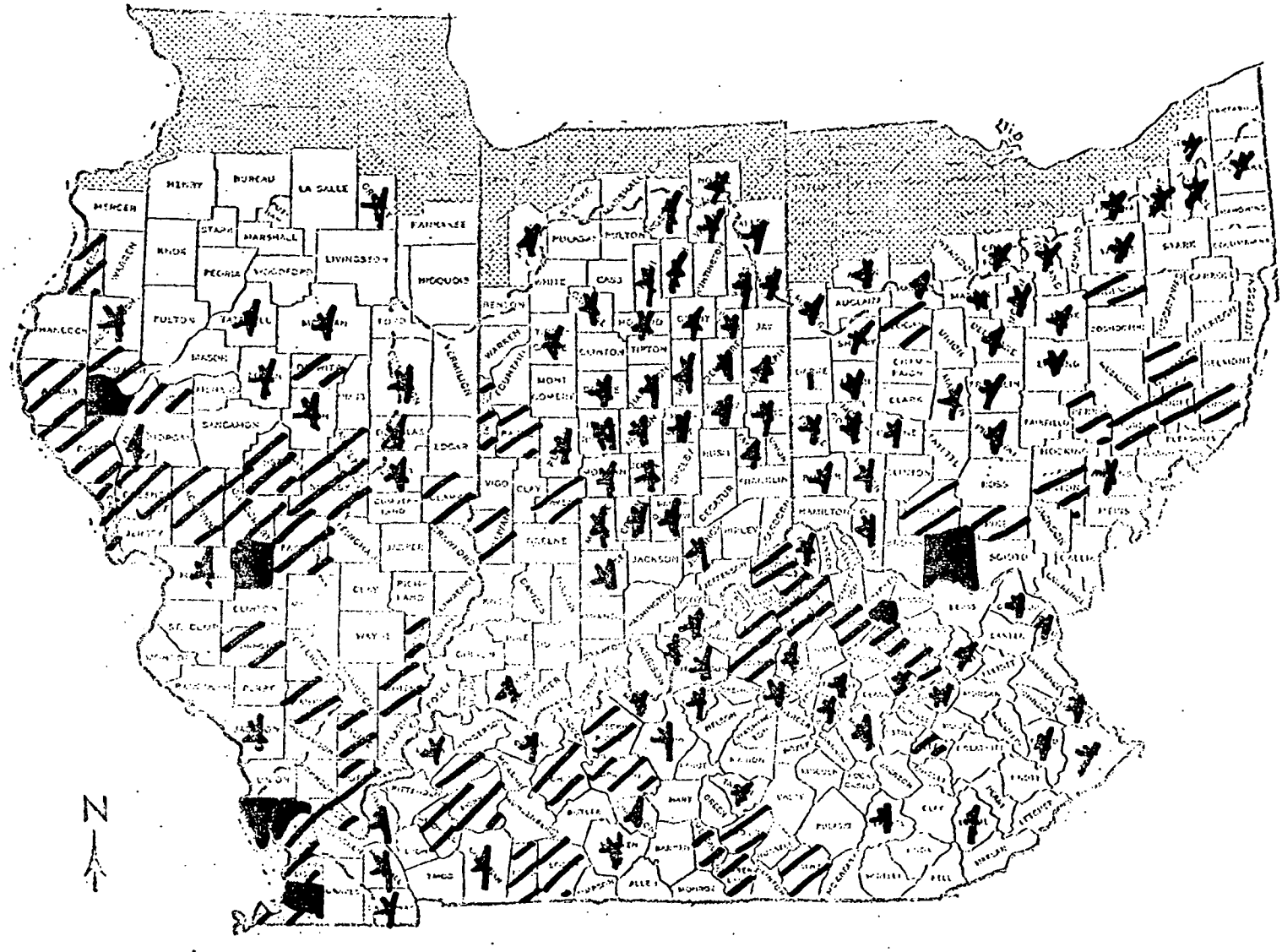
2.0 - 3.4

3.5 - 3.9

4.0 or more

MAP III-D-41

WIDOWED MEN AS PERCENTAGE OF MALES 14 OR OLDER
SOURCE: 1970 Census of Population - Table 37



Less than 3.0

3.0 - 3.9

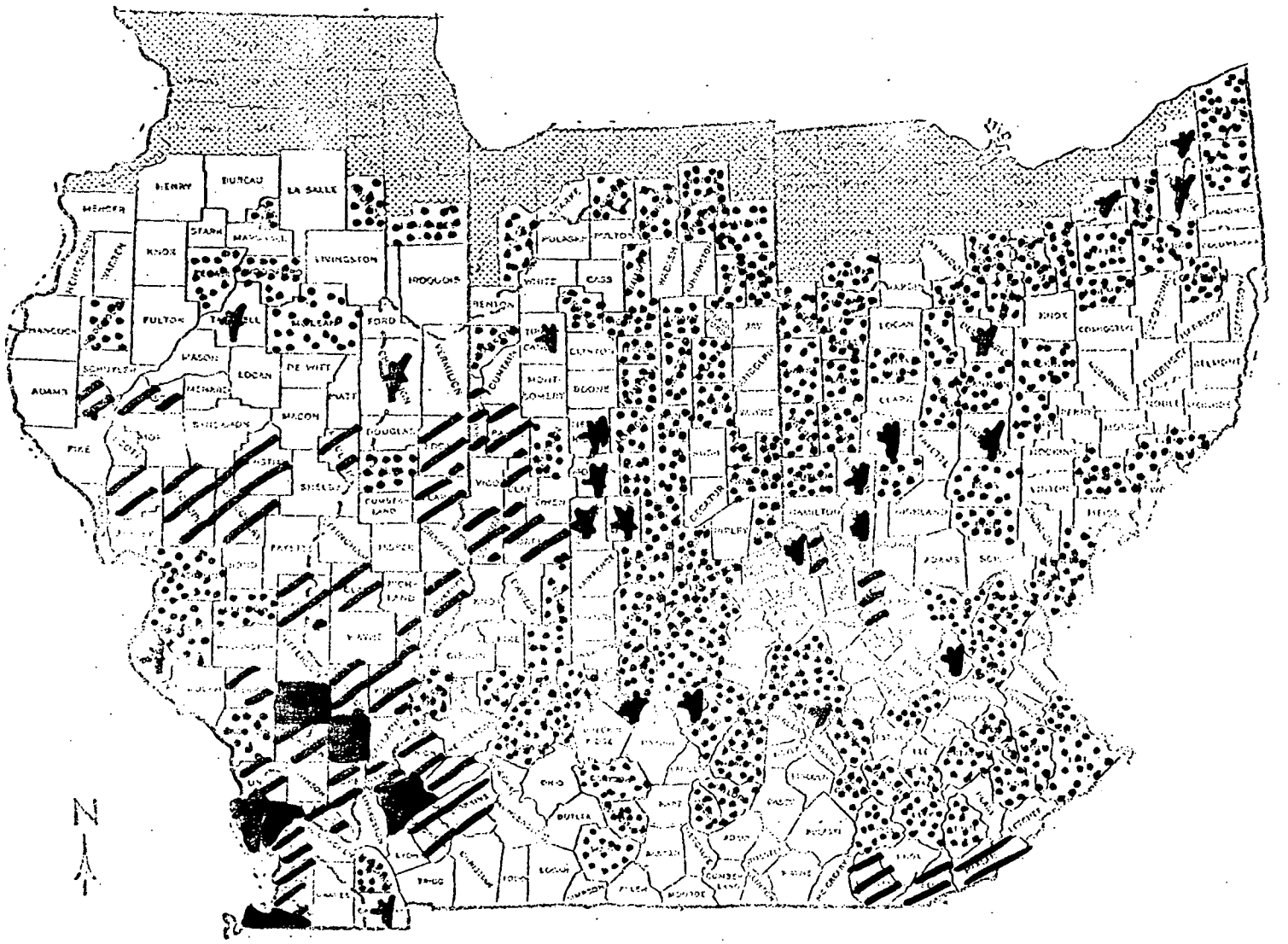
4.0 - 4.9

5.0 or more

MAP III-D-42

WIDOWED WOMEN AS PERCENTAGE OF FEMALES 14 OR OLDER

SOURCE: 1970 Census of Population - Table 37



Less than 10.0

10.0 - 12.9

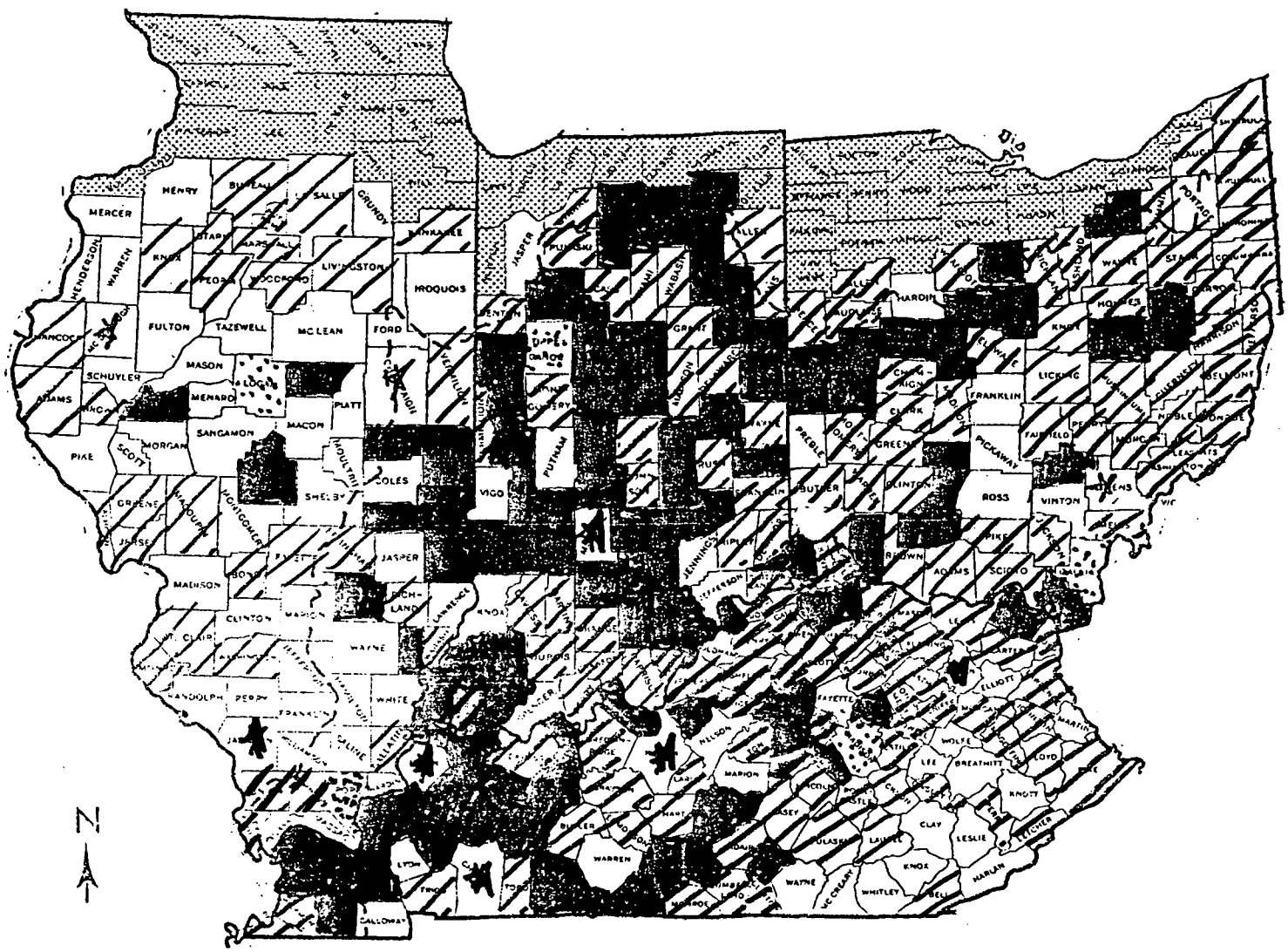
13.0 - 15.9

16.0 - 18.9

19.0 or more

MAP III-D-43

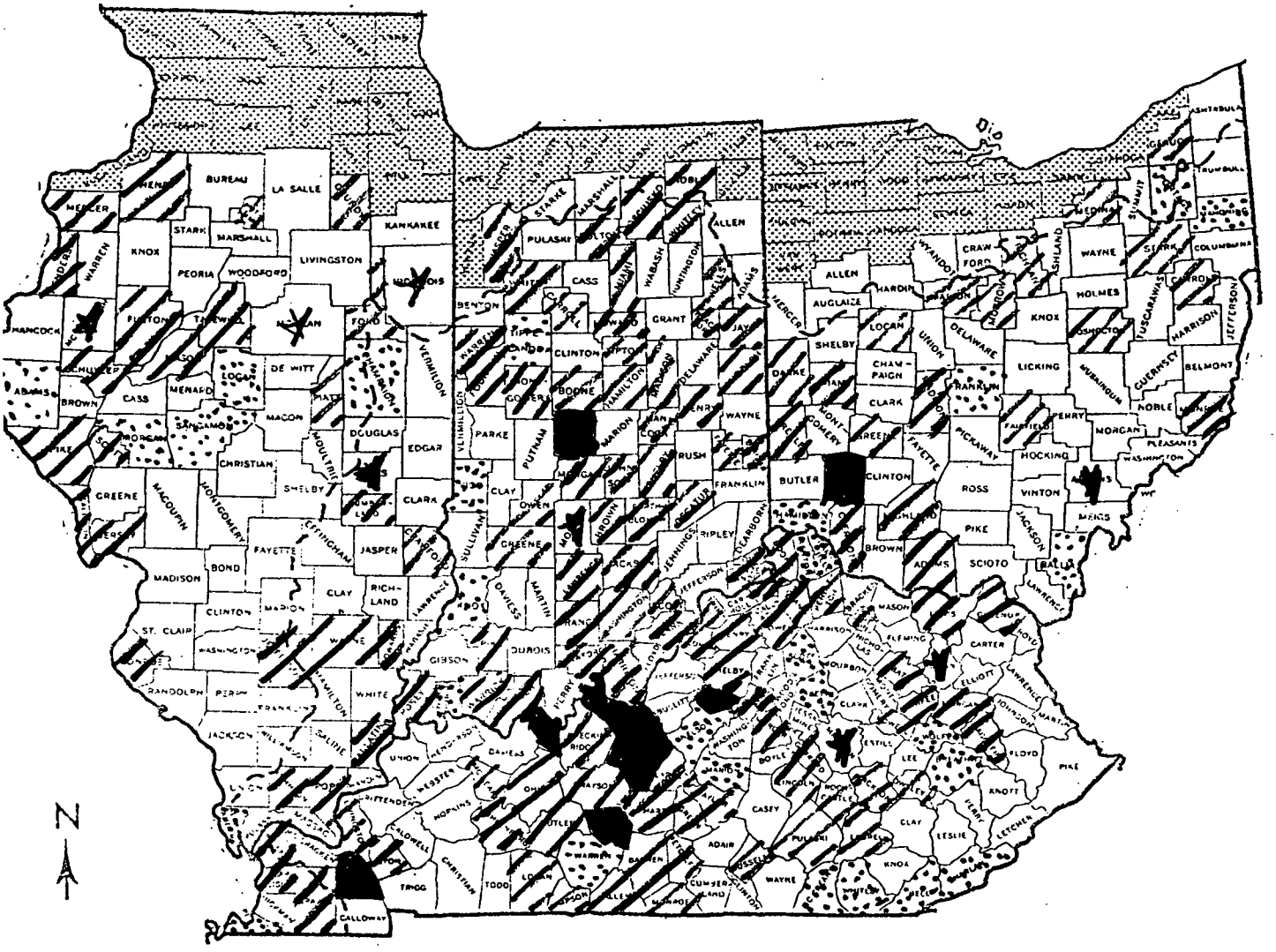
MARRIED MALES AS PERCENTAGE OF MALE POPULATION 14 OR OVER
SOURCE: 1970 Census of Population - Table 16



MAP III-D-44

MARRIED WOMEN AS A PERCENTAGE OF FEMALES 14 OR OVER

SOURCE: 1970 Census of Population - Table 16



Less than 55.0

55.0 - 59.9

60.0 - 64.9

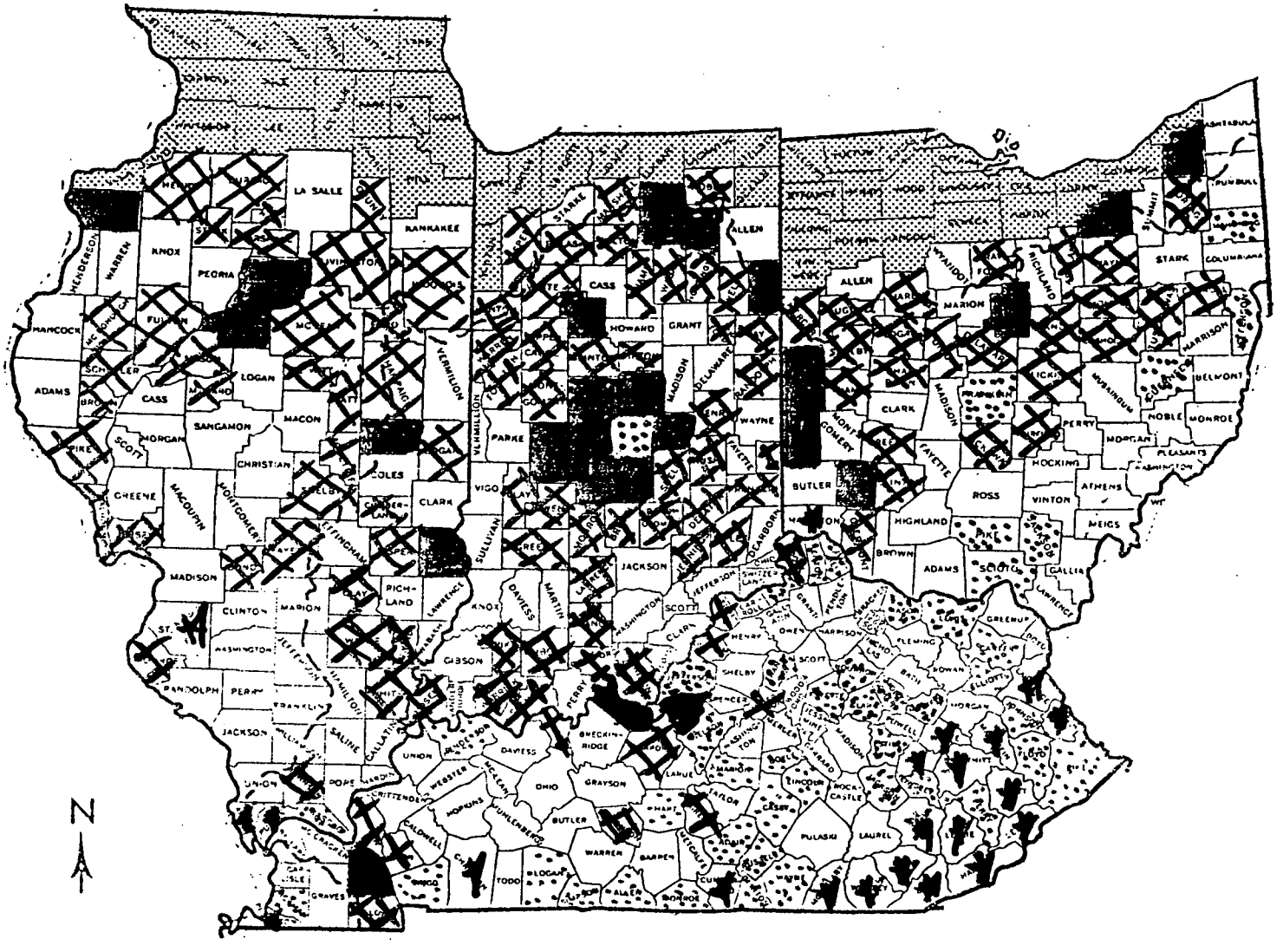
65.0 - 69.9

70.0 or more

MAP III-D-45

HUSBAND-WIFE FAMILIES AS A PERCENTAGE OF TOTAL FAMILIES

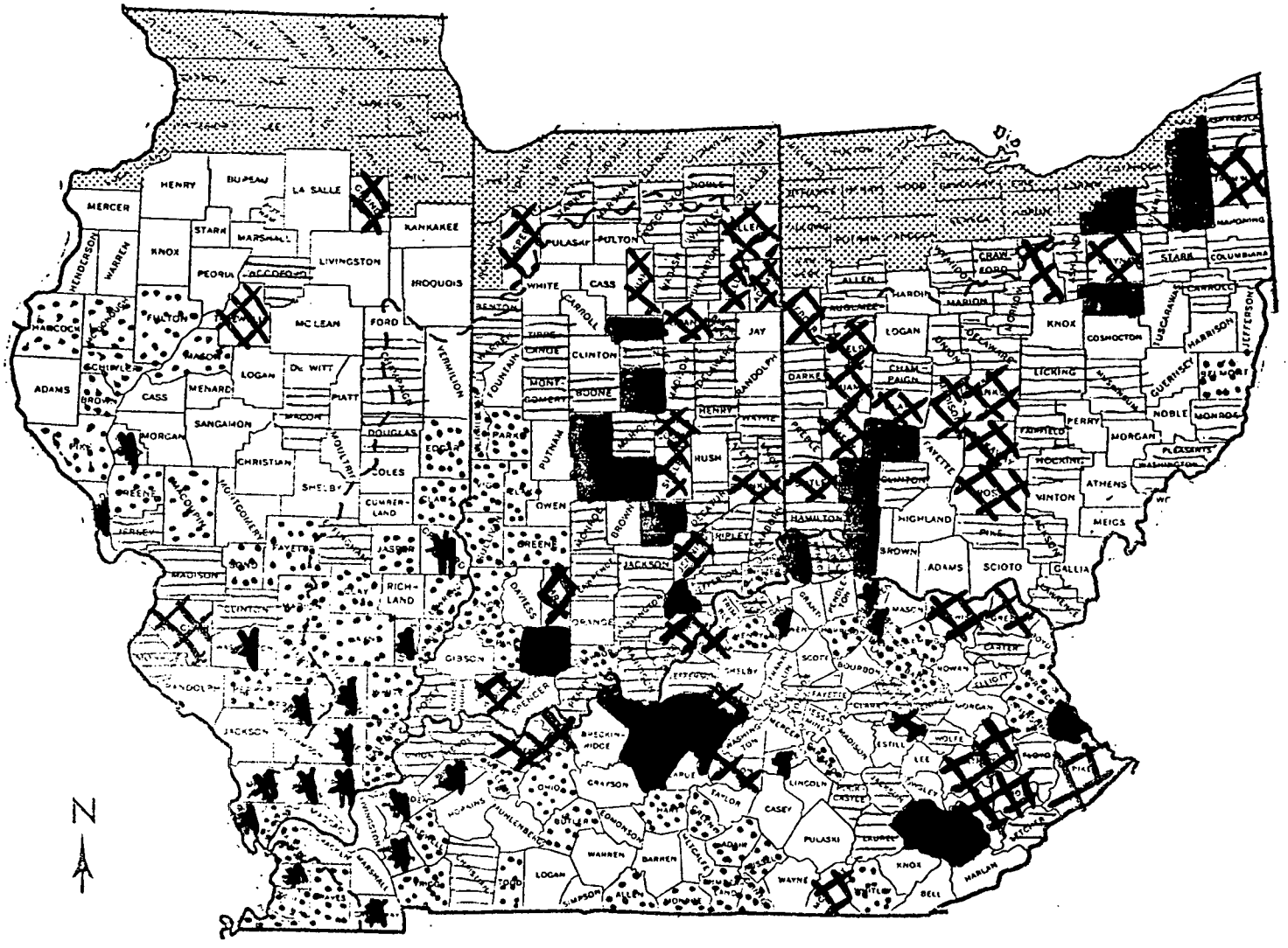
SOURCE: 1970 Census of Population - Table 36



MAP III-D-46

PERCENTAGE OF FAMILIES WITH CHILDREN UNDER 18

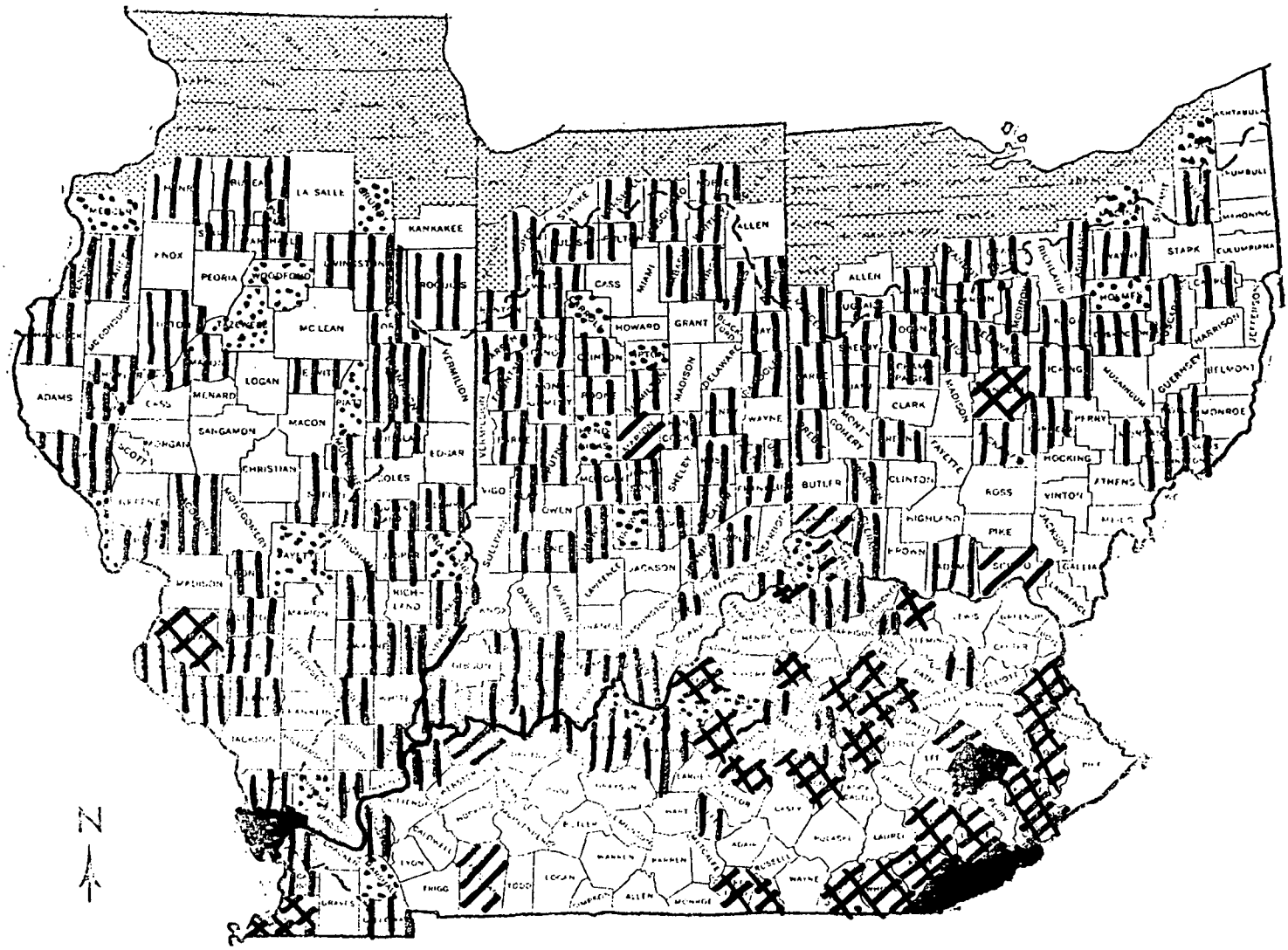
SOURCE: 1970 Census of Population - Table 36



