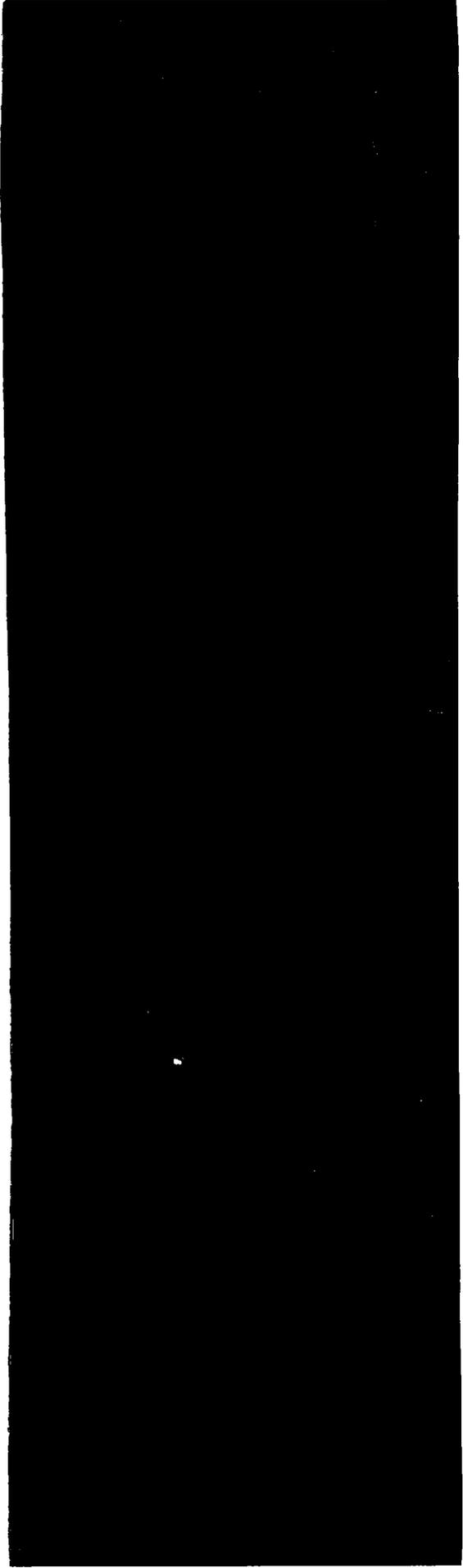


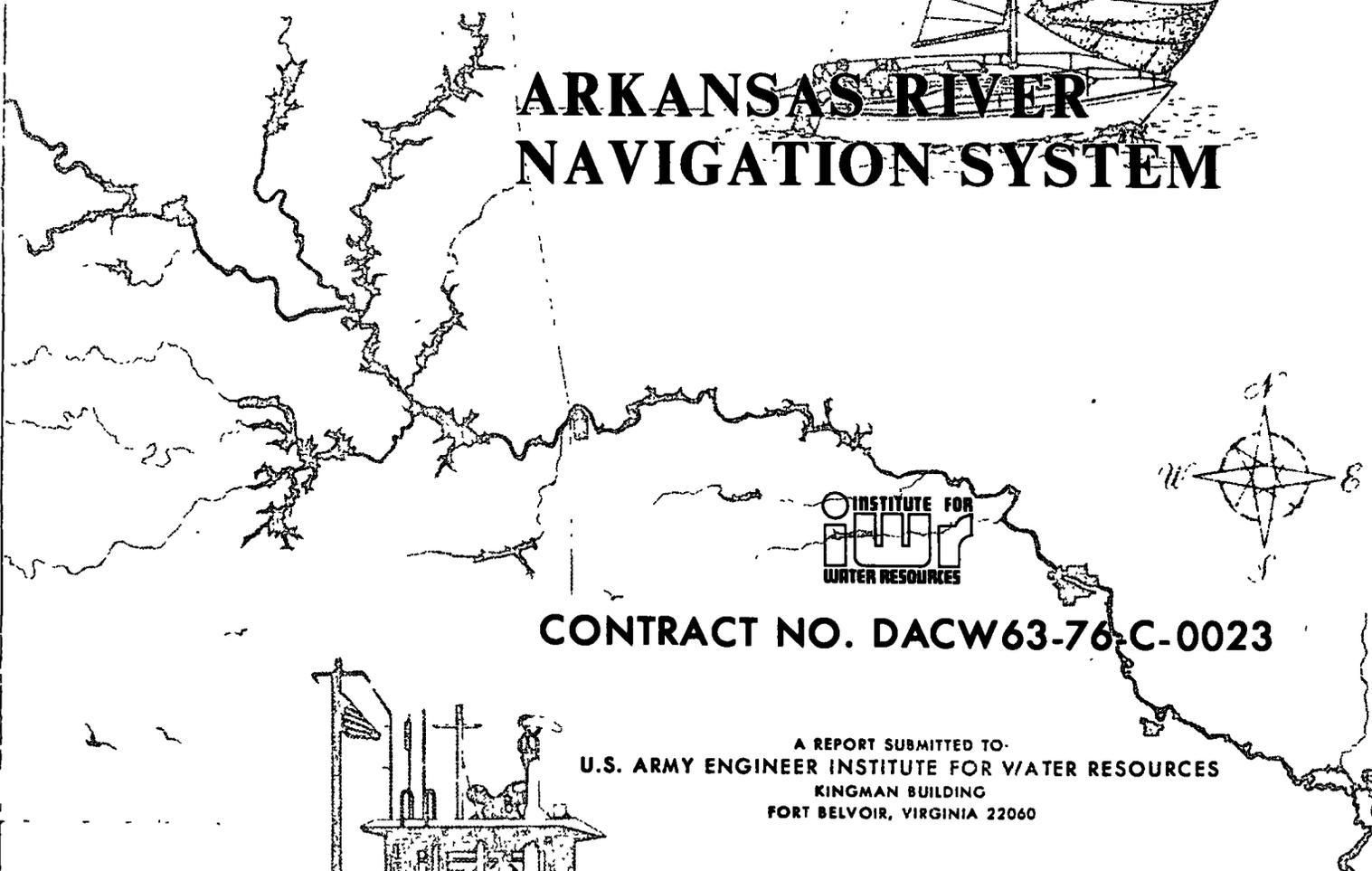
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# POPULATION CHANGE, MIGRATION AND DISPLACEMENT ALONG THE McCLELLAN-KERR

## ARKANSAS RIVER NAVIGATION SYSTEM



INSTITUTE FOR  
**IWR**  
WATER RESOURCES

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U.S. ARMY ENGINEER INSTITUTE FOR WATER RESOURCES  
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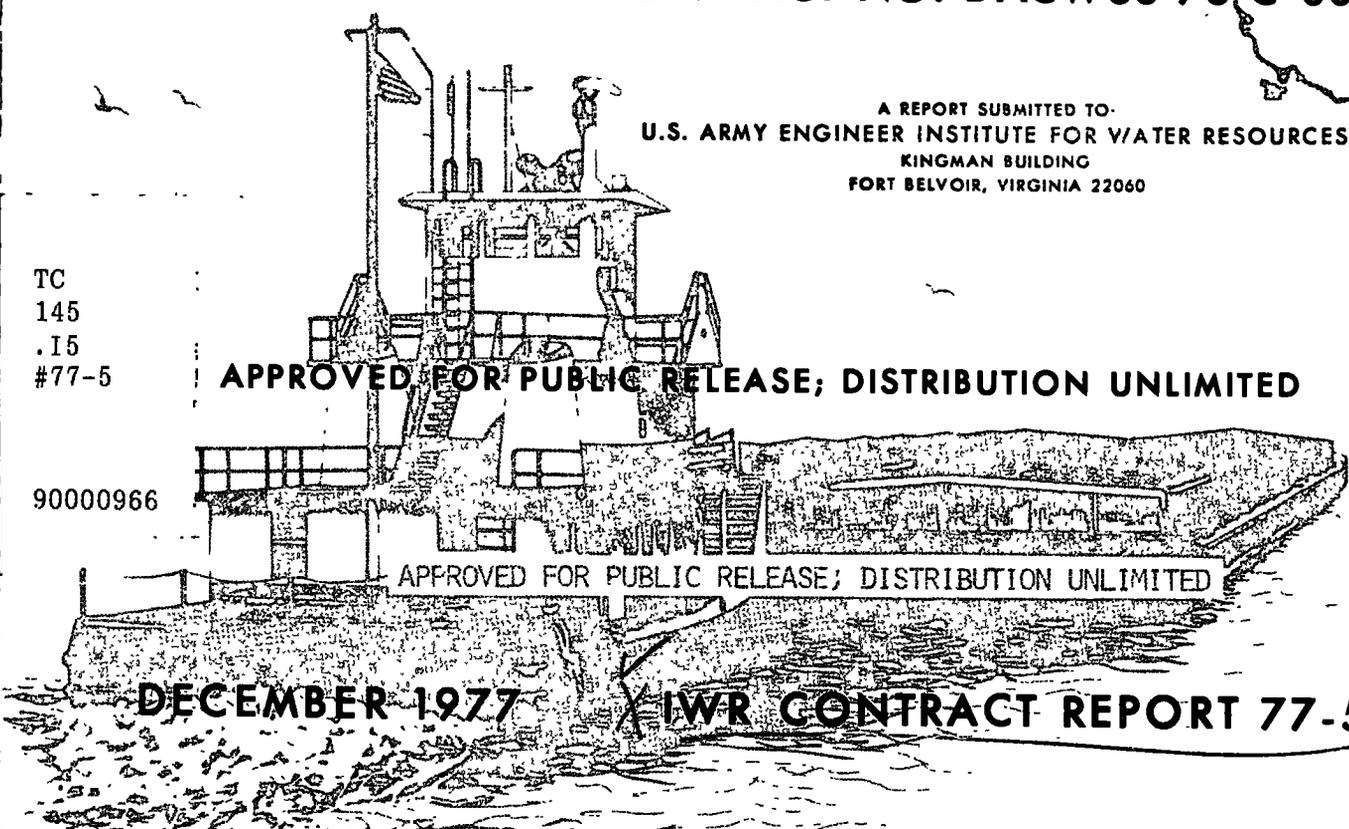
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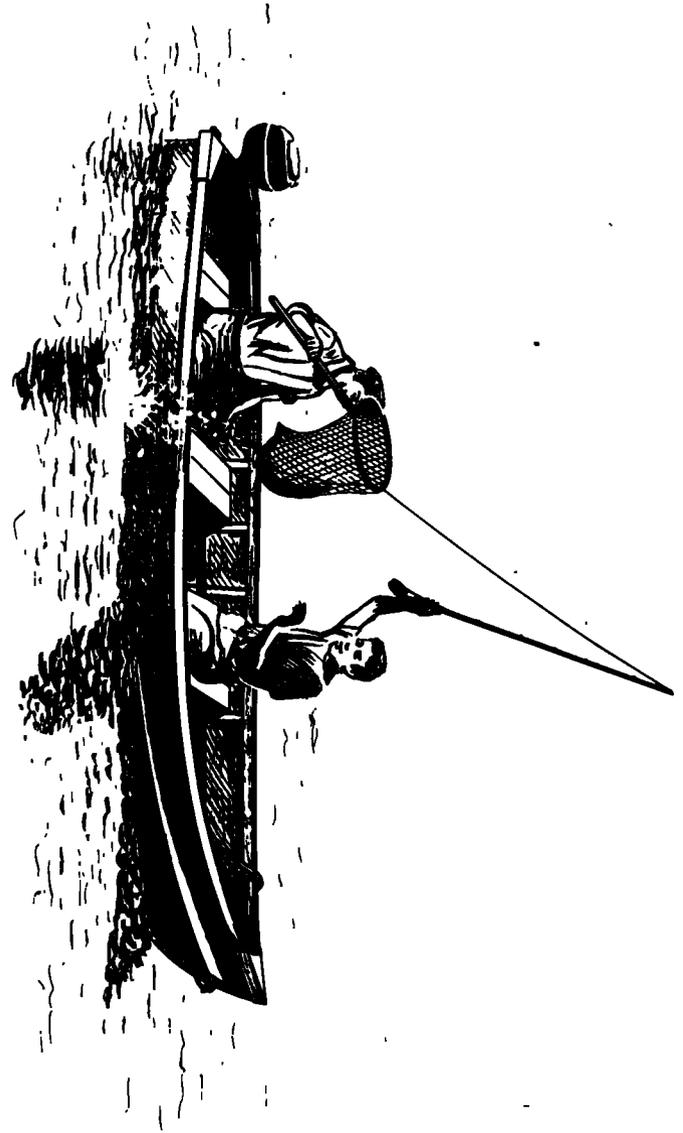
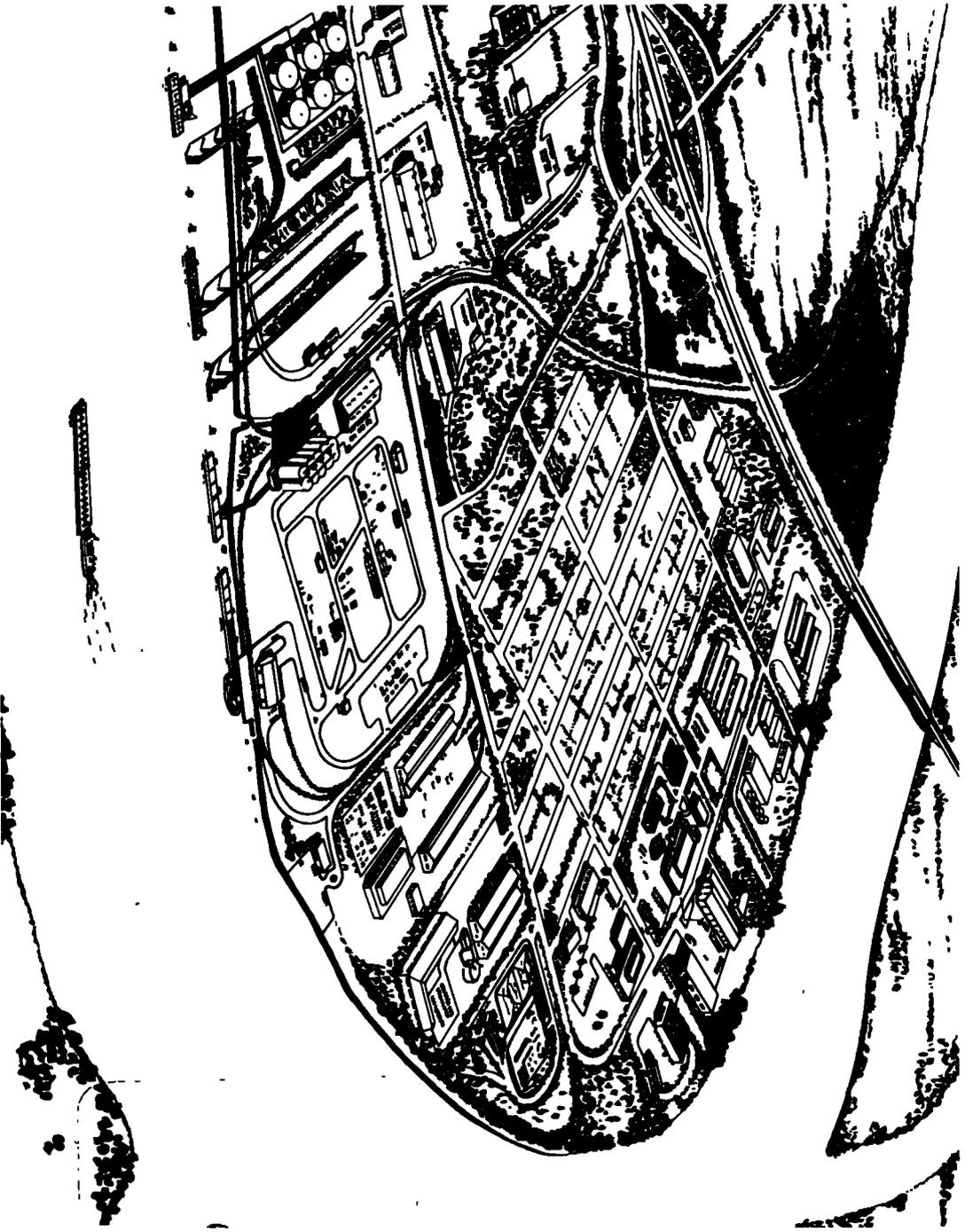
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**DECEMBER 1977**

**IWR CONTRACT REPORT 77-5**







POPULATION CHANGE, MIGRATION, AND DISPLACEMENT  
ALONG THE McCLELLAN-KERR RIVER NAVIGATION SYSTEM

A Report Submitted to:

U.S. Army Engineer Institute for Water Resources  
Kingman Building  
Fort Belvoir, Virginia 22060

Under:

Contract No. DACW63-76-C-0023

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IWR Contract Report 77-5

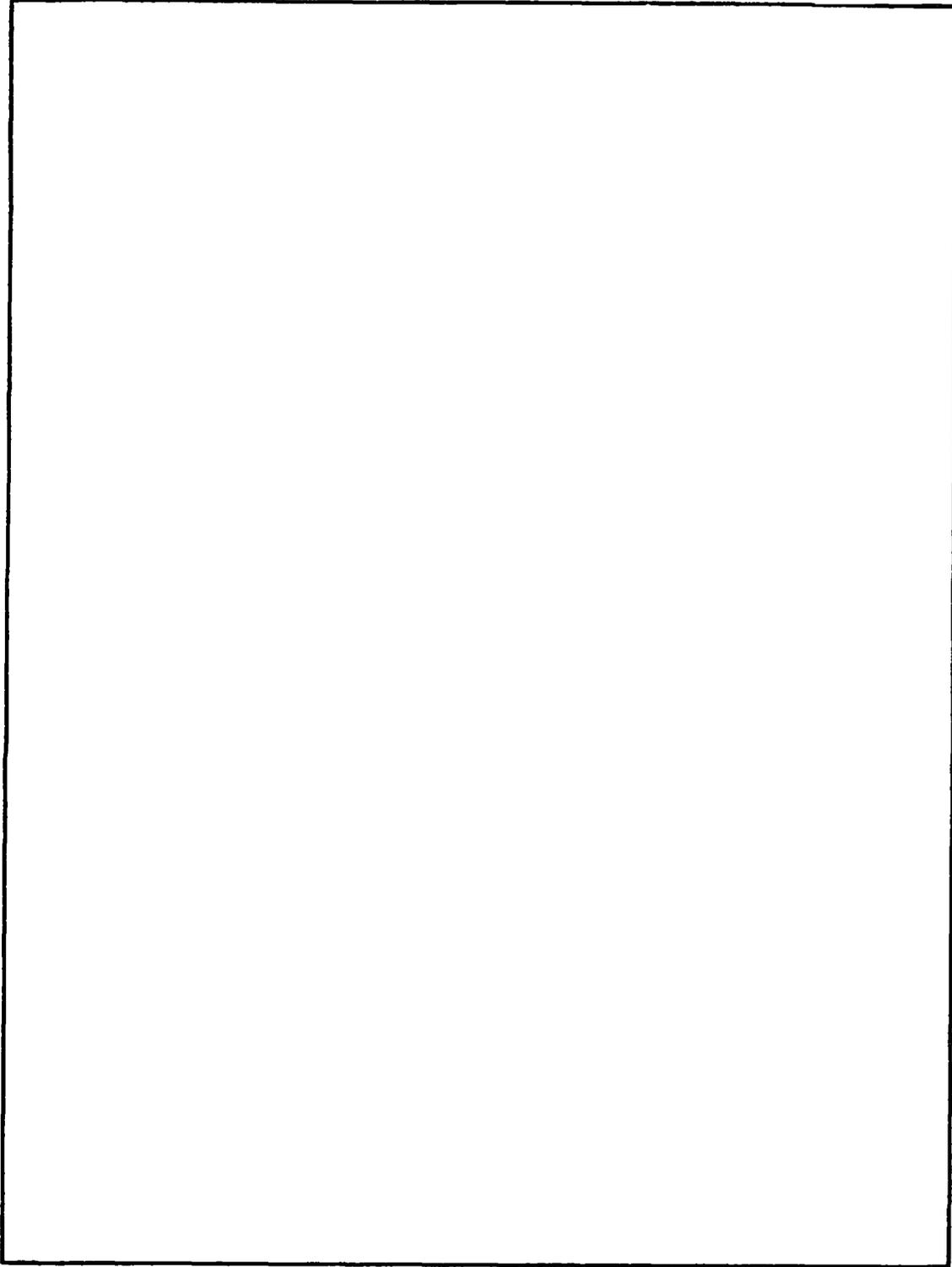
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This report is one of a series of impact-studies by the Institute for Water Resources dealing with the McClellan-Kerr Arkansas River Navigation System. All the reports listed below may be purchased from:

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- 1.) "Recent Developments in the McClellan-Kerr Arkansas River Navigation System Area." IWR Research Report 77-R1
- 2.) "A Research Strategy for Social Impact Assessment: A Tale of Three Cities." IWR Contract Report 77-R2
- 3.) "An Application of the Interregional I/O Model for the Study of the Impact of the McClellan-Kerr Arkansas River Multiple Purpose Project." IWR Contract Report 77-2
- 4.) "Analysis of Expenditures for Outdoor Recreation at the McClellan-Kerr Arkansas River Navigation System." IWR Contract Report 77-4
- 5.) "Population Change, Migration and Displacement Along the McClellan-Kerr Arkansas River Navigation System." IWR Contract Report 77-5
- 6.) "McClellan-Kerr Arkansas River Navigation System: Hydroelectric Power Generation." IWR Research Report 77-R4.
- 7.) "A River, A Region and A Research Problem." IWR Research Report 71-6
- 8.) "Regional Response Through Port Development: An Economic Case Study on the McClellan-Kerr Arkansas River Project." IWR Contract Report 74-5
- 9.) "Evaluation of Interregional Input-Output Models for Potential Use in the McClellan-Kerr Arkansas River Multiple Purpose Project Impact Study." IWR Contract Report 74-6
- 10.) "Discriminant Analysis Applied to Commodity Shipments in the Arkansas River Area." IWR Research Report 74-R2
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## Preface

The overall purpose of this segment of the McClellan-Kerr Impact Studies was to identify and analyze the impacts of the navigation system and its reservoirs upon population change, especially migration. In order to accomplish this task, the project was divided into three phases of work:

Phase I - Within this initial portion of the project, migration patterns in the McClellan-Kerr area were documented. Data for the 1940-1975 period were used for an examination of trends. In addition, these data were broken down in several ways, that is, by state, OBERS areas 117, 118 and 119, the Ozarks portions of the states, the waterway counties, etc....