MAP III-D-47

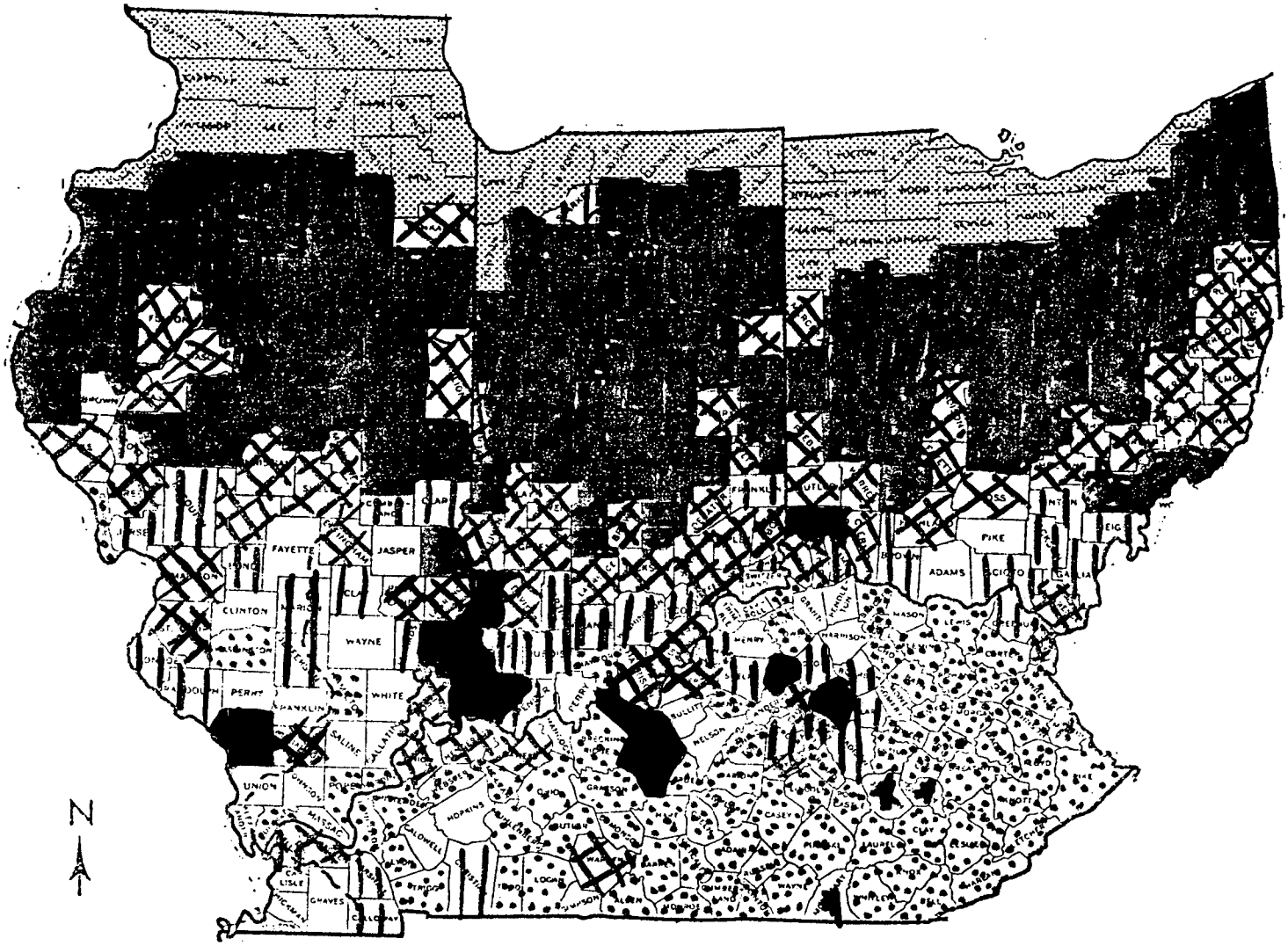
PERCENTAGE OF FAMILIES WITH A FEMALE HEAD

SOURCE: City County Data Book - Table 2, Item 51



MAP III-D-48

MEDIAN SCHOOL YEARS COMPLETED, POPULATION OVER 25
SOURCE: City County Data Book - Table 2, Item 24



Less than 8.0

8.0 - 8.9

9.0 - 9.9

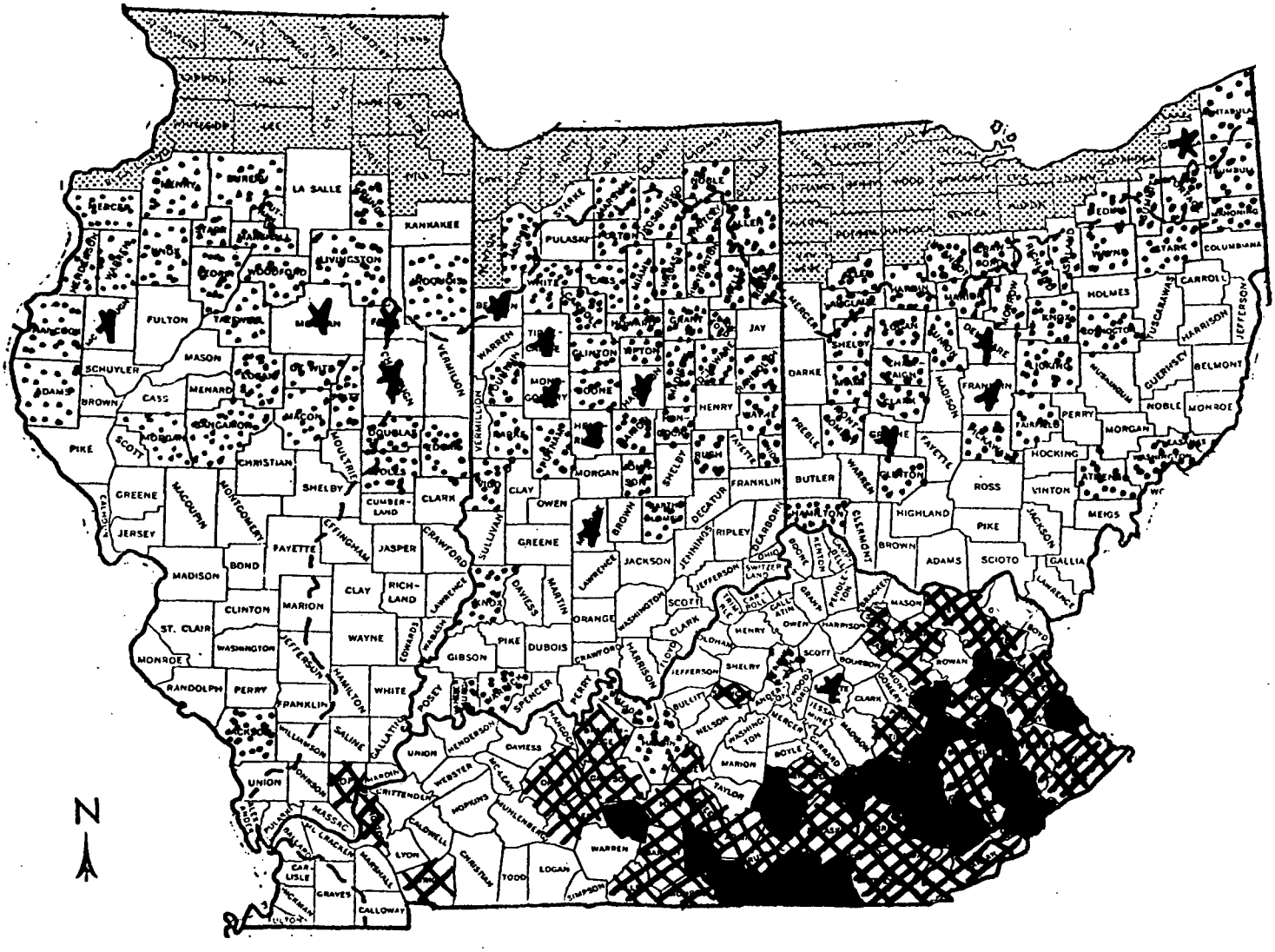
10.0 - 10.9

11.0 - 11.9

12.0 or more

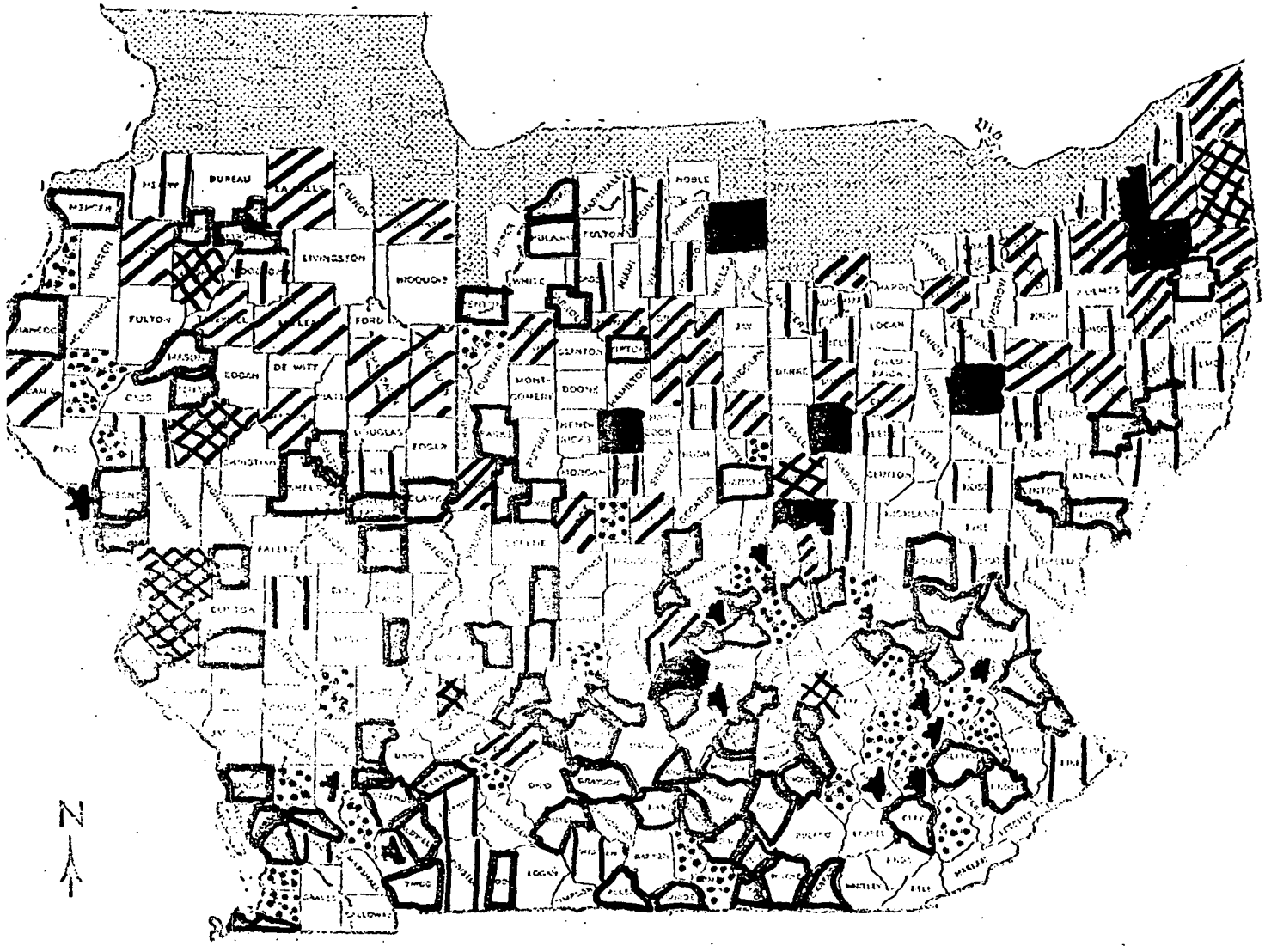
MAP III-D-49

PERCENTAGE OF PERSONS 25 OR OLDER WITH LESS THAN FOUR YEARS OF HIGH SCHOOL, 1970
SOURCE: City County Data Book - Table 2, Item 26



MAP III-D-50

PAID CIVILIAN WAGE AND SALARY EMPLOYMENT COVERED IN
COUNTY BUSINESS PATTERNS, 1973



Less than 500

500 - 999

1,000 - 2,999

3,000 - 9,999

10,000 - 19,999

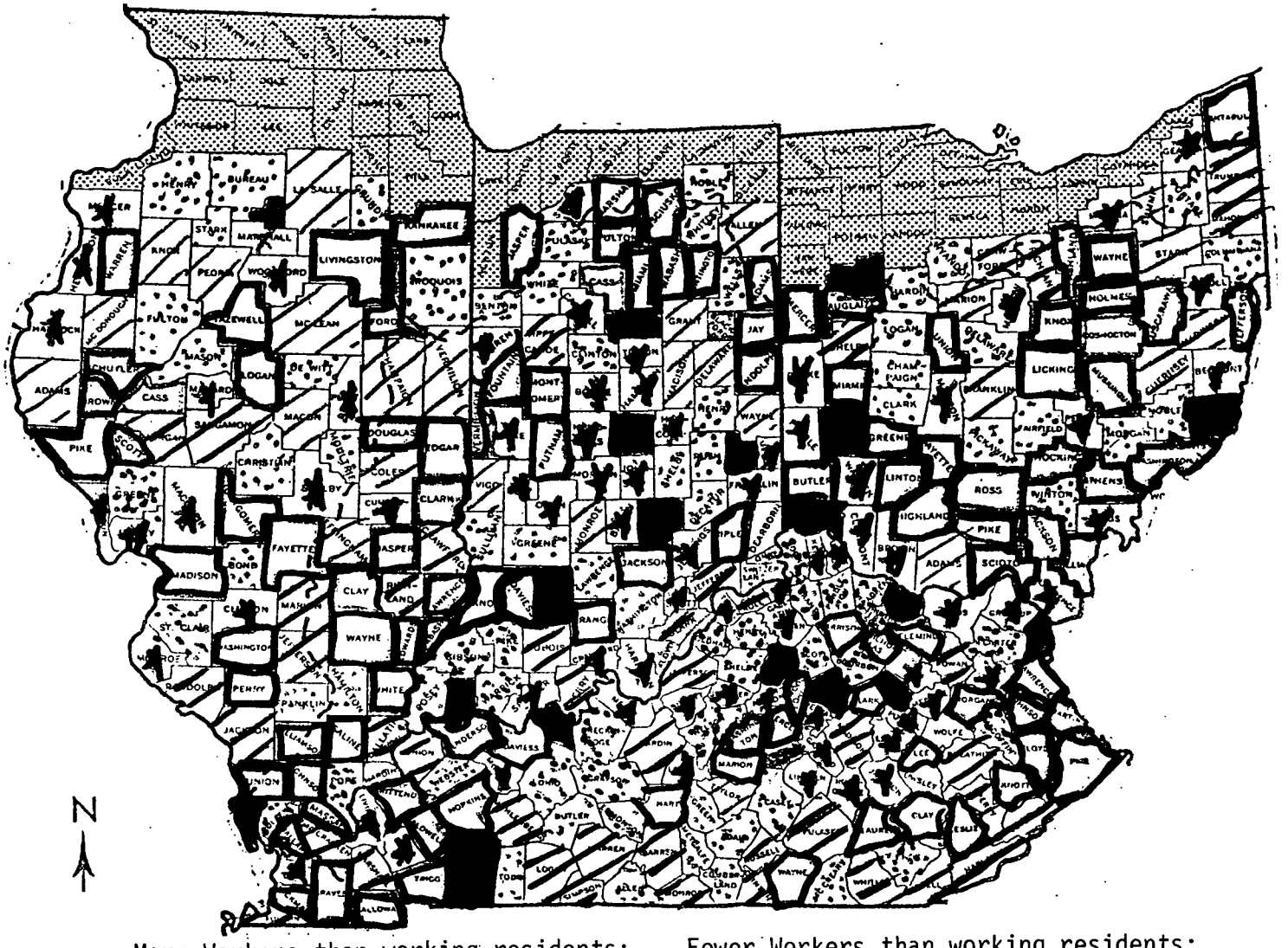
20,000 - 49,999

50,000 - 99,999

100,000 or more

MAP III-D-51

RATIO OF WORKERS WORKING IN COUNTY TO WORKERS RESIDING IN COUNTY, 1970
SOURCE: Bureau of Census - Map GE-50, No. 63



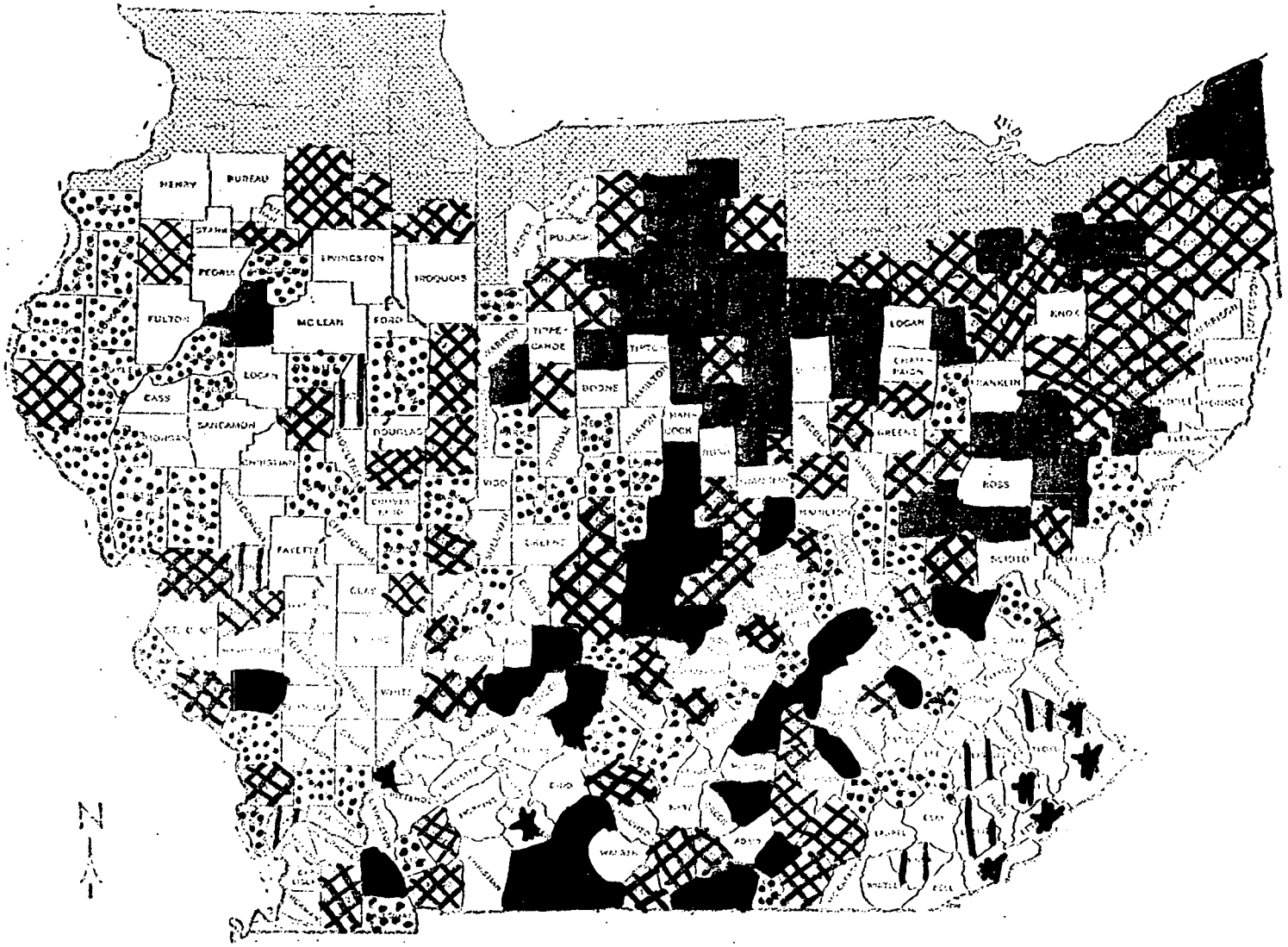
More Workers than working residents:

- 1.15 or more
- 1.00 - 1.14
- Counties without a significant volume of commuting

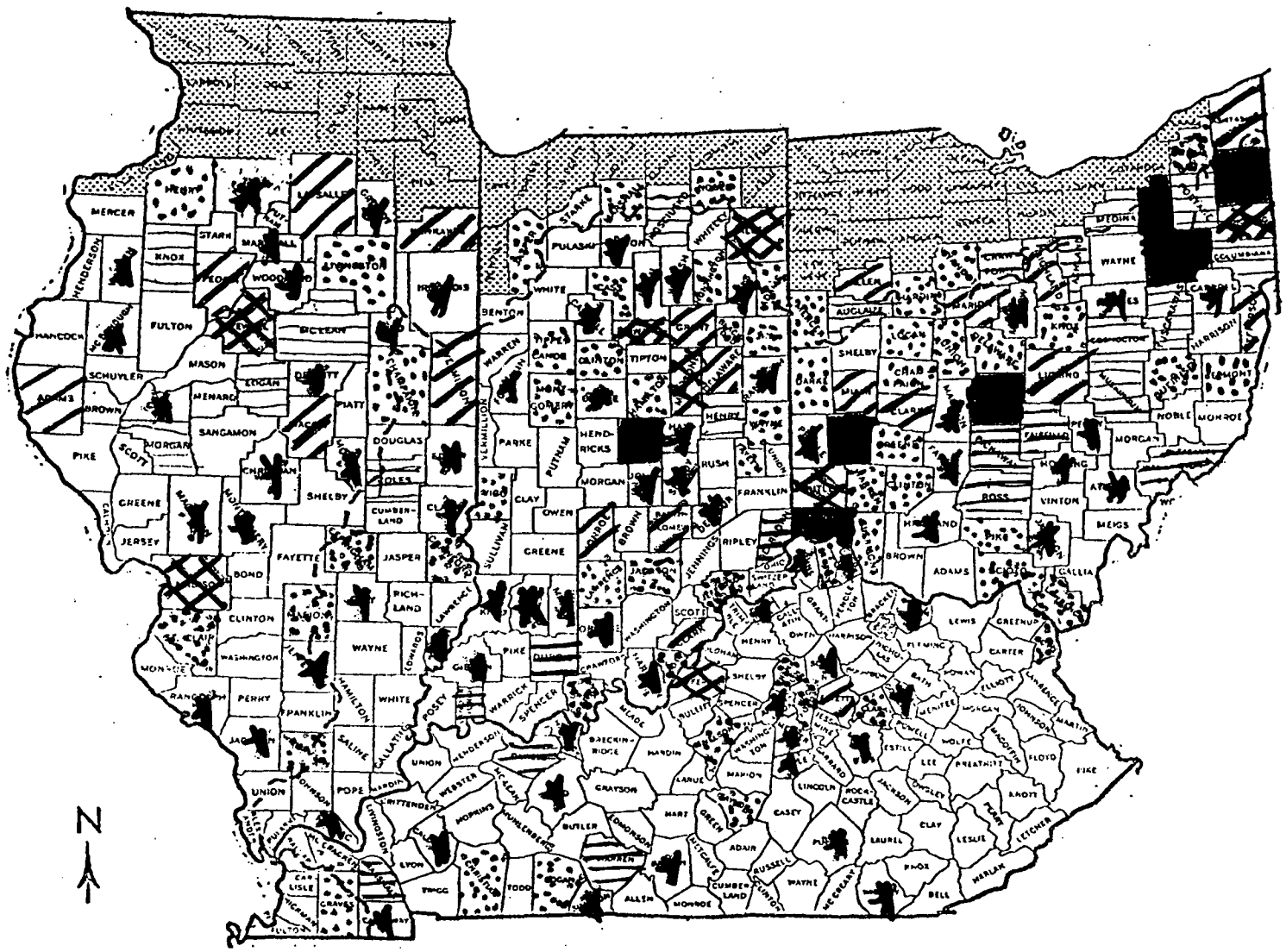
Fewer Workers than working residents:

- Less than .75
- 0.75 - 0.84
- 0.85 - 0.99

MAP III-D-52
PRIMARY ECONOMIC ACTIVITY
SOURCE: County Business Patterns, 1973 - Table 2


HENRY
BUREAU
PEORIA
LIVINGSTON
IROQUOIS
FULTON
MCLEAN
FORD
LOGAN
CASS
SANGAMON
DOUGLAS
EDGAR
CLARK
CLAY
RICHLAND
LAWRENCE
WABASH
EDWARDS
WAYNE
WHITE
GALLATIN
HAMILTON
WILLIAMSON
FRANKLIN
JACKSON
PERRY
RANDOLPH
MONROE
ST. CLAIR
CLINTON
MARION
JEFFERSON
WASHINGTON
JEFFERSON
HAMILTON
WAYNE
EDWARDS
WABASH
RICHLAND
CLAY
EFFINGHAM
FAYETTE
MONTGOMERY
CHRISTIAN
MACON
PIATT
CHAMPAIGN
VERMILION
DE WITT
MACON
MOULTRIE
COLES
CUMBERLAND
CLARK
EDGAR
DOUGLAS
SHELBY
MACON
DECATUR
CLAY
RICHLAND
JASPER
CRAWFORD

MAP III-D-53
VALUE ADDED BY MANUFACTURE, 1972 (Millions)



Less than 15.0

15.0 - 49.9

50.0 - 99.9

100.0 - 199.9

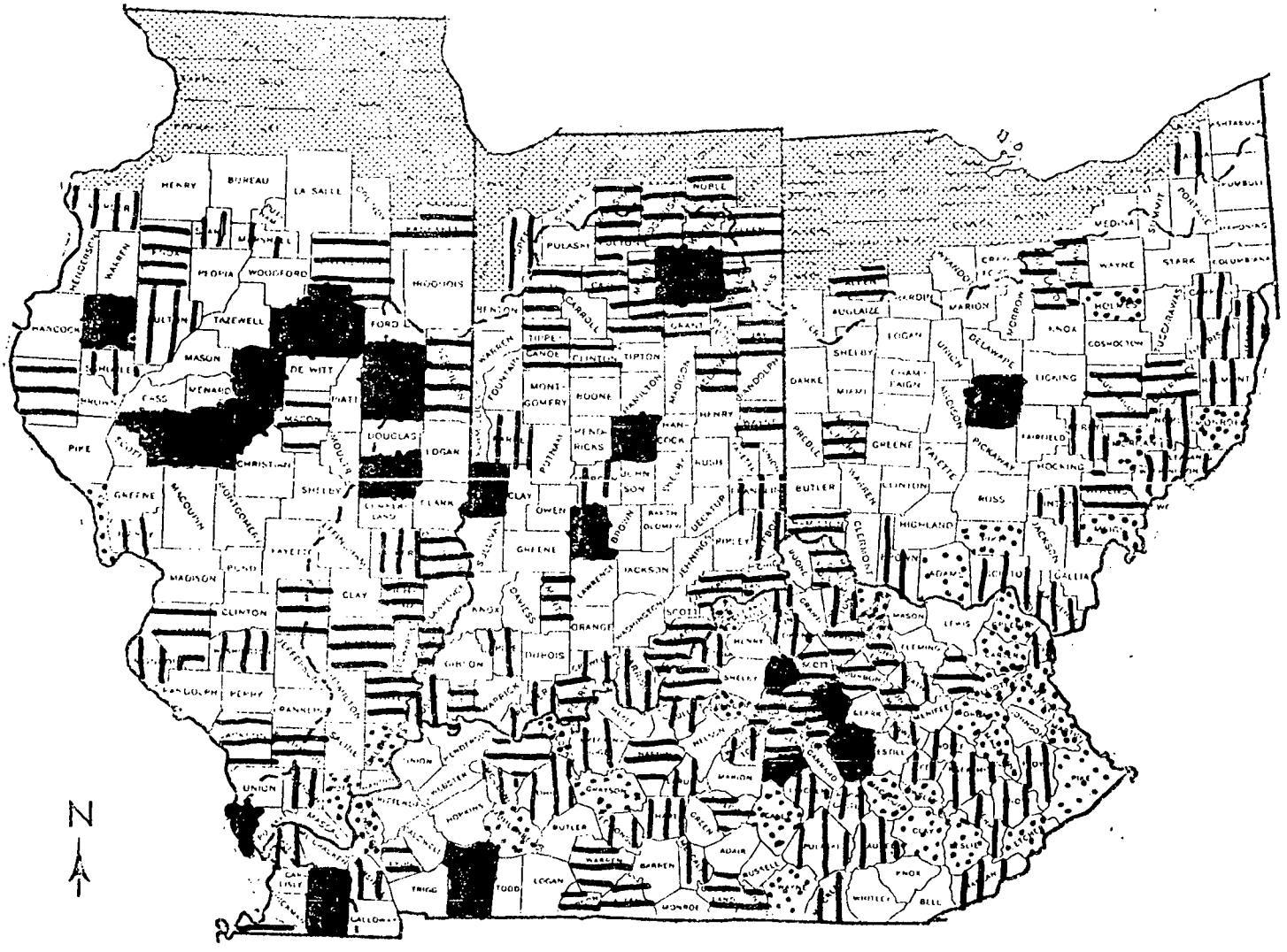
200.0 - 499.9

500.0 - 999.9

1,000.0 or more

MAP III-D-54

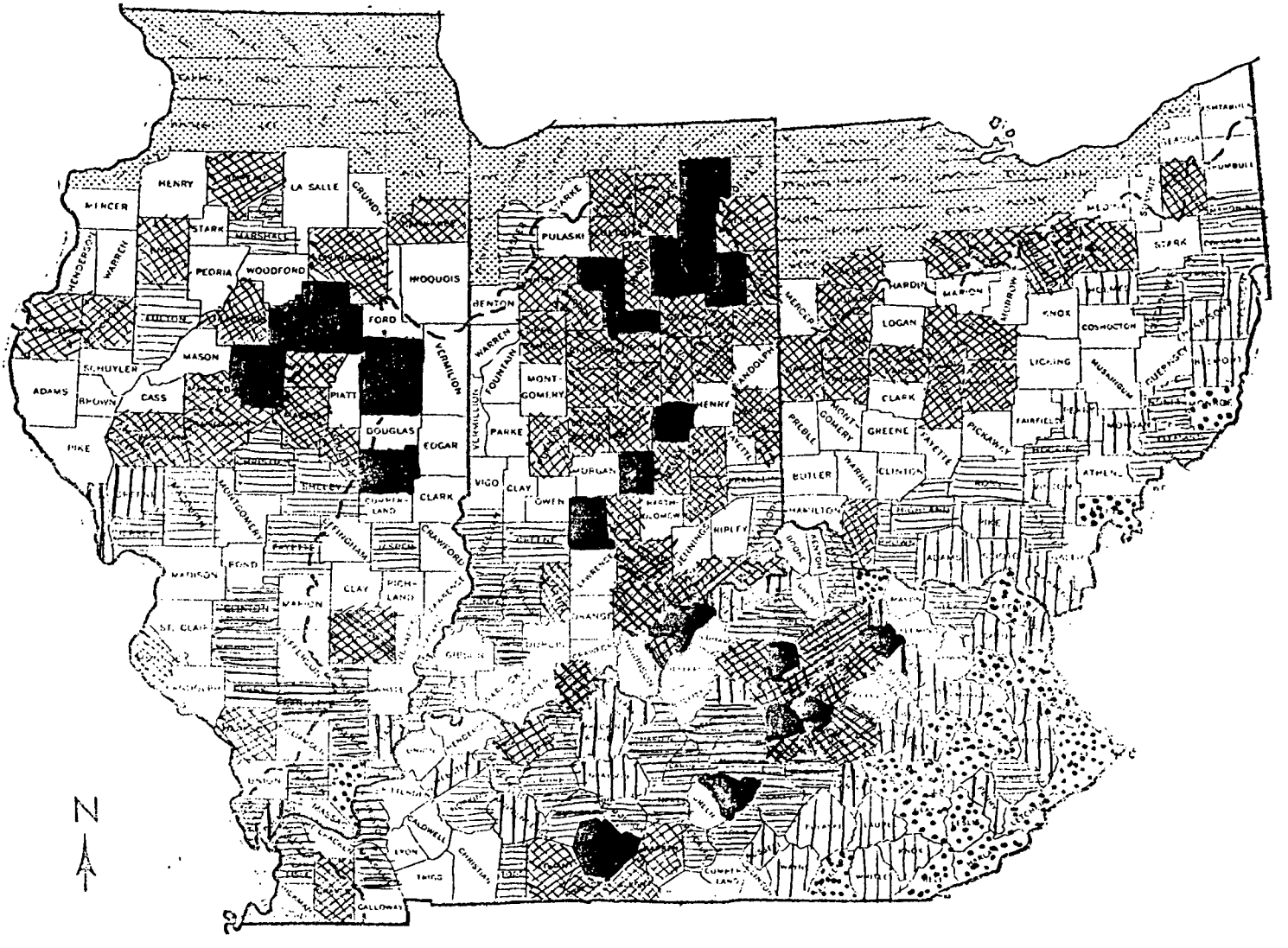
FEMALES AS A PERCENTAGE OF CIVILIAN WORK FORCE, 1970
SOURCE: City County Data Book - Table 2, Items 34 and 35



MAP III-D-55

PERCENTAGE OF FAMILIES WITH BOTH HUSBAND AND WIFE IN WORK FORCE, 1970

SOURCE: City County Data Book - Table 2, Items 50,35,36



Less than 20.0

20.0 - 24.9

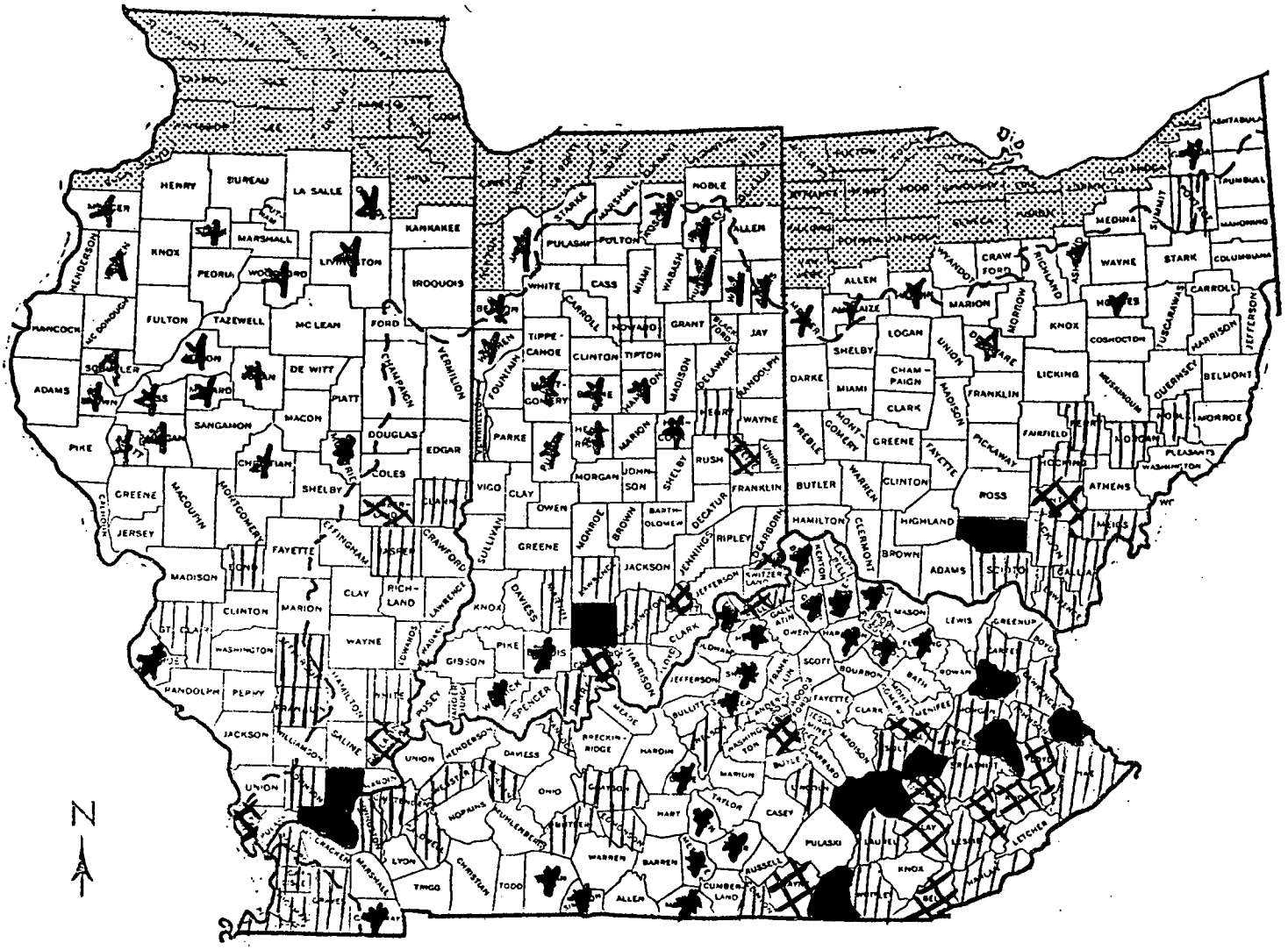
25.0 - 29.9

30.0 - 34.9

35.0 - 39.9

40.0 or more

MAP III-D-56
UNEMPLOYED AS PERCENTAGE OF CIVILIAN WORK FORCE, 1970
SOURCE: City County Data Book - Table 2, Item 37



10.0 or more

8.0 - 9.9

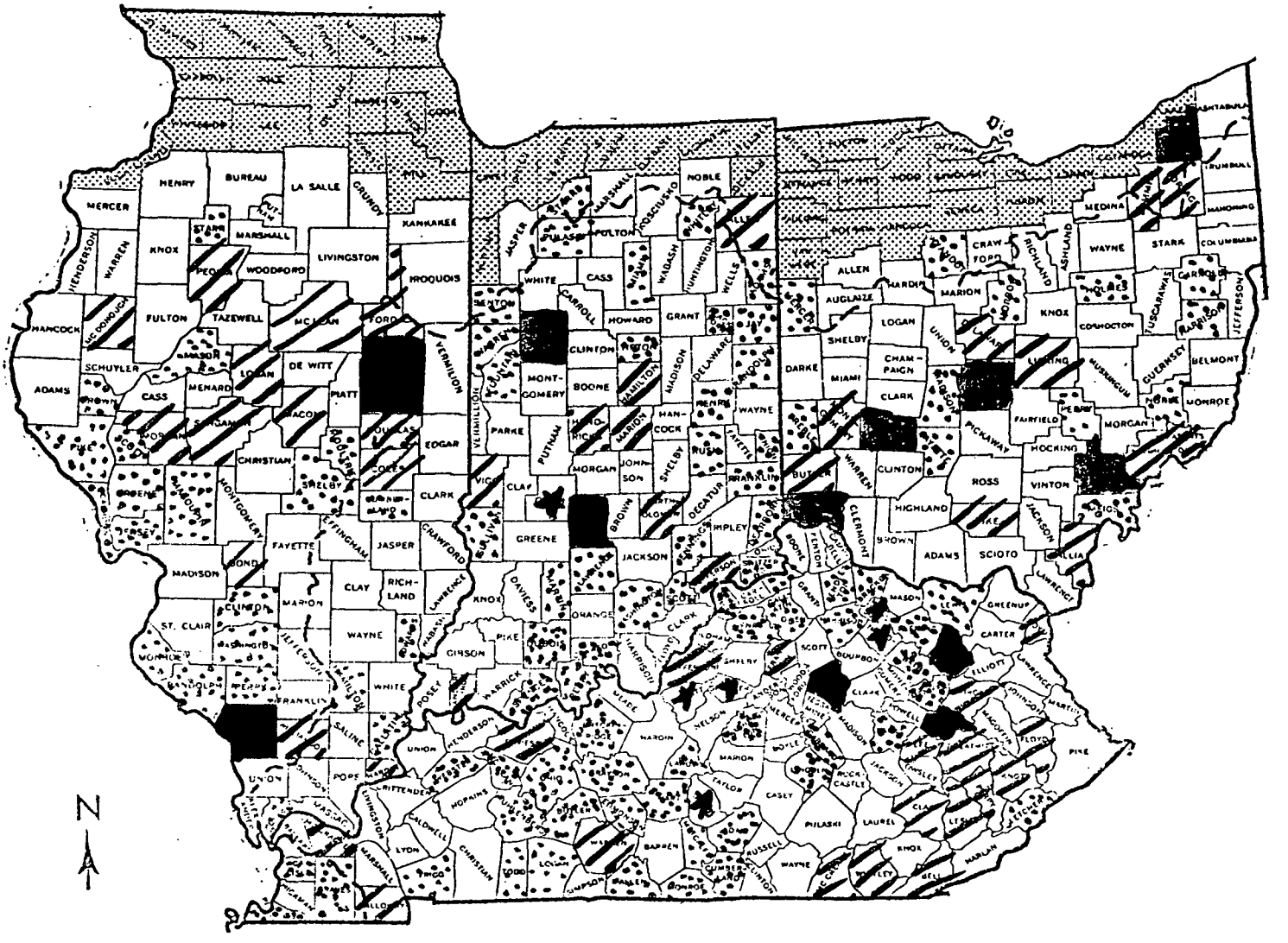
6.0 - 7.9

3.0 - 5.9

Less than 3.0

MAP III-D-57

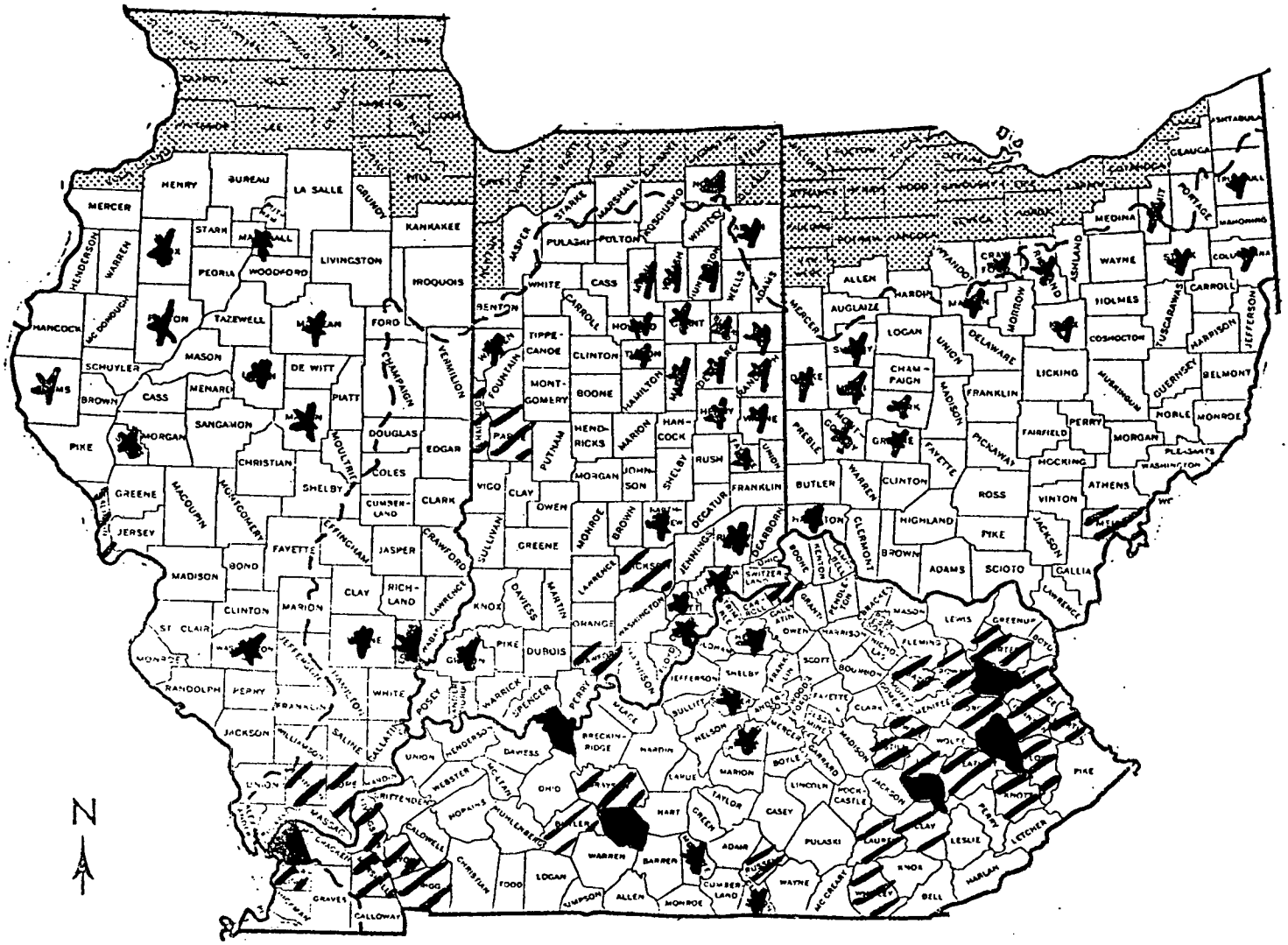
PERCENTAGE OF EMPLOYED CIVILIAN LABOR FORCE IN PROFESSIONS OR MANAGEMENT
SOURCE: City County Data Book - Table 2, Item 45



MAP III-D-58

PERCENTAGE OF EMPLOYED CIVILIAN LABOR FORCE WORKING IN CONSTRUCTION, 1970

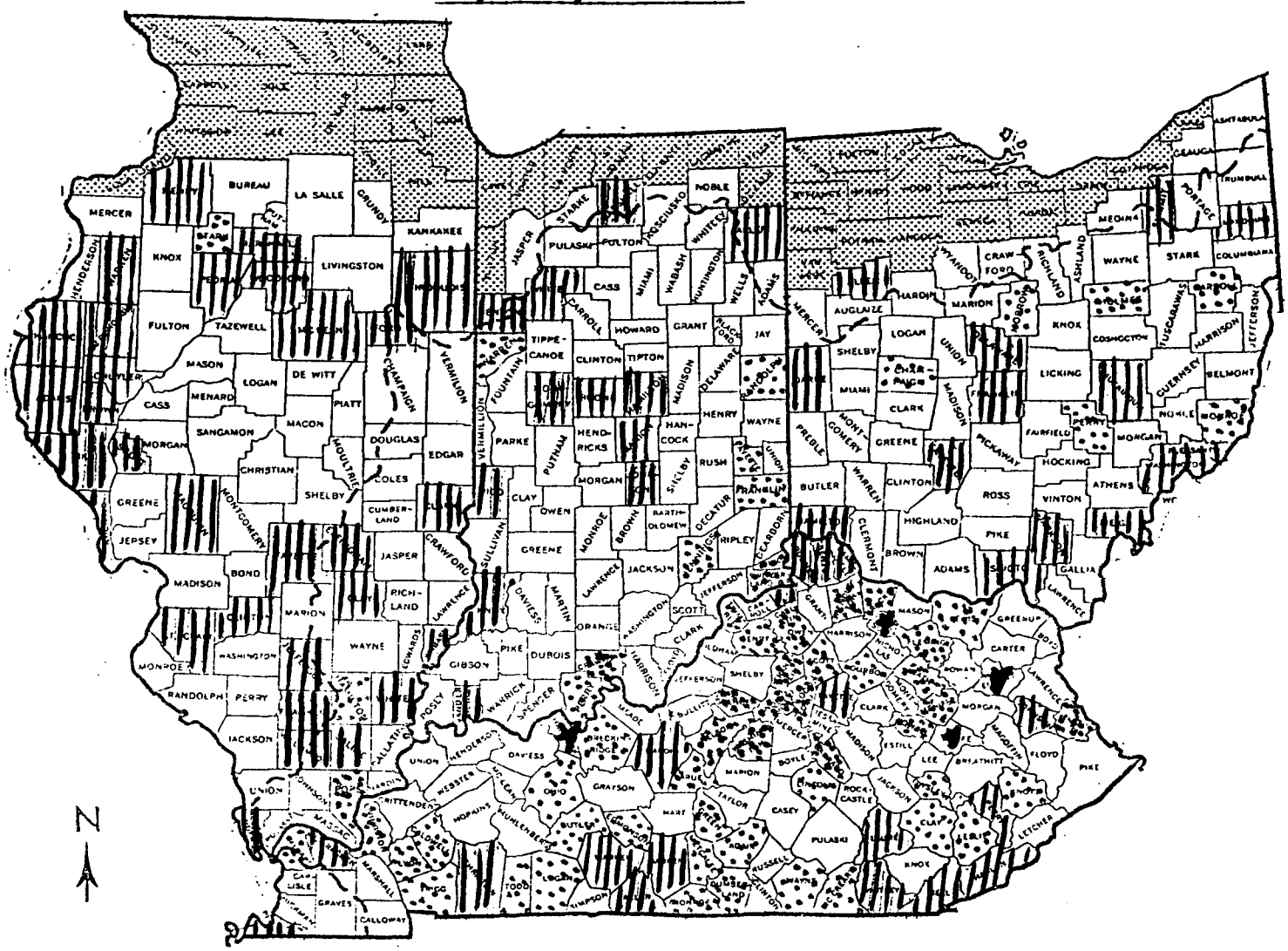
SOURCE: City County Data Book - Table 2, Item 43



MAP III-D-59

PERCENTAGE OF EMPLOYED CIVILIAN LABOR FORCE WORKING IN WHOLESALE AND RETAIL TRADE, 1970

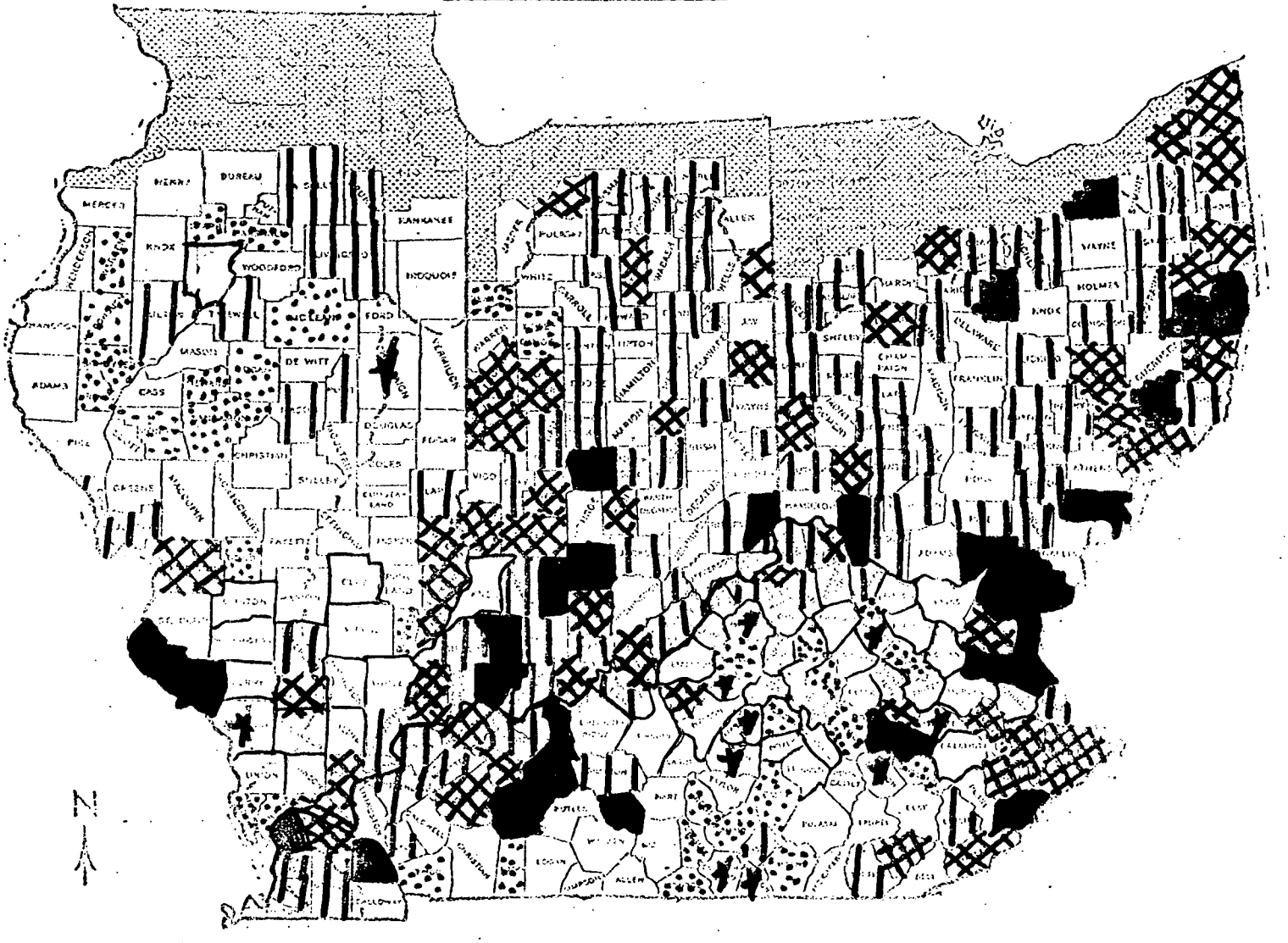
SOURCE: City County Data Book - Table 2, Item 40



MAP III-D-60

PERCENTAGE OF CIVILIAN LABOR FORCE EMPLOYED AS CRAFTSMEN OR FOREMEN, 1970

SOURCE: City County Data Book - Table 2, Item 47



Less than 10.0

10.0 - 11.9

12.0 - 14.9

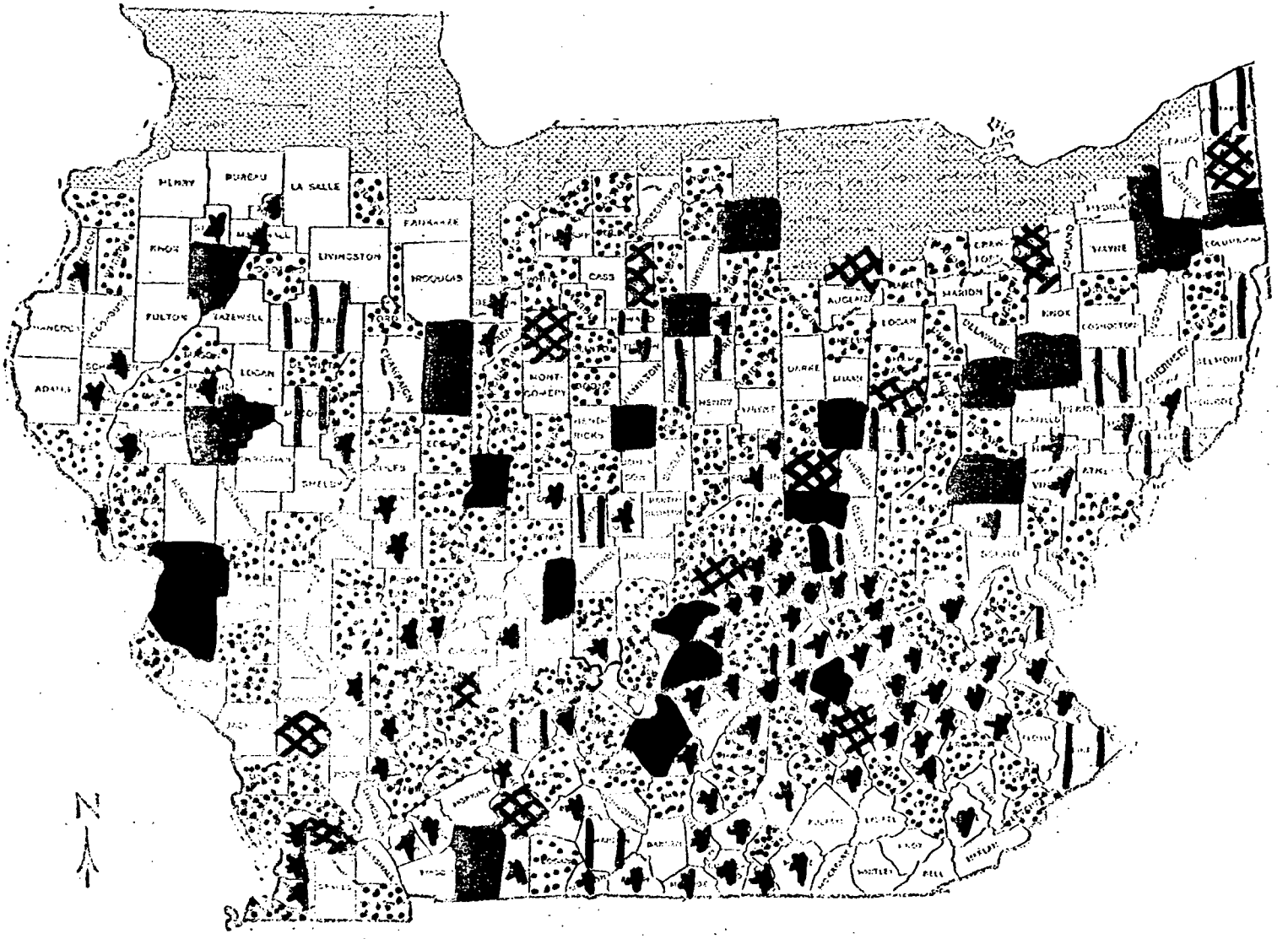
15.0 - 16.9

17.0 - 18.9

19.0 or more

MAP III-D-61

FEDERAL CIVILIAN EMPLOYMENT, DECEMBER 31, 1974



Less than 50

50 - 99

100 - 299

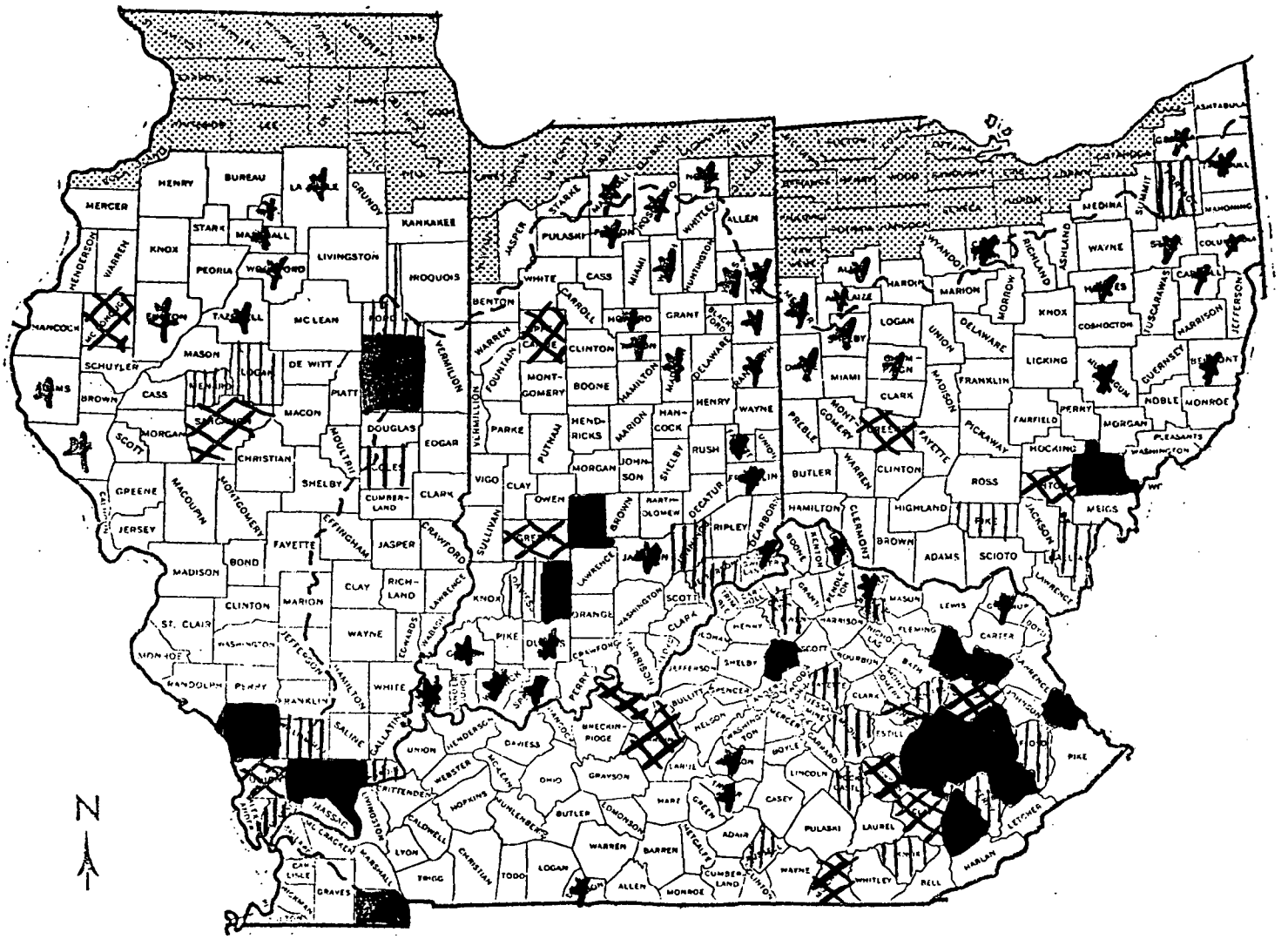
300 - 499

599 - 999

1,000 or more

MAP III-D-62

PERCENTAGE OF EMPLOYED CIVILIAN LABOR FORCE IN GOVERNMENT, 1970
SOURCE: City County Data Book - Table 2, Item 44