Phase II - Through the use of a survey instrument, links between the waterway and lakes and migration to areas were established. This survey was administered to a sample of residents drawn from Johnson, Logan, Pope and Yell counties in Arkansas, and Cherokee, Haskell, McIntosh, Muskogee and Wagoner counties in Oklahoma. The instrument explored the household characteristics, residential histories, future mobility plans and associated indicators, and perceived benefits and losses because of the lakes.

Phase III - An examination of the impacts of lake construction on dislocated persons was conducted. A sample of persons who had to move because of Eufaula, Fort Gibson and Webbers Falls reservoirs were interviewed. This instrument focused on acquisition and condemnation procedures, social and economic losses and benefits of relocation, and the individual impacts of relocation.

### Acknowledgements

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## Introduction

When we speak of the "demographic" impact of a project, such as McClellan-Kerr, we rarely refer to direct quantifiable links. Rather, impact is considered as the "force of impression or operation" of McClellan-Kerr upon the size, distribution, and composition of the population. Of course, in some cases the impact will be quite direct, such as a family moving to a house on a newly-created lake, or a family forced to move because of that lake. But for the most part, McClellan-Kerr must be considered as a facilitator of change, one factor within a broad systems framework, the sum of which creates the demographic impact. The nature and magnitude of the impacts will depend on a large variety of factors in the local, regional and national systems. The complexity of the issue has been summed up by John Ballard:

The impact of a reservoir is like an equation with almost every factor an unknown. Some effects are inevitable, some are probable, some are possible, and some are almost inconceivable. They interrelate and crosstie until it is an excruciating task to separate them. A summary statement of community effects depends upon so many variables that a good guess is probably all one can hope to achieve.]

By examining the changes in the size, distribution, and composition of the population through secondary data and a survey of households, we may, to the limit of our analytic tools, make judgements concerning the impact of McClellan-Kerr. Since the leading element of population change, especially at the sub-regional level, is migration, this report deals essentially with the impact of McClellan-Kerr on population mobility. However, relationships between mobility, areas, and people will illustrate linkages among areal changes, individuals and household changes, and McClellan-Kerr.

### Summary of Major Findings

Although it is difficult to summarize the findings of this study even in a report this size, we may briefly sketch the major elements comprising the basis of the report:

1. McClellan-Kerr waterway counties in recent years have experienced and continue to experience population change through migration. With recent trends in Southern non-metropolitan growth, increasing economic opportunities, and improved living conditions, this area is showing a dramatic turn-around from the traditional pattern of rural-urban out-migration.

2. Although recent changes in residential preferences have given the McClellan-Kerr counties the potential for continued in-migration, they are in competition for these migrants with other areas in the two states, especially other Ozarks counties.

3. In the 1960's, McClellan-Kerr Ozark counties, in total, had a rate of net migration (6.5%) well above that of the states' total (-0.8%) and the bi-state Ozarks region (4.8%).

4. While the 1970-1975 migration rate for the waterway area (7.3%) continued to exceed that of the states (4.3%), it was surpassed by that of the total Ozarks (9.7%).

5. Although McClellan-Kerr counties may appear to be experiencing a migration slowdown, the rate for the recent five-year period (7.3%) is higher than that for the previous decade (6.5%). In addition, the net gain in migrants for the five years of this decade is 67,100 persons, compared to a net gain in the preceding ten years of 51,600 persons.

6. Increases in migration to the river/lakes area were not evenly distributed across all counties, with some areas showing dramatic increases, while others remain stable or continue to decline. For example, Wagoner County, Oklahoma, had a net migration rate of 19.0% in the 1970-1975 period, and Haskell County experienced only a 1.1% rate.

7. In the 1960-1970 period, outmigration in nonmetropolitan Ozarks areas continued for young adults, while the metropolitan areas received slight gains, especially among young whites. For the 1970-1975 period, gains in metropolitan and nonmetropolitan Ozarks areas were nearly equal (9.8%, 9.7%).

8. Migration was found to have been largely to small cities and towns, with some suburbanization in a few places, and some settlement of elderly in rural areas.

9. Satellite growth has occurred in towns near the larger nonmetropolitan urban centers where suitable transportation exists for commuting.

10. It was found that economic reasons dominated the migration to the area (40% of the migrants) followed by amenities (30%) and socio-cultural reasons (30%).

11. Obviously, it would be rather difficult to link all reasons to the waterway, since McClellan-Kerr constitutes a single factor in a giant array of possible linkages to motives. However, according to responses to questions in the survey, the waterway-created lakes present themselves as an important factor.

12. Few respondents held a negative opinion of the waterway project and a striking majority (70%) claimed that jobs and recreation were its most important benefits. (Recreational benefits were perceived in two ways: economic gain from tourism and recreational opportunities for the residents themselves).

13. The high proportion of return migration and high rates of home ownership, with the high attractiveness of the area will lead to low remigration rates. Few have plans to leave the area.

14. As a consequence of a substantial amount of in-migration, the receiving area is changed because of what each migrant brings to the area, and the timing of the move. Areas attract different types of migrants, each type with a somewhat distinct set of characteristics, depending upon the stage of economic development or diversity and the presence of amenities. Migrants from nearby areas (local movers, 38% of the total migrants) are the first to take advantage of expanded employment opportunities, followed by return migrants (43%) learning of opportunities through family/friendship networks; then primary migrants (19%). Each migrant group carries successively higher levels of education and occupational skills to the area.

15. Almost half (45%) of the adult population in McClellan-Kerr Ozark counties have moved into their current residence (crossing at least county lines) since 1965. One-fourth (26%) are under age 30; a little more than half (55%) aged 30-64, and almost a fifth (19.7%) are aged 65 and over.

16. Migrants are better educated (11.1 median years schooling) than non-migrants (8.1 years), more often white-collar workers (28% vs. 17%) and have higher income levels (\$7,708 median household income vs. \$5,390).

17. The available labor pool has expanded in size and quality as immigrants have raised the pool of available skills. Some of the growth in employment has been at the expense of nonmigrants at a competitive disadvantage for jobs.

18. While the river project has shown itself to be rather highly beneficial to the area, a project of this type is not without negative ramifications. Because of the realized benefits of the project, the persons who are most directly affected by reservoir projects--the residents forced to leave their homes--tend to be forgotten.

19. Approximately half of the displaced persons interviewed (52%) felt that the land settlement was fair, but many claimed that the smaller the acreage, the lower the price per acre.

20. From a personal standpoint, the relocatees felt that the money received, although perhaps fair, was not enough to purchase comparable land, especially with rising land prices from anticipation of the reservoir. However, a sizeable minority (21%) felt that the acquisition was a greater benefit than loss to themselves personally. Although the majority (60%) felt that benefits would outweigh costs in the long run, the pinch was that they (the relocatees) would not personally benefit.

21. Most of the relocatees quit farming (65%) and either retired or became unemployed (of 76 persons responding, the number unemployed rose from 8 persons before the move to 54 currently). More than half (58%) gave their present household income as less than \$5,000 annually. It must be noted, however, that income levels before relocation were not very often above the \$5,000 mark.

22. Overall, the attitudes of relocatees reflected numbness and resignation, the desire to forget that the relocation had ever happened, and the recognition that some have to suffer for the good of many.

23. McClellan-Kerr has affected the size, distribution and composition of the population, both as a mechanism of economic development and through improved amenities (i.e. lake areas for residential development and recreational opportunities). By extrapolating results from the survey, the authors estimate that approximately 40% of the immigration is probably attributable to amenities and employment opportunities afforded by the McClellan-Kerr project. In terms of absolute numbers, this would yield a figure of about 25,000 persons since 1970. However, it is possible that the most dramatic impacts have already occurred, concentrated in the late 60's and early 70's. Competition from amenities offered by other lakes in the Ozarks region has resulted in higher growth rates in surrounding counties than in McClellan-Kerr counties, and locational factors will become more critical for growth in the near future.

24. A further issue, and one of increasing importance in the refinement of impact assessment research, is the issue of "transferability" to other target sites. Clearly, each project is tied to specific conditions particular to a given area. Transferability is a function of 1) the degree of similarity between comparison projects; 2) methodological strategies used to gather the information; 3) elasticity of response to comparable inputs from national levels. Thus, any inferences drawn from the McClellan-Kerr project regarding other projects, whether it be the Tombigbee in Alabama or Meramec in Missouri, must be couched in terms of varying conditions and situations from place to place.

However, there are apparently basic demographic processes operating in a relatively similar fashion from area to area. For example, this report has identified the importance of amenities, job opportunities, and proximity to metropolitan areas. Applying these constraints on growth to a reservoir in eastern Missouri or northern Alabama will have very different outcomes. The factors of growth have not changed, only their aggregate effect and role in the particular developmental process. Any transferability must consider the differential role the same factors will generate from area to area.

Demographic Review: 1940-1975Arkansas and Oklahoma

For the period 1940-60 the population of Arkansas declined steadily, followed by a considerable growth in the 1960's, so that by 1970 the population of the state was nearly equal to that of 1940. In the case of Oklahoma, the state has had a gain of about 220,000 people since 1940. The only decade of population loss was in the 1940-50 period when the loss was about 100,000 people. A gain of about 100,000 occurred in the 1950's and an additional gain of 230,000 in the 1960's (See Figure I).

The distribution of the population of these two states by their urban and rural residence is instructive. Both states show a strong increase in urban residents and a large decline in rural residents. For example, Arkansas has gained more than a half million urban residents in the 1940-70 period counteracted by a similar loss of rural population. Oklahoma gained about 860,000 in urban population and had a rural loss of about 640,000 in the 30 year period. As a result of this internal redistribution, the urban proportion of the population in these states had increased markedly. Arkansas has moved from 22% urban in 1940 to 50% by 1970; Oklahoma similarly has moved from 38% urban in 1940 to 68% by 1970.

The rapid growth of urban population can be illustrated by examples of urban concentration. In 1940 Arkansas had but one city of at least 50,000 population (Little Rock) while four cities (including North Little Rock, Ft. Smith and Pine Bluff) were of that size by 1970. Oklahoma in 1940 had only two cities in the 50,000 plus category (Oklahoma City and Tulsa) and by 1970 two others (Norman and Lawton) had reached that size. The proportion of the population living in cities of 50,000 or over has increased greatly in the two states-moving in the case of Arkansas from about 5 percent in 1940 to 16 percent in 1970 and from 15 percent to 32 percent for Oklahoma in the same period. Also, by 1970,

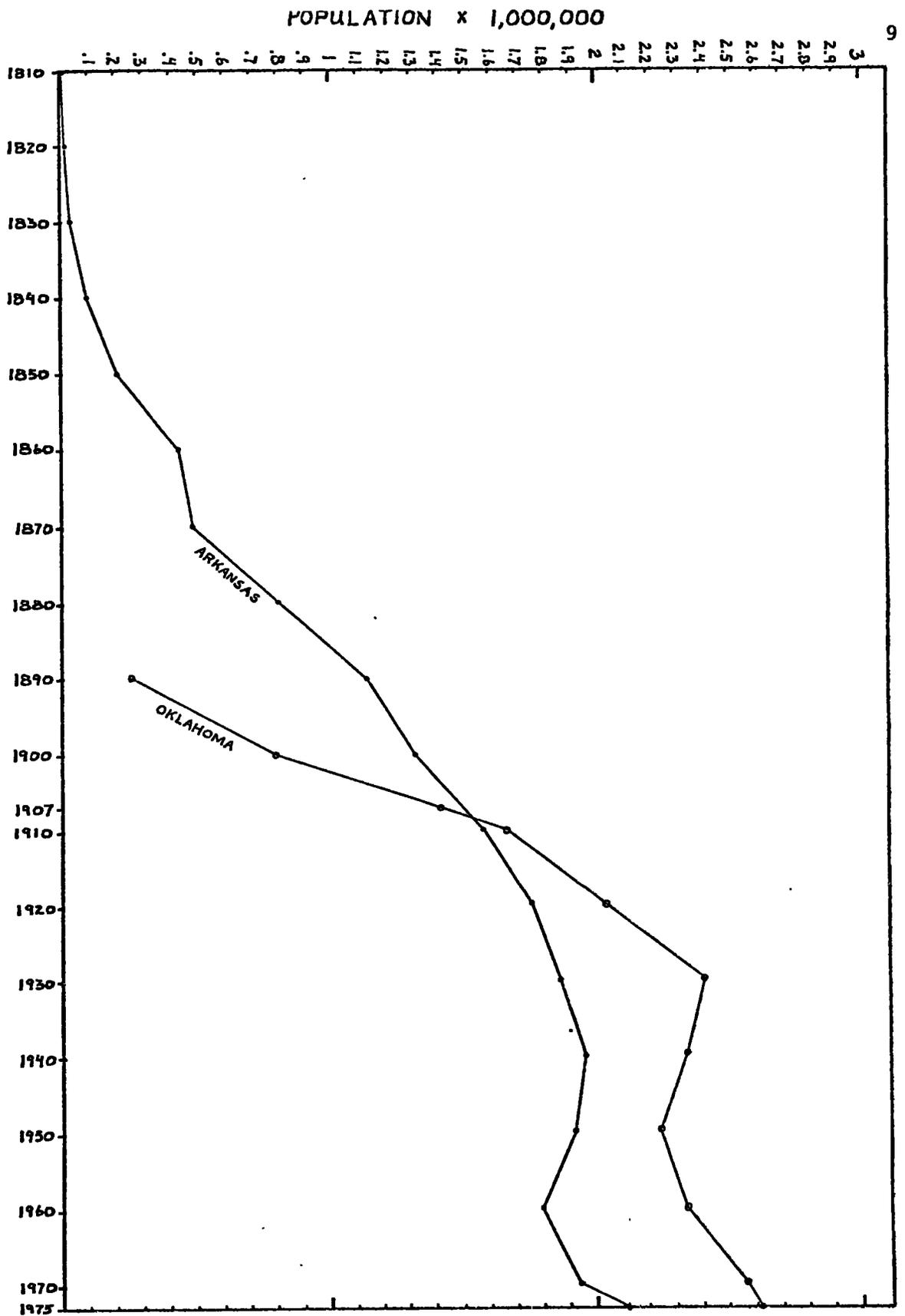


Figure I: Population Size for Arkansas and Oklahoma from Earliest Census

31 percent of the people of Arkansas and 50 percent of Oklahoma's population resided in Standard Metropolitan Statistical Areas. It is in the SMSA's where relatively rapid growth has occurred recently. For example, Arkansas increased by 7.7 percent in the decade of the 60's but nearly double that rate of growth (14.3 percent) is reported for the Arkansas portion of the SMSA's during the same period. Similarly, Oklahoma gained by 9.9 percent in the 1960-70 period but Oklahoma residents in SMSA's had double this rate of increase (20.0 percent). It is clear that the SMSA's have played a striking part in the population change of these states. Arkansas had a population increase of about 137,000 in the ten years before the 1970 census but nearly 75,000 of the increase or about 54 percent was within the SMSA's alone. Also, Oklahoma had a state increase of about 231,000 with the SMSA's accounting for about 213,000 or over 90 percent of the total.

The states of Oklahoma and Arkansas have been agricultural states until recently. The great changes occurring in the agricultural economy throughout the nation have had the effect of reducing the need for manpower on the nation's farms, at the same time, there has been an increase in agricultural productivity. Thus, Arkansas and Oklahoma have had an extended record of out-migration principally from their rural areas. It was not until the 1960-70 decade that this trend reversed. In that most recent decade Arkansas had about 70,000 net out-migration but that amount should be compared with net out-migration in the magnitude of 400-500 thousand for previous decades. Likewise, Oklahoma, for the first time in decades, had an in-migration of about 13,000 people in the ten years before the 1970 census which can be contrasted with out-migration in the 200-500 thousand range in previous decades.

Out-migration until 1960 in both states has been selective by race, age, and sex. Although net out-migration occurred at virtually every point in the

age scale for both sexes and for whites and nonwhites, out-migration rates have been higher for nonwhites than whites and reached their highest levels among youth in their twenties. For the ten years since 1960 in Arkansas, out-migration had continued at a high rate for the nonwhites but among the white population there was for the decade a modest in-migration. Oklahoma, during the same period, had a reverse situation from that of Arkansas. As previously noted, there was a small net in-migration. This was due to relatively heavy in-migration of nonwhites to Oklahoma City and Tulsa while elsewhere in the state most counties had net migration losses among nonwhites. Similarly the white net migration gains were concentrated in Oklahoma and Tulsa counties but these gains were slightly more than offset by white out-migration elsewhere in the state.

In areas of both states distant from cities, out-migration of both sexes in the younger years continued in the 1960-70 decade while the more urbanized areas gained by in-migration of youth. But there was a sharp difference in migration patterns as between the large city-counties and what might be classified as suburban counties. The large cities received heavy in-migration of nonwhite youth of both sexes while there was out-migration of white young people. Conversely, the "suburban" migration gains were most evident for young whites. White elderly people of both sexes reveal a pattern of leaving the larger cities and something of a concentration in "suburban" areas. Elderly nonwhites on the other hand were significant contributors to the net in-migration of cities but accounted in a very minor way for the growth of "suburban" areas.

Since 1970, estimates prepared by the U.S. Bureau of the Census for states and counties show that both Arkansas and Oklahoma have gained population at a more rapid rate than the gains noted for the 1960-70 decade. By July 1, 1975, Arkansas had gained 193,000 and Oklahoma 153,000 people since April 1, 1970.

These gains amount to more than one percent annually and if continued for the decade of the 70's would result in rates of increase exceeding those of any decade for the past 50 years. More than one-half of these gains are due to net in-migration but the net migration gains were not general among the counties of either state. Among Arkansas' 75 counties, 22 had net out-migration since 1970 and for Oklahoma's 77 counties, 20 had migration losses since 1970. Generally speaking, migration gains occurred in and near urban concentrations and in other areas holding some attraction for light industry, recreation, and retirement homes.

#### OBERS Regions

Taken together, OBERS 117, 118 and 119 had little population change from 1940 to 1960 but in the decade of the 1960's there was a gain of more than 250,000 people and an estimated additional increase of nearly 160,000 by July 1, 1974. In this latter period about 100,000 of the increase was due to in-migration. From 1960 to mid-1974 the three economic areas had reached a population total of 2,323,500 or a percentage gain of 21.3 (See Figure II).

OBERS 117 lies wholly in Arkansas and includes the larger cities of Little Rock and Pine Bluff and the Dardanelle development area in the vicinity of Russellville; it also includes counties extending to the Missouri border in north central Arkansas and counties extending south of the Arkansas River to and beyond the Hot Springs vicinity. Aside from counties along the eastern and southern borders of OBERS 117 with population losses or very small gains, the counties along or bordering the course of the Arkansas River had by 1974 appreciable gains ranging from around 15 to more than 50 percent of their 1960 base. Another group of counties in OBERS 117 had gains of similar impressive magnitude, these constitute seven counties north of Little Rock to the Missouri border in what may generally be termed the White River watershed.