Less than 10.0

10.0 - 19.9

20.0 - 24.9

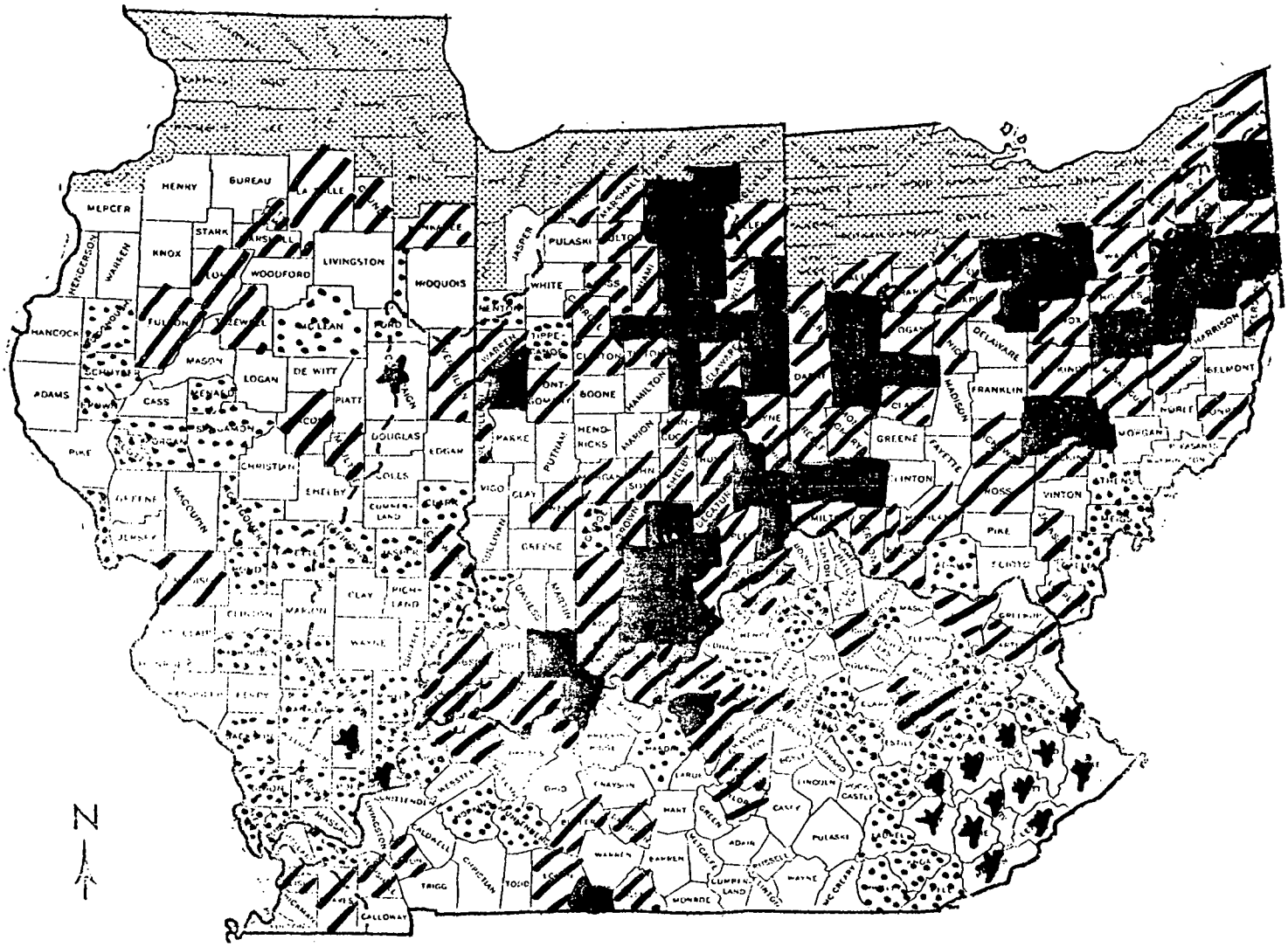
25.0 - 29.9

30.0 or more

MAP III-D-63

PERCENTAGE OF EMPLOYED CIVILIAN LABOR FORCE WORKING IN MANUFACTURING, 1970

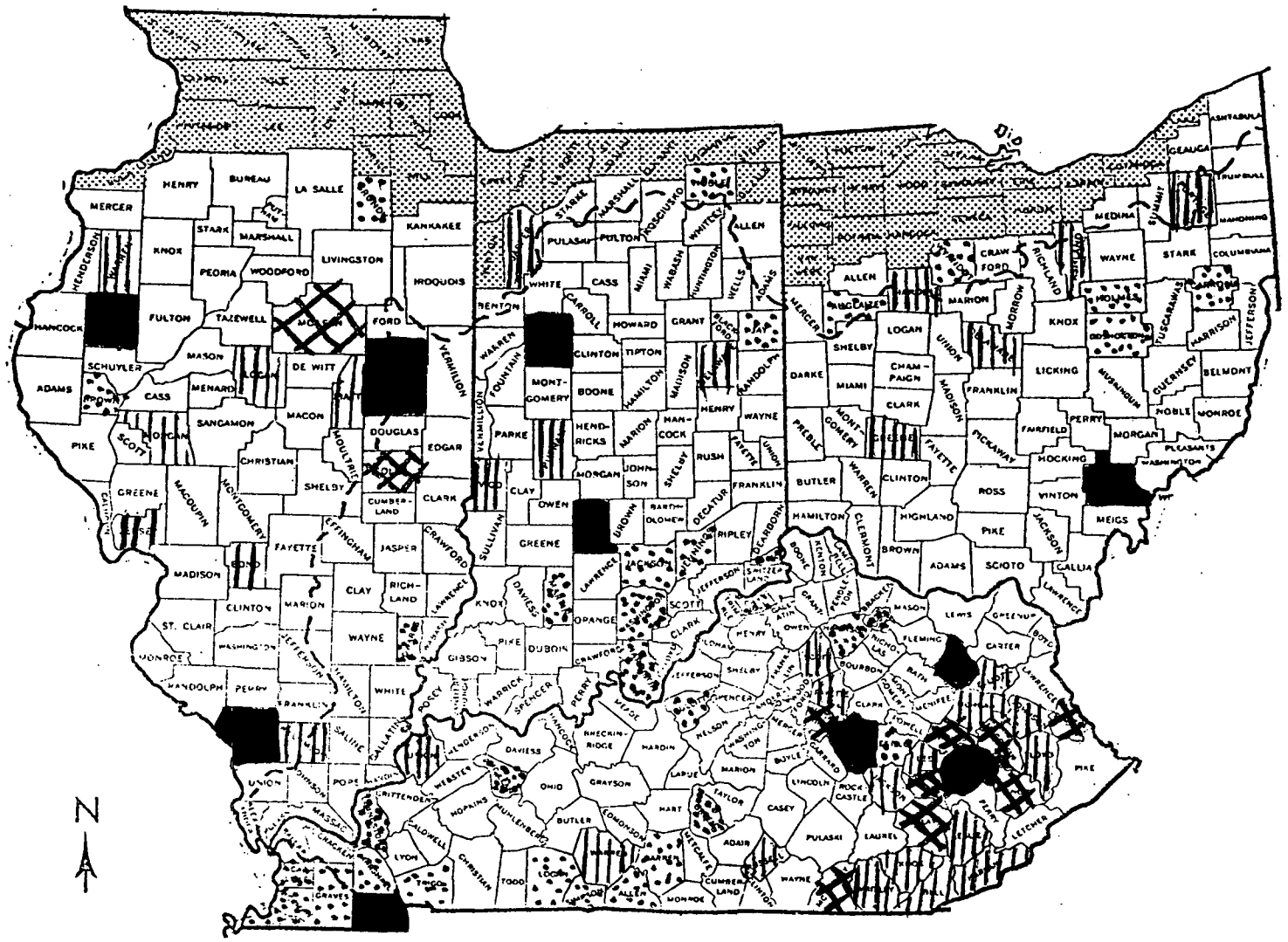
SOURCE: City County Data Book - Table 2, Item 39



MAP III-D-64

PERCENTAGE OF EMPLOYED CIVILIAN LABOR FORCE IN EDUCATIONAL SERVICES, 1970

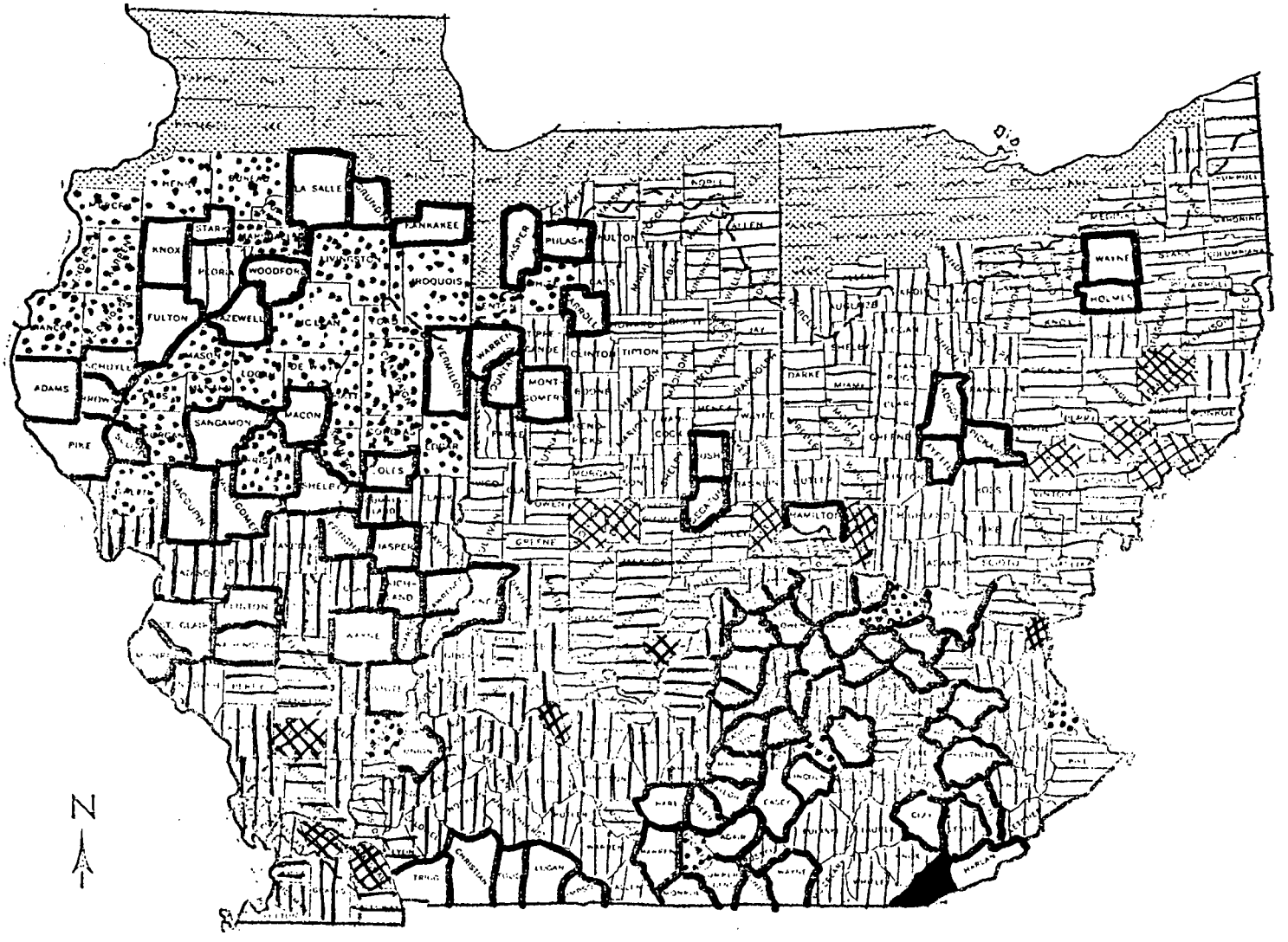
SOURCE: City County Data Book - Table 2, Item 42



MAP III-D-65

PERCENTAGE OF FARM OPERATORS WORKING 100 OR MORE DAYS OFF FARM, 1969

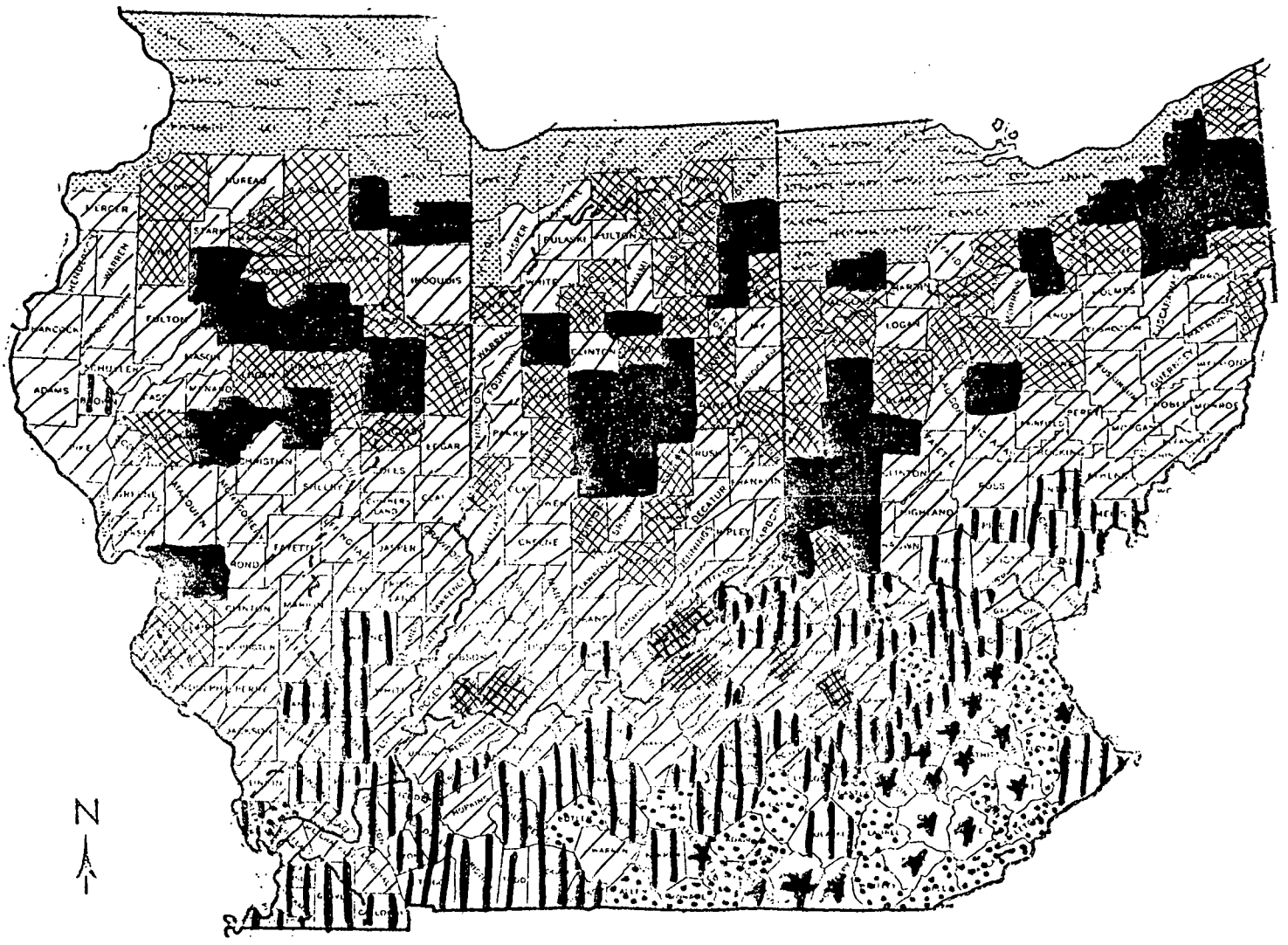
SOURCE: City County Data Book - Table 2, Item 196


N
LA SALLE
KANKAKEE
KNOX
WOODFORD
IROQUOIS
FULTON
TAZEWELL
MCLEAN
ADAMS
SCHUYLER
SANGAMON
MACON
PIKE
MACOUPIN
SHELBY
COLES
JASPER
CLAY
EFFINGHAM
CHRISTIAN
LOGAN
VERMILION
CHAMPAIGN
PIATT
DE WITT
MONTGOMERY
CLINTON
MARION
CLAY
RICHLAND
EDGAR
DOUGLAS
MOULTRIE
CUMBERLAND
CLARK
EDGAR
CRAWFORD
JASPER
PULASKI
ALEXANDER
UNION
JOHNSON
MASSAC
POPE
HARDIN
GALLATIN
SALINE
WILLIAMSON
FRANKLIN
JACKSON
PERRY
RANDOLPH
MONROE
ST. CLAIR
CLINTON
WASHINGTON
JEFFERSON
WAYNE
EDWARDS
WABASH
HAMILTON
WHITE
GREENE
CALHOUN
JERSEY
MACOUPIN
MONTGOMERY
MADISON
BOND
CLINTON
MARION
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
LAWRENCE
RICHLAND
CLAY
WAYNE
EDWARDS
WABASH
WHITE
HAMILTON
FRANKLIN
JEFFERSON
WASHINGTON
RANDOLPH
PERRY
JACKSON
UNION
ALEXANDER
PULASKI
MASSAC
JOHNSON
PO

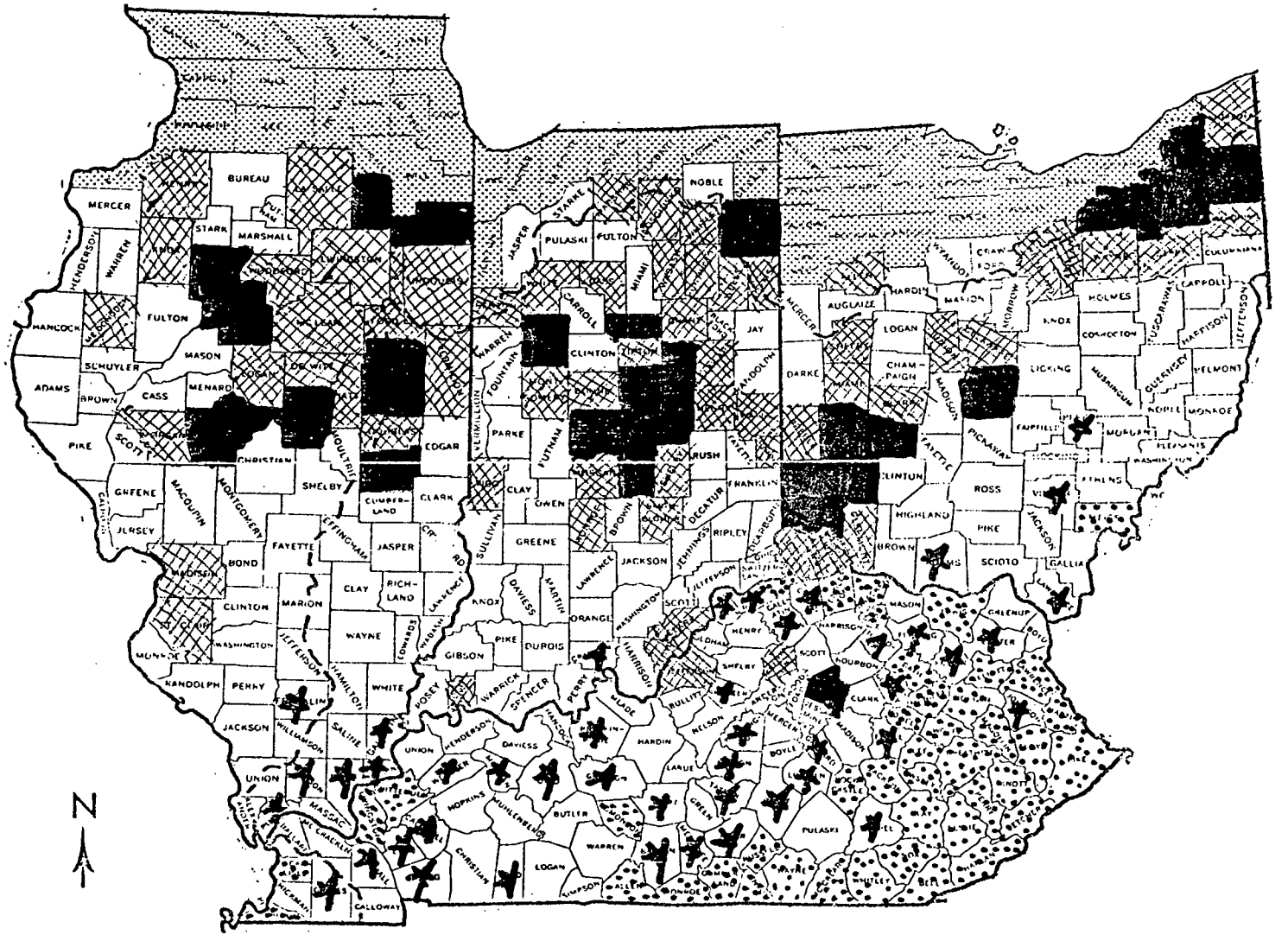
MAP III-D-66

MEDIAN FAMILY INCOME, 1969

SOURCE: City County Data Book - Table 2, Item 58

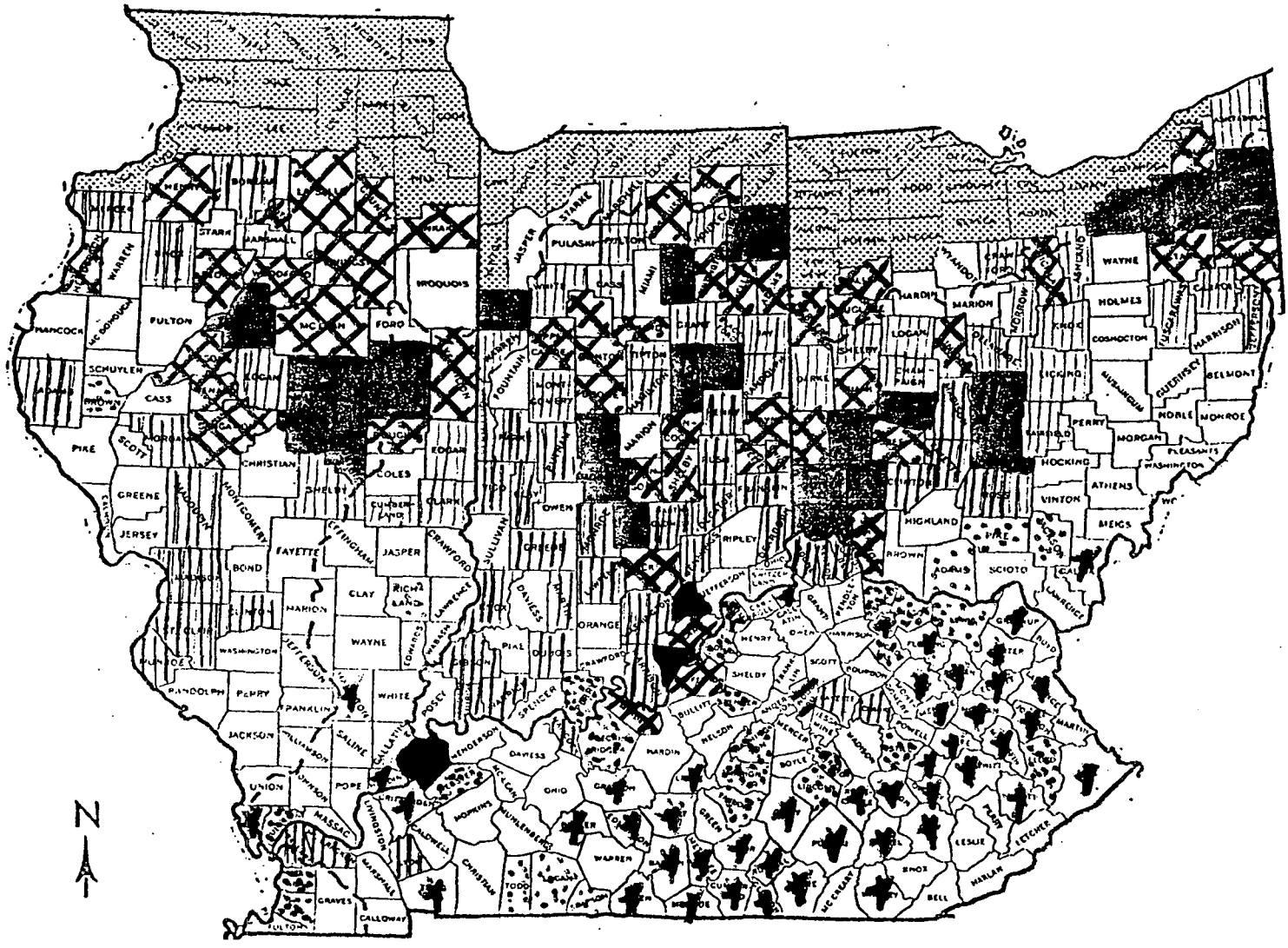


MAP III-D-67
PERCENTAGE OF FAMILIES WITH INCOME OF $15,000 or more, 1969
SOURCE: City County Data Book - able 2, Items 56, 57



MAP III-D-68

MEDIAN FAMILY INCOME FOR FARM POPULATION, 1969
SOURCE: City County Data Book - Table 2, Item 171

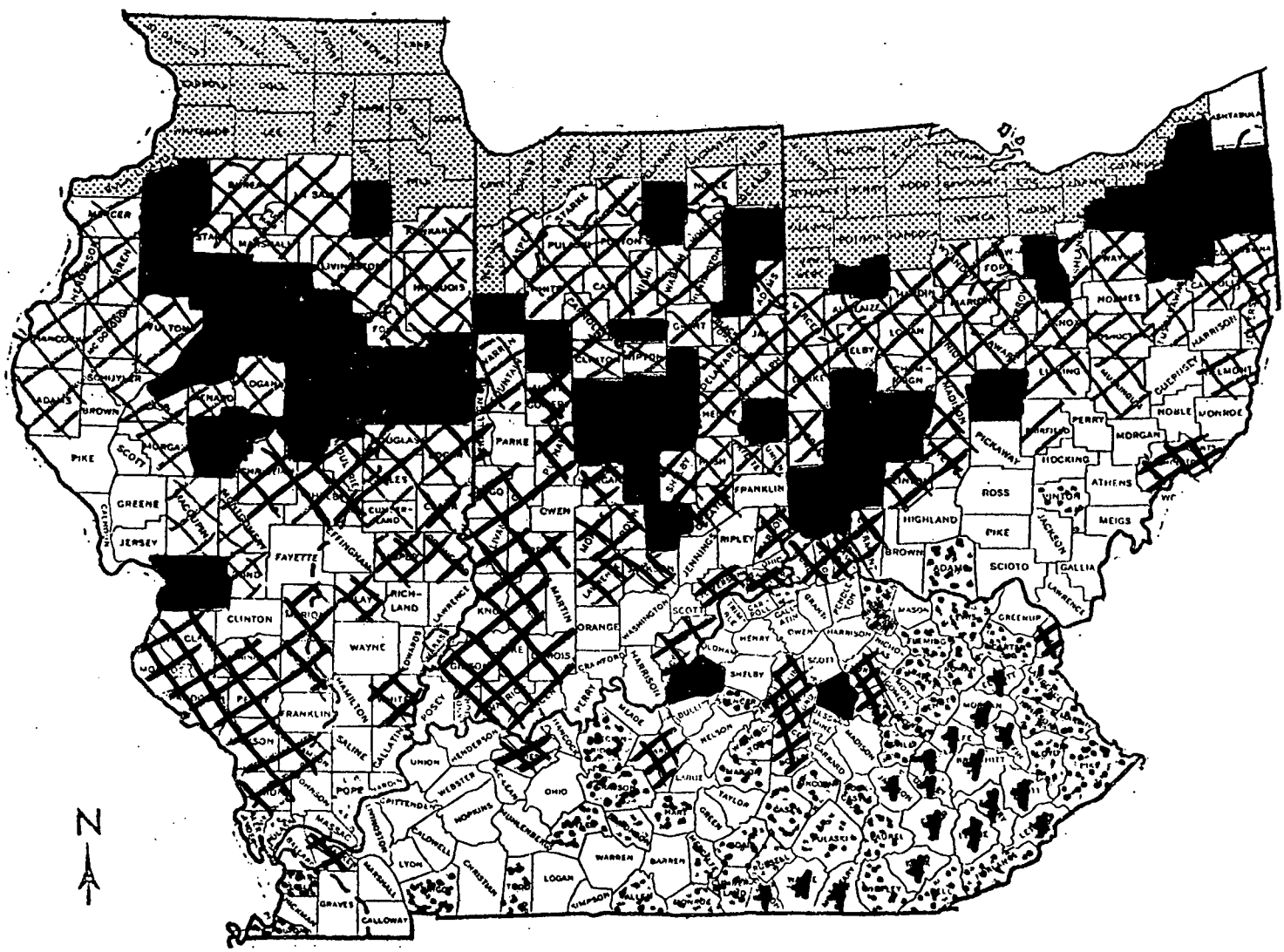


Note: The following counties have fewer than 100 engaged in farming, hence data are not reported: Marion in Indiana; Bell, Harlan, Knott, Leslie, Letcher, McCreary, Martin and Perry in Kentucky.