OBERS 118 lies in southeast Oklahoma including 6 counties generally south of the Canadian River and 7 counties in west central Arkansas with the city of Fort Smith as the principal population center. OBERS 118 is the least populous of the three areas having about a quarter million people in 1960 but slightly more than 300,000 by mid-1974 or a gain of about 22 percent almost identical with the growth rate of OBERS 117 and 119. Unlike OBERS 117, this area (118) experienced gains in each of the 13 counties. Seven of the counties gained by at least 20 percent in the last 15 years. It is of note that, numerically, the four counties comprising the Fort Smith metropolitan area gained 37,590 people which is fully two-thirds (66.9 percent) of the gain reported for all of OBERS 118.

OBERS 119 includes 20 counties, 17 of which are in northeastern Oklahoma. The three Arkansas counties are in the northwest corner of that state. Tulsa is the largest city and is a part of a metropolitan area, another metropolitan area included is the Fayetteville-Springdale area of northwest Arkansas. Area 119 is the most populous of the three areas being discussed having reached a total of just over a million people by mid-1974, a gain of nearly 180,000 or 20 percent since 1960. As in OBERS 118 there is a notable concentration of population gains in area 119. The city of Tulsa and the Fayetteville-Springdale locality in which about half the people in area 119 live, account for about 112,000 or 64 percent of the total area gain since 1960. Oklahoma counties in the northern border of area 119 have lost population in the past fifteen years and there are only modest gains elsewhere but six Oklahoma counties directly east of Tulsa and two border counties of northwest Arkansas have gains with a range of 25 to 67 percent. The Oklahoma portion of this most rapid relative growth is within the Catoosa, Ft. Gibson, and Tenkiller developmental areas. The two

counties in northwest Arkansas with high growth rates comprise an area in which there are no major Arkansas River development projects but for other reasons manufacturing, recreation, and retirement have been developed at a rapid rate.

#### McClellan-Kerr Waterway Counties and the Ozarks

In the past, the McClellan-Kerr waterway counties reflected the type of patterns visible in the two states as a whole. As noted earlier, both Arkansas and Oklahoma had several decades of population decline, but, for the most part, in the 1960's, these states showed a reversal from heavy population losses. Initially, rapid increases occurred in the metropolitan areas with continued out-migration from the rural segments of the states through most of the 60's. But, with changing residential location preferences, and increased opportunities to implement these preferences, the pattern has begun to shift.<sup>2</sup>

In a regional sense, the shift has gone to the Ozarks portion of the bi-state area (See Figure III). While this portion of the states does include several metropolitan areas, the majority of the population lives outside these urban centers. In addition, from 1970-1975 a majority of all net migration experienced by these two states was to the non-metropolitan Ozark areas. It has been noted in several research investigations that the Ozarks has become one of the major focal points of growth in the country, and this migration to McClellan-Kerr counties (most of which are in this region), can be viewed as a result of this regional change. However, the upsurge in migration to this area is not distributed equally across all counties, with some areas showing dramatic increases, while others remain stable or continue to decline. These small area differences will be discussed in the next section.

Breaking out the McClellan-Kerr counties for an examination of their migration rates, it can be stated that in the 1960 decade these counties, in total,



TABLE I: POPULATION, CHANGE AND MIGRATION WITHIN THE  
OKLAHOMA - ARKANSAS OZARKS, 1960-1975

	Population			1960 - 1970				1970 - 1975			
	1960	1970	1975	#	Change%	Migration#	Migration%	#	Change%	Migration#	Migration%
Total Okla.-Ark. Ozarks	1709011	1914998	2150500	205987	12.1	82836	4.8	235700	12.3	186400	9.7
Metropolitan Ozarks	650196	788276	899500	138080	21.2	64699	9.9	111400	14.1	77300	9.8
Non-Metropolitan Ozarks	1058815	1126722	1251000	67907	6.4	18137	1.7	124300	11.0	109100	9.7
MK Ozarks	792252	920352	1021300	128100	16.2	51645	6.5	101100	10.9	67100	7.3
Non-MK Ozarks	916759	994646	1129200	77887	8.5	31191	3.4	134600	13.5	119300	11.9
Sample Counties	178288	200163	221400	21875	12.3	11316	10.6	21300	10.6	17100	8.5
Johnson Co., Ark.	12421	13630	15600	1209	9.7	844	6.8	2000	14.7	2000	14.5
Logan Co., Ark.	15957	16789	18100	832	5.2	235	1.5	1300	7.8	1000	5.9
Pope Co., Ark.	21177	28607	34100	7430	35.1	5318	25.1	5500	19.2	4300	14.9
Yell Co., Ark.	11940	14208	16600	2268	19.0	1526	12.8	2400	16.8	2000	14.2
Cherokee Co., Okla.	17762	23174	25400	5412	30.5	3644	20.5	2200	9.6	1400	5.9
Haskell Co., Okla.	9121	9578	9700	457	5.0	143	1.6	100	1.4	100	1.1
McIntosh Co., Okla.	12371	12472	13300	101	0.8	-200	-1.6	800	6.8	1000	7.7
Muskogee Co., Okla.	61866	59542	61600	-2324	-3.8	-5424	-8.8	2100	3.5	1100	1.9
Wagoner Co., Okla.	15673	22163	27000	6490	41.4	5230	33.4	4900	21.9	4200	19.0

Sources: U.S. Department of Commerce, Bureau of the Census, Current Population Reports, Series P-26, No. 75-4 "Estimates of the Population of Arkansas Counties and Metropolitan Areas: July 1, 1975 and 1975"; No. 75-36, "Estimates of the Population of Oklahoma Counties and Metropolitan Areas: July 1, 1974 and 1975" Washington, D.C. U.S.G.P.O. 1976.  
Bowles, Gladys K. and Calvin L. Beale. Net Migration of the Population, 1960-1970 by Age, Sex and Color Part 5-West South Central States, Economic Research Service, U.S. Department of Agriculture; Institute for Behavioral Research, University of Georgia, National Science Foundation, cooperating.

had a rate of migration (6.5%) well above that of the states' total (-0.8%) and the Ozarks region (4.8%) (See Table I). While the 1970-75 rate for the waterway area (7.3%) continued to exceed that of the states' (4.3%), it was surpassed by that of the total Ozarks (9.7%). In part, this may be a result of a migration slowdown. Since 1970 only 53.9% of the McClellan-Kerr Ozark counties showed migration rates as high as or higher than those noted in the previous decade. However, three points must be kept in mind:

- 1) These most recent figures reflect only a five-year period as compared to those for a decade. The net gain for the first 5 years of this decade was 67,100 persons, compared to a net gain in the previous 10 years of 51,600 persons.
- 2) While in a comparison of the Ozarks to the McClellan-Kerr area, the rate for the waterway counties is the lower of the two, it is higher than the rate they exhibited during the 1960 period.
- 3) The waterway counties, in general, are in competition for migrants with other Ozark counties, such as the lakes area in Northern Arkansas.

Overall, it would appear that the actual rate of migration may slow somewhat (especially as other areas continue to attract in-migrants) but the pattern of gradual increase is expected to continue (See also Figures IV and V).

#### McClellan-Kerr Small Area Analysis

In Arkansas it is possible to compare population change in minor civil divisions (townships) for 1960 and 1970. A scheme was therefore developed to provide a three-step spatial arrangement: (1) all townships touching on the

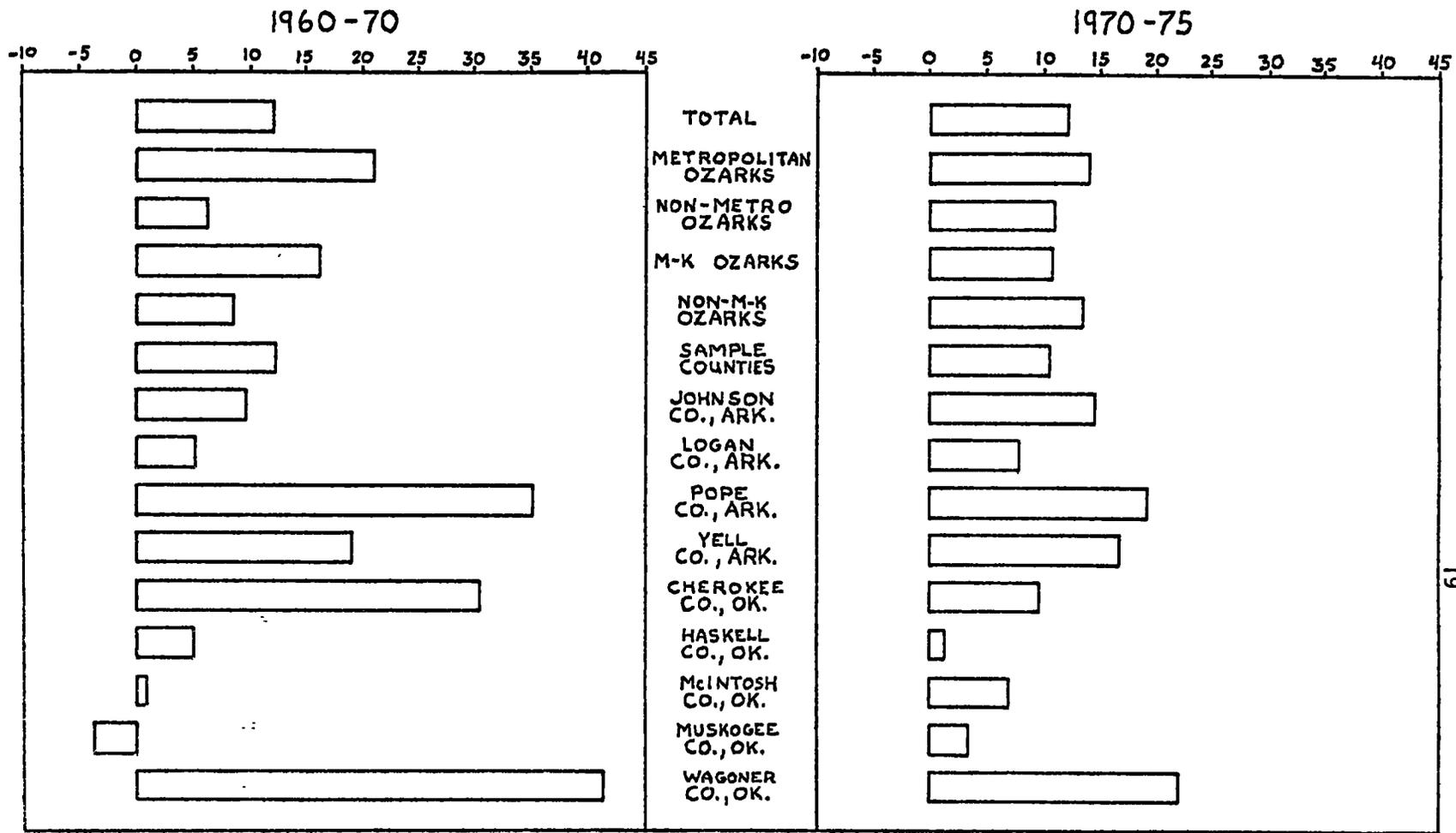


Figure IV: Percent of Population Change in the Oklahoma-Arkansas Ozarks Region, 1960-1975

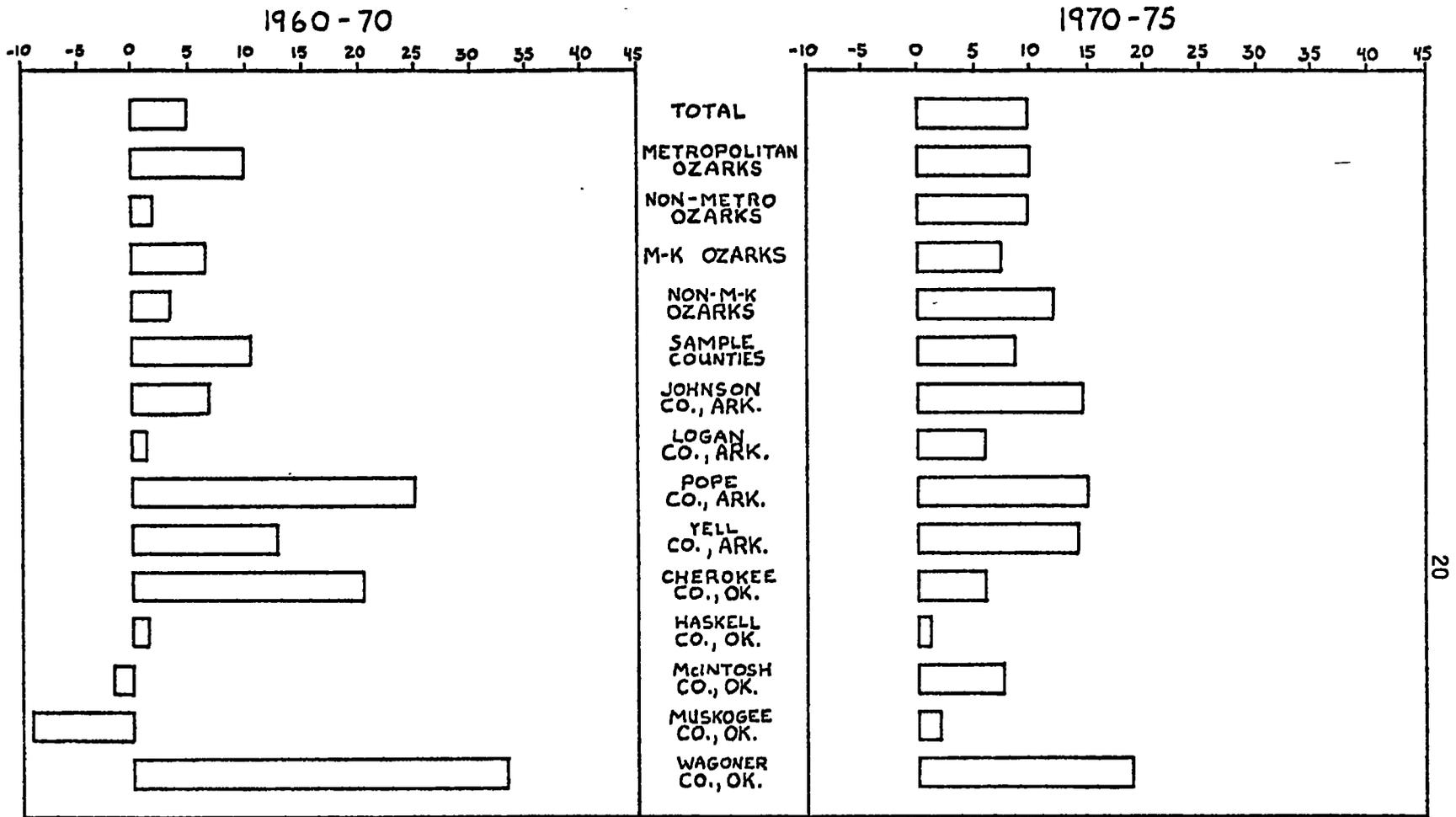


Figure V: Net Migration Rates in the Oklahoma-Arkansas  
Ozarks Region, 1960-1975

Arkansas River from Ft. Smith to Pine Bluff were listed by county, except for Pulaski County where reorganization of townships during the 1960-70 decade made comparisons impossible; (2) demographic materials for the balance of the counties bordering the river were assembled; (3) finally, population change data were prepared for counties adjacent to those bordering the River.

In the case of Oklahoma, reorganization of minor civil divisions in all counties during the decade of the 60's prevented a similar analytical approach. Consequently, a delineation of entire counties encompassing a few major navigational developments classified as (1) main stem, and (2) tributary was used.

In 1970, Arkansas had about two million people and about one-third resided in counties bordering the Arkansas River from Fort Smith to Pine Bluff. All of these 13 "border" counties had population increase in the 1960's. Since 1970, that is to July 1, 1975, the border counties have grown at an even faster pace and for this more recent period had an annual in-migration rate of about 1.5 percent.

The 13 "adjacent" counties in 1970 accounted for an additional 17.5 percent of the state's population so taken together the border and adjacent counties as here defined amounted to about one-half of the population of Arkansas. The border counties and the adjacent counties had nearly equal percentage gains, 16.9 and 17.4 respectively. Their combined increase in the 1960's was about 137,000 people which was almost identical to the gain for the state as a whole. The adjacent counties have continued growth since 1970 so that by mid-1975 they show an annual in-migration rate of 2.9 percent.

The 13 border and the 13 adjacent counties have some similarities and some major differences. Both areas show over-all growth in the decade of the 1960's and since 1970. The fastest growing areas are in the Russellville and

Fayetteville localities, the former in the border area and the latter in the adjacent area. Although there are four SMSA's represented in the two areas which account for considerable population concentration, five of the 13 border counties and ten of the 13 adjacent counties were two-thirds or more rural in 1970. Aside from the four SMSA's, five of the border counties and nine of the adjacent counties had no place larger than 5,000 population.

Within the counties bordering the Arkansas River from the Ft. Smith area to Pine Bluff in Jefferson County (excluding Pulaski County), calculation of population change for the minor civil divisions 1960-70 was made for only those MCD's touching the river. The intent was to compare population change for those MCD's with that of the balance of the border counties and with population change in the adjacent counties. The 1960-70 change for the three "tiers" is as follows:

	Increase 1960-70	Percent Change
Minor Civil Divisions	30,429	15.6
Balance of Border Counties	12,616	13.8
Adjacent Counties	42,271	17.4

No very conclusive remarks can be made from these differences in growth rates. The results mask some important internal demographic situations within the three tiers. For example, MCD's on the river in Crawford and Sebastian Counties (part of Ft. Smith SMSA) account for about 40 percent of the population gain in the MCD "tier." If these MCD's were removed from the calculation, the percentage gain for the MCD category would be reduced from 15.6 to 13.3. Likewise, Washington County (part of Fayetteville SMSA) accounted for about one-half of the population gain in the adjacent counties and were that county to be removed from calculation, the percentage gain for adjacent counties would be reduced from 17.4 to 11.1.

Since 1970, Arkansas has gained 113,000 people or a percentage increase of

of 5.9. The Arkansas River border counties have gained 48,000 or a percentage gain of 7.3; the adjacent counties have gained 31,000 at a rate of 10.8 percent. Thus, the balance of the state has gained 34,000 people or at a rate of 3.5 percent.

Although the bands of counties bordering and adjacent to the Arkansas River show population gains, the territory included is so diverse that there is no consistent pattern of population change. As indicated above, there are certain population concentrations. The Little Rock, Ft. Smith and Fayetteville metropolitan areas have of course larger base populations and their change in number looms large in the totals even though other locations may have a relatively large change considering their small populations. It may be helpful to examine specific locations where there appears to be significant changes with a view to judging how these are related to navigational development.

Lake Ozark in Franklin County is situated only a few miles east of Ft. Smith. The county had about 11,000 people in 1970, a gain of about 1,000 since 1960 and has gained an additional 1,000 people since 1970 or a total gain in the past 15 years of 2,000 or an increase of about 20 percent. Ozark City nearby the lake had on the other hand gained, by 1970, 627 people from a 1960 base of 1,965, a percentage increase of 31.9. The remainder of the county in the 1960's gained at a rate of only 5.6%. This would appear to be indicative of population growth related to recreational and retirement home concentrations near a lake development on the river.

Population changes occurring at Lake Dardanelle may be another example of change related to the Arkansas River Development Project. Illinois township in Pope County and Dardanelle township in Yell County border the Lake at its headwaters. Illinois township including the city of Russellville increased

4,677 by 1970 from a 1960 population of 10,811, a rate of increase of 43.3%. During this same period the balance of the county gained at a rate of 26.6%. Similarly, just across the Lake from Illinois township, Dardanelle township in Yell County increased 763 by 1970 from a 1960 population of 3,069, a rate increase of 24.9%. The remainder of Yell County in the same period gained by 13.5%.

In the 13 "adjacent" counties, Washington County stands out as the largest gain situation, and its rate of gain is double that of any of the other "adjacent" counties in the 1960-1970 decade. A large share of the growth is accounted for by Fayetteville, the location of the University of Arkansas.