MAP III-D-69

PER CAPITA MONEY INCOME FOR 1969

SOURCE: Bureau of Census, Map GE-50, No. 57



Less than $1,500

$1,500 - 1,999

$2,000 - 2,499

$2,500 - 2,999

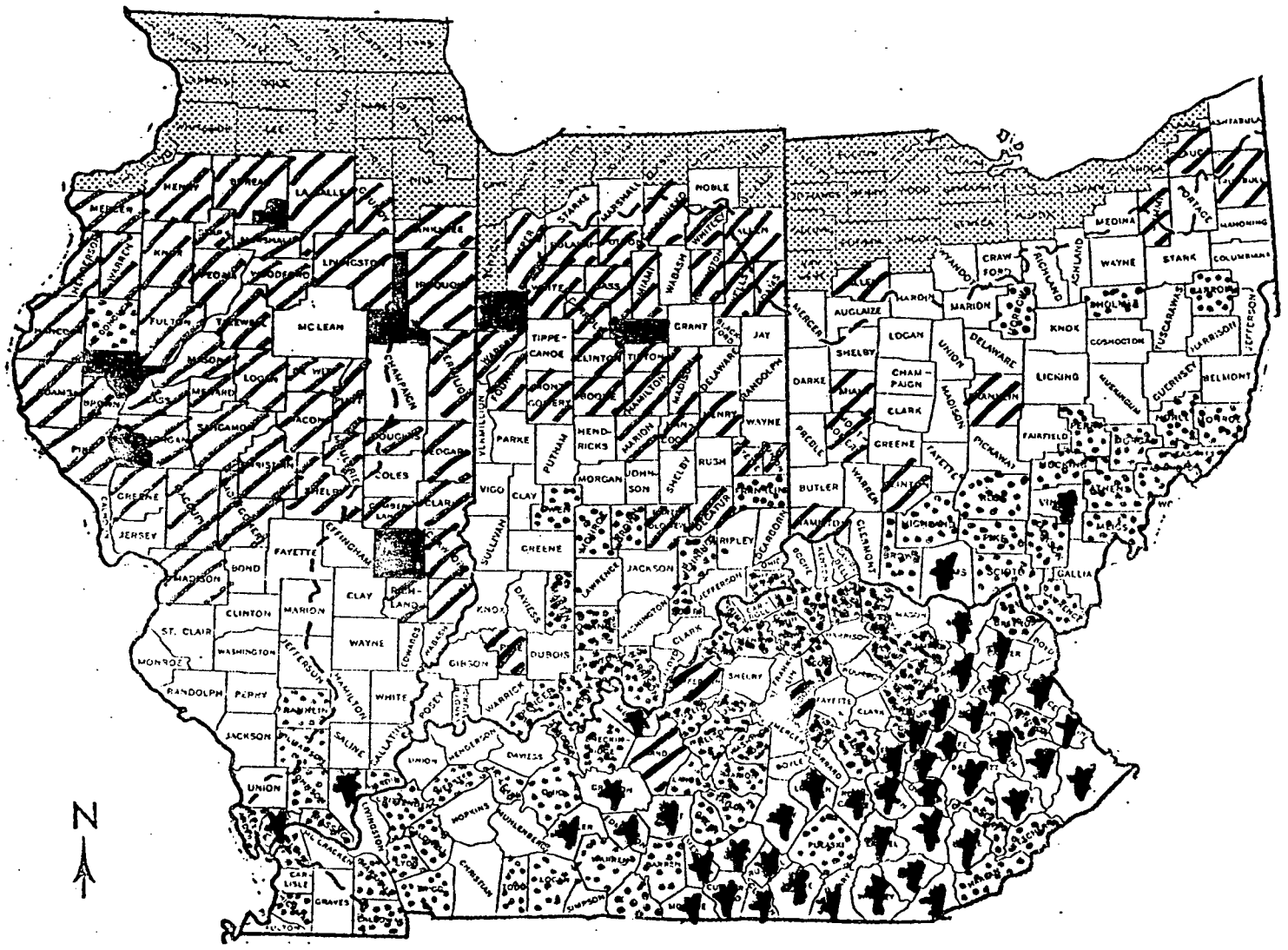
$3,000 - 5,446

United States per capita money income for 1969: $3,119

MAP III-D-70

PER CAPITA PERSONAL INCOME, 1973

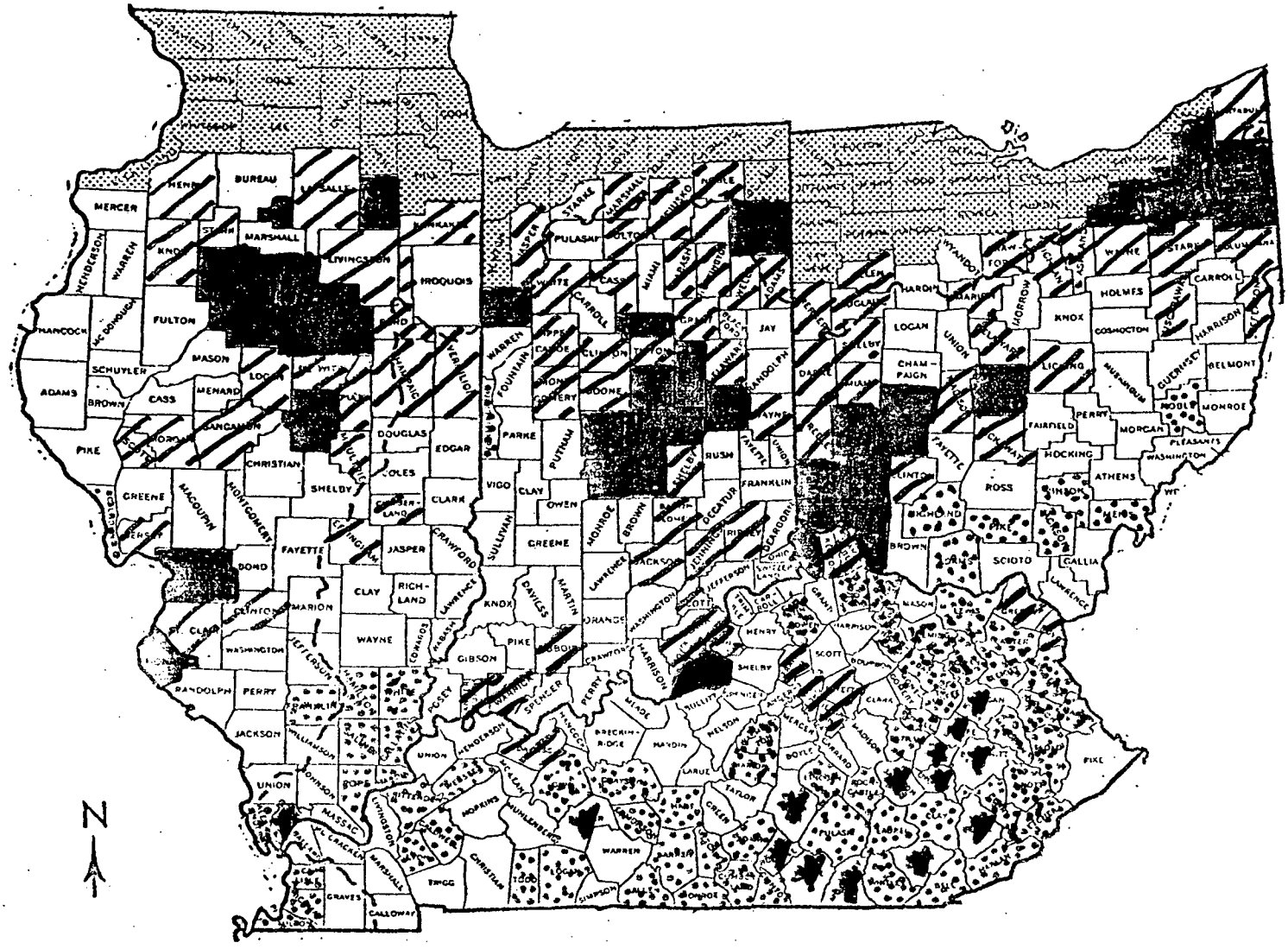
SOURCE: Survey of Current Business - Table 2, April, 1975



MAP III-D-71

MEDIAN HOUSEHOLD EFFECTIVE BUYING POWER, 1974

SOURCE: Sales Management, July 21, 1975



MAP III-D-72

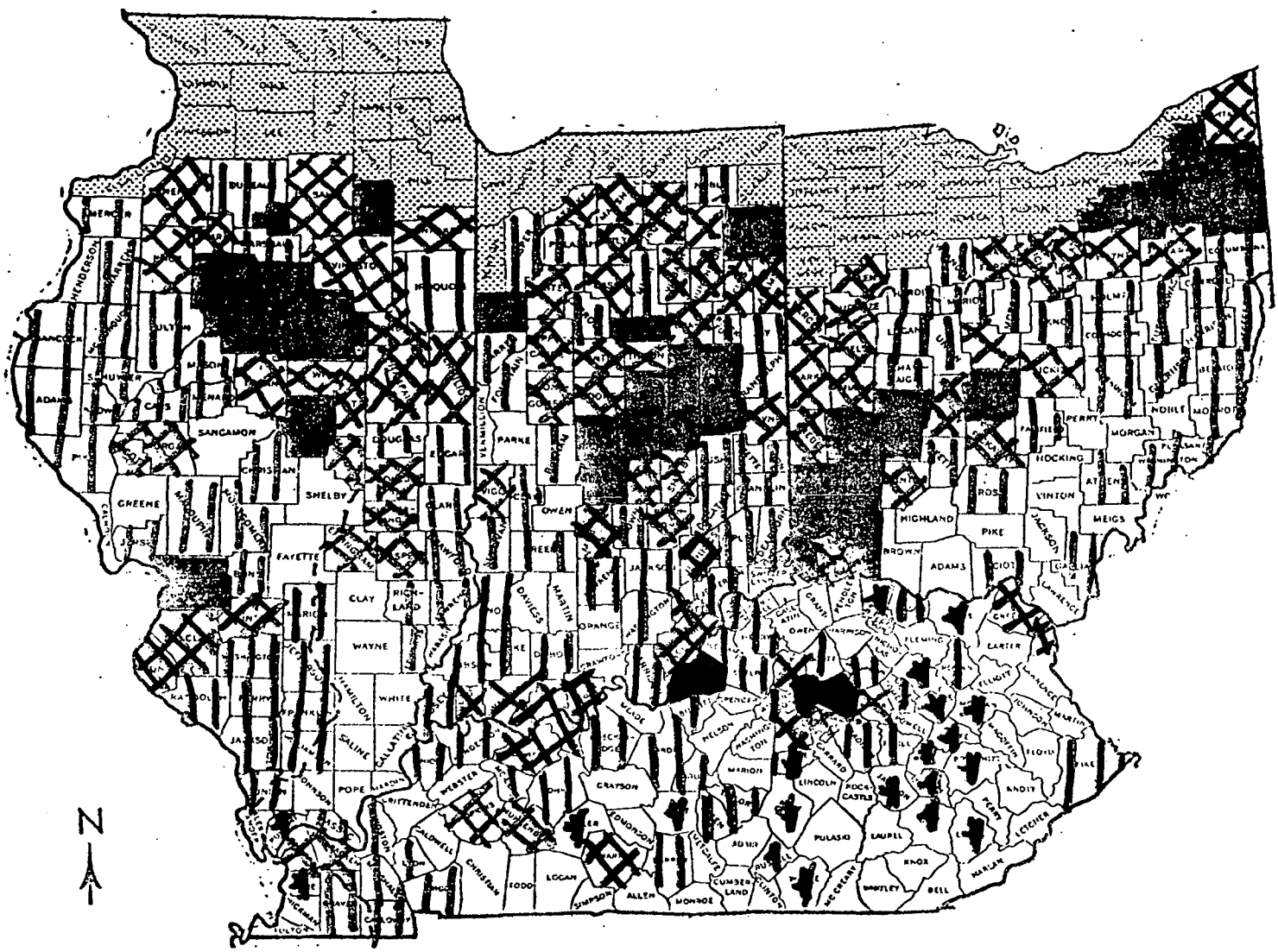
PERCENTAGE OF HOUSEHOLDS WITH EFFECTIVE BUYING POWER LESS THAN $3,000

SOURCE: Sales Management, July 21, 1975

MAP III-D-73

PERCENTAGE OF HOUSEHOLDS WITH EFFECTIVE BUYING POWER OF $15,000 OR MORE, 1974

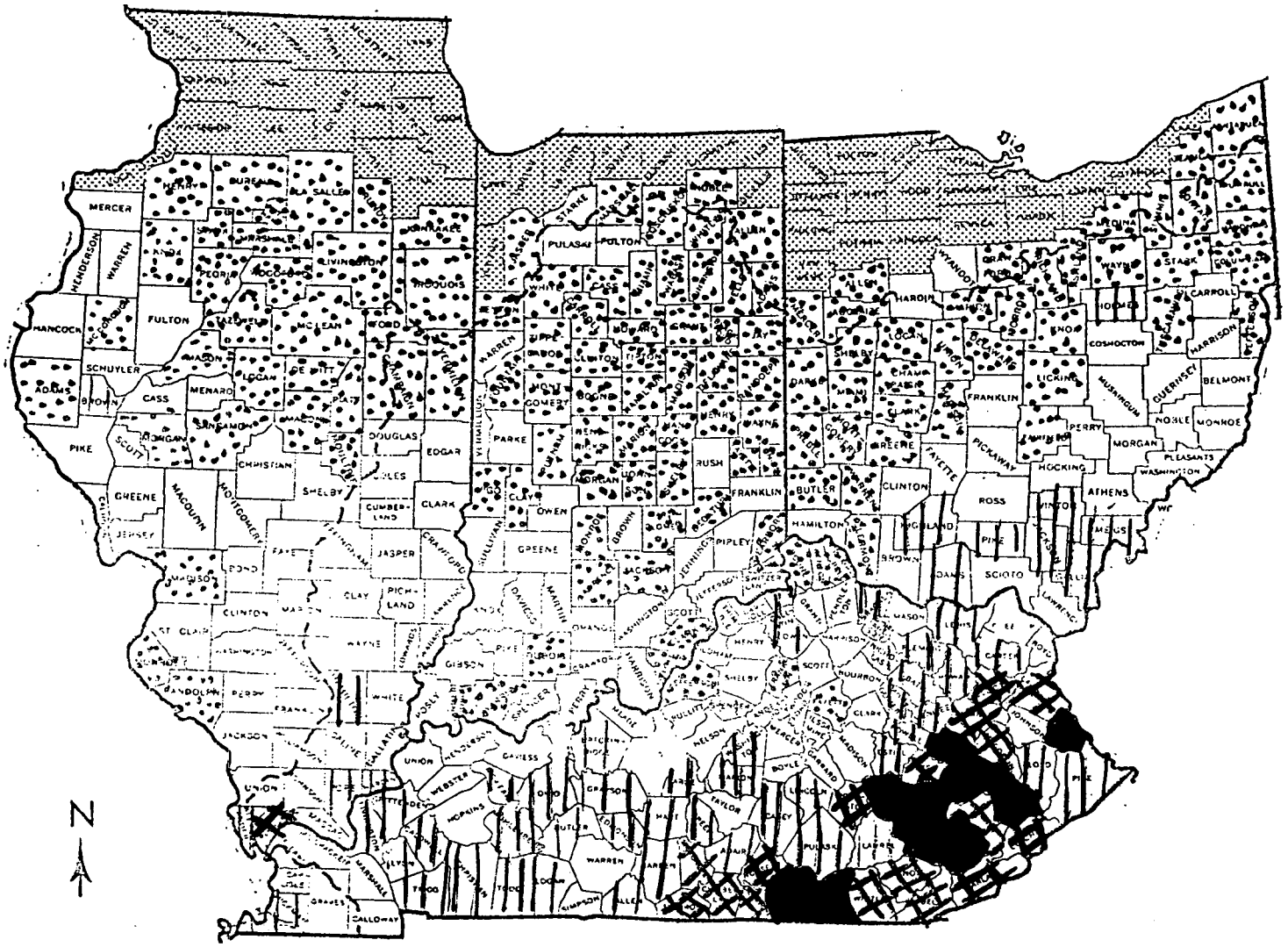
SOURCE: Sales Management, July 21, 1975



MAP III-D-74

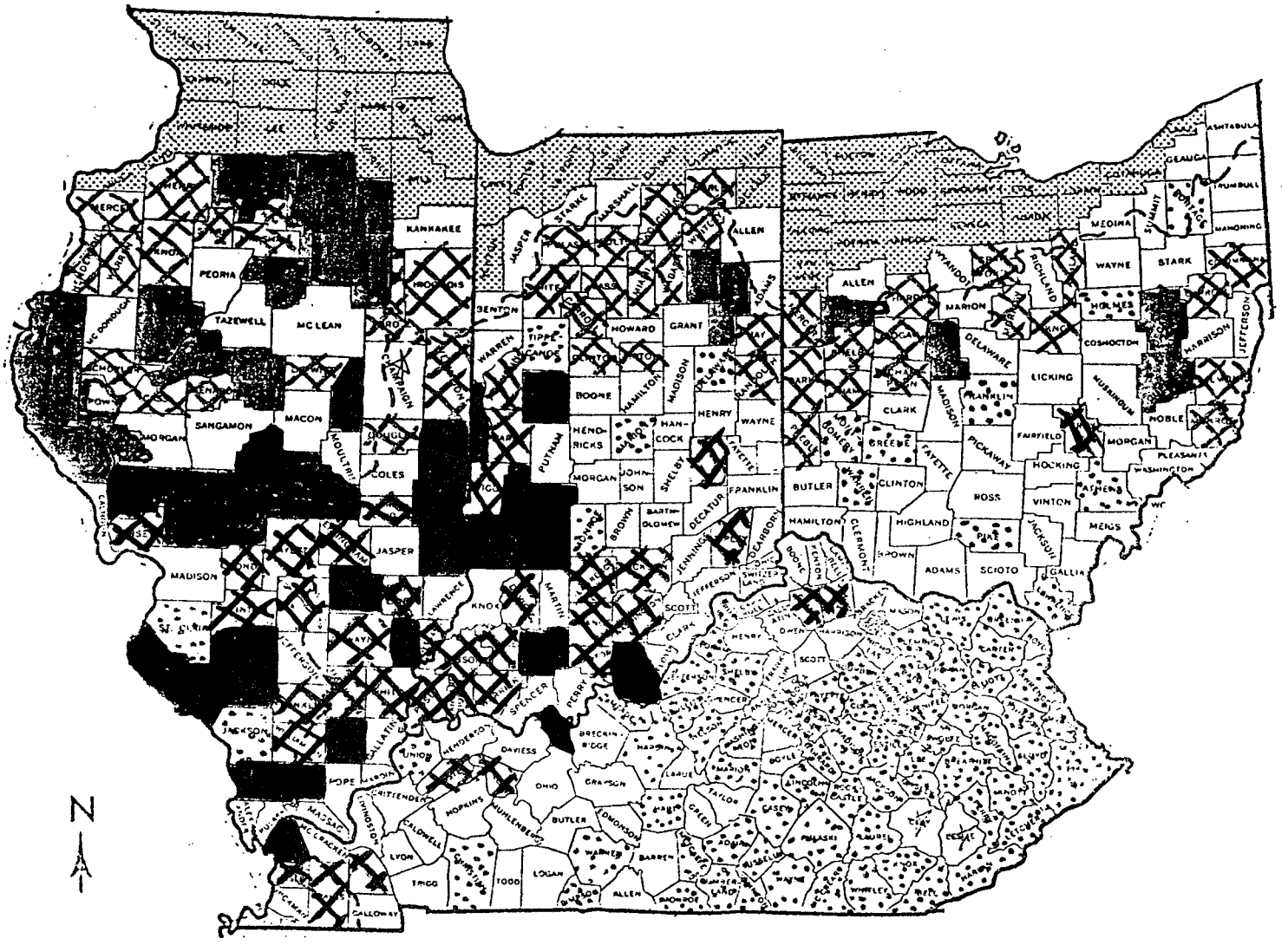
PERCENTAGE OF FAMILIES BELOW THE LOW INCOME LEVEL IN 1969

SOURCE: City County Data Book - Table 2, Item 62



MAP III-D-75

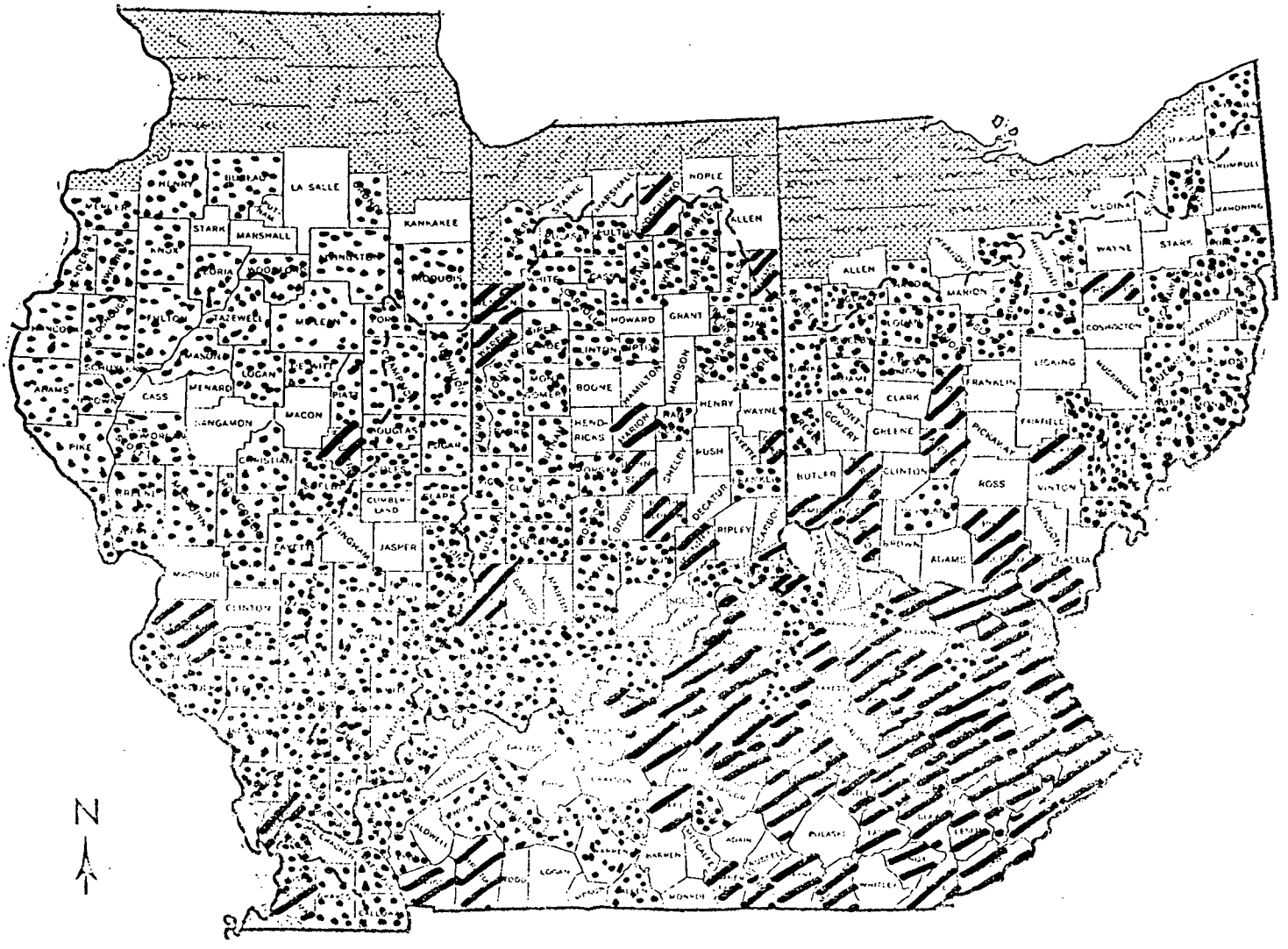
PERCENTAGE OF LOW INCOME POPULATION 65 OR OLDER,1970
SOURCE: City County Data Book - Table 2, Item 66



MAP III-D-76

PERCENTAGE OF LOW INCOME POPULATION UNDER 18, 1970

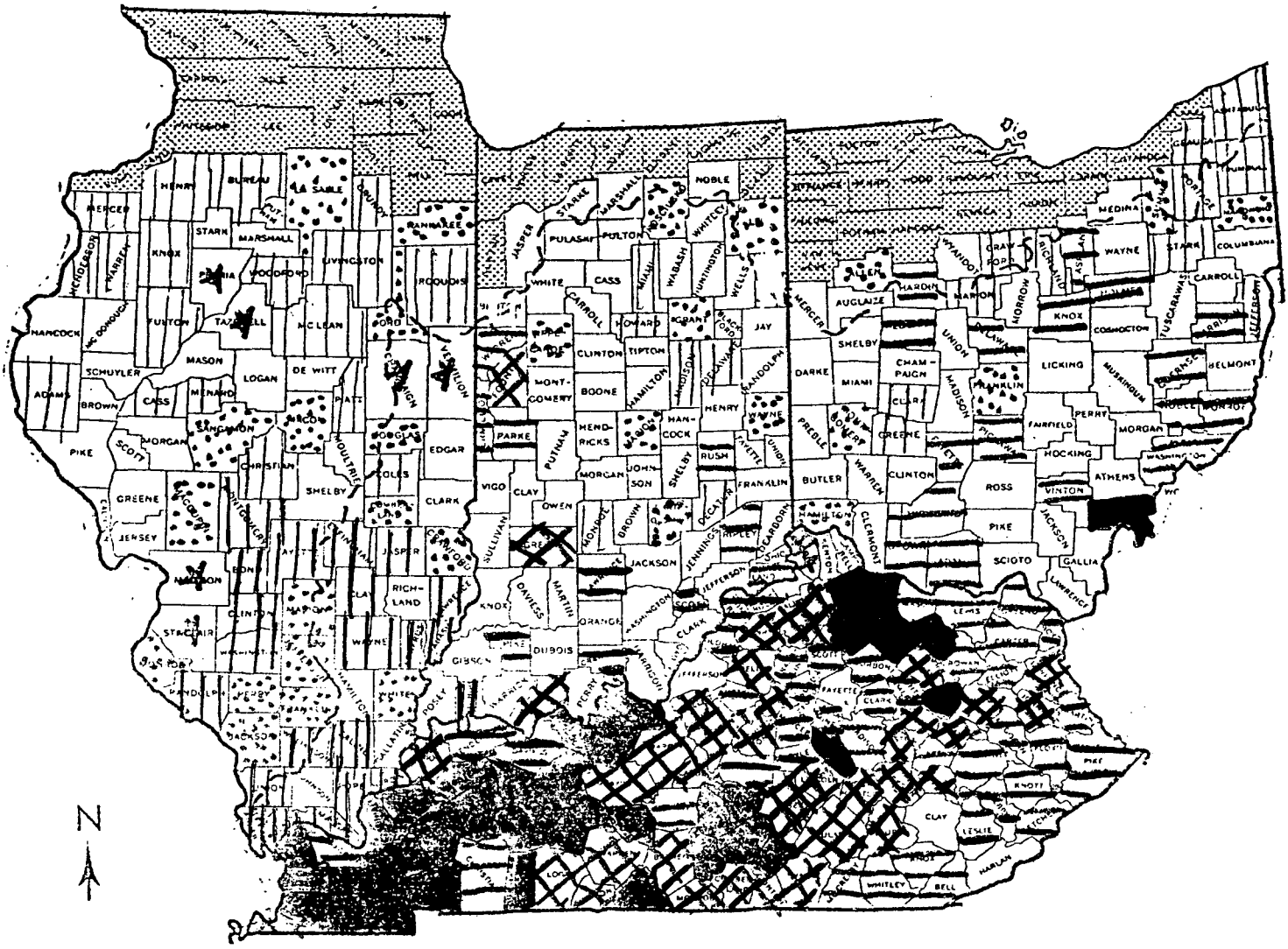
SOURCE: City County Data Book - Table 2, Item 65