Since 1970, estimates show that the counties bordering and adjacent to the river have been gaining population as a whole. The locations previously cited as "spots" of higher gains continue to grow. For example, Pope and Yell Counties bordering Lake Dardanelle had a combined population in 1975 of about 51,000 which represents an increase of about 8,000 people since 1970. This is equivalent to an annual increase of about 3% which is double the rate for the state as a whole during the past 5 years. Older people as well as those younger account for the increase; there are now about 12% of the population in Pope and Yell Counties over 65 years of age which ranks these counties among the highest in the state. Also, more than 6,000 of the recent increase is of people of other ages representing an increase in the younger years well above the state average.

In Oklahoma several areas have been selected for discussion of population change. Included are certain major river and tributary areas developed in the last decade or so. Those selected on the mainstem are Catoosa and Muskogee which have port facilities, and the Robert S. Kerr Lake. Those selected for

discussion on tributaries are Tenkiller Lake, Eufaula Lake, and Oologah Lake. All these have been in operation sufficiently long so that the 1970 Census materials and the 1975 population estimates are useful indicators of change.

There was actually population decrease in Muskogee City in the 1960-70 decade as well as in Muskogee County as a whole. Since 1970 a very small gain is estimated for Muskogee County. Thus, the port at Muskogee cannot be shown to be in an area of substantial population growth.

Since the Catoosa port in Rogers County adjoins the Tulsa metropolitan area, it is difficult to make a judgement of population growth associated with the Catoosa port and that associated with the Tulsa metropolitan area. Both Rogers County and Catoosa town had substantial population growth in the decade preceding the 1970 Census and the county has continued to grow since 1970. The port area at Catoosa is not one that would be an attraction for recreation uses and retirement homes as might be true of a lake development, and Catoosa itself is a small town of only about 1,000 population.

Robert S. Kerr Lake is one of the larger of the navigational developments on the Arkansas River. It is located a short distance west of Fort Smith, Arkansas, and lies within parts of Haskell and Sequoyah Counties in Oklahoma. In the approximately 15 years since 1960, Haskell County has had a modest increase in population of about 7 percent from a 1960 base of 9,121, while Sequoyah County in the same period has gained 46 percent from a 1960 base of 18,001. Since Sequoyah County is a part of the Fort Smith metropolitan area, some part of the county's growth must be influenced by proximity to Fort Smith. Aside from this, the largest town in the county (Sallisaw) is located near the head of the lake and increased by 46 percent in the 1960-70 decade to reach a population of nearly 5,000 in 1970. It may be significant to note that both of these counties had sustained population losses from 1940 until the decade of the 1960's.

Tenkiller Lake is on the Illinois River close to the confluence of that tributary with the Arkansas River. It lies largely within Cherokee County. That county from a 1960 total of 17,762 has increased in population by about 42 percent from 1960 to 1975. The largest town in the county (Tahlequah) is nearby the lake and had gained by 58.5 percent in the 1960's to a 1970 population of 9,254. The location of a state university in the county and the development of Tenkiller Lake may very well be motivating factors in the population gains experienced. It is worth noting that net in-migration to the county has accounted for at least 5,000 of the nearly 8,000 population gain from 1960 to 1975. There has been relatively high in-migration of elderly people (65 and older) and the county ranks above the state average in population of older people.

Eufaula Lake is yet another large development in the Arkansas River Development Project. It is on the Canadian River tributary and is located in parts of Haskell, McIntosh and Pittsburg Counties. These 3 counties have had less than 10 percent population increase from 1960 to 1975. In 1970 Haskell had no urban place (2,500 or more), McIntosh had one urban place (Checotah, population 3,074), Pittsburg had one urban place (McAlester, population 18,802). Combined, the 3 counties had about 60,000 people and there has been virtually no population change since 1970. Livelihood level appears to be low in this 3 county area; per capita personal income in 1969 was little more than 50 percent of the state average in Haskell and McIntosh Counties, and 76 percent of the state average in Pittsburg County. The three counties have considerably higher median ages than is true of the state of Oklahoma and well above the state average for percent of the aged. Despite the fact that the three counties include a major lake development, the area cannot be characterized as one of growth. Rather, net out-migration of youth has continued aging of the population not greatly influenced by in-migration of elderly people.

Oologah Lake is a short distance northeast of Tulsa on the Verdigris tributary. The larger part of the lake is in northern Rogers County but extends into southern Nowata County also. Rogers County has increased in population 62 percent in the period 1960-1975, while Nowata County in the same period has sustained a loss of 4.5 percent. Claremore, a city of 9,084 in 1970 is the only urban place in Rogers County and that city had a 36.8 percent increase in the 1960-70 decade. Nowata City is the only urban place in Nowata County (3,679 population in 1970) and had a loss of 11.6 percent of its 1960 population. Rogers County is within short commuting distance of Tulsa and the county is traversed by Will Rogers Turnpike which suggests other reasons for rapid growth than Oologah Lake. The loss of population in Nowata County appears to represent a quite different situation. The proportion of its population in the older ages (65 and older) is 17.7 percent which is about 50 percent above the 1970 state average; its median age in 1970 was 38 years contrasted with 30 years for Rogers County and 29 years for the entire state. Moreover, the median age in Nowata had increased by 3 years since 1960 whereas it had declined in Rogers County as well as in the state. Contributing to the aging of Nowata County's population is a long continued net out-migration at most stages of the age scale and out-migration is particularly heavy in the age interval 15-29 years.

It is not possible to make a general case for pronounced population growth in the selected areas of navigational development in the Oklahoma portion of the McClellan-Kerr. The enumerations and estimates by the U.S. Bureau of the Census reveal a spotty picture. For example, Tenkiller Lake appears to be a growth area while the Eufaula Lake area presents almost a static situation. It should be noted, however, that the Census reports used do not reflect seasonal or occasional occupancy of vacation homes or the volume of visitors for fishing, boating, and other

recreational uses. These are among the factors which could very well alter conclusions reached from resident population change alone. The results reported from the field study furnish more information on population change at specific sites.

### Migration into Selected McClellan-Kerr Counties

The role and influence of McClellan-Kerr upon population change (i.e. migration and residential mobility) cannot be accurately evaluated through aggregate secondary source data. The impacts at the individual and household levels may come from the increased attractiveness of a lakefront or nearby residential location; job opportunities expanded through industrial and commercial development; increased tourism attracting or promoting private businesses; or some other reason or combination of reasons stemming from the above. In order to determine the relative weights of the above conditions, and their differential impact in the types of people moving to the area, a representative sample was drawn in nine nonmetropolitan counties along the waterway for personal interview.

The survey was constructed to gather information on individual and household characteristics for a cross-section of the population, and the perceived influence of McClellan-Kerr upon attitudes toward the community, plans to move or stay in the area, perceptions of benefits/costs, and for new residents, the role of McClellan-Kerr in their decision to move.<sup>3</sup> The following analysis will focus first upon the determinants of mobility and non-mobility among area residents, then upon the various types of migrants to the area and the role of McClellan-Kerr; and finally upon the general attitudes toward the impact of McClellan-Kerr on life styles, mobility behavior, and general satisfaction. Although the exact linkages between attitudes and behavior may vary in measurability as much as the links between McClellan-Kerr and population change in general, the results of the survey will provide some insight into the impact of McClellan-Kerr at the smallest, yet most important level: the individual.

### Determinants of Mobility and McClellan-Kerr

People remain or move for a variety of reasons. Broadly, we may consider these as relating to three general classes of motives: economic motives (jobs), sociocultural ties (family and friends) and amenities (the level of general pleasantness of an area as a place to live). Of course, seldom does a person or household make a decision on a single motive, although one motive may dominate. For example, a person may desire to live closer to one's parents, but the move may not be feasible without the ability to get a job. On the other hand, potential migrants may have to choose among a variety of locations, each with advantages and disadvantages, and the final selection of a particular location may be the result of a series of factors weighed against possible alternatives.

In most migration studies, attention is focused on those who move. But it may often be more instructive to examine those who do not move since they are presumably affected by many of the same factors as those who do move. By dividing the sample into "movers" and "stayers" we can more clearly focus on those factors affecting people with similar characteristics in different ways. In any migration, the people who move are "different" than those who do not move. That is, we say that migration is a selective process, relative both to the point of origin and destination. Usually, migration occurs most frequently among young adults, and the better educated (hence those with higher-status occupations and incomes). In addition, migration experience is cumulative in that past mobility is a strong indication of future mobility, and that the law of inertia operates in that the longer one stays in a place, the less likely one is to move as ties increase in number and depth: ties to jobs, friends, neighborhoods, etc....

From the sample, we observe that nearly half of the people have moved into their current residence (crossing a county line) since 1965. Looking first at

31  
TABLE II

Characteristics of Movers vs. Stayers

	Movers (%)	Stayers (%)
Age of Head		
20-29	25.9	7.3
30-44	24.6	16.5
45-54	14.7	13.6
55-59	8.5	9.2
60-64	6.7	11.7
65-74	14.3	21.2
75+	5.4	20.5
Years of School Completed		
0-8 years	25.3	47.3
1-4 High School	32.0	32.4
1-4+ College	42.7	20.4
Head's Occupation		
White Collar	28.3	17.2
Non-white Collar	29.2	33.9
Retired	22.1	29.6
Other, not in L.F.	20.4	19.3
Total Household Income		
Less than \$5,000	28.1	35.7
\$5,000-\$9,999	28.6	33.7
\$10,000-\$14,999	24.4	18.9
\$15,000+	18.9	11.6
Number Children 6 and under		
No children	75.7	90.9
1 child	15.0	7.6
2 or more children	9.3	1.5
Number of Children aged 6-18		
None	62.8	70.5
1 child	15.0	16.7
2 children	13.3	7.6
3 or more children	8.8	5.1

age differentials between movers and stayers, we first note that movers are younger: median ages differ by almost fifteen years (47.1 vs. 61.5, vs. 53.3 for the total adult population). Greater than a fourth of the recent movers are under age 30, while two-fifths of the stayers were over age 65. Virtually every other distinction that can be made between the two groups can be traced back to this age difference. Age differences are among the "most basic and crucial aspects of human life and determinants of human destiny"<sup>4</sup> since they are largely the basis for role differentiation and integration, changing as one moves through the family and career cycles. The entire nature and structure of social and economic life of a community will relate back to the age structure of the population (See Table II).

To further illustrate this point, we note that the proportion of movers with some college training (43%) is nearly equal to the proportion of stayers who never made it to high school (47%). Age and education are strongly associated in the population, with each successive generation receiving more years of formal education.<sup>5</sup> With higher educational levels, migrants are more often found in white collar and other high-status jobs. Differences in incomes are slightly in favor of the migrants, but this again relates to age as older workers earn more due to longer experience, seniority, etc.... Other differences related to age are larger household sizes among migrants (who are in the child-bearing and child-rearing stages of life cycle), more frequent incidence of widowhood among stayers; and higher rates of home ownership among stayers, who have stronger ties to the community.

Incorporating residential histories by means of mobility rates<sup>6</sup> for the past ten years, we gain insight into the relative importance of the individual characteristics (See Table III). Controlling for effects of all variables

TABLE III  
Household Characteristics for Mobility Rates

Total Mean Mobility Rate - 1.66

<u>Household Characteristics</u>	<u>Average Rate</u>	<u>Adjusted Avg. Rate</u>
<b>Age of Head:</b>		
20 - 29	2.33	1.90
30 - 44	1.78	1.67
45 - 54	1.58	1.60
55 - 59	1.55	1.56
60 - 64	1.38	1.55
65 - 74	1.43	1.63
75 +	1.25	1.58
	$\text{Eta}^2 = 0.207$	$\text{Beta}^2 = 0.022$
<b>Home Ownership:</b>		
Own	1.52	1.66
Rent	2.00	1.67
	$\text{Eta}^2 = 0.081$	$\text{Beta}^2 = 0.0001$
<b>Income of Head:</b>		
Less than \$5,000	1.54	1.66
\$5,000 - \$9,999	1.62	1.61
\$10,000 plus	1.88	1.71
	$\text{Eta}^2 = 0.036$	$\text{Beta}^2 = 0.003$
<b>Occupation of Head:</b>		
White-collar Worker	1.96	1.69
Other Workers	1.62	1.62
Retired	1.49	1.69
Others, Not in Labor Force	1.62	1.65
	$\text{Eta}^2 = 0.048$	$\text{Beta}^2 = 0.002$
<b>Years of School Completed:</b>		
0 - 8 years	1.39	1.60
1 - 4 High School	1.64	1.62
1 - 4 + College	2.01	1.77
	$\text{Eta}^2 = 0.115$	$\text{Beta}^2 = 0.011$
<b>Duration of Current Residence:</b>		
Less than one year	2.52	2.44
2 - 3 years	2.43	2.34
4 - 6 years	2.44	2.38
More than 6 years	1.17	1.22
	$\text{Eta}^2 = 0.683$	$\text{Beta}^2 = 0.558$

$R^2 = 72.6\%$

$R^2(\text{Adjusted}) = 71.4\%$

simultaneously, the duration of residence in the current sites, age and education of the head emerge as the key indicators of mobility. The mobile segments have shorter residential durations, which is intuitively obvious but revealing of the staging of the moves, indicating a slight increase in the rate for durations of four to six years. This stands as a proxy for the increased mobility since 1969. Age, with declining mobility rates, supports traditional patterns, except for the increases in persons 65-74 years and over age 75, reflecting the emergence of the relatively recent phenomena of retirement-directed migration.

Except for the retirees, the differences between the movers and stayers are not as marked as in most migration streams, based on several factors. In the first place, this particular migration is largely metropolitan to nonmetropolitan, the reverse of the historically dominant stream. The age structure of the base population is skewed upwards since decades of outmigration drained the areas of the young adults. Secondly, the immigration stream is characterized by a particular type of migrant becoming more familiar in mobility studies: the return migrant. Thirdly, the particular setting of the McClellan-Kerr areas has resulted in the increase of migration of those in the retirement and pre-retirement age cohorts. The differentiation of migrant types is crucial in explaining the population change that has occurred in the area, and the implications for the nature of future change and economic development.

Evidence from other studies<sup>7</sup> indicate that as a community or area changes from a single-industry economy (usually agriculture or other extractive types) to a diversified economy, different types of migrants are associated with each state (excluding retirement movers). Initially, low wage, labor intensive industries filter down from metropolitan areas, and jobs are filled by local persons,

who commute in the short run (given highway access) and become local movers in the ensuing months. At this stage, and as employment expands, family and friend networks pass information to former residents who then return to the area. These migrants have higher educational and occupational levels than the local residents, and have a competitive advantage in the job search. As industries move into an area that require more technical training, the proportion of migrants who are new to the area increases, these bringing higher skill levels than the returnees. The important point then in economic development concerns who gets the jobs. Many attempts to alleviate unemployment and raise incomes in depressed areas have failed since new jobs were taken by migrants. Greater levels of employment disguise the number displaced or kept from jobs by the newcomers, and increases in per capita income stand next to increased numbers of persons below the poverty level. This may be the essential question in rural economic development.

Breaking the migrant sample into local movers (38% of all migrants), returnees (43%), and primary migrants (19%), it is found that this breakdown is in line with the expected pattern.<sup>8</sup> Using duration of residence as a proxy variable, we note that durations decrease as one moves from local migrants (4.2), returnees (4.0) and primary migrants (2.4). Each group has successively higher levels of educational and occupational status. However, the differences are not statistically significant, except for the primary migrants whose socioeconomic status as a group is significantly higher. The apparent reason for the relative homogeneity of the migrant classes is that the area is attractive to a relatively narrow range of persons, and that as a particular place would approach the diversity of a metropolitan area, the gaps would widen. Also, much of the economic growth in towns along McClellan-Kerr is a result of deliberate attempts by the communities to attract certain types of industries, hence certain types of migrants.

TABLE IV  
 Characteristics of Households by Migrant Type

Household Characteristic	Local Migrants		Primary Migrants		Return Migrants	
	Adj. %	%	Adj. %	%	Adj. %	%
Age of Head						
20 - 29	41.5	(37.5)	16.5	(21.4)	42.9	(41.1)
30 - 44	39.9	(33.9)	18.0	(22.6)	41.9	(43.4)
45 - 59	32.8	(38.8)	27.5	(24.5)	39.5	(36.7)
60 - 74	30.6	(34.8)	15.6	( 8.7)	53.1	(56.5)
75 +	54.5	(60.0)	15.4	(10.0)	30.4	(30.0)
Reason for Move						
Family/Social Ties	30.7	(31.7)	17.8	(14.3)	51.8	(53.9)
Economic	42.4	(41.1)	22.8	(25.6)	32.8	(32.2)
Amenities/Living Cond.	36.8	(36.5)	15.1	(14.3)	50.5	(47.6)
Occupation of Head						
White Collar	32.2	(35.4)	27.4	(30.6)	41.4	(33.9)
Non-white Collar	38.3	(33.9)	20.3	(20.9)	41.0	(45.2)
Retired	34.4	(37.8)	19.4	(13.3)	45.3	(48.9)
Others, not in L.F.	46.4	(44.4)	5.9	( 6.7)	47.8	(48.9)
Duration in Current Residence						
Less than 1 year	37.6	(36.5)	27.7	(26.9)	34.6	(36.5)
2 - 3 years	31.2	(31.8)	25.8	(25.4)	42.6	(42.8)
4 - 6 years	37.6	(37.3)	12.8	(13.7)	49.6	(49.0)
More than 6 years	44.9	(45.8)	7.7	( 8.3)	47.5	(45.8)
Number of Children under 6						
None	42.6	(41.5)	19.4	(18.24)	37.9	(40.2)
One	23.9	(26.5)	25.8	(29.4)	50.4	(44.1)
2 or more	19.7	(23.8)	6.3	( 9.52)	74.1	(66.6)

(N = 224)

Briefly, we may note distinctions among the groups, adjusting for the relative effects of variables (See Table IV). Returnees are older than the other migrants, largely because most of the retirement migrants were returnees. Associated with age are the reasons for moving, with returnees most likely to give family-related or amenities reasons. Job related reasons were more common among local movers, and especially pronounced for the younger, higher educated primary migrants. Very few primary migrants are not in the labor force, and the most frequent occupations for this group are in white-collar classes. The durations of current residence support the staging pattern associated with levels of development: local movers, followed by returnees, and, as greater economic diversity occurs, primary migrants. Differences on education, income, and occupation between returnees and local migrants are not significant, but the primary migrants exhibit levels that are markedly higher than the other two groups (See also Table V and Figure VI).

Although the point may be obvious, the migrants are located in the urban centers along the McClellan-Kerr, except for spotty residential locations along the lakes. For areas that show little change at the county level, dramatic growth may have occurred in the urban centers while the countryside continues to lose population. Differences by state are also slight, except that Oklahoma is more likely to receive local migrants while Arkansas attracts more primary migrants; the proportion of returnees is nearly equal. As noted above, primary migrants arrive as the economy becomes diversified (i.e. approaches metropolitan status), which is directly related to size of the place. Looking at the origins of the non-local migrants, the most common areas were Texas, California, and cross-overs from Oklahoma to Arkansas and vice-versa.