MAP III-D-77

PUBLIC ASSISTANCE, FEBRUARY, 1972: PERCENTAGE PAID FOR OLD AGE ASSISTANCE

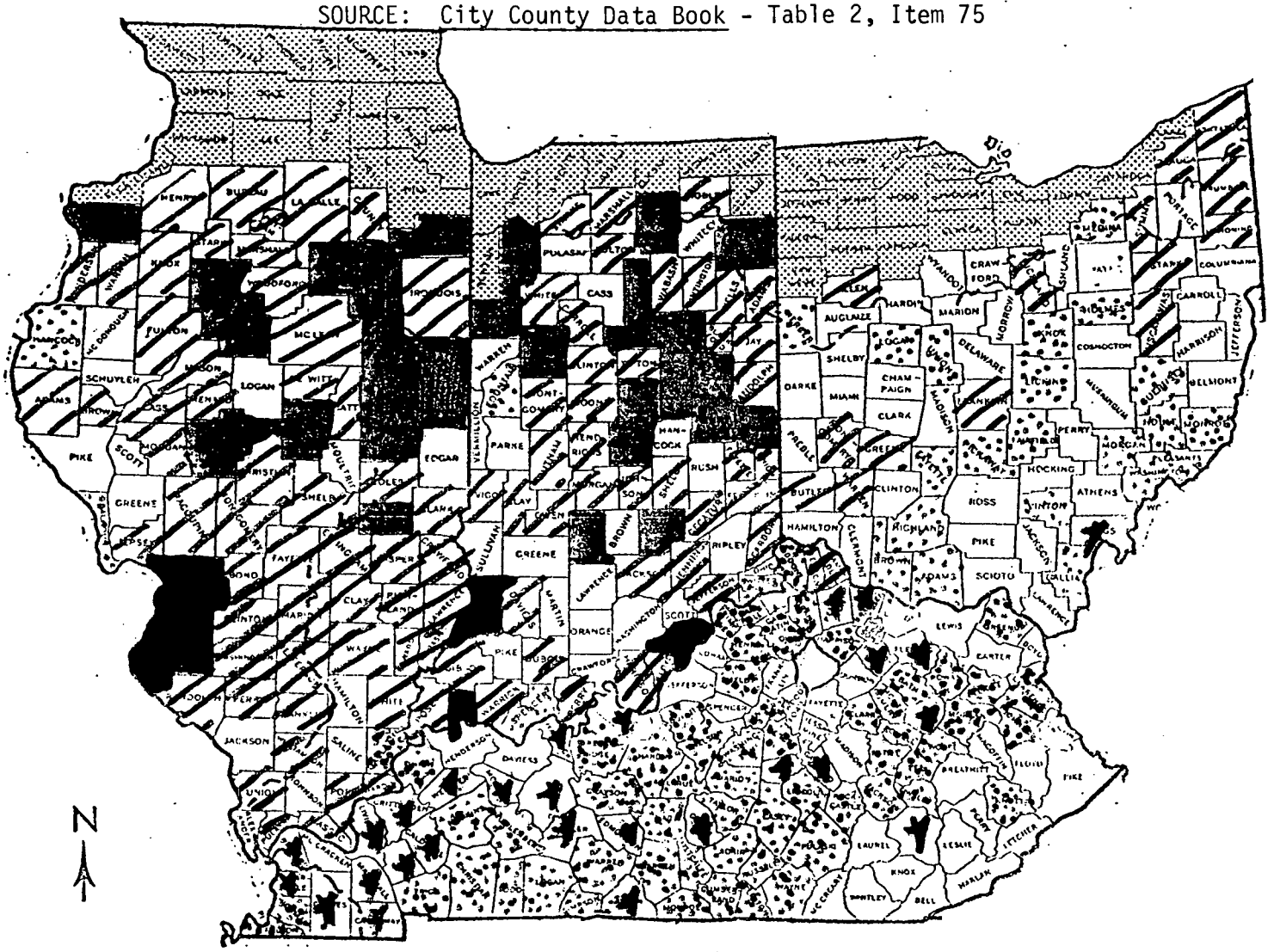
SOURCE: City County Data Book - Table 2, Item 74



MAP III-D-78

PERCENTAGE OF PUBLIC ASSISTANCE GOING TO FAMILIES WITH DEPENDENT CHILDREN
1972

SOURCE: City County Data Book - Table 2, Item 75



Less than 30.0

30.0 - 44.9

45.0 - 59.9

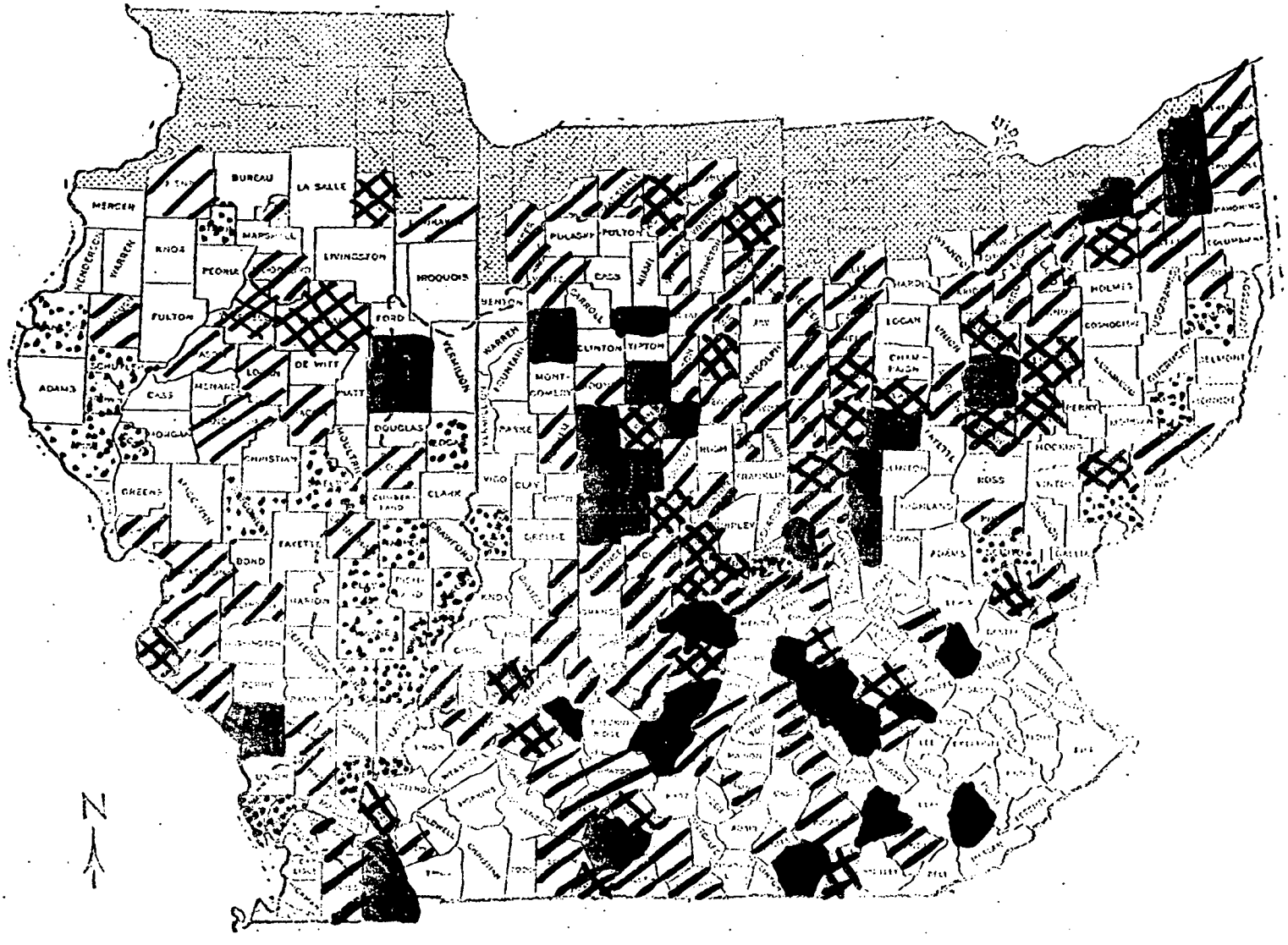
60.0 - 74.9

75.0 or more

MAP III-D-79

PERCENTAGE CHANGE IN NUMBER OF HOUSEHOLDS, 1960 - 1970

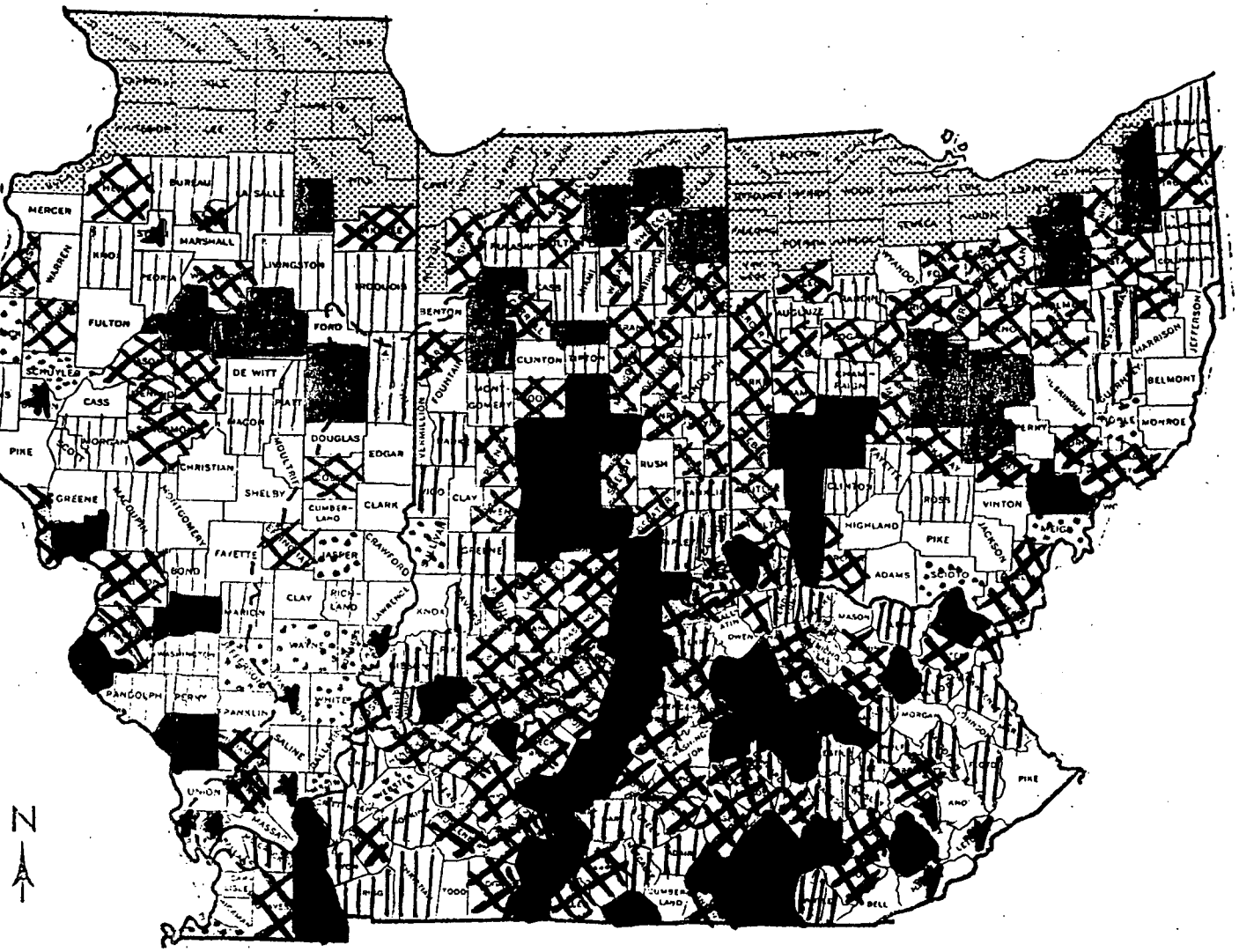
SOURCE: 1970 Census of Population - Table 16



MAP III-D-80

PERCENTAGE CHANGE IN NUMBER OF YEAR ROUND HOUSING UNITS, 1960 - 1970

SOURCE: City County Data Book - Table 2, Item 78



Gain, 20.0 or more

Gain, 10.0 - 19.9

Gain, 5.0 - 9.9

Gain, 0 - 4.9

Loss, 0 - 4.9

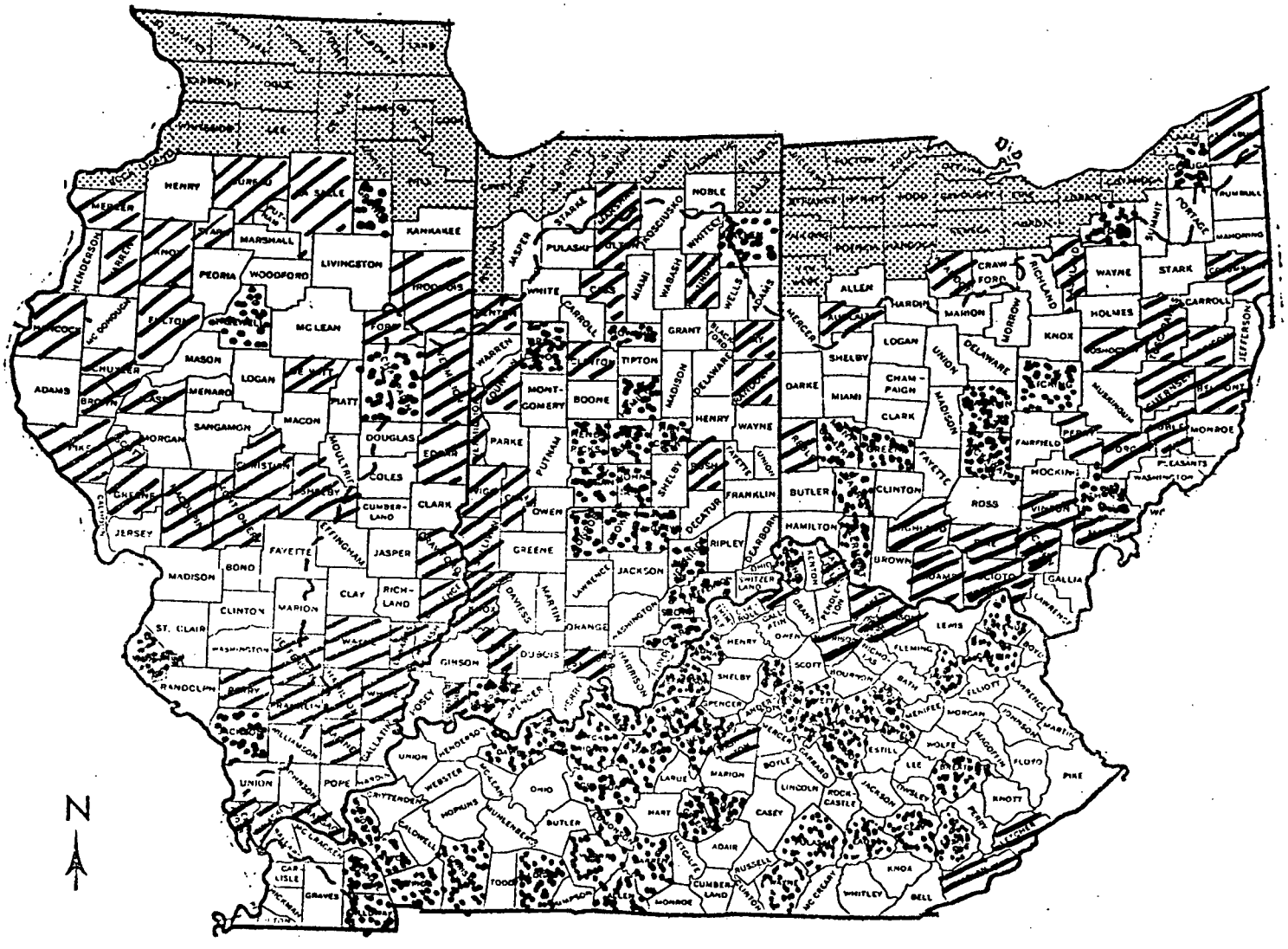
Loss, 5.0 or more

(Note: Brown County, Indiana = 77.4% Gain)

MAP III-D-81

PERCENTAGE OF YEAR ROUND HOUSING UNITS BUILT BETWEEN 1960 and MARCH 1970

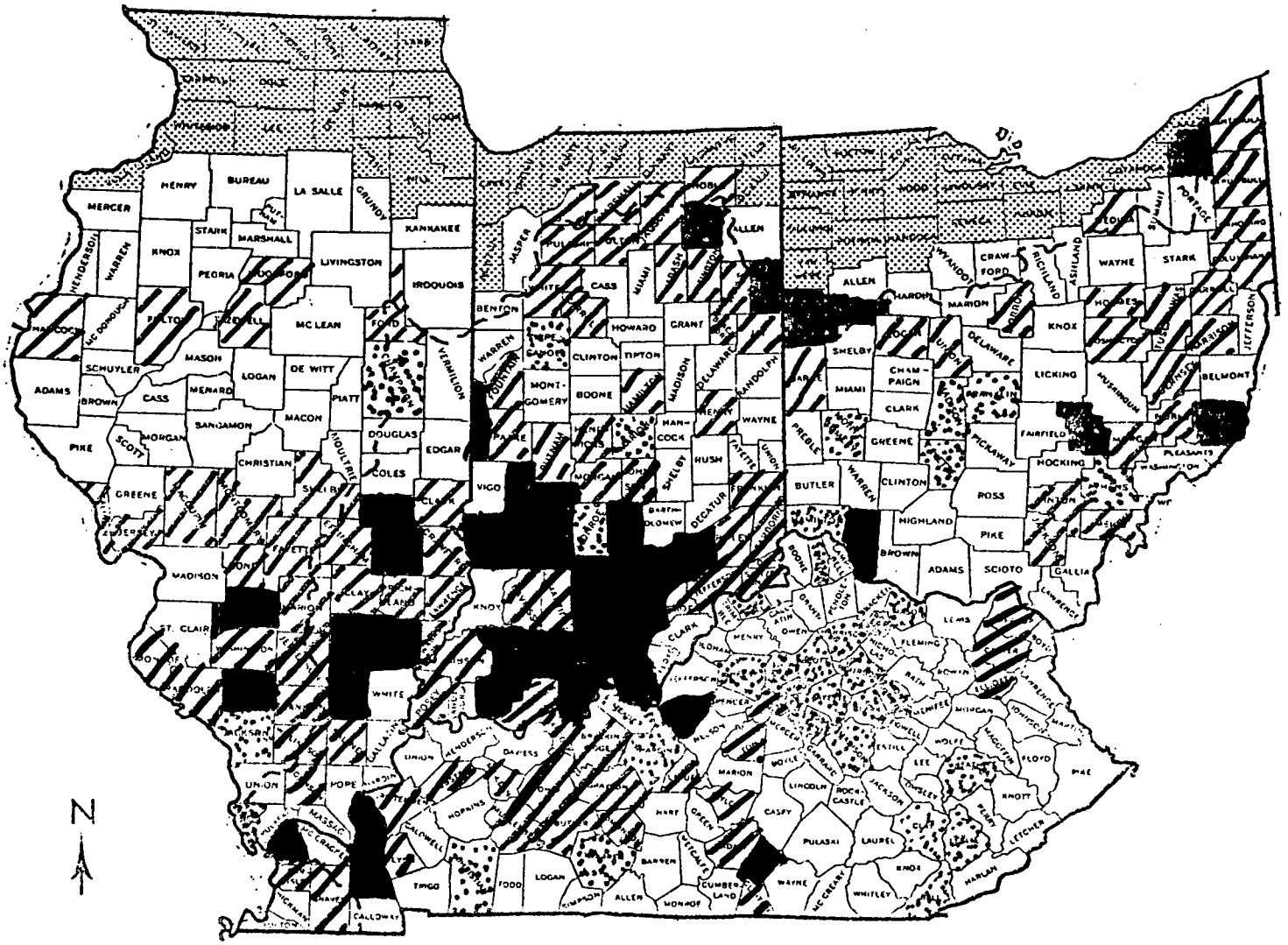
SOURCE: 1970 Census of Housing - Table 62



MAP III-D-82

HOME TENURE FOR YEAR ROUND HOUSING UNITS

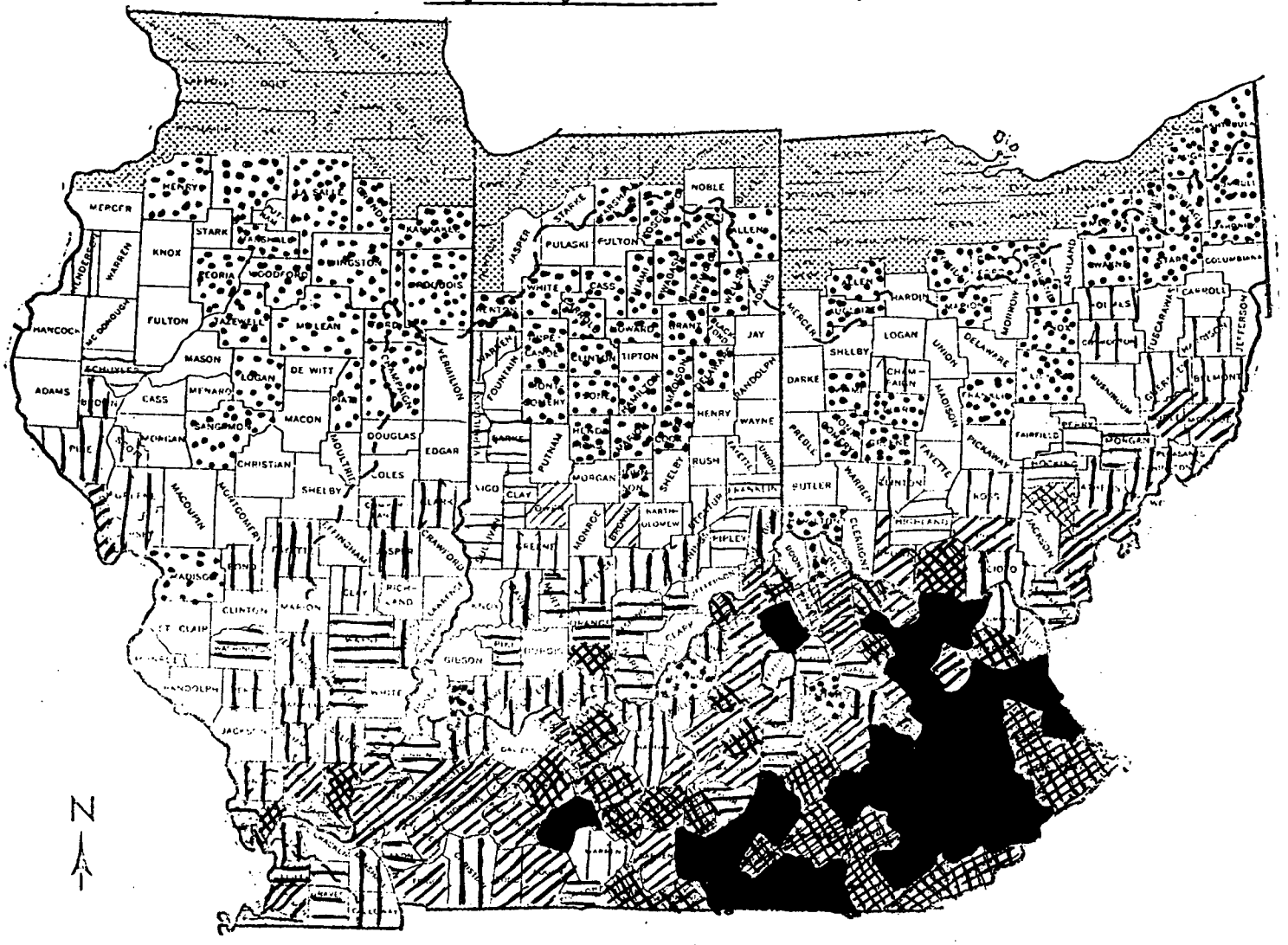
SOURCE: 1970 Census of Housing - Table 29



MAP III-D-83

PERCENTAGE OCCUPIED HOUSING UNITS LACKING SOME OR ALL PLUMBING FACILITIES, 1970

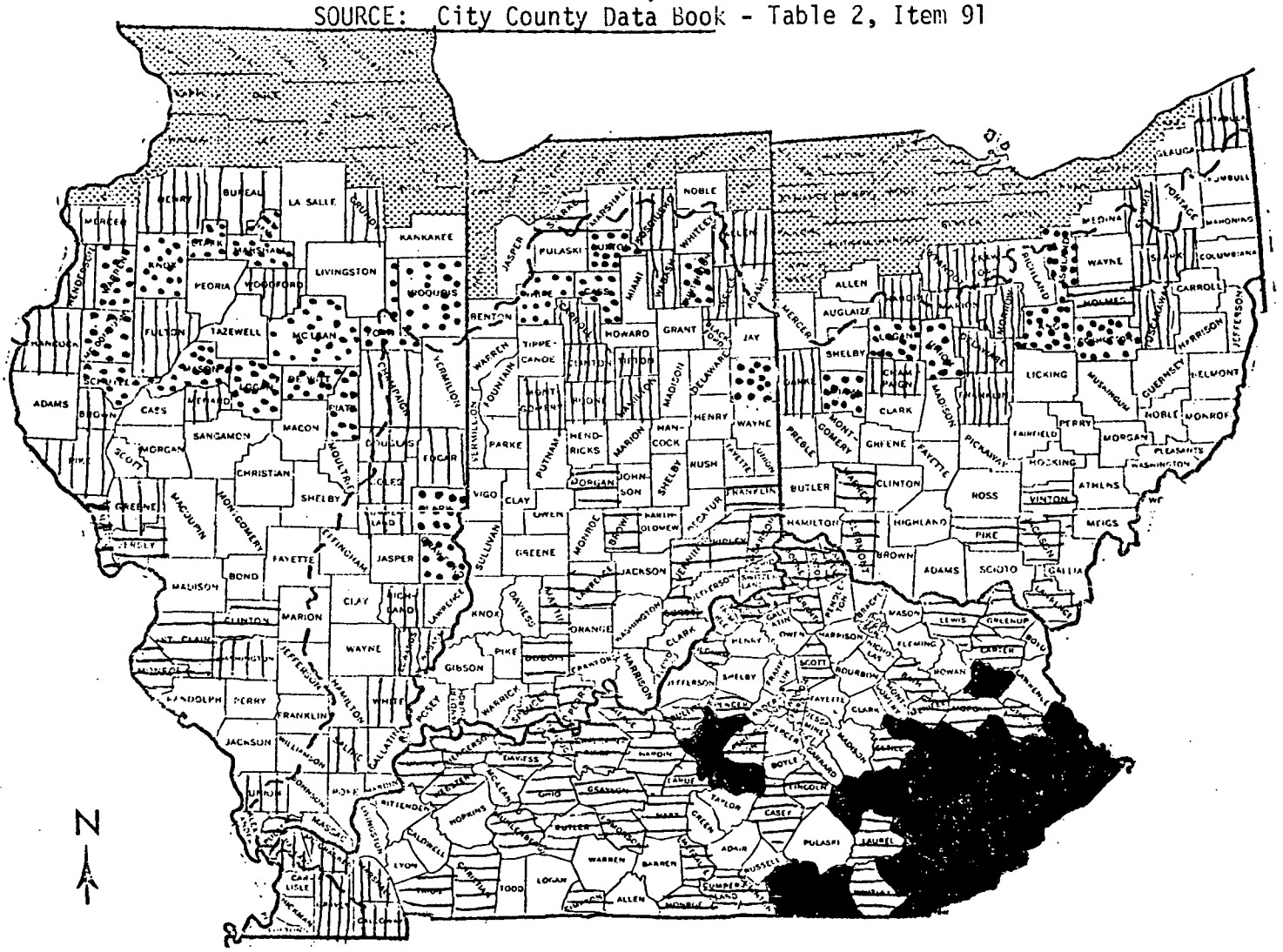
SOURCE: City County Data Book - Table 2, Item 90