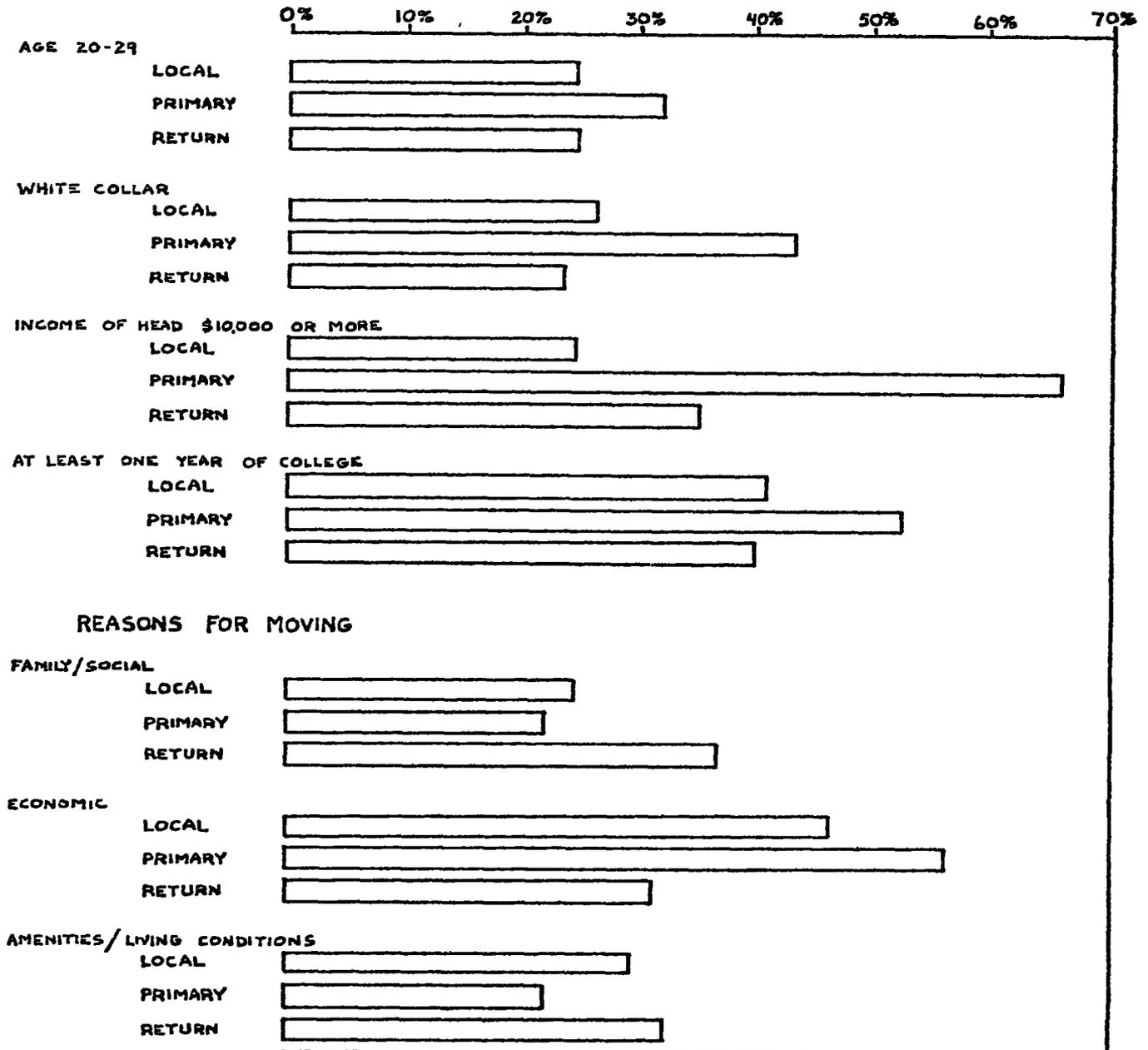
TABLE V

## Selected Characteristics of Households by Migrant Type

Household Characteristic	Local Migrants	Primary Migrants	Return Migrants
Age of Head			
20 - 29	24.4	31.8	24.5
30 - 44	22.1	29.5	24.5
45 - 59	24.4	27.3	20.2
60 - 74	19.8	9.1	27.7
75 +	9.3	2.3	3.2
Occupation of Head			
White Collar	26.1	43.2	23.4
Non-white Collar	26.1	34.1	29.8
Retired	25.0	13.6	23.4
Others, not in L.F.	22.7	9.1	23.4
Head's Income			
\$5,000	47.6	12.2	33.0
\$5,000 - \$9,999	28.0	22.0	31.8
\$10,000 +	24.4	65.9	35.2
Years of School Completed by Head			
0 - 8 years	35.2	11.4	22.6
1 - 4 High School	23.9	36.4	37.6
1 - 4 + College	40.9	52.3	39.8
Home Ownership			
Own	63.2	56.8	64.9
Rent	36.8	43.2	35.1
Number of Children under 6			
None	84.1	72.7	69.1
One	10.2	22.7	16.0
2 or more	5.7	4.5	14.9
Number of Children Aged 6 - 18			
None	65.9	47.7	67.0
One	14.8	25.0	10.6
Two	13.6	11.4	13.8
Three or more	5.7	15.9	8.5
Duration in Current Residence			
Less than 1 year	21.6	36.4	20.2
2 - 3 years	25.0	36.4	28.7
4 - 6 years	23.9	18.2	26.6
More than 6 years	29.5	9.1	24.5
Reason for Move			
Family/Social Ties	24.4	22.0	36.6
Economic	46.3	56.1	31.2
Amenities/Living Condition	29.3	22.0	32.3

N=224

Figure VI: Selected Household Characteristics  
By Migrant Type



### Reasons for Move

Even though migrants are not easily differentiated on common socioeconomic measures, the incentives that brought them to the area vary across a wider range. Not surprisingly, economic incentives accounted for 40% of all moves, the largest single response. Social ties and amenities reasons were evenly split (30% each). Research has shown that while economic incentives are dominant for most movers, the incidence tends to decline with age, either as a function of greater financial security or changing personal priorities. In any event, job reasons were cited most frequently by the younger migrants, who were also the local and primary migrants. These migrants moved largely to the urban centers along McClellan-Kerr, and, for the primary movers, there was a tendency to move to suburban areas near the larger towns. Poor transportation systems in the area suppress the level of commuting.

Returnees most often cited social ties (family, friends, feeling of "home") as the main reason for moving, while local and primary migrants more often cited economic incentives. Responses related to amenities were also cited more often by returnees, which is not surprising given their slightly older age structure. That is, households in the mid to later stages of the life cycle are more likely to move for non-economic reasons (family and living conditions) since the importance of economic returns expected from a move declines with age, and is lower for returnees than other migrant groups.<sup>9</sup> It must be kept in mind that movements for amenities reasons presupposes at least some economic security. In fact, we must assume economic concerns as a "constant" in that the in-migration is dependent upon the ability to maintain a given standard of living. But the relative importance of economic concerns is a function of age, education, past experience, income level, etc.... For example, when asked as to why they would

remain in the area, the majority of respondents cited family and home reasons (39%) followed by living conditions (30%). The former response increases with age, but the reason of living conditions is concentrated among the middle-age group and elderly. These two groups are also largely return migrants. Economic ties were given by persons between the ages of 20 and 29 and especially the primary migrants. As secondary responses, attractive living conditions was an overwhelming choice.

Amenities are related, but not restricted, to the presence of the lakes. For about three-fourths of the migrants citing amenities, the reference was specifically to aesthetic and recreational opportunities afforded by the lakes. For others, the lakes were a part of a total package of amenities that included opportunities for housing, good schools, friendly people, etc....

Since migration rates decrease with age, length of residence, and amount of social and economic ties in a community, several observations may be made regarding remigration in this population. Returnees who moved for reasons of ties are the least likely to remigrate,<sup>10</sup> while primary migrants are the most likely given their younger age and higher educational and occupational levels. The long durations of residence and high rates of home ownership among local movers and returnees lowers their probabilities of remigration. In general, one would estimate that, given the characteristics of the in-migrants, most are there to stay.

To summarize briefly, the role of McClellan-Kerr in the migration process is two-fold: primarily, increased amenities from the lakes, and as an indirect factor in the stimulation of expanded employment opportunities. Most polls regarding residential preferences point to the desire for homes near "water"

and in small cities with quick and easy access to open country. The McClellan-Kerr area supplies both of these, along with a growing economy in selected places. Again, the question of the degree of benefit received by the local population versus new residents in the area remains an important but unanswered question.

#### Attitudes Toward McClellan-Kerr

The focus of this report is the impact of the McClellan-Kerr project upon population change. In terms of attitudes, this relates to the perceived impact on the role of McClellan-Kerr in decisions to move to or remain in the area (See Table VI). The relationships between attitudes and behavior in the migration process can be examined perhaps more clearly than any other link between McClellan-Kerr and population change since the wish to move is a strong indicator of future mobility.<sup>11</sup> In the preceding section, it was observed that the amenities of the McClellan-Kerr lakes was a consideration in the decision to move, and that for a sizeable group it was a dominant theme.

Few respondents held a negative opinion of the McClellan-Kerr project, and only 11% said they would be against the project if it did not already exist (it is important to note that perceptions relate almost exclusively to the lakes and not to impacts from navigation). Even though the lakes were an important feature in the decision to move to the area, only 10% of the respondents claimed that the lakes influenced their decision to remain in the area. Although this may seem incongruous, or indicating unmet expectations, the actual case is that 85% of the people do not plan to move anyway. That is, social and economic ties to the area are the chief holding factors, as in any area, and the lakes tend to be taken for granted. Of those that do express a desire to move, these are the young, highly-educated persons comprising the highly mobile segment of the population. It is highly probable that if households were considering moving to other places, the amenities of the lakes would assume more importance as alternative places were considered.

Table VI  
Summary of Attitudes/Perceptions on McClellan-Kerr

"How do you feel McClellan-Kerr has been good?" by Migrant Type

	<u>Stayers</u>	<u>Local</u>	<u>Primary</u>	<u>Return</u>
Economic Benefits	46.1	43.9	34.9	52.8
Recreation	29.7	42.7	39.5	33.7
Improved Conditions	24.2	13.4	25.6	13.5
				(N=470)

"Why do you think people are moving into this area?" by Migrant Type

	<u>Stayers</u>	<u>Local</u>	<u>Primary</u>	<u>Return</u>
Family/Social Ties	3.7	7.1	2.3	2.2
Economic-Jobs	33.5	34.5	32.6	25.6
Living Conditions	29.0	28.6	32.6	36.7
Retirement	16.7	14.3	9.3	24.4
Environment	4.1	3.6	7.0	2.2
Lake or Related	13.0	11.9	16.3	8.9
				(N=486)

Future Mobility Plans by Migrant Type

	<u>Stayers</u>	<u>Local</u>	<u>Primary</u>	<u>Return</u>
Will Move Sometime	6.1	17.9	45.0	23.5
Will Never Move	93.9	82.1	55.0	76.5
				(N=463)

"Why are you staying in this area?" by Migrant Type

	<u>Stayers</u>	<u>Local</u>	<u>Primary</u>	<u>Return</u>
Own Land or House	13.3	5.8	11.6	9.2
Family-Home	48.1	26.7	4.7	36.8
Job	11.1	33.7	41.9	27.6
Living Conditions	27.4	33.7	41.9	26.4
				(N=486)

The attitudes of the total population are important indicators of residential satisfaction (which is the chief determinant of mobility) and since much of the observed migration, and future migration, depends upon the information passed through kin and friendship networks, it is useful to examine the perceived impacts of McClellan-Kerr upon population change by the respondents. Further, community cohesion, as reflected by the satisfaction levels of the people, will strongly influence further developments. For example, the attraction of industries may depend on the passage of bond issues, and to the extent that local residents perceive beneficial impacts, the bonds will pass or fail.

The people of the area are well-acquainted with the consequences of heavy outmigration of the young and educated. When asked why they thought people had left the area, the response was almost always jobs and nothing to do. When asked why people were moving into the area, the responses were jobs and something to do. Over three-fourths of the people claimed that the benefits from McClellan-Kerr were jobs and recreation, with recreation perceived in two ways: economic gain from tourism and recreational opportunities for residents themselves. Actual participation in recreational activities related to the lakes varied inversely with age, but older persons tended to value it as a means of keeping young people in the area.

Related to this latter point is the heavy migration of older people into the area. It was noted earlier that about one-fourth of the migrants moved for retirement or with retirement in mind. While boating and skiing may not be too important for these people, fishing, pleasure driving, the opportunity to stroll along the lakeshore, or merely to stare out the window at a tree-lined lake are very important. Again, the link between McClellan-Kerr and migration is quite direct considering the amenities people attach to water-related residences and opportunities.

### McClellan-Kerr and Population Change

Up to this point, we have virtually kept distinct changes at county and regional levels, and the findings from the household survey. This section is an attempt to illustrate how the changes and observations at the micro-level relate to the broad changes noted from secondary materials. In general, the impact of McClellan-Kerr upon population change (and here we speak exclusively of migration since the impacts upon fertility and mortality are so slight as to be immeasurable) has been considered as taking two forms:

- 1) As a mechanism of economic development which, when included in a total systems package, results in expanding employment opportunities to halt or slow outmigration and stimulate in-migration.
- 2) Increased and/or improved amenities for residential and industrial location on and near lakes developed in the McClellan-Kerr project.

By no means are these two impacts exclusive. On the contrary, they are extremely interrelated, since many moves for reasons of attraction and amenities include the ability to get a job, which may have been a result of McClellan-Kerr. In all but a few cases, we cannot trace a respondents job directly to McClellan-Kerr; in a few cases, the respondent was transferred by a firm that had relocated in the area. It is not within the range of this study to determine how many migrants took jobs created, directly or indirectly, by McClellan-Kerr. But by examining selected places, we may get some estimation as to the magnitude of the impact.

The demographic review of the area illustrated the magnitude and distribution of migration into the region. Since almost the entire Ozarks region has

gained population, especially since 1970, it is impossible to point to the specific effects of McClellan-Kerr. The reason is that impacts are always greatest in the immediate areas, areas often smaller than counties. In some cases, a county may show little or no change, but one need only walk around to see new homes, shops, etc....

Noting that local migrants are the first to take advantage of expanding opportunities, rural areas in a county may lose their young residents to the urban centers along the waterway. This presents the problem of continued depopulation of the open-county areas, and the prospect of small pockets of urban congestion. But these effects are hidden by aggregate data. Further, each community may be at a different stage of development, which influences the types of migrants attracted. Secondary data generally reveal little as to changes in the composition and distribution of the population in nonmetropolitan areas, and usually only gives estimates of changes in size.

The impact of McClellan-Kerr as a mechanism of development will vary from community to community depending on a host of factors: town leadership, transportation systems, available labor pool, proximity to markets and metropolitan areas, etc..., and growth in one community may prevent growth in another. The integration of development efforts is necessary for orderly development and suppression of competition affecting areas adversely. The clearest example of planned development and the relationship between McClellan-Kerr and population change is Russellville, Arkansas.

Russellville is in an enviable position: midway between Little Rock and Fort Smith, on I-40 and Highway 7, and with an aggressive Chamber of Commerce. Population growth has exceeded 20% for the 1960-70 and 1970-75 periods as employment

has expanded and residential construction increased. Russellville has, with great foresight, annexed surrounding areas, especially the area of Norristown which now borders Lake Dardanelle. Successful efforts to attract new, light industries, and the construction and operation of nuclear power generating facilities, have attracted skilled and technical workers (entering the stage of growth where primary migrants are received) and their families. Capitalizing on the setting, the attraction of Lake Dardanelle, and a clean, low crime area, Russellville has become a growth center for a wide region.

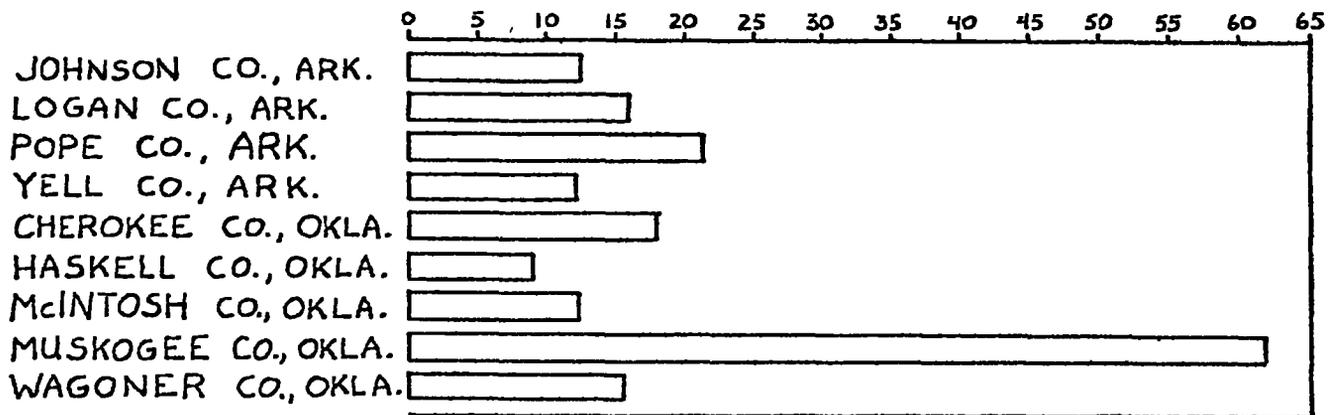
Russellville leaders have attempted to screen potential developments, taking pains to avoid haphazard growth and maintain a high quality of life. McClellan-Kerr provided an opportunity for port facilities, an added inducement to industrial location, and improved amenities attractive to two large groups of potential migrants: middle-aged return migrants seeking greater residential satisfaction, and retirement/pre-retirement migrants seeking quiet living, amenities, and small-sized cities. In Russellville, then, the impact of McClellan-Kerr has been quite direct in attracting such industries as Laddish, Inc., development of port facilities, and attracting new residents.

Farther upstream, Clarksville has received some growth in residential construction and real estate, and low-multiplier tourism. The Ozark reservoir is a recent addition, and has yet to stimulate much attention. Over in Oklahoma, growth rates in Cherokee County have been dramatic as residential development has spread around Lake Tenkiller, and in the city of Tahlequah. Muskogee, which has shown little population change, has completed its port facilities, and as navigation proves to be an integral benefit of McClellan-Kerr, should show gradual growth. Muskogee has been successful in attracting new industries such as Fort Howard Paper and Oklahoma Gas and Electric Company, which has spread population

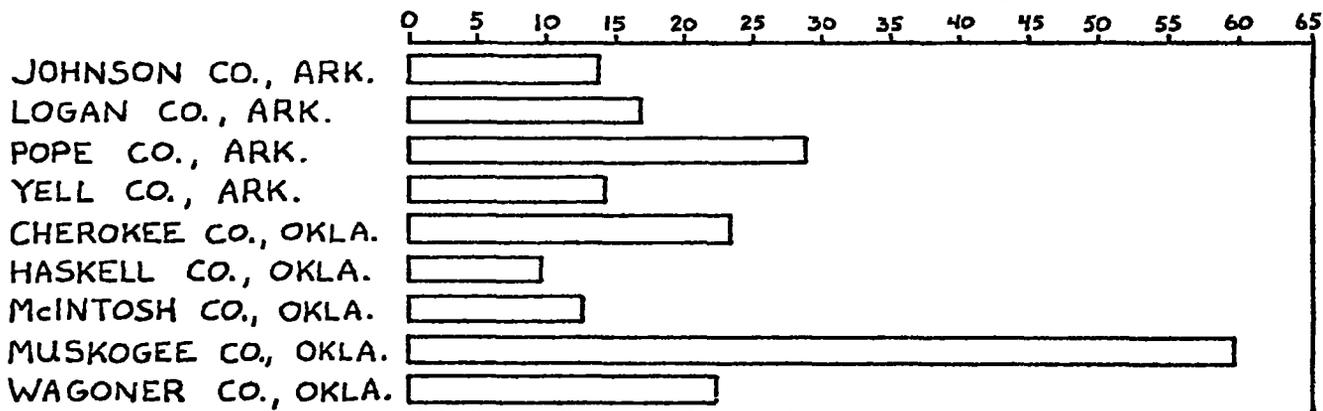
and employment growth to Fort Gibson and beyond. In Catoosa, port facilities stand ready for the City of Tulsa.

The point is that there is no uniform pattern of population change directly attributable to McClellan-Kerr (See Figure VII). In some areas, such as Russellville, Lake Dardanelle and the navigation channel have coincided with other factors to create a dramatic impact. In other areas, the impact has been slight or non-existent. But, to greater or lesser degrees, the project has affected the size, composition, and distribution of the population in nonmetropolitan areas.

## 1960 POPULATION × 1,000



## 1970 POPULATION × 1,000



## 1975 POPULATION × 1,000

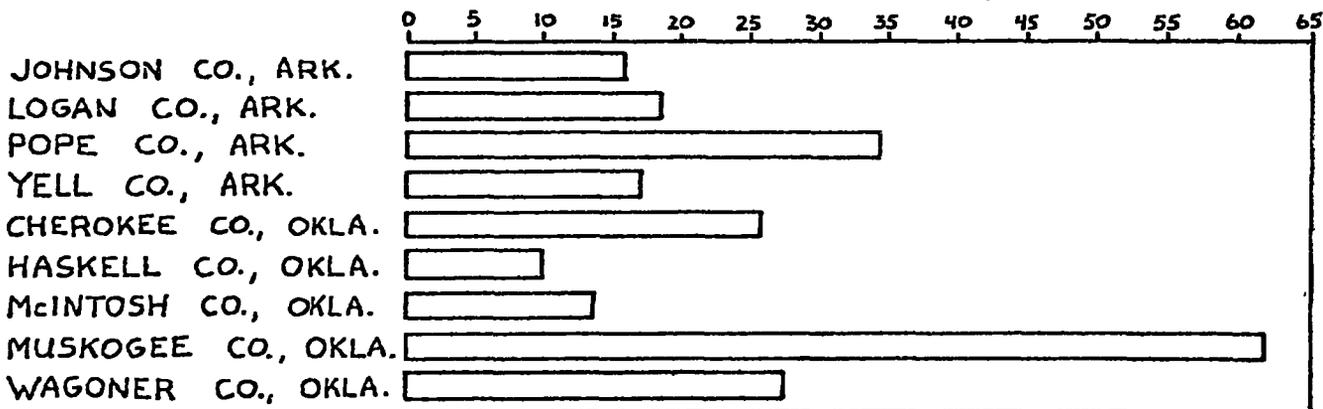


Figure VII: Population of Sample Counties, 1960-1975

### Reservoir Construction and Forced Relocation

Partly because it seems to be a no-win situation for everyone involved, we often tend to gloss over, or even ignore, those persons most directly affected by reservoir projects: the residents forced to leave their homes. Their numbers are small, their voices weak and splintered. On the one hand, most recognize the need for the project, but feel somehow punished by being forced to carry the burden. On the other hand, the belief in just authority is strong, akin to the belief in God and progress in the American tradition, and they resign themselves to their fate. For the most part, the relocated families are farmers, middle-aged or older with marginal incomes, who have led quiet, settled lives on the lands their fathers and grandfathers lived and died upon.

Research has repeatedly focused on the psychological stress, or what has come to be called "transitional neurosis." It does not take any special training in psychology or sociology to sympathize with the attachment of people to their homes and land to which they have devoted their entire lives. One may receive a fair market price for the property, but how do we place a dollar value on the effects of uprooting, or the sense of confusion following relocation, or the years of anxiety between the announcement of a project and the final arrival of the land agents? At best, we can attempt to ease the strain, and by examining the acquisition procedures and consequences through the expressions of a group of persons (76) relocated in Oklahoma, we may be able to formulate appropriate strategies.<sup>12</sup>

#### Property Acquisition

Most of the landowners held small acreages, fully half with 50 acres or less, and only 14% holding more than 300 acres. Half of the landowners had owned the land for over twenty years, only 6% less than 5 years. Most of the land acquired

had been used for agriculture, for livestock pastureland, and for homesites. About half of the persons interviewed (52%) felt that the settlement was fair, but many claimed that the smaller the acreage, the lower the price per acre, which resulted in the frequent comment that "they (government prices) aren't for poor folk. They're for people with money." In terms of overall fairness, one respondent summed up the attitudes of dissatisfaction: "They didn't pay me the market price, but all around, they probably do pay the fair amount."

When asked if the landowners stood to gain more than they'd lose by lake construction, most were quick to claim that the loss of good, level bottomland could not be outweighed. From a personal standpoint, the respondents felt that the money received, although perhaps fair, was not enough to purchase comparable land, especially with rising land prices from anticipation of the reservoir. However, a sizeable minority (21%) felt that the acquisition was a greater benefit than loss to themselves personally. Although the majority (60%) felt that benefits would outweigh costs in the long run, the pinch was that they (the relocatees) would not personally benefit.

#### Overall Attitudes

Faced with the prospect of losing their homes, neighbors and land, many of the relocatees found themselves enmeshed in a difficult conflict. A prevalent trust in government was apparent in such responses as: "The government knows what it's doing. The lake hurts me, but there'll be plenty of others who they will help"; "It wasn't fair; I had to move, but you can't stop progress." Despite personal grievances, there is a persistent effort to justify the project with the faith that it was at least beneficial to others and that their sacrifices were not in vain.

The adjustment process was difficult. Most of the relocatees quit farming (65%) and either retired or became unemployed (the number unemployed rose from 8 persons before the move to 54 currently). More than half (58%) gave their present household income as less than \$5,000 annually. It must be noted, however, that income levels before relocation were not very often above the \$5,000 mark.

Psychologically, males appeared to have felt the greatest sense of loss. Many claimed poor or declining health as a result of the affair. For those who changed occupations from self-employed farmer to manual laborer the loss of status had a profound effect. Females emerged with more positive attitudes, but often credited the experience with causing their husbands' death, heart attack, stroke, or general unhappiness.

The modes of dealing with the stress seemed to follow three paths. One was numbness, a resignation to the bitter facts of life: "It was a long time ago. Nothing we can do about it now." A second mode was selective memory; many persons contacted could not recall the particularities of the event, or even if the settlement was fair or not. Finally, many appealed to the ways of God, that their sacrifices in this life were to be repaid in the next, and that while they could not understand the reasons for their suffering, the Lord must have His reasons. Overall, the respondents expressed an overwhelming desire to forget that it had ever happened.

Little can be said in the way of conclusions. Many researchers have proposed greater financial assistance for the move itself, counseling assistance, and closer scrutiny of Corps land acquisition procedures. While these efforts may provide an easing of tensions for some, it is highly doubtful that the impacts would be large. Of more open meetings, the respondents claimed that while they may be informative, they had little effect on policy. Greater financial

assistance in relocation does not erase the fact that it is still a forced move. Counseling may provide some consolation, but cannot replace lost neighbors and familiar surroundings. They do not need to be convinced of the utilitarian decree of the good of the many over the few. The deep attachment is between a man and his land, and no service will repair, or replace that bond.

### Conclusions and Unresolved Issues

The McClellan-Kerr project has provided a potential mechanism for economic development and improved amenities for residential and industrial location. Its impact on population change has been to stimulate immigration, especially of amenities-seeking return and retirement migrants. In some areas, growth has reached the point of attracting young, highly skilled primary migrants. Most of the migration has been to the lake areas and small cities bordering the lakes or waterway, with the spotty development of retirement villages. A rough estimate based on the household survey and related data would generate a figure of about 25,000, or 40% of all immigrants directly or indirectly attributable to the McClellan-Kerr project since 1970 in nonmetropolitan areas. This figure is conservative or liberal, depending on how far one wishes to go on indirect impacts.

Further, the composition of the population is changing in favor of higher educational, occupational, and income levels as migrants move to the area. This has resulted in greater economic diversity, availability of labor, and in many cases, improved community facilities, such as in schools, hospitals, improved roads, etc....

The impression created thus far is that McClellan-Kerr has been a complete blessing, and in large part it has. But care must be taken to consider the costs associated with unused potential and misdirected efforts. Ultimately, we must come to grips with the growth for growth's sake dilemma, and planners must sort out the needs and wishes of the people as to the impact McClellan-Kerr should have. The first issue is the need to integrate planning efforts to avoid haphazard development in some areas, and no development in others. The second issue concerns the potential adverse effects from current trends.

Given that the greatest value of McClellan-Kerr so far has been increased amenities, care must be taken so that economic growth does not degrade the amenities. The current pattern of movement into the area results in increased urbanization, and continued depopulation of the countryside. If a major auspice of the migration is amenities and the flight from urban congestion, people may find that they have merely transferred the problem. All indications are to continued migration and unless steps are taken to minimize the adverse effects of this, the area may end up as a string of small cities surrounded by empty countryside.

The second major issue is the effect of various types of economic development. Attracting industry per se is no panacea. Without integration into regional economies, the types of industry attracted to rural areas will continue to be low-wage, low multiplier types, while the higher-paying industries will concentrate in the small cities. Even surrounding the lakes, if recreation industries are over-developed, little benefit will accrue to the area, and other industries will shy away.

Recent research, and the data in this survey, indicate an all too frequent corollary to industrialization aimed at lowering unemployment and lowering the proportion of families in poverty. As noted above, migrants to an area bring higher skill levels than the resident population, and hence have a better competitive position for jobs. Employment expansion will attract local and return migrants in the early stage, increasing employment and income levels in the host area. But in many cases, if not most, the migrants take the newly created jobs, and local workers must migrate somewhere else, or continue in unemployment or underemployment. The increased levels of employment and income benefit the migrants, disguising the unchanging or even increasing numbers of persons unemployed or in poverty.<sup>13</sup> Efforts at development must consider who will

benefit, and who is meant to be served. McClellan-Kerr can serve as an important element in the Ozarks to bring this region into line with national income levels.

A further issue, and one of increasing importance in the refinement of impact assessment research, is the issue of "transferability" to other target sites. Clearly, each project is tied to specific conditions particular to a given area. Transferability is a function of 1) the degree of similarity between comparison projects; 2) methodological strategies used to gather the information; 3) elasticity of response to comparable inputs from national levels. Thus, any inferences drawn from the McClellan-Kerr project regarding other projects, whether it be the Tombigbee in Alabama or Meramec in Missouri, must be couched in terms of varying conditions and situations from place to place.

However, there are apparently basic demographic processes operating in a relatively similar fashion from area to area. For example, this report has identified the importance of amenities, job opportunities, and proximity to metropolitan areas. Applying these constraints on growth to a reservoir in eastern Missouri or Northern Alabama will have very different outcomes. The factors of growth have not changed, only their aggregate effect and role in the particular developmental process. Any transferability must consider the differential role the same factors will generate from area to area.

McClellan-Kerr has been a relatively strong influence in the attraction of residents and industries to some areas, but has had little or no impact in other areas. The current research has identified major elements and causes of demographic change, but much remains to be done.

The following topics illustrate the nature of unresolved issues in the form of needed research. But one other issue continually cropped up in the course of this study, and that concerns economic development as it relates to minorities, especially blacks. Growth of nonmetropolitan areas in the South is fast becoming the rule and not the exception as in past decades, except for counties with large black populations. This is hardly coincidental. For example, it is no secret that communities attempt to attract clean industries that require highly skilled workers. Understandably, the effort to attract "high income class" migrants, as opposed to labor intensive industries that will bring in "low income class" unskilled migrants, may translate into a white versus black migrant pool. It was expressed by more than one community leader that some industries would not be allowed to locate in the area because blacks from southern Arkansas and Louisiana would move into the area. Thus, economic segregation may become de facto racial segregation.

Other issues that require attention to rescue the area from haphazard development and allow planned, integrated economic growth in a regional economy include:

- 1) A serious attempt should be made to produce a regional approach to single out and appropriately weigh factors operating in McClellan-Kerr area and the Ozarks, which are producing change. If the current study of migration had included the growth counties surrounding McClellan-Kerr, more could have been said regarding differential factors influencing migration among areas. Having no appropriate control group, the weight of McClellan-Kerr in relation to factors in other areas cannot be evaluated.

- 2) Comparative, longitudinal studies of demographic change in relation to water-resource projects are needed. Mechanisms of change operating differentially in different locations are little understood. Why migrants and developers choose Lake Dardanelle over Fort Gibson, or Table Rock over Stockton is only superficially known.
- 3) Case studies of industries should be utilized to determine effects of migration on unemployment of local residents, ratios of unemployment, number of households below poverty and the specific role of McClellan-Kerr.
- 4) The growth in retirement migration (and pre-retirement) is little understood in its size, distribution, and impacts upon communities. The Ozarks, which includes most of the McClellan-Kerr counties, is one of three major areas of the country experiencing this type of migration, and the phenomenon deserves serious attention.

### FOOTNOTES

1. Ballard, John E., "Impact - A Reservoir Comes to Town," speech presented to Save the Niebrara Association, Lincoln, Nebraska, August, 1976.
2. Fuguitt, Glenn V. and Calvin L. Beale, "Population Change in Nonmetropolitan Cities and Towns," Economic Development Division, Economic Research Service, U.S. Department of Agriculture, Agricultural Economic Report 323, 1976; Beale, Calvin L., and Glenn V. Fuguitt, "Population Trends of Nonmetropolitan Cities and Villages in Subregions of the United States." Center for Demography and Ecology, Working Paper No. 75-30, September, 1976; Morrison, Peter A. and Judith P. Wheeler, "Rural Renaissance in America?," Population Bulletin, Vol. 31, No. 3, October, 1976; Fuguitt, Glenn V. and James J. Zuiches, "Residential Preferences and Population Distribution," Demography, Vol. 13, No. 3:491-504, August, 1975, and Hansen, Niles M., The Future of Nonmetropolitan America, Lexington Books, 1973.
3. The survey was a 10% sample of households in randomly selected enumeration districts in nonmetropolitan counties bordering McClellan-Kerr: Pope, Yell, Johnson and Logan in Arkansas; Wagoner, McIntosh, Cherokee, Haskell and Muskogee in Oklahoma. For information regarding sample design, questionnaire construction, and interviewing, see Appendix A: Methodological Procedures.
4. For more thorough discussion of auspices of migration see Cox, K. R., Man, Location, and Behavior: An Introduction to Human Geography, New York, John Wiley, 1972; Julian Wolpert, "Behavioral Aspects of the Decision to Migrate," Papers and Proceedings of the Regional Science Association, 15, pp. 159-169, 1965.
5. Goldscheider, Calvin, Population, Modernization, and Social Structure, Little, Brown, and Company, 1971, p. 312 (quoting S. N. Eisenstadt, From Generation to Generation: Age Groups and Social Structure (New York: The Free Press, 1956, p. 21).
6. Mobility rates were calculated using the number of moves per 6-month segments, controlling for age. See Appendix B: Multivariate Procedures for Migration Data.
7. For more detail see Rex R. Campbell and Daniel M. Johnson, "Propositions on Counterstream Migration," Rural Sociology, Vol. 41, No. 1, Spring, 1976.
8. Criteria for differentiating migrant types were:
  - (1) Local Movers - persons moving within the state, but crossing county lines;
  - (2) Returnees - persons who had resided in the area at some time in the past; all but a few of these persons had been born and raised in the area, and left during the periods of heavy outmigration; and
  - (3) Primary migrants - persons who had never resided in the area, and moved from states other than Arkansas or Oklahoma.

9. Lansing, John B. and Eva Mueller, The Geographical Mobility of Labor, Institute for Social Research, Survey Research Center, University of Michigan, 1967.
10. Ibid.
11. Roistacher, Elizabeth, "Residential Mobility" in 5,000 American Families: Patterns of Economic Progress, Vol. II, James N. Morgan (ed) Institute for Social Research, Survey Research Center, University of Michigan, 1974.
12. During the months of March and April, 1976, telephone interviews were conducted to obtain a sample of Oklahoma residents who had to move because of McClellan-Kerr lake construction. The Tulsa District Office provided land acquisition-resettlement lists for Ft. Gibson, Webbers Falls and Eufaula reservoirs. From these lists, which gave no hint as to the present location of relocatees, and telephone listings for Muskogee, Ft. Gibson, Braggs, and Eufaula, 139 names and numbers were obtained with three additional names and numbers acquired in the course of interviewing. Initially, a sample of Arkansas relocatees was to be obtained from lists provided by the Little Rock District Office. However, out of 68 names listed for Lake Dardanelle only 7 interviews were completed. Reasons for non-completion of others were: inability to locate persons, refusals, death and migration out-of-state. In addition, from an examination of these 7 interviews a major revamping of the relocatee schedule was performed and thus, the information obtained from Arkansas could not be fitted to that for Oklahoma. See also Appendix A: Methodological Procedures.
13. Summers, Gene, Sharon Evans, Frank Clemente, E. M. Beck and Jon Minkoff, Industrial Invasion of Nonmetropolitan America: A Quarter Century of Experience, Praeger Publishers, New York, 1976.

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## Appendix A: Methodological Procedures

### Sample and Household Selection for Major Schedule

The McClellan-Kerr Navigation System, including upstream reservoirs, encompasses a rather large expanse of land and involves over 30 counties in Arkansas and Oklahoma. These counties include several metropolitan areas - Little Rock, Tulsa, and Fort Smith. During the sample selections process, an initial decision was made to study only the non-metropolitan counties because of heterogeneity of the total areas and the limited resources available for the project. In addition, an examination of the secondary data suggested the need for at least two sample areas, one in Arkansas and the other in Oklahoma. These were selected to be centered around the waterway, the main stem reservoirs, and the upstream lakes. The exact counties to be included were determined in consultation with the Corps of Engineers. The areas to be studied were the Dardanelle Port and Reservoir area in Arkansas and the Muskogee port and portions of several upstream lakes. The counties surrounding the Dardanelle Reservoir are: Johnson, Logan, Pope and Yell. These, in turn, became the Arkansas area. Included in the Muskogee vicinity are: Eufaula, Robert S. Kerr, Webbers Falls, Ft. Gibson, and Tenkiller Ferry reservoirs. The number of counties and total land area immediately surrounding these lakes is extensive. The sample selected from these were: Muskogee, Cherokee, McIntosh, Wagoner and Haskell Counties.

Although the number of sample counties drawn had been narrowed, the number of households and land area included remained rather large. Since the objective of the study was to establish impacts caused by the waterway system, it was decided that attention be turned to areas of probable immediate "impact" within each county. Through the use of county enumeration district (ED) maps from the U.S. Bureau of Census, "impact areas" were selected with a limit of approximately five miles from the water's edge. Since ED's were to be used in the selection of the households to

be interviewed, the "impact" area boundaries were set to follow ED boundaries. This selection of ED's lowered the total area to be covered from over 300 ED's in the sample counties to 132 in the immediate impact area. A sample from these remaining ED's was drawn. A few enumeration districts were dropped on the basis of large numbers of college students i.e., 15% or more, contained in each because the target population was to be "permanent" civilian and non-student. Also, a few ED's fell out because they contained no occupied housing units. These together lowered the total number of ED's to 121.

The unit of analysis was the household and the total number of occupied housing units for each ED was determined through the use of the 1970 5th Count Census of Population and Housing Data Files for Oklahoma and Arkansas. The basic design from this point on was to select a random sample of household units, that is, each household would have an equal chance of being selected. To accomplish this, a multi-stage stratified area probability design was utilized. The first step was to stratify the areas by size, i.e. the total number of occupied housing units in each ED. (See Table A-I) Using the desired total of 500 interviews as the sample size, this suggested that a 10% sample of household units was appropriate. The ED's within each stratum were randomized. Finally, using the desired total number of interviews for each stratum and the 10% figure for each ED, a final sample of ED's was made. Twenty-one enumeration districts (11 in Arkansas and 10 in Oklahoma) were selected with 481 as the expected total number of interviews. (See Table A-II)

The selection of individual housing units within each ED began by counting all the occupied housing units within each ED. (Several of the ED's were very rural in nature, and these districts were only partially enumerated, i.e. major roads and highways.) In this enumeration process, it was quickly discovered that the total number of occupied housing units for some of the ED's had changed drastically from

1970. An example of this was ED 39 in Pope County. According to the 1970 5th Count Data File, this district has 278 units, however, our count totaled only 128. Originally, 28 interviews would have been completed, but this would represent almost 22% of housing units in that district, at present. In light of this development, the number of interviews to be completed for all sample ED's was adjusted to depict the 1976 count. (The partially enumerated districts were assumed to be unchanged from the 1970 census count because past data revealed little change in the number of units for rural areas and on-site inspection did not dispel that) (See Table A-III).

Once an ED was counted, all housing units were assigned a number, and random numbers were used to select the units to be interviewed. Alternates were used only in the event of one of three occurrences: a vacant house, a refusal, or no one at home.

In the case of a refusal the household was recontacted and if a second refusal was given, an alternate was used. If an interviewer found a housing unit with no one at home, the household was visited at a minimum of four more times at varying times of the day and week. Only after these attempts were made and proved futile was an alternate address employed. Alternates were used 58 times. As seen in Table A-IV this stems from 42 refusals, 2 vacant houses and 14 times the respondents were not at home. While the over-all rate of using alternates was 10.4%, the refusal rate was only 7.7%.

#### Design of Major Schedule and Data Collection

Work on the construction of the schedule began in the early fall of 1975 and was completed in January, 1976. The instrument itself was of the personal contact type. While the interviews were administered on a household basis and several sections dealt with the entire household, a few segments were directed solely toward the head of the household and/or the spouse. For the most part, closed questions were employed where

all responses were readily classifiable. However, in several areas throughout the schedule, open-ended questions were utilized and the responses were later collapsed into meaningful categories.

A main objective of this project had been to discover what, if any, impact the waterway had on migration. Thus, a major thrust of the schedule was at fulfilling that requirement. As can be seen in the instrument, see Appendix C, major segments were designed to uncover this impact, such as residential histories, migrant status, reasons for moving and future mobility plans. (All migration questions dealt solely with the head's experience. It was decided that it would be extremely difficult to deal with the migration data of the respondent since this could be the head or the spouse.)

Once a pretest of the schedule (in a small lake community on the Lake of the Ozarks in Missouri) was administered and the necessary revisions were completed, the actual interviewing began in the first week of February and was completed by mid-March, 1976. The project was announced in all major local newspapers and to local law enforcement agencies and Chambers of Commerce. This was to solicit the cooperation of respondents and to assure our legitimacy to the populace.

Interviewing personnel were obtained by means of advertisements and through the aid of state employment agencies. Prospective interviewers were screened by the field research teams and intensively trained on the use of the schedule and interviewing techniques.

All schedules were edited. A 10% sample of the schedules were verified by telephone call or visit by a field supervisor to insure accuracy and validity.