MAP III-D-84

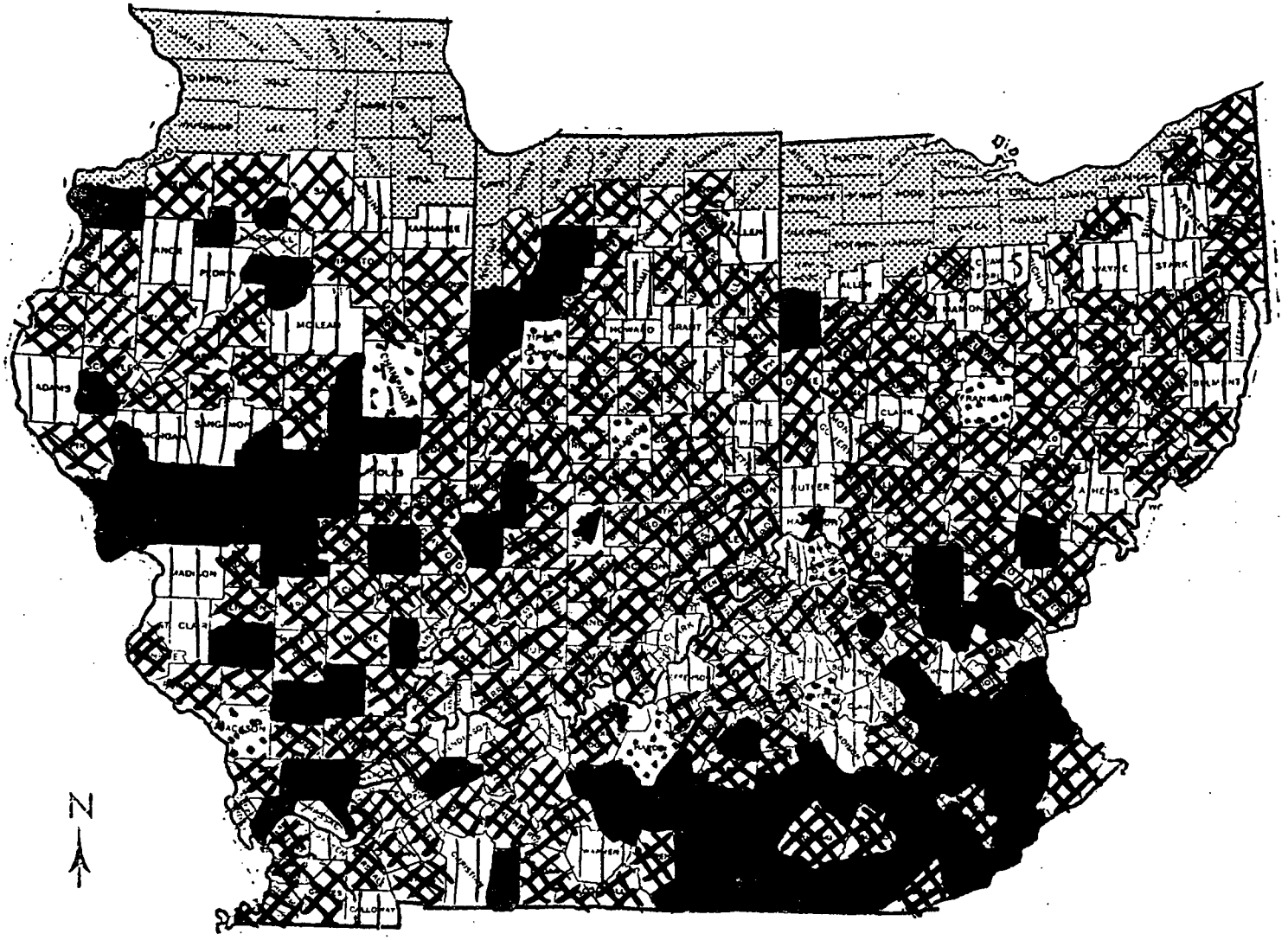
PERCENTAGE OF OCCUPIED HOUSING UNITS WITH 1.01 OR MORE PERSONS PER ROOM, 1970

SOURCE: City County Data Book - Table 2, Item 91



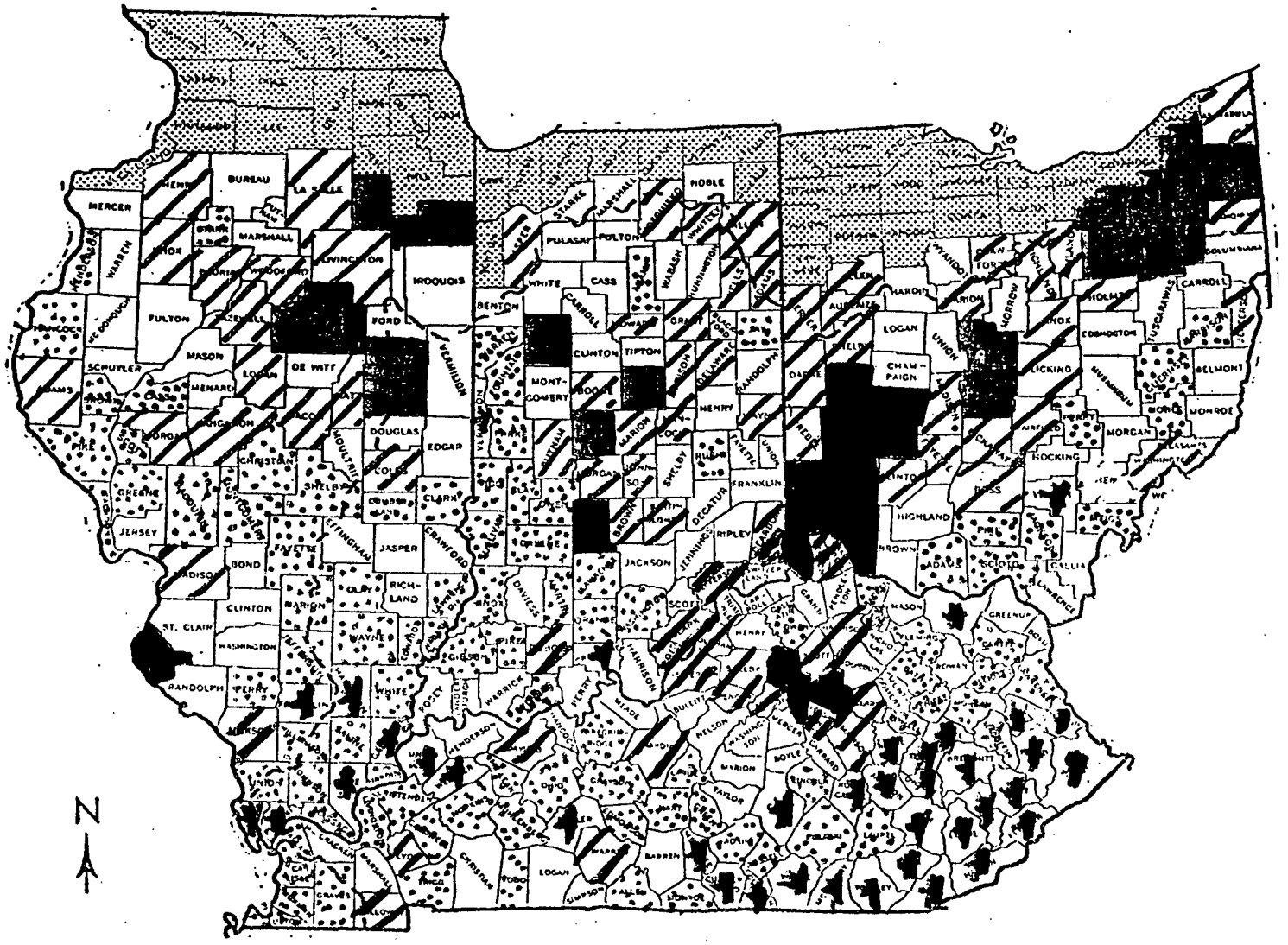
MAP III-D-85

PERCENTAGE OF YEAR ROUND HOUSING UNITS IN ONE-UNIT STRUCTURES, 1970
SOURCE: City County Data Book - Table 2, Item 80



MAP III-D-86

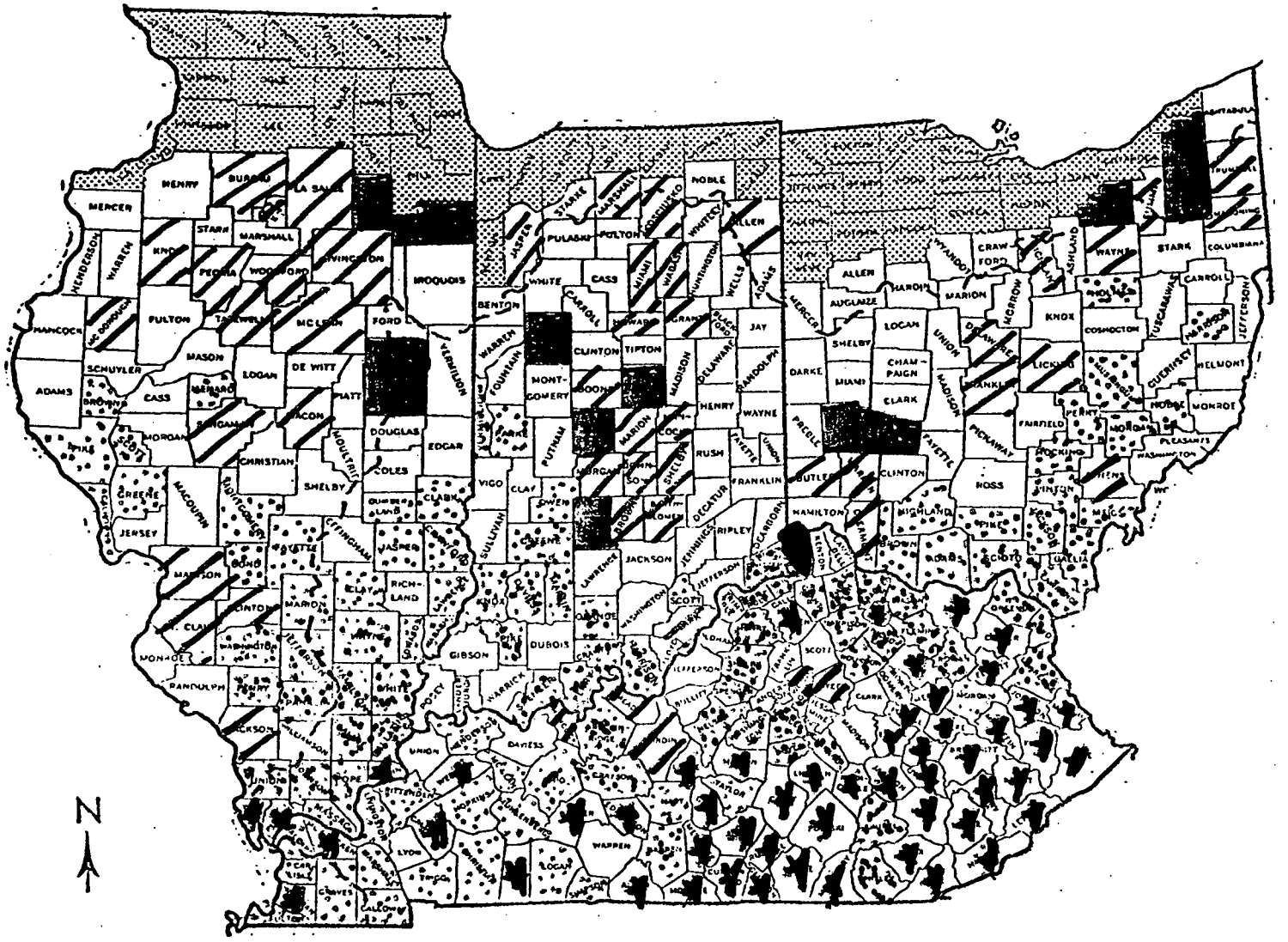
MEDIAN VALUE OF OWNER-OCCUPIED SINGLE FAMILY DWELLINGS, 1970
SOURCE: City County Data Book - Table 2, Item 83



MAP III-D-87

MEDIAN GROSS RENT FOR RENTER-OCCUPIED HOUSING, 1970

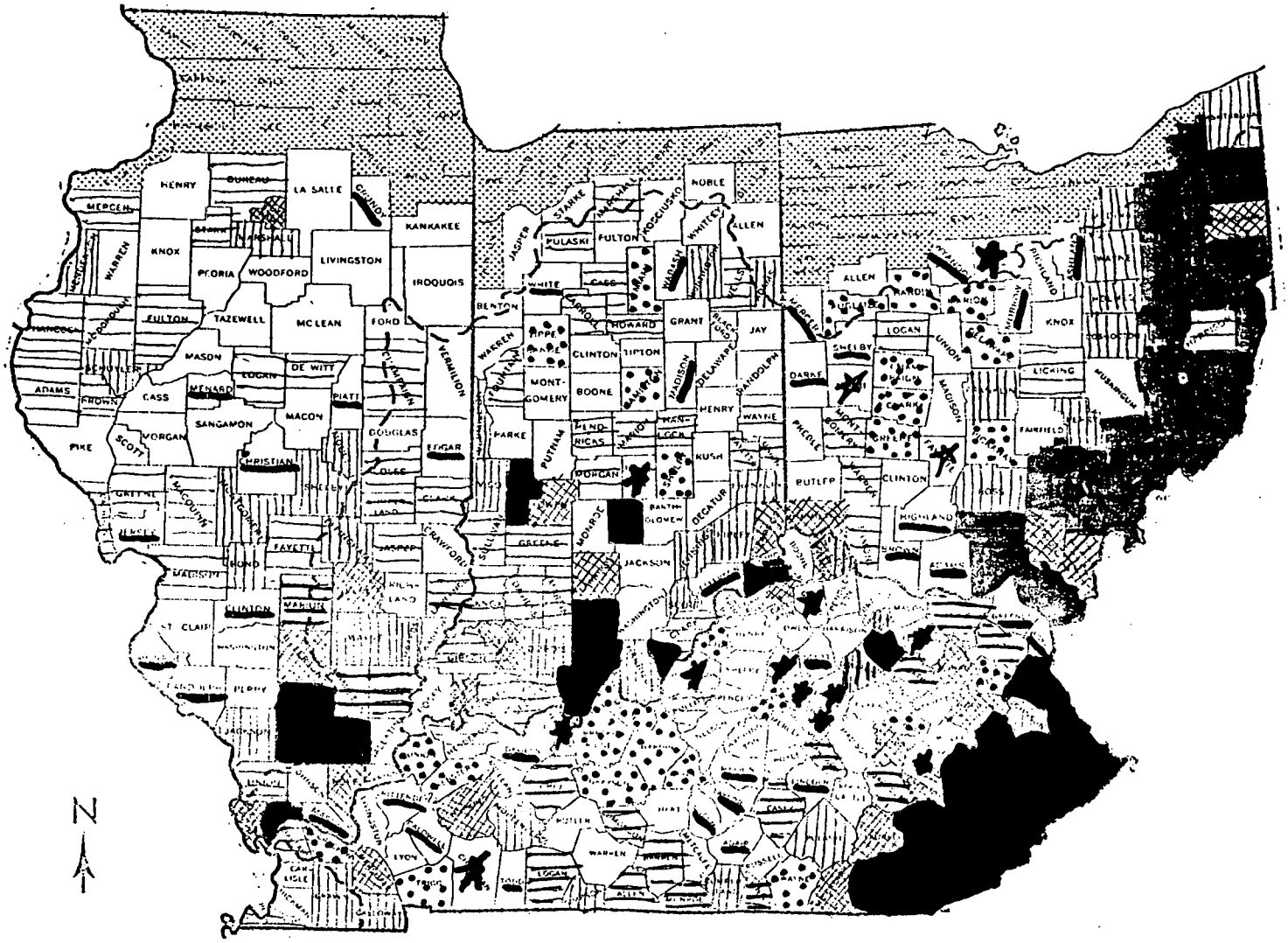
SOURCE: City County Data Book - Table 2, Item 89



MAP III-D-88

PERCENTAGE CHANGE IN NUMBER OF FARMS, 1964 - 1969

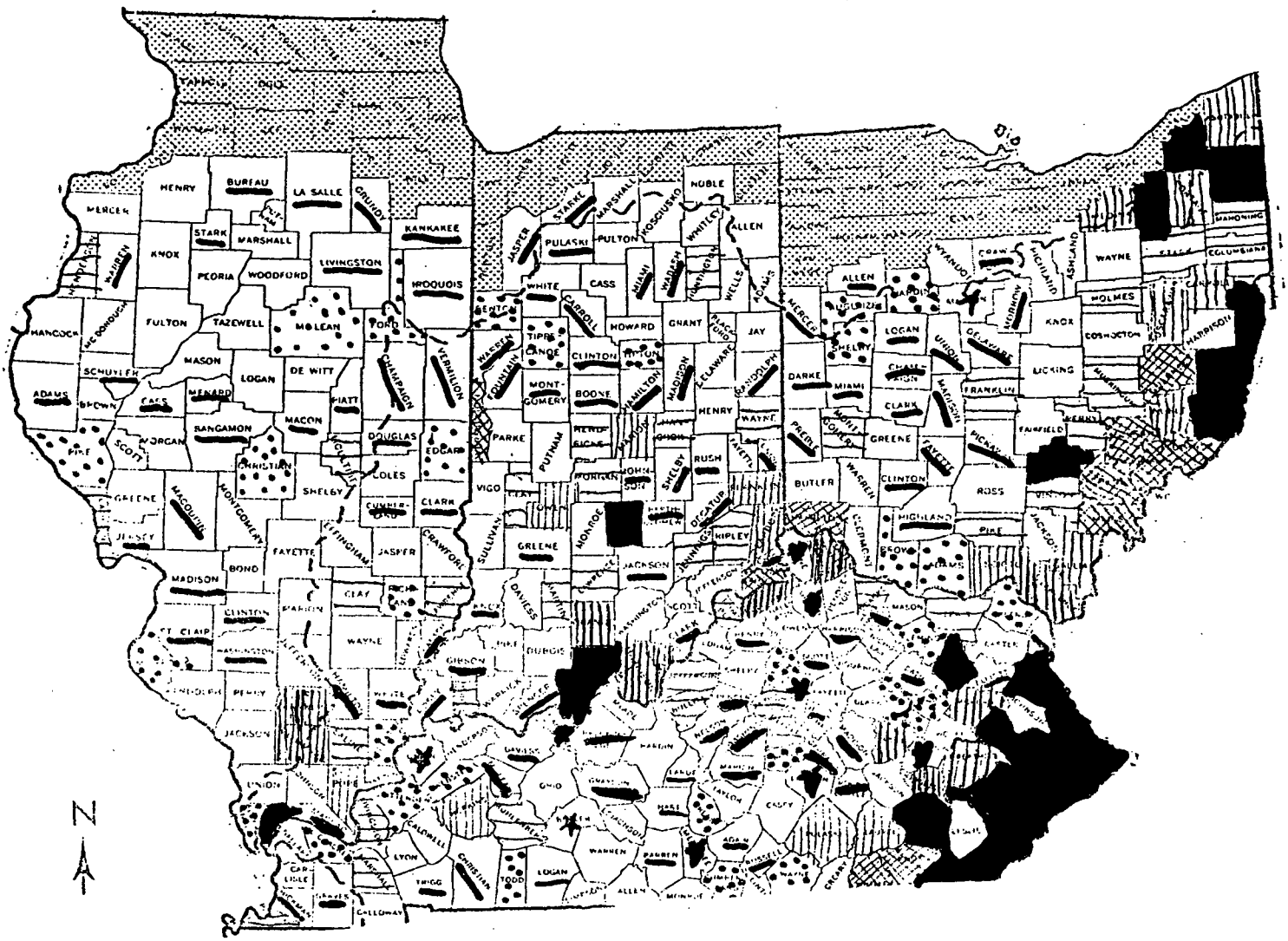
SOURCE: City County Data Book - Table 2, Item 174


HENRY
BUREAU
LA SALLE
MERCER
KANKAKEE
KNOX
PEORIA
WOODFORD
LIVINGSTON
IROQUOIS
FULTON
TAZEWELL
MC LEAN
FORD
MASON
DE WITT
CASS
MENARD
LOGAN
PIATT
ADAMS
BROWN
SANGAMON
MACON
DOUGLAS
EDGAR
VERMILION
MORGAN
PIKE
SCOTT
CHRISTIAN
MACOUPIN
MONTGOMERY
CLINTON
MARION
FAYETTE
EFFINGHAM
JASPER
CRAWFORD
CLARK
EDGAR
CUMBERLAND
COLES
SHELBY
MOULTRIE
DOUGLAS
PIATT
CHAMPAIGN
VERMILION
EDGAR
CLARK
COLES
CUMBERLAND
EFFINGHAM
FAYETTE
JASPER
CRAWFORD
CLAY
RICHLAND
LAWRENCE
JEFFERSON
WAYNE
EDWARDS
WABASH
WHITE
HAMILTON
FRANKLIN
WILLIAMSON
JACKSON
PERRY
RANDOLPH
MONROE
ST CLAIR
CLINTON
MARION
WASHINGTON