#### Relocatee Sample and Schedule Construction

One aim of the final phase of this project was to interview a number of persons who had to be relocated because of the McClellan-Kerr waterway and reservoir construction. Given that relocatees, for the most part, move to areas within close

proximity of their original residential site, it was felt that not many problems would be encountered in locating and interviewing a sample of these people. However, this was not the case.

The biggest, single problem was the inability to find persons who had been forced to move. This dilemma stemmed from several factors. Although a sizable number of reservoirs were constructed, only a handful of resettlement lists were available from which to draw a sample. While this small number of lists contained well over a thousand names, for the majority, these names plus the name of the reservoir were the only identification items present to assist in locating these residents. In addition to the above items, several of the lakes had been constructed one or two decades prior to this study. The age of these reservoirs made some of the lists equally as old if not older - meaning that some of the relocatees had died or had moved out of the area. Finally, because of time constraints, and the vast amount of physical area involved, reliance was placed upon the use of telephone directories to obtain addresses. However, this method presented its own set of obstacles. This automatically excluded all unlisted names and numbers and many addresses were listed as simply "South of City" or something similarly vague.

Originally, a sample of Arkansas relocatees was to be interviewed. However, as a result of examining the seven completed questionnaires, it was found that a major revamping of the instrument was necessary. In addition, the amount of time involved in obtaining those seven was deemed excessive.

The overall consequence of all these difficulties was the production of a telephone interview schedule. Because of the revisions in the instrument, the completed Arkansas surveys were thrown out, since they would not have been compatible with the new schedule. The telephone sample was drawn from lists for the Oklahoma

reservoirs of Ft. Gibson, Webbers Falls and Eufaula. From these and telephone listings for Muskogee, Ft. Gibson, Braggs and Eufaula, 139 names and numbers were obtained with three additional names and numbers acquired in the course of interviewing.

The actual interviewing was conducted during the months of March and April, 1976, and resulted in 76 completed questionnaires.

Table A-I  
 Number and Percentage of Housing Units  
 by Stratum and Desired Total of Interviews

Stratum *	Housing Units Number	** %	Number of Interviews
1-200	5669	20.79	104
201-300	8877	32.56	163
301 +	<u>12,720</u>	46.65	<u>233</u>
Total	27,266		500

\* Each stratum depicts a range of occupied housing units contained within an ED. Thus, an ED with 87 occupied housing units, such as ED 19 in Johnson Co., Arkansas, would fall into the first stratum.

\*\* Housing Units represents the total number of occupied housing units in all 121 ED's, plus the total number of housing units for all ED's falling into each stratum.

Table A-II

Random Ordering of ED's by Stratum with Number of Interviews Per ED

1-200			201-300			301 +		
ED	HU *	I *	ED	HU	I	ED	HU	I
AJ19 **	87	9	AP30	298	30	OC17	453	46
AP38	62	6	OMC2	250	25	AP36	301	30
AL3	76	8	OC7	217	22	OW1	442	44
OM2	138	14	OMC15	257	26	OM1	382	38
OC18	112	11	AY9	248	25	OC13	348	35
OMC9	152	15	AD39	278	28	AJ22	339	34
AY7	110	11	OC24	229		AP46	333	
AJ29	135	14	OC2	269		AJ25	395	
AL11	100	10	OC4	241		AP35	521	
AP47	143	—	OH1	247	—	OM86	379	—
		98			156			227

\* HU - number of housing units per ED. I - number of interviews per ED.

\*\* An abbreviation for state, county and ED number. Thus, AJ19 is Arkansas, Johnson County, ED19.

Table A-III  
Number of Housing Units in Sample Areas

State	County	ED	Occupied Housing Units		Change		Sample Size	
			1970	1976	#	%	1970	1976
Arkansas	Johnson	19	87	87 *	0	0	9	9
		22	339	327	-12	-3.5	34	33
		29	135	135 *	0	0	14	14
	Logan	3	76	76 *	0	0	8	8
		11	100	72	-28	-28.0	10	7
	Pope	30	298	383	+85	28.5	30	38
		36	301	364	+63	20.9	30	36
		38	62	70	+8	12.9	6	7
		39	278	128	-150	-53.9	28	13
	Yell	7	110	110 *	0	0	11	11
		9	248	241	-7	-2.8	25	24
Oklahoma	Cherokee	7	217	217 *	0	0	22	22
		13	348	341	-7	-2.0	35	34
		17	453	432	-21	-4.6	45	43
		18	112	223	+111	99.1	11	22
	McIntosh	2	250	215	-35	-14.0	25	22
		9	152	152 *	0	0	15	15
		15	257	287	+30	11.7	26	29
	Muskogee	1	382	508	+126	32.9	38	51
		2	138	163	+25	18.1	14	16
	Wagoner	1	442	456	+14	3.2	44	46

\* Partial enumeration. Total number of occupied housing units assumed to be unchanged from 1970 count.

Table A-IV  
Reasons for Non-Responses and Refusal Rates

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Arkansas	No One Home	4
	Refusals	<u>16</u>
		<u>20</u>
Oklahoma	No One Home	10
	Vacant House	2
	Refusals	<u>26</u>
		<u>38</u>
Refusal Rate	Arkansas	7.4%
	Oklahoma	7.9%
	Total	7.7%
Total Rate	Arkansas	9.1%
	Oklahoma	11.2%
	Total	10.4%

## Appendix B: Multivariate Procedures for Migration Data

Two multivariate procedures were used in the handling of the migration data collected for this study, both variations on dummy variable multiple regression. The first was Multiple Classification Analysis (MCA); used for interval-scaled dependent variables; in this case, the dependent variables were based on a mover/stayer dichotomous variable, and the mobility rate constructed from residential histories. The second technique, Multivariate Nominal Analysis (MNA); used for the nominal scale variables of migrant status. Both procedures were developed by the Survey Research Center at the University of Michigan.\* The purpose of this appendix is not to explain the procedures themselves, but to assist the reader in the interpretation of the data.

The first analysis set divided the sample into two groups: movers and stayers. The MCA package generates statistics for each category of the dependent variable, plus measures of association. Category statistics are expressed as class means, and the interpretation proceeds in terms of the grand mean for the sample, and the variations in the class means. For the second analysis set, mobility rates were constructed from residential histories from the past ten years (1965 - 1975) expressed as the number of moves divided by the number of 6 month segments in the last ten years, or since age 18, times 100. The variable was unstructured in the analysis (i.e. each household head had a different value) in order to test for relationships and incidence of migration.

\* Andrews, Frank M., James N. Morgan, John A. Sonquist, Laura Klem, Multiple Classification Analysis, Survey Research Center, Institute for Social Research, University of Michigan, 1973.

Andrews, Frank M., Robert C. Messenger, Multivariate Nominal Scale Analysis, Survey Research Center, Institute for Social Research, University of Michigan, 1973.

There are three sets of statistics measuring strength and direction of relationships. The Eta-Square measures the simple bivariate relationship (i.e. the association between one independent variable and the dependent variable), and is analogous to simple correlation. The Beta-Square measures the bivariate association controlling for the effects of all other variables. The  $R^2$  and adjusted  $R^2$  variables present the proportion of variance explained by all of the independent variables. The adjusted  $R^2$  controls for an internal mechanism in the procedure.

As an illustration of the above, we can use the tables on mobility rate. The mean rate for the total sample was 1.66, and mean rates are presented for each category of the independent variables in two forms: class mean and the mean after adjusting for the effects of all variables. Looking at age, we can see that mobility rates decline with age across all age cohorts until the cohorts 65 and over, reflecting the incidence of retirement migration. The duration in current residence has the strongest bivariate relationship with mobility rate (Eta-Square), as well as the strongest multivariate relationship (Beta-Square). Differences between unadjusted and adjusted means can be noted, as in the case of a lowering of the mean for persons aged 20-29, where the rate is lowered from 2.33 to 1.90, again reflecting the pull of retirement migrants. The proportion of variance explained is very high (71% adjusted), meaning that these six variables account for nearly three-fourths of the variance in mobility rates.

The MNA statistics operate in a slightly different manner. Looking at migrant status, the class rates are expressed as adjusted and unadjusted proportions in each category of the independent variables. The proportions sum

across to 100%, and can be interpreted in much the same manner as the class means in the example above. The proportion of variance explained is low, however, reflecting the relative homogeneity of migrants moving into the nonmetropolitan areas surrounding McClellan-Kerr.

The techniques provide a greater power to identify the relative power of individual predictors of mobility and migrant status. The results are consistent with most migration studies, and the examination of all differences allow evaluation of predictors in a multivariate context; that is, the explanation of individual characteristics considering (controlling for) the effects of all other variables and correlations among the predictors themselves.

Appendix C: Major and Relocatee Schedules  
Major Schedule

Questionnaire Number \_\_\_\_\_

Interviewer \_\_\_\_\_

Time Began \_\_\_\_\_

Time Ended \_\_\_\_\_

The University of Missouri--Columbia  
Department of Rural Sociology

Respondent's Name \_\_\_\_\_  
 Address \_\_\_\_\_  
 Last First M. Initial  
 House Number Street Name  
 City County  
 State Zip Code  
 Telephone Number \_\_\_\_\_  
 Area Code Prefix Number

## Contact Report (EVERY ATTEMPT MUST BE RECORDED)

ATTEMPT #	Date	Time	Person Contacted	Respondent Not At Home	Appointment Made	Refusal Why?	Year Moved Into Community

## Screening:

- We are looking for families who have:
1. Moved into the area since 1965
  2. Been living here since 1965

Could I ask you what year you moved into present community? \_\_\_\_\_

Status

Interview Completed \_\_\_\_\_  
 Interview Refused \_\_\_\_\_  
 Interview Screened \_\_\_\_\_  
 Field Verified \_\_\_\_\_

1. Questionnaire Number \_\_\_\_\_

2a. Are there any occupied living quarters besides your own at \_\_\_\_\_ ?  
(READ STREET ADDRESS\*)

\_\_\_\_\_ Yes

\_\_\_\_\_ No

2b. How many people are living in this household? \_\_\_\_\_

\* REMEMBER, INTERVIEWER INSTRUCTIONS FOR THIS QUESTIONNAIRE ARE DESIGNATED BY THE USE OF CAPITAL LETTERS. ANY INSTRUCTIONS OF THIS TYPE ARE NOT TO BE READ TO THE RESPONDENTS.

-3-

What is the name of the head of this household (dwelling unit)? (PUT IN LINE 1 OF 3b BELOW)

What are the names of all the other persons who are living or staying here? (BEGIN WITH LINE 2 OF 3b BELOW)

	3a Name (First)	3b Relationship to the household head (E.G., SPOUSE, SON, DAUGHTER, IN-LAW, PARTNER, LODGER, LODGER'S SPOUSE, ETC.)	4 Year of Birth	5 State of Birth (ABRV)
1 Respondent				
2				
3				
4				
5				
6				
7				
8				
9				
10				

6 Sex (CIRCLE)	7 Marital Status (WRITE- IN)	8 Highest grade of school ever completed	9 Employment Status "Are you working now?" IF YES, ASK FULL-TIME/ PART-TIME. IF NO, ASK WHAT THEY DO?	10 What is occupation of employed persons other than respondent and spouse? ONLY IF APPLICABLE
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				
M F				

Married	1	1=1-5	5=1-3	1=FT(35+)	6=student
Widowed	2	2=6-8	Coll	2=PT(35-)	7=disabled
Divorced	3	3=1-3	6=C.G.	3=n/w(seas)	8=retired
Separated	4	H.S.	7=G.S.	4=looking	9=on vacation
Never		4=H.G.	8=G.D.	5=hsbppg	10=other
Married	5		or P.D.		(specify)

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## CURRENT OCCUPATION

FOR THE FOLLOWING QUESTIONS ASK ABOUT THE HEAD OF THE HOUSEHOLD FIRST,  
REPEAT QUESTIONS FOR SPOUSE IF APPLICABLE.

## HEAD

IF HEAD IS EMPLOYED, ASK QUESTIONS 11-14.

For whom does (HEAD) work? (NAME OF COMPANY, BUSINESS, ORGANIZATION,  
OR OTHER EMPLOYER.)

11. \_\_\_\_\_

What kind of business or industry is this? (FOR EXAMPLE, RETAIL SHOE  
STORE, TV MANUFACTURING PLANT, STATE LABOR DEPARTMENT, FARMING, HOUSEKEEPING,  
ETC.)

12. \_\_\_\_\_

What is (HEAD'S) job and major duties? (FOR EXAMPLE, ELECTRICAL ENGINEER,  
STOCK CLERK, TYPIST, FARMER; IF THE RESPONDENT HESITATES, REPHRASE QUESTION TO  
READ "OCCUPATION," OR "POSITION" IN PLACE OF "JOB.")

13. \_\_\_\_\_

When did (HEAD) start working at (HEAD'S) present job?

14. \_\_\_\_\_  
Month            Year

IF ANSWER TO QUESTION 14 IS 1965 OR BEFORE SKIP TO QUESTION 18.

IF HEAD IS NOT EMPLOYED ASK QUESTION 15.

When did (HEAD) become:

15. Unemployed 1 \_\_\_\_\_  
                  Month            Year  
Disabled     2 \_\_\_\_\_  
                  Month            Year  
Retired      3 \_\_\_\_\_  
                  Month            Year

IF ANSWER TO QUESTION 15 IS 1965 OR BEFORE ASK QUESTION 16 AND THEN SKIP  
TO QUESTION 18.

Before (HEAD) became \_\_\_\_\_ what was (HEAD'S) previous job?

16. \_\_\_\_\_

-6-

Now I would like to briefly go over some of the jobs (HEAD) has held in the past. What kind of job did (HEAD) have before (HEAD'S) current job (present period of unemployment/retirement).

NOTE: IF ANY JOB STARTED IN 1965 OR BEFORE GO TO QUESTION 18.

17 a. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (HEAD): unemployed 1  
disabled 2  
retired 3

17b. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (HEAD): unemployed 1  
disabled 2  
retired 3

17c. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (HEAD): unemployed 1  
disabled 2  
retired 3

17d. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (HEAD): unemployed 1  
disabled 2  
retired 3

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17e. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17f. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17g. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17h. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17i. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

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17j. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17k. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17l. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17m. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17n. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

-9-

17m. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17n. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17o. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17p. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17q. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

-10-

17r. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17s. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

17t. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (HEAD): unemployed 1  
 disabled 2  
 retired 3

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SPOUSE  
IF SPOUSE IS EMPLOYED ASK QUESTIONS 18-21

For whom does (SPOUSE) work? (NAME OF COMPANY, BUSINESS, ORGANIZATION, OR OTHER EMPLOYER.)

18. \_\_\_\_\_

What kind of business or industry is this? (FOR EXAMPLE, RETAIL SHOE STORE, TV MANUFACTURING PLANT, STATE LABOR DEPARTMENT, FARMING, HOUSEKEEPING, ETC.)

19. \_\_\_\_\_

What is (SPOUSE'S) job and major duties? (FOR EXAMPLE, ELECTRICAL ENGINEER, STOCK CLERK, TYPIST, FARMER; IF THE RESPONDENT HESITATES, REPHRASE QUESTION TO READ "OCCUPATION," OR "POSITION" IN PLACE OF "JOB.")

20. \_\_\_\_\_

When did (SPOUSE) start working at (SPOUSE'S) present job?

21. \_\_\_\_\_  
Month      Year

IF ANSWER TO QUESTION 21 IS 1965 OR BEFORE SKIP TO QUESTION 25a.

IF SPOUSE IS NOT EMPLOYED ASK QUESTION 22

When did (SPOUSE) become:

22. Unemployed 1 \_\_\_\_\_  
                  Month      Year  
Disabled 2 \_\_\_\_\_  
                  Month      Year  
Retired 3 \_\_\_\_\_  
                  Month      Year

IF ANSWER TO QUESTION 22 IS 1965 OR BEFORE ASK QUESTION 23 AND THEN SKIP TO QUESTION 25a.

Before (SPOUSE) became \_\_\_\_\_ what was (SPOUSE'S) previous job?

23. \_\_\_\_\_



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24e. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24f. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24g. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24h. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24i. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                              Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24j. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (SPOUSE): unemployed 1  
disabled 2  
retired 3

24k. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (SPOUSE): unemployed 1  
disabled 2  
retired 3

24l. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (SPOUSE): unemployed 1  
disabled 2  
retired 3

24m. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (SPOUSE): unemployed 1  
disabled 2  
retired 3

24n. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
Month/Year

Month/Year

Was this a transfer: Yes 1 Was this: Full-time 1  
No 2 Part-time 2

If not employed, was (SPOUSE): unemployed 1  
disabled 2  
retired 3

-15-

24o. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24p. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24q. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24r. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

24s. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

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24t. Occupation \_\_\_\_\_ Worked from \_\_\_\_\_ to \_\_\_\_\_  
 \_\_\_\_\_  
 Month/Year Month/Year

Month/Year

Was this a transfer: Yes 1      Was this: Full-time 1  
 No 2                                      Part-time 2

If not employed, was (SPOUSE): unemployed 1  
 disabled 2  
 retired 3

-17-

25a. Have you continuously lived in this county since 1965?

(STAYER) \_\_\_\_\_ Yes 1 (IF YES, ASK 25b)

\_\_\_\_\_ No 2 (IF NO, ASK 26)

25b. Have you lived here all your life?

\_\_\_\_\_ Yes 1 (IF YES SKIP TO 29)

\_\_\_\_\_ No 2 (IF NO ASK 25c)

25c. When did you move to this area? \_\_\_\_\_  
Month/Year

SKIP TO QUESTION 29

26. Have you continuously lived in this state since 1965?

(LOCAL MIGRANT) \_\_\_\_\_ Yes 1 (IF YES, SKIP TO 29)

\_\_\_\_\_ No 2 (IF NO, ASK 27)

27. Prior to moving to (OKLAHOMA/ARKANSAS) had you ever lived in this state before?

\_\_\_\_\_ Yes 1 (IF YES, ASK 28)

(LONG-DISTANCE MIGRANT) \_\_\_\_\_ No 2 (IF NO, SKIP TO 29)

28. How long had you lived here?

Years

(IF MORE THAN ONE YEAR, THEN THE RESPONDENT IS A RETURN MIGRANT.)

(IF LESS THAN ONE YEAR, THEN THE RESPONDENT IS A LONG-DISTANCE MIGRANT.)

29. INDICATE RESPONDENT'S MIGRANT STATUS

1 \_\_\_\_\_ STAYER 1 (IF ONE (1) CIRCLED, SKIP TO QUESTION 38)

2 \_\_\_\_\_ LOCAL MIGRANT

3 \_\_\_\_\_ LONG-DISTANCE MIGRANT

4 \_\_\_\_\_ RETURN MIGRANT

-18-

## LIFE CYCLE

Now I would like to discuss with you some events that take place in everyone's life.

In the past 12 years (1965-1976):

30. Have you had a change in your marital status?

YEARS

Married \_\_\_\_\_

Widowed \_\_\_\_\_

Divorced \_\_\_\_\_

Separated \_\_\_\_\_

31. Has anyone (other than your own children) lived with you, say a grandmother, aunt or friend of the family? (Over 6 months)

Years \_\_\_\_\_

How Many \_\_\_\_\_

How Long \_\_\_\_\_

32. Has there been a decrease in the size of your family through someone leaving, a death in the family, etc.?

Death \_\_\_\_\_

Someone Leaving \_\_\_\_\_

-19-

Now I'd like to ask you about the places where you lived between 1965 and 1976.

33

34

35

36

	33 Where did you live before? _____ CITY	34 When did you move to _____? CITY (MONTH/YEAR)	35 Before you moved to _____ did you CITY own your own home?	36 Why did you move to _____? CITY Which reasons were most important?
a	PRESENT PLACE OF RESIDENCE			
b				
c				
d				
e				
f				
g				

SHOW LIFE EVENTS CARD AFTER COMPLETION OF THIS TABLE

37

HAND RESPONDENT LIFE EVENTS CARD.

Now I would like to know if any of the events shown on this card influenced your decision to move?

Life Cycle Events

1. Enter Armed Forces
2. Leave Armed Forces
3. Enter School
4. Leave School
5. Job Transfer
6. Child Born
7. Decrease in Household Size
8. Increase in Household Size
9. Retirement
10. Marriage
11. Divorce
12. Widowhood
13. Separation
14. Change in Jobs

38. If you were age 13 before 1965, how many times did you move between your 18th birthday and 1965?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

RETURN . MIGRANTS ONLY FROM QUESTION 29

39. Why did you initially leave the state? (PROBE AND PROBE AGAIN).

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

40. Which of the above reasons do you feel was most important? Second? Third?  
RANK THESE ABOVE, 1, 2, & 3

41. At the time you left did you plan to return?

\_\_\_\_\_ Yes 1  
\_\_\_\_\_ No 2

42. IF THE RETURN MIGRANT MOVED BACK TO (OKLAHOMA/ARKANSAS) before 1965 -- THIS CAN BE SEEN ON PAGE --ASK: Where was the last place you lived outside OKLAHOMA/ARKANSAS?