MAP III-D-89

PERCENTAGE CHANGE IN FARM ACREAGE, 1964 - 1969

SOURCE: City County Data Book - Table 2, Item 176



Loss, 20.0 or more

Loss, 15.0 - 19.9

Loss, 10.0 - 14.9

Loss, 5.0 - 9.9

Loss, 0 - 4.9

Gain, 0 - 4.9

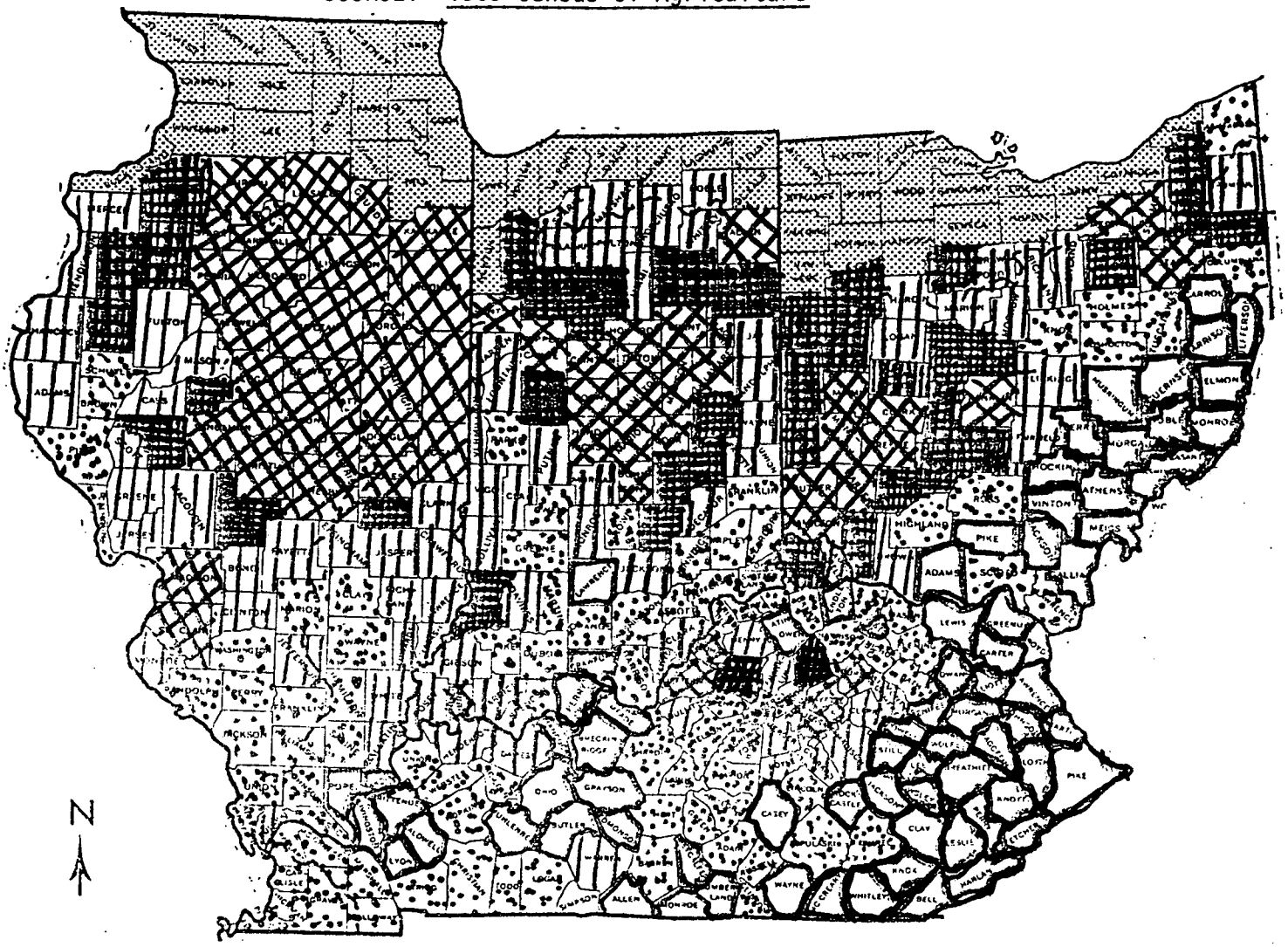
Gain, 5.0 - 9.9

Gain, 10.0 or more

MAP III-D-90

AVERAGE VALUE OF FARM LAND AND BUILDINGS PER ACRE

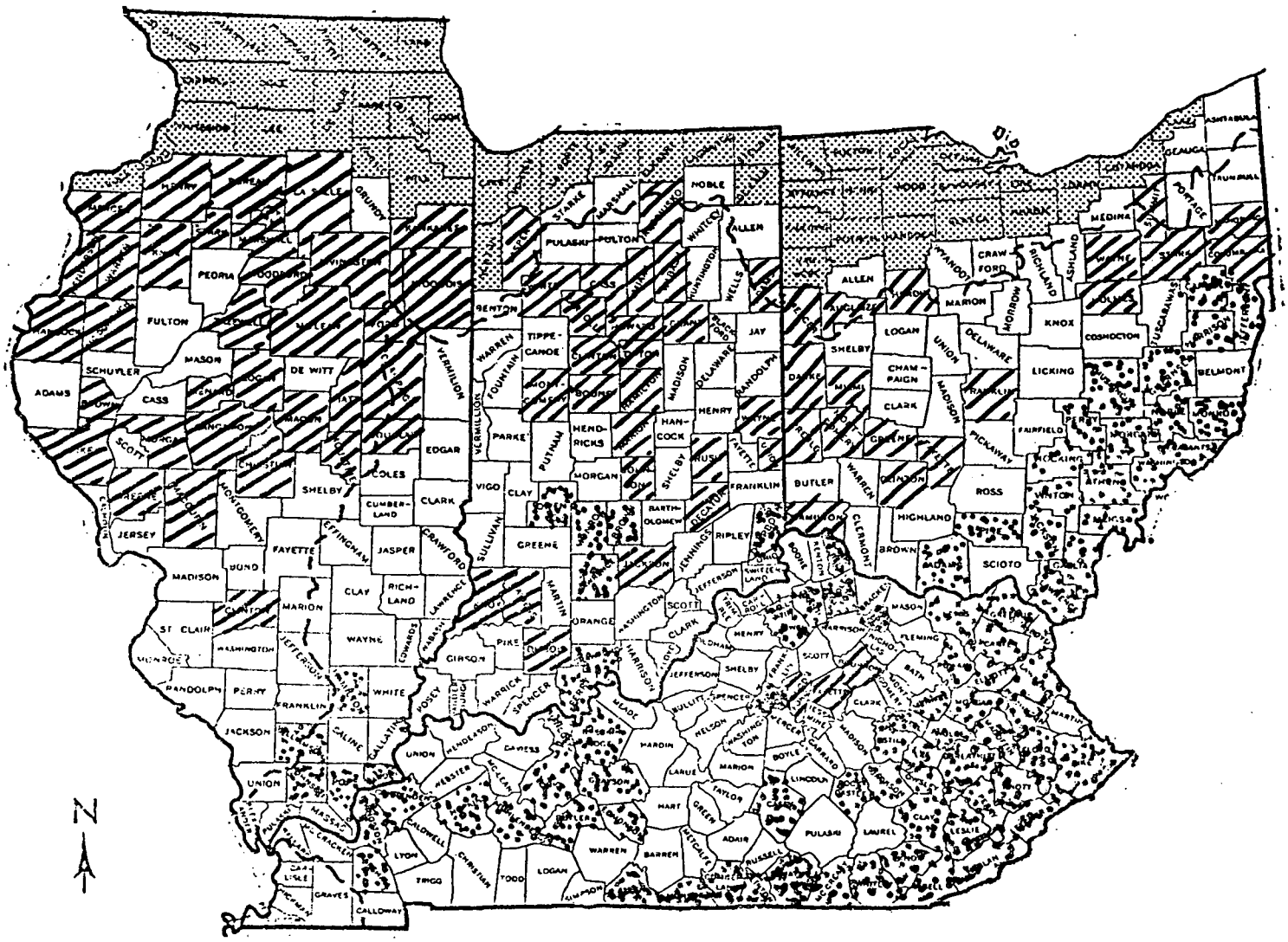
SOURCE: 1969 Census of Agriculture



MAP III-D-91

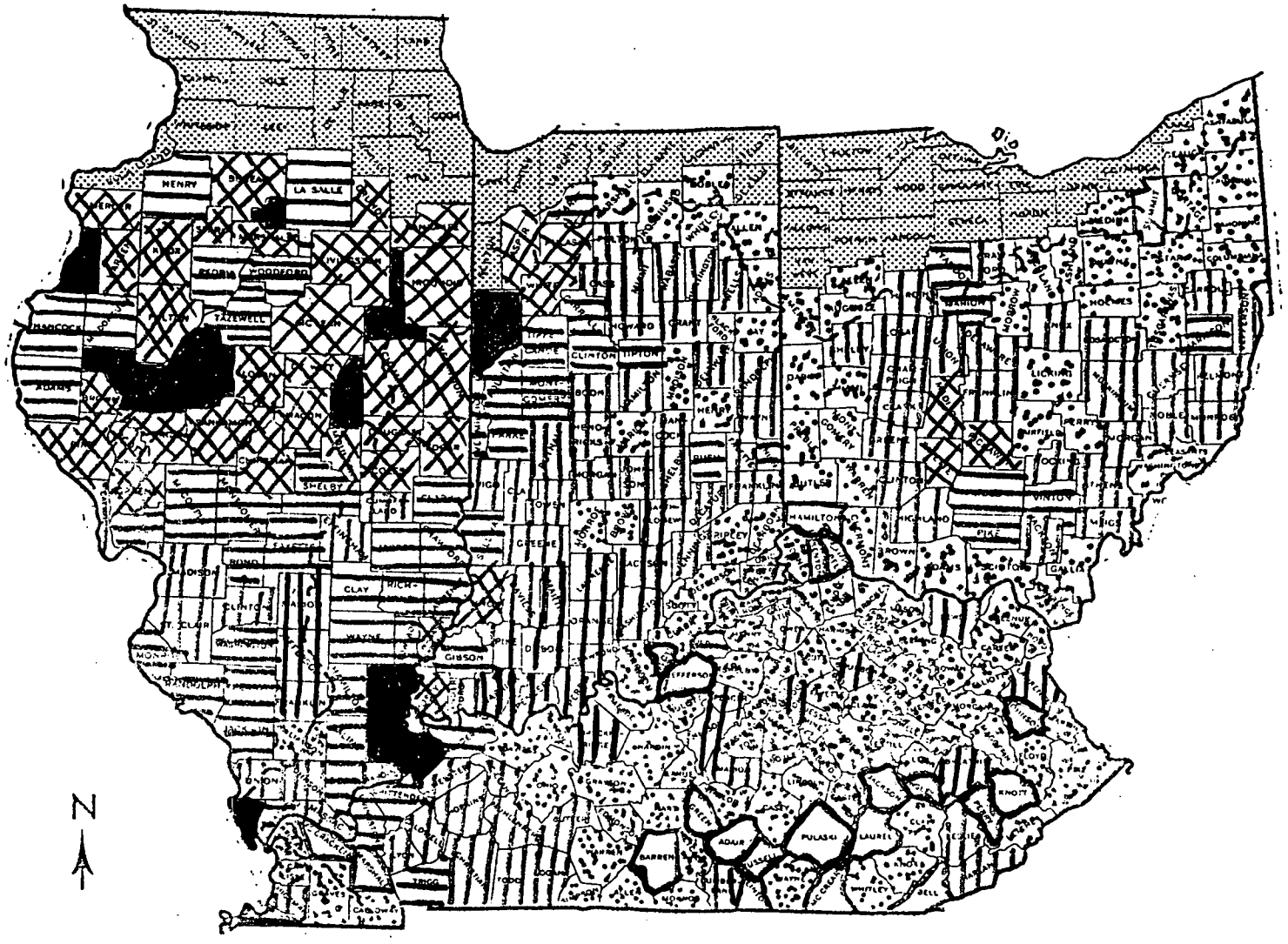
AVERAGE VALUE OF AGRICULTURAL PRODUCTS PER ACRE

SOURCE: 1969 Census Of Agriculture



MAP III-D-92

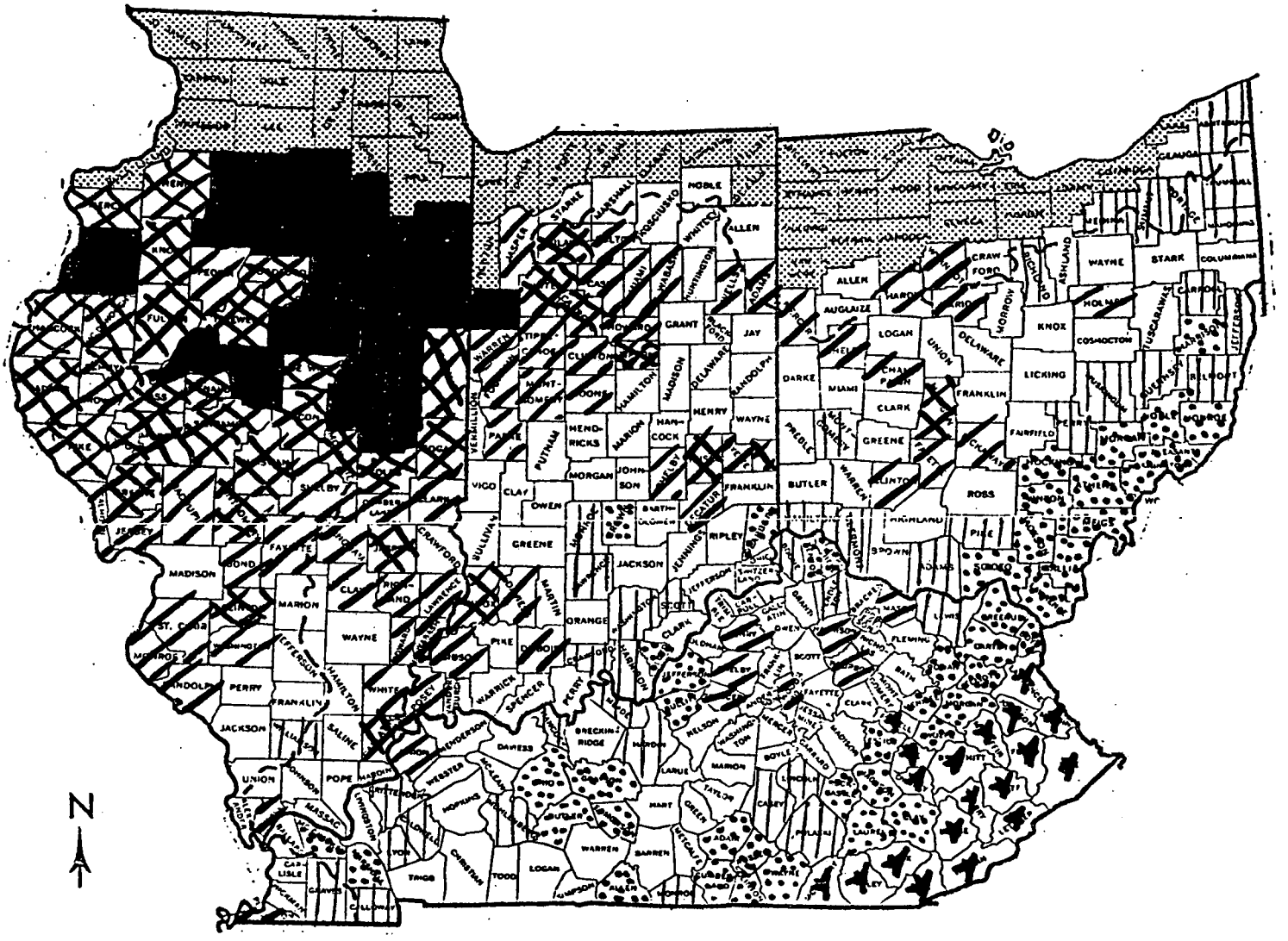
AVERAGE NUMBER OF ACRES PER FARM
SOURCE: 1969 Census of Agriculture



MAP III-D-93

PERCENTAGE OF FARMS WITH SALES OF $2,500 OR MORE, 1969

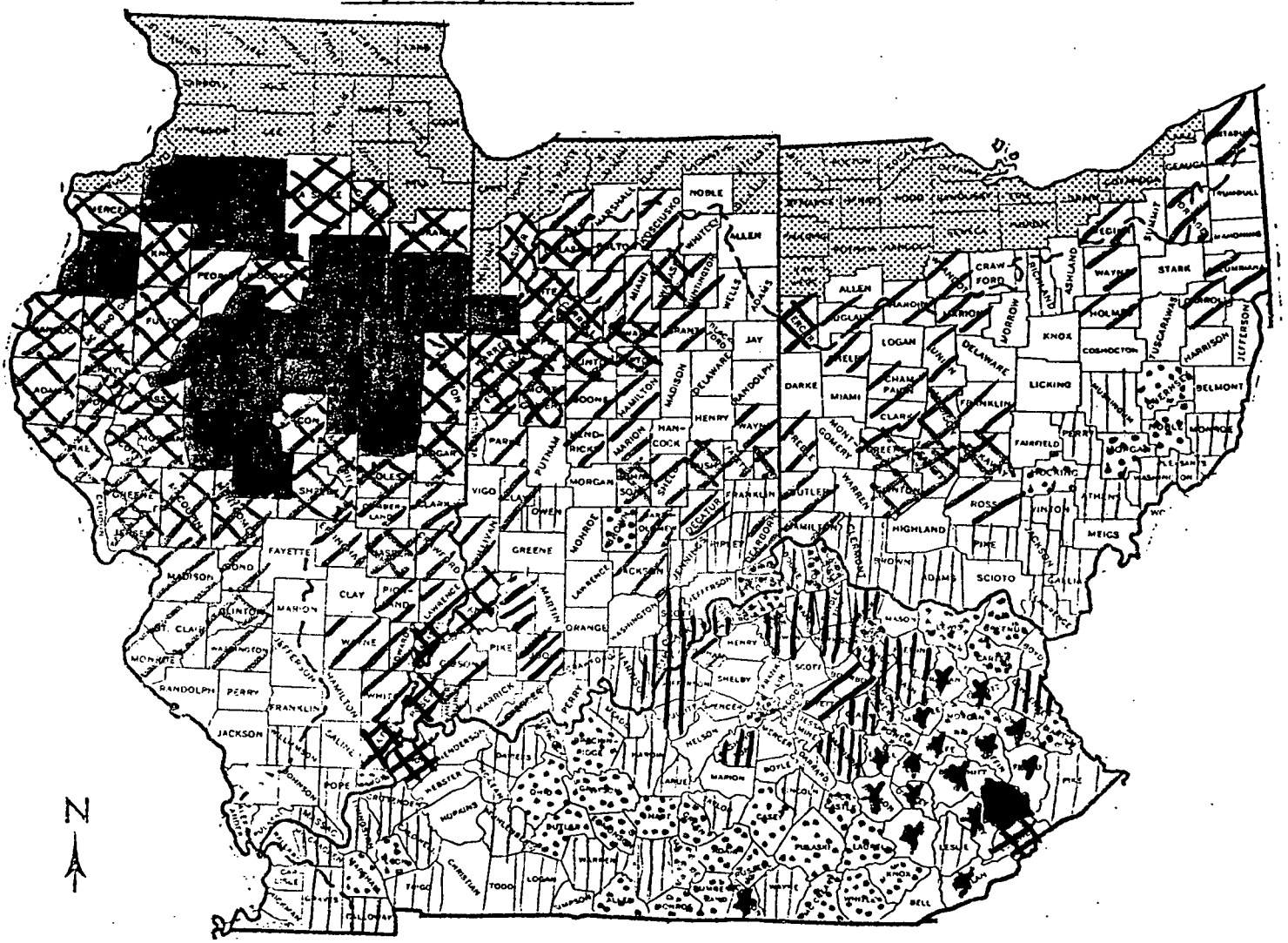
SOURCE: 1969 Census of Agriculture - Table 1, County Summary



MAP III-D-94

PERCENTAGE OF CLASS I-V FARMS WITH SALES OF $10,000 OR MORE, 1969

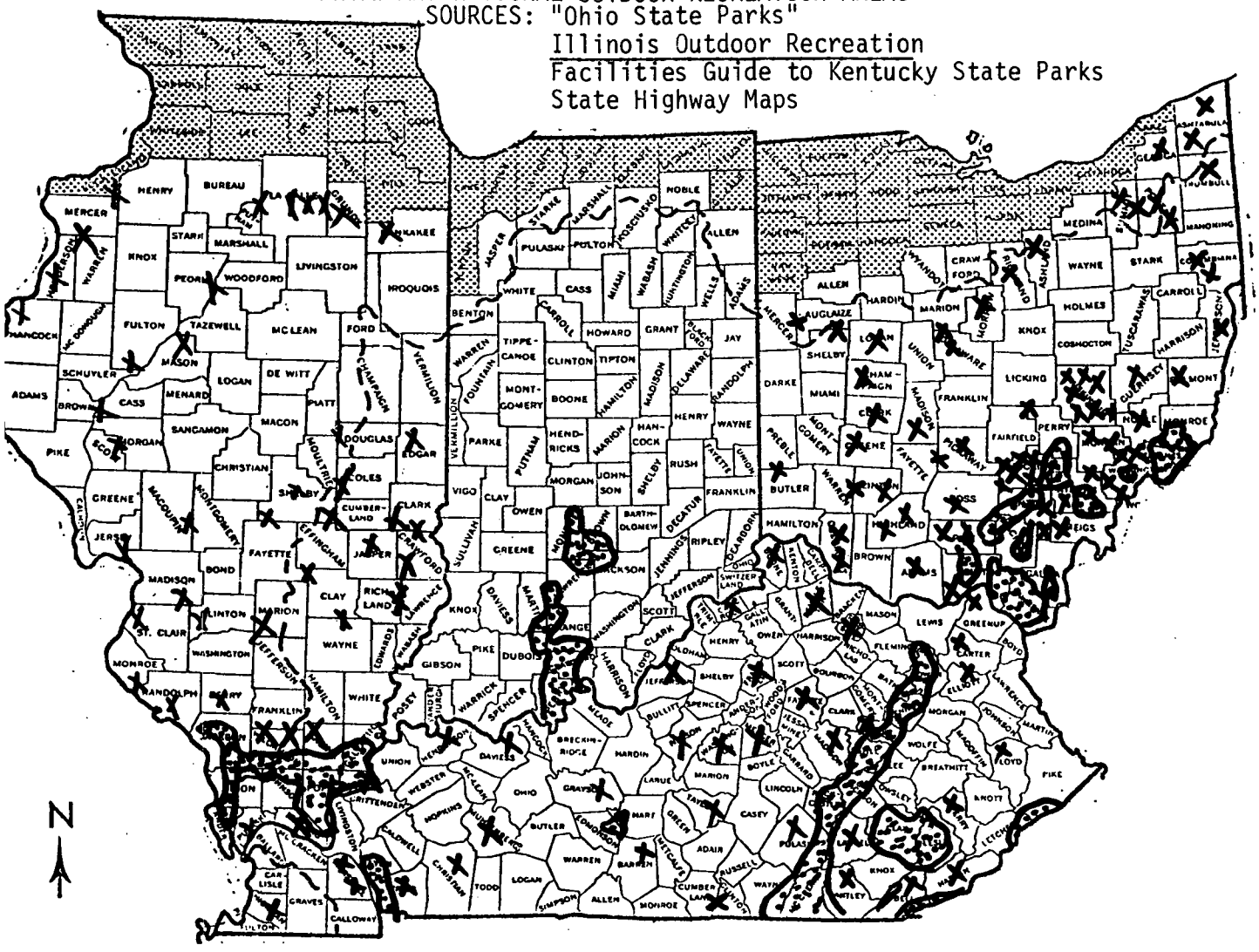
SOURCE: City County Data Book - Table 2, Items 185 and 186



SYMBOLIC ORIENTATION MAPS

MAP III-D-95

STATE AND NATIONAL OUTDOOR RECREATION AREAS
SOURCES: "Ohio State Parks"
Illinois Outdoor Recreation
Facilities Guide to Kentucky State Parks
State Highway Maps

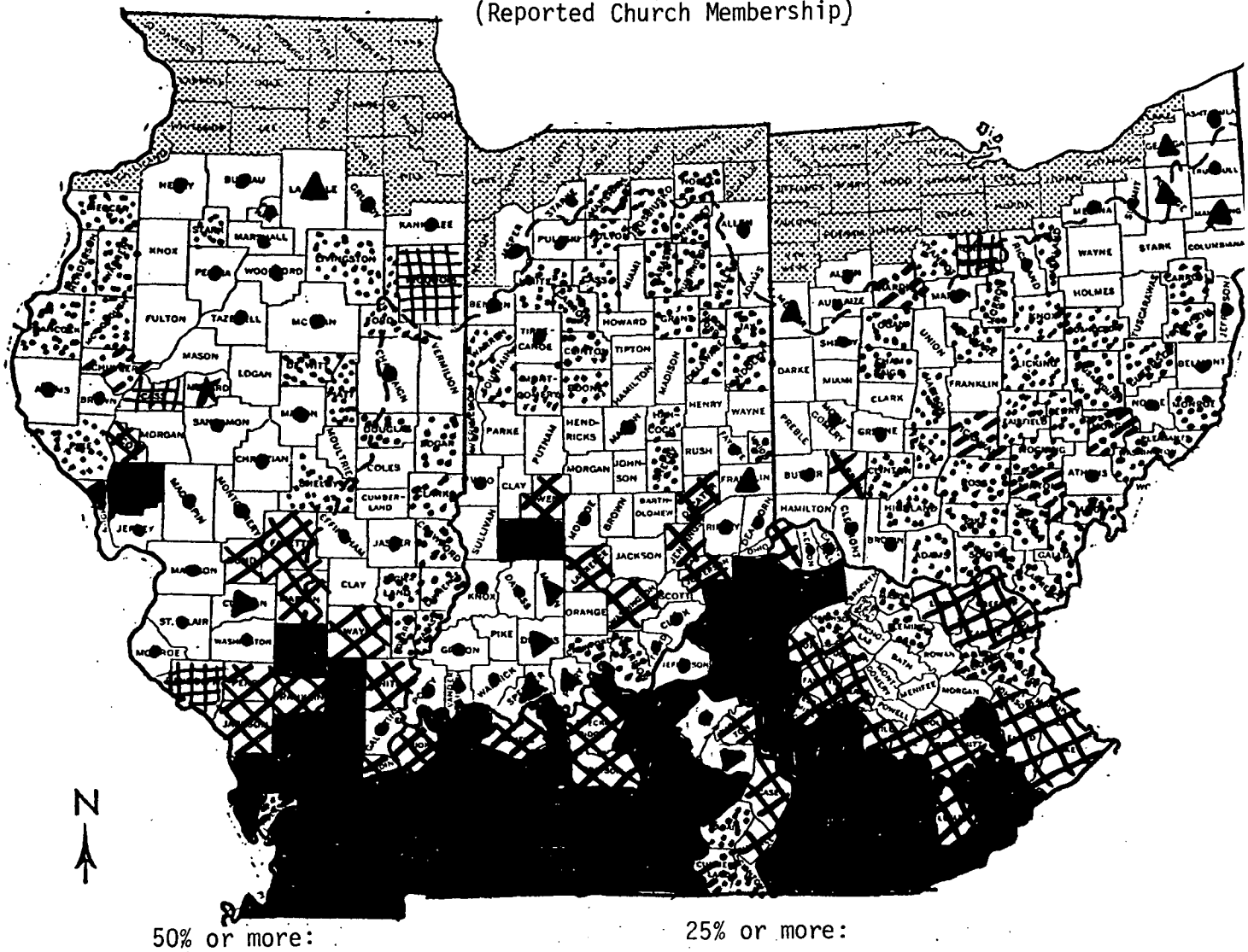


National Forests

X State Parks and recreation areas (where information was available)

MAP III-D-96

RANKING CHRISTIAN DENOMINATIONS, 1971
SOURCE: Map, Glenmary Research Center
(Reported Church Membership)



50% or more:

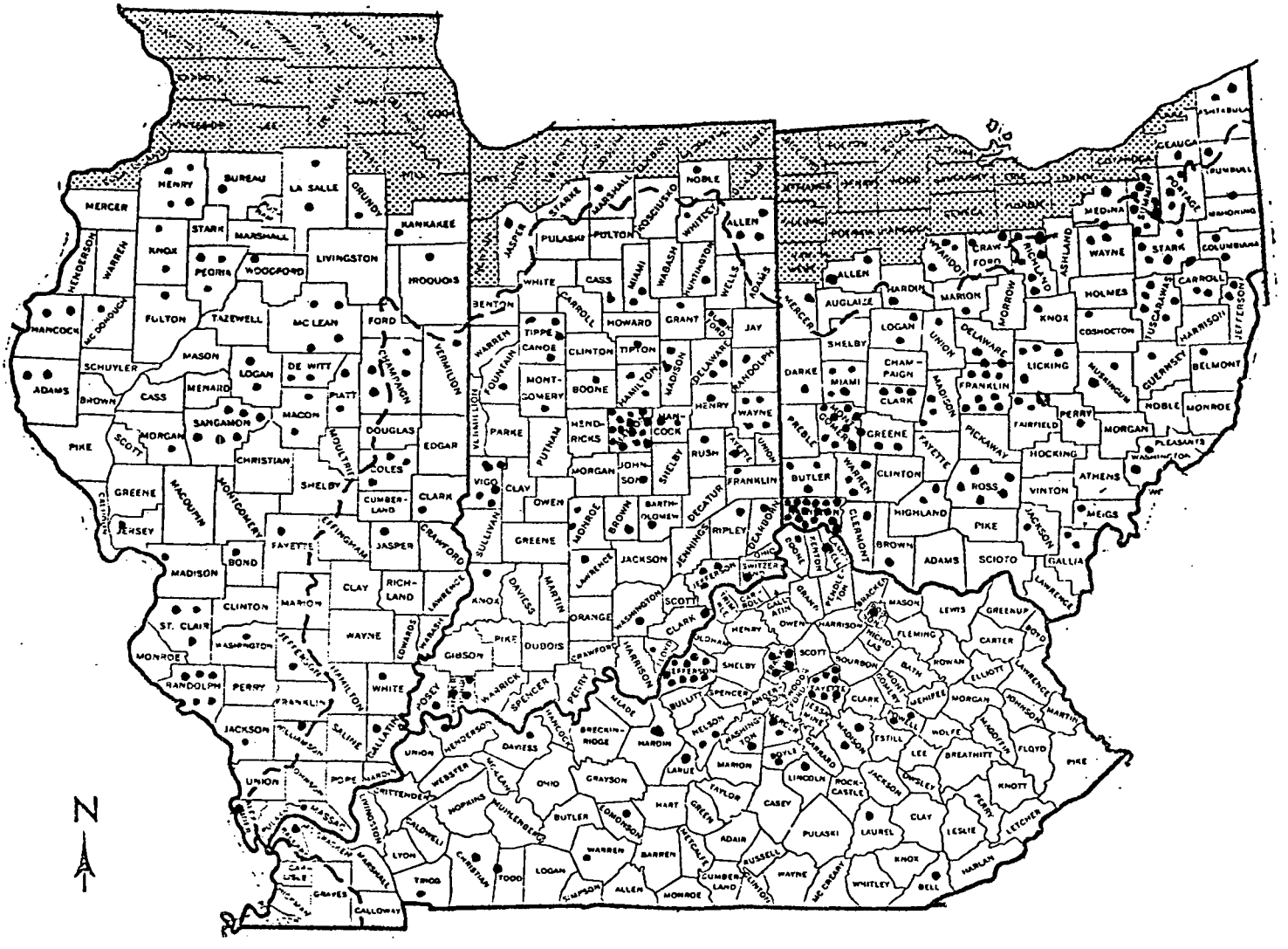
- Baptist
- Catholic
- Methodist

25% or more:

- Baptist
- Catholic
- Methodist
- Lutheran
- Presbyterian

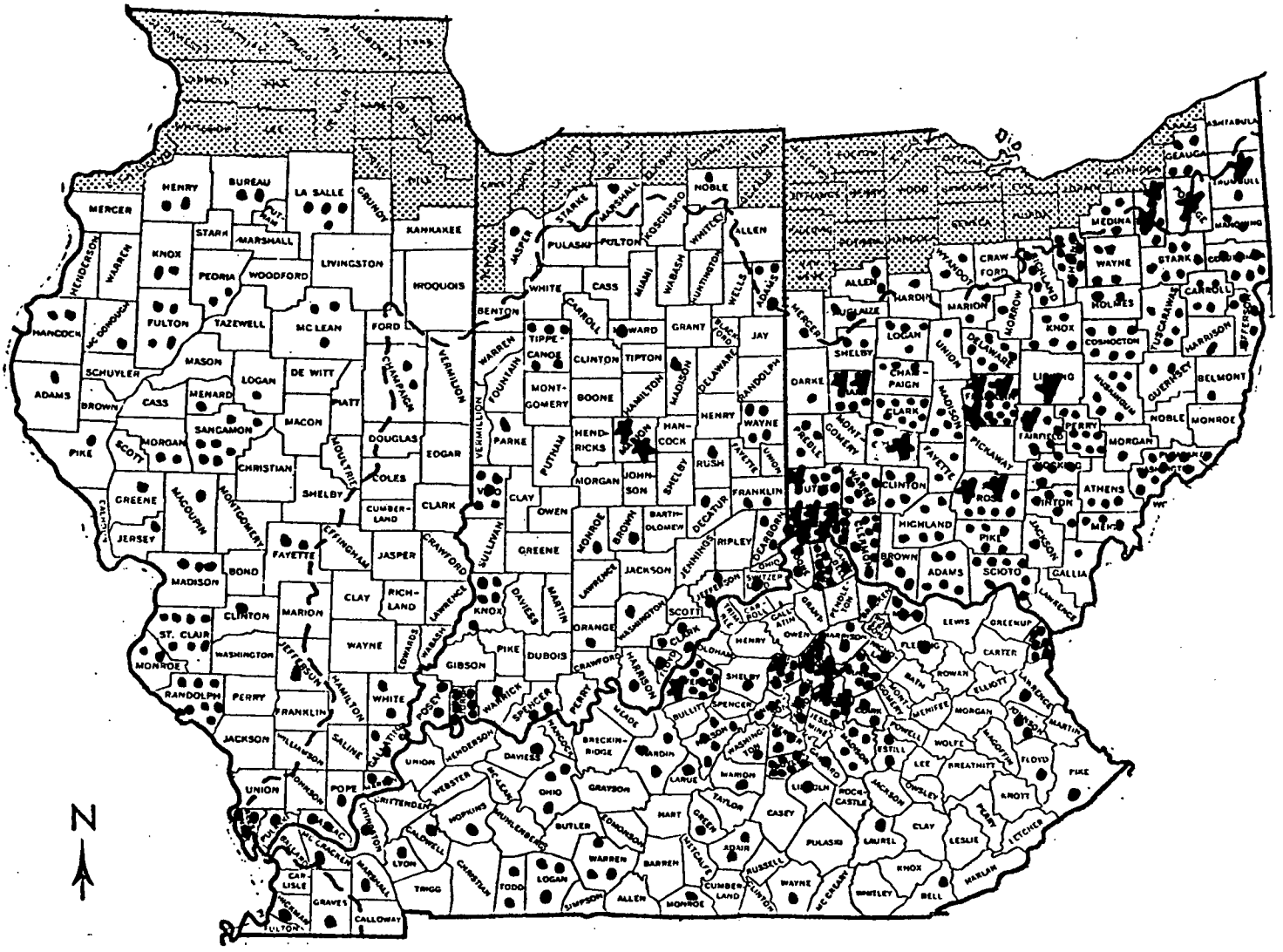
MAP III-D-97

MUSEUMS LISTED IN THE 1975 OFFICIAL MUSEUM DIRECTORY



MAP III-D-98

NATIONAL REGISTER OF HISTORIC PLACES, 1976



Number of places listed:

One

Ten