\_\_\_\_\_, \_\_\_\_\_  
CITY STATE

Now I would like to discuss with you any plans you might have made to move from this area.

43a. Do you now have any plans for moving away from this area?

\_\_\_\_\_ Yes 1 (IF YES, ASK 43b)

\_\_\_\_\_ No 2 (IF NO, SKIP TO QUESTION 44a)

43b. Why do want to move at this time? (PROBE)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

43c. What is keeping you from moving at this time? (PROBE)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

43d. Where would you most likely move to?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
CITY COUNTY STATE

44a. In the past, had you ever planned to move away from this area?

\_\_\_\_\_ Yes 1 (IF YES, ASK 44b)

\_\_\_\_\_ No 2 (IF NO, SKIP TO QUESTION 44f)

44b. When was this? \_\_\_\_\_

44c. Why at that particular time? (PROBE)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

44d. Where would you most likely have moved to?

\_\_\_\_\_ , \_\_\_\_\_ , \_\_\_\_\_  
CITY COUNTY STATE

44e. What stopped you from moving at that time? (PROBE)

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44f. Why are you staying in this area? (PROBE)

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44g. Which of the above reasons do you feel is most important? Second? Third?  
RANK THESE ABOVE.

45. Do you think that you will move from this area?

Within the year	1
Within five years	2
Sometime in the future	3
Never	4
Other (Specify)	5
Don't know	0

---

46a. Do you have any relatives living in this area?

\_\_\_\_\_ Yes 1 (IF YES, ASK 46b)

\_\_\_\_\_ No 2 (IF NO, SKIP TO QUESTION 47)

46b. Where do they live? \_\_\_\_\_

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47. When you think of your home community, where do you think of?

Here 1

\_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ .Some other place (specify) 2

Don't know 0

48. For many years, this area lost large numbers of people, because they moved away. Why do you think people moved away from here? (PROBE)

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49. Which of the above reasons do you feel is most important? Second? Third?  
RANK THESE ABOVE.

50. In recent years, people have been moving into this area. Why do you  
think people in general move here or stay here? (PROBE)

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51. Which of the above reasons do you feel is most important? Second? Third?  
RANK THESE ABOVE.

Now I would like to ask you some questions about Lake \_\_\_\_\_.

52. Who built Lake \_\_\_\_\_?

53. Why was it built? \_\_\_\_\_

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54. Who controls it now? \_\_\_\_\_

55. Are you now, or were you ever, a member of an organization concerned about  
the effects the Lake is having on your community or area in general?

\_\_\_\_\_ Yes 1

\_\_\_\_\_ No 2

56a. If the Lake was not constructed yet, but was being planned now, would  
you be...

Strongly in favor of construction	1
In favor of construction	2
Against construction	3
Strongly against construction	4
Mixed opinion	5
No opinion	0

56b. Why? \_\_\_\_\_

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Now I would like to ask you some questions about the effect of the Lake:

57a. Has the presence of the Lake been good for your community?

\_\_\_\_\_ Yes 1 (IF YES, ASK 57b)

\_\_\_\_\_ No 2 (IF NO, SKIP TO QUESTION 58a)

57b. How? (PROBE)

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57c. Which of these reasons do you feel is most important? Second? Third?  
RANK THESE ABOVE.

58a. Has the presence of the Lake been bad for your community?

\_\_\_\_\_ Yes 1 (IF YES, ASK 58b)

\_\_\_\_\_ No 2 (IF NO, SKIP TO QUESTION 59)

58b. How? (PROBE)

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58c. Which of these do you feel is most important? Second? Third?  
RANK THESE ABOVE.

59. Overall; do you feel the presence of the lake has been good or bad for  
your community?

Good 1  
Bad 2  
Neutral 3  
Don't know 0

60a. What do you think is the attitude of the people of this community  
toward the lake? How many of them, do you think, are strongly in  
favor of the lake?

All 1  
Almost all 2  
Most 3  
About half 4  
Some 5  
A few 6  
None 7  
Don't know 0

60b. How many of them, do you think are strongly opposed to the lake?

All	1
Almost all	2
Most	3
About half	4
Some	5
A few	6
None	7
Don't know	0

61a. Has the presence of the reservoir had any impact on your plans to stay here or move away?

\_\_\_\_\_ Yes 1 (IF YES, ASK 61b)

\_\_\_\_\_ No 2 (IF NO, SKIP TO QUESTION 62a)

61b. How? (PROBE)

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62a. Now I have some questions about leisure time, that is, questions about the time you have after work in the evenings, and on weekends for hobbies and recreation--both indoors and outdoors. How do you usually spend most of your leisure time? (INTERVIEWER: IN THE BLANKS ACCOMPANYING THE LIST BELOW, NUMBER CONSECUTIVELY, STARTING WITH "1" THE ORDER IN WHICH ANY OF THESE LEISURE ACTIVITIES ARE MENTIONED IN THE ANSWERS TO QUESTIONS 58a, b, and c.)

62b. Are there any other leisure time activities on which you spend much of your free time--in the evenings, in your time off, and on weekends? (CONTINUE THE CONSECUTIVE NUMBERING IN THE BLANKS BELOW)

(INTERVIEWER: HAND THE FLASH CARD WITH LEISURE ACTIVITIES TO THE RESPONDENT)

62c. Here is a list of some leisure activities. Are there any things on this list that you didn't think of mentioning, but that you also do quite a lot? (CHECK ON OTHER COLUMN).

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<u>Card Responses</u>	<u>Number</u>	
_____	_____	A. Visiting with friends, parties, dancing.
_____	_____	B. Reading
_____	_____	C. Going to plays, concerts, concerts, lectures or museums.
_____	_____	D. Pleasure driving
_____	_____	E. Going to restaurants or bars for recreation or entertainment.
_____	_____	F. Watching television
_____	_____	G. Participating in clubs, organizations, or churchwork
_____	_____	H. Gardening or yardwork
_____	_____	I. Photography or art work
_____	_____	J. Workshop or homemaking hobbies
_____	_____	K. Participation in musical activities (FOR EXAMPLE, INSTRUMENTALS, SINGING)
_____	_____	L. Sports (WHAT KIND OF SPORTS)
_____	_____	1. _____
_____	_____	2. _____
_____	_____	3. _____
_____	_____	M. Other (SPECIFY)
_____	_____	1. _____
_____	_____	2. _____
_____	_____	3. _____

INTERVIEWER: GIVE FLASH CARD WITH WATER-RELATED ACTIVITIES TO RESPONDENT.

63a. This card shows the activities that we think of as water-related activities. Would you please tell me how frequently you did each of these things in your leisure time in the last twelve months, following this card.

INTERVIEWER: CIRCLE APPROPRIATE FREQUENCY CODE ON OPPOSING PAGE FOR RESPONDENT, SPOUSE, OR OTHER FAMILY MEMBER(S).

63b. (REPEAT FOR SPOUSE IF RESPONDENT IS MARRIED). Would you tell me how frequently your spouse did each of these things during the last twelve months.

63c. (IF RESPONDENT HAS CHILDREN UNDER 18 YEARS OF AGE IN THE HOUSEHOLD, ASK THE FOLLOWING QUESTION:) Would you please tell me how frequently each of these things was done by your child(ren), adding together their individual activities during the last twelve months?

63d. (IF THE RESPONDENT HAS CHILDREN OVER 18 YEARS OF AGE, OR OTHER FAMILY MEMBERS LIVING IN THE HOUSEHOLD, ASK THE NEXT QUESTION:) Finally, would you please tell me how frequently each of these things was done by other family members in your household, adding together individual activities during the last twelve months?

A = Not at all  
 B = Once or twice  
 C = Three or four times  
 D = More often

Activity	63a	63b	63c	63d
	Respondent	Spouse	Child(ren)	Other(s)
1. Outdoor swimming in lakes or rivers or going to the beach	A B C D	A B C D	A B C D	A B C D
2. Scuba Diving	A B C D	A B C D	A B C D	A B C D
3. Fishing	A B C D	A B C D	A B C D	A B C D
4. Sailing	A B C D	A B C D	A B C D	A B C D
5. Canoeing	A B C D	A B C D	A B C D	A B C D
6. Other boating	A B C D	A B C D	A B C D	A B C D
7. Water skiing	A B C D	A B C D	A B C D	A B C D
ANY OF THESE OTHER REASONS FOR GOING TO RIVERS OR LAKES:	-----	-----	-----	-----
8. Camping	A B C D	A B C D	A B C D	A B C D
9. Sunbathing	A B C D	A B C D	A B C D	A B C D
10. Hunting	A B C D	A B C D	A B C D	A B C D
11. Bicycling	A B C D	A B C D	A B C D	A B C D
12. Horseback riding	A B C D	A B C D	A B C D	A B C D
13. Pleasure driving, sightseeing	A B C D	A B C D	A B C D	A B C D
14. Hiking or walking for pleasure; sightseeing or viewing nature	A B C D	A B C D	A B C D	A B C D
15. Picnics or barbecues	A B C D	A B C D	A B C D	A B C D
16. Jogging or running	A B C D	A B C D	A B C D	A B C D
17. Playing outdoor games or sports	A B C D	A B C D	A B C D	A B C D
18. Attending outdoor water events as a spectator (boat races, etc.)	A B C D	A B C D	A B C D	A B C D
19. Other (SPECIFY)	A B C D	A B C D	A B C D	A B C D

INTERVIEWER: GIVE FLASH CARD WITH LAKES TO RESPONDENT

64a-64d Following this card, tell me how many times you visited each of the lakes on the list during the last twelve months, in order to participate in any of the water-related activities on the last card.

	64a	64b	64c	64d
Lake -- In Oklahoma	Respondent	Spouse	Child(ren)	Other(s)
a. Keystone	A B C D	A B C D	A B C D	A B C D
b. Oologah	A B C D	A B C D	A B C D	A B C D
c. Pensacola	A B C D	A B C D	A B C D	A B C D
d. Hudson	A B C D	A B C D	A B C D	A B C D
e. Fort Gibson	A B C D	A B C D	A B C D	A B C D
f. Tenkiller Ferry	A B C D	A B C D	A B C D	A B C D
g. Webber's Falls	A B C D	A B C D	A B C D	A B C D
h. Eufaula	A B C D	A B C D	A B C D	A B C D
i. Robert S. Kerr	A B C D	A B C D	A B C D	A B C D
j. Arkansas River	A B C D	A B C D	A B C D	A B C D
Lake -- In Arkansas				
k. Ozark	A B C D	A B C D	A B C D	A B C D
l. Dardanelle	A B C D	A B C D	A B C D	A B C D
m. Arkansas River	A B C D	A B C D	A B C D	A B C D

INTERVIEWER: USE THE SAME PROCEDURE AS  
IN QUESTIONS 63a-63d FOR SPOUSE, CHILDREN  
AND OTHER FAMILY MEMBERS

A = Not at all  
B = Once or twice  
C = Three or four times  
D = More often

65a. If your family could do as it pleases, are there any things on this list (SHOW WATER-RELATED ACTIVITIES FLASH CARD) that you (or other family members) would like to do more often or would enjoy taking up in the future?

\_\_\_\_\_ Yes (IF YES, ASK 65b)

\_\_\_\_\_ No (IF NO, SKIP TO QUESTION 66)

65b. What kinds of activities? (SPECIFY)

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65c. What was it mainly that prevented you from doing these things last year? (PROBE)

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66. How many weeks of paid vacation did the head of the household receive in the last 12 months?

\_\_\_\_\_ weeks

INTERVIEWER: GIVE RESPONDENT FLASH CARD WITH INCOME SOURCES:

67. Have you or any member of your family received any income from the following sources during the last calendar year, 1975? (CIRCLE MEMBER FOR YES RESPONSE).

CIRCLE CODE Y = Yes  
n = No

R = Respondent  
S = Spouse  
O = Other family member

- |   |              |
|---|--------------|
| a) Wages or salaries (tips, commissions)  | a) Y N R S O |
| b) Own business (or farm)   | b) Y N R S O |
| c) Workmen's compensation   | c) Y N R S O |
| d) Unemployment compensation  | d) Y N R S O |
| e) Social security (OASDI)  | e) Y N R S O |
| f) Other pensions (Veterans', private employer, Government, etc.)   | f) Y N R S O |
| g) Welfare or public assistance (Aid to dependent children, OAA, aid to disabled, foster children care, etc.) | g) Y N R S O |
| h) Rents (Including that from roomers and boarders)   | h) Y N R S O |
| i) Interest and dividends   | i) Y N R S O |

## HAND FLASH CARD WITH INCOME CATEGORIES TO RESPONDENT

INCOME

- A. No Income
- B. Under \$1,000
- C. 1,000-1,999
- D. 2,000-2,999
- E. 3,000-3,999
- F. 4,000-4,999
- G. 5,000-5,999
- H. 6,000-6,999
- I. 7,000-7,999
- J. 8,000-8,999
- K. 9,000-9,999
- L. 10,000-10,999
- M. 11,000-11,999
- N. 12,000-12,999
- O. 13,000-13,999
- P. 14,000-14,999
- Q. 15,000-19,999
- R. 20,000-24,999
- S. 25,000-29,999
- T. 30,000 and over
- U. Refusal

68. Would you please indicate to me the letter closest to the total income you received before taxes from all sources for the last calendar year, 1975? (ENTER CODE) \_\_\_\_\_.

IF MARRIED, ASK:

69. Also, would you please indicate which of the letters is closest to the total income received by your spouse from all sources before taxes for the last calendar year, 1975? (ENTER CODE) \_\_\_\_\_.

IF MORE THAN ONE PERSON IN THE FAMILY UNIT, ASK:

70a. Now, would you please indicate to me which of the letters is closest to your total family income before taxes from all sources for the last calendar year, 1975? (ENTER CODE) \_\_\_\_\_.

70b. Does that include the income of everyone in the family, including yourself? (INDICATE CORRECT LETTER IN QUESTION 70a TO INCLUDE TOTAL FAMILY INCOME)

\_\_\_\_\_ Yes 1

\_\_\_\_\_ No 2 (FOLLOW ABOVE INSTRUCTIONS)

THANK THE RESPONDENT FOR THEIR TIME AND ASSISTANCE. REMEMBER TO COLLECT UP ALL FLASH CARDS AND SIMILAR MATERIALS BEFORE LEAVING.

INTERVIEWER QUESTIONNAIRE

THIS FORM IS TO BE FILLED OUT AFTER THE INTERVIEWER HAS LEFT THE RESPONDENT'S RESIDENCE ONLY

1) What was the predominant type of residence in the respondent's block area?

Apartment Dwellings

Private Homes

Mobile Home Lot

Boarding Houses

2. Describe the character of the respondent's neighborhood:

Completely Residential

Largely Residential; Some Commercial Development

Mixed: Commercial and Residential Development

Mixed: Residential and Commercial Development

Largely Residential; Some Industrial Development

Other (please specify) \_\_\_\_\_

3. Describe the structure and character of the respondent's home (e.g., run-down area; state of disrepair; lacking plumbing facilities; beds, cots, or mattresses in living room; etc.... PLEASE EXPLAIN)

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4 . Describe the general tone of the interview (e.g., respondent was hostile, reserved, unwilling, interested, open, etc.):

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5. Please comment on anything in the interview that would affect the nature of the data gathered. Please be specific and complete.

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2b. What happened to \_\_\_\_\_ ? \_\_\_\_\_  
(IF MOVED AWAY, GET ADDRESS AND PHONE NUMBER IF POSSIBLE.) \_\_\_\_\_  
\_\_\_\_\_

ALL REMAINING QUESTIONS ARE TO BE ANSWERED IN LIGHT OF THE RELOCATEE'S EXPERIENCES. FOR EXAMPLE, IF THE RESPONDENT IS THE RELOCATEE'S DAUGHTER WE DO NOT WANT HER AGE, MARITAL STATUS, ETC.

3. In your dealings with the Corps, how would you describe the treatment you received?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

4a. Did you consider, or actually carry the settlement into court for a higher settlement?

- Yes, considered it            1 (Skip to 5)
- Yes, took it to court        2 (Ask 4b)
- No, never considered it    3 (Skip to 5)

4b. Did the court provide a better settlement?

- Yes 1
- No 2

5. Would you say that you were better off financially as a result of the land sale?

- Yes 1
- No 2

6. Do you feel you were adequately reimbursed for moving expenses?

- Yes 1
- No 2

7. In your estimation, was the settlement fair?

- Yes 1
- No 2
- Other (specify) 3 \_\_\_\_\_

8. Did the settlement upset any plans for working?

- Yes 1 (Ask 8b)
- No 2 (Skip to 9)

8b. How? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

9a. Did the purchase of your land turn into an opportunity for you?

- Yes 1 (Ask 9b)
- No 2 (Skip to 10)

9b. In what way was it an opportunity? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Now we would like to ask your opinion on several statements and find out whether you agree or disagree with each one. There, of course, are no right or wrong answers to them. (DO NOT READ, DON'T KNOW)

10. Average landowners stand to gain more than they will lose by lake construction.

- Agree 1
- Disagree 2
- Don't Know 3

11. The construction of lakes is likely to be met with widespread acceptance in rural areas.

- Agree 1
- Disagree 2
- Don't Know 3

12. Landowners have great opportunity to express their opinion in the planning of new lakes.

- Agree 1
- Disagree 2
- Don't Know 3

13. Prices the government pays for land are the true market value.

- Agree 1
- Disagree 2
- Don't Know 3

14. The benefits gained from new lakes outweigh the costs.

- Agree 1
- Disagree 2
- Don't Know 3

15. Family and community ties tend to be strengthened for people who have to move due to lake construction.

- Agree 1
- Disagree 2
- Don't Know 3

16. What was your occupation before you moved?

- Farm (full-time) 1
- Farm (part-time) 2
- Non-Farm (specify) 3 \_\_\_\_\_
- Retired 4
- Disabled 5
- Unemployed 6
- Other (specify) 7 \_\_\_\_\_

17a. Immediately after you moved, what was your occupation?

- Farm (full-time) 1
- Farm (part-time) 2
- Non-Farm (specify) 3 \_\_\_\_\_
- Retired 4
- Disabled 5
- Unemployed 6
- Other (specify) 7 \_\_\_\_\_

IF RETIRED, ASK 17b. IF NOT, SKIP TO 18.

17b. Did the settlement influence your decision to retire?

- Yes 1 (Ask 17c)
- No 2 (Skip to 18)

17c. How? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

18. At present, what is your occupation?

- Farm (full-time) 1
- Farm (part-time) 2
- Non-Farm (specify) 3 \_\_\_\_\_
- Retired 4
- Disabled 5
- Unemployed 6
- Other (specify) 7 \_\_\_\_\_

19. How many acres of land did you own at the time of the settlement?

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20. How many acres were purchased by the government?

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21. How long had you or your family owned the acreage?

- Less than one year 1
- 1-5 years 2
- 5-10 years 3
- 10-20 years 4
- More than 20 years 5

22. Before you sold these acres, what did you use them for?

- Crops 1
  - General Farming 2
  - Grazing 3
  - Pastureland 4
  - Fallow 5
  - Woodland 6
  - Other (specify) 7 \_\_\_\_\_
- 

23. What are they used for now?

- Underwater 1
  - Back water area 2
  - Easement 3
  - Other (specify) 4 \_\_\_\_\_
- 

23a. Do you presently lease any land from the government?

- Yes 1 (Ask 24b)
- No 2 (Skip to 25)

24b. Do you use this land?

- Yes 1 (Ask 24c and 24d)
- No 2 (Skip to 25)

24c. How do you use it? \_\_\_\_\_

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24d. Have you ever been flooded out while using this land?

- Yes 1 (Ask 24e)
- No 2 (Skip to 25)

- 24e. How many times? \_\_\_\_\_
25. In what year were you born? \_\_\_\_\_
- 26a. Are you married?
- Yes 1 (Skip to 27)  
No 2 (Ask 26a)
- 26b. What is your marital status? \_\_\_\_\_
27. What is the highest grade of school you finished? \_\_\_\_\_
28. Our last question is about your income. Is your total household income:
- |                       |   |
|-----------------------|---|
| Less than \$5000      | 1 |
| \$5000-\$10,000       | 2 |
| Greater than \$10,000 | 3 |
| Refused               | 4 |
29. (DO NOT ASK - FROM VOICE) Sex
- |        |   |
|--------|---|
| Male   | 1 |
| Female | 2 |

Thank you for your time, you've been a great help to us.