

Blacks in Space: Land Tenure and Well-being in Perry County, Alabama

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An exploratory research project has examined the relationship between land tenure and well-being in a rural, predominantly Afro-American, forested county in the USA. Poverty in Alabama's Black-Belt is endemic, especially among Afro-Americans. The question explored is the relationship between the spatial concentration of Afro-Americans and the well-being of the Afro-American population. This relationship is explored at the sub-county level in Perry County which has a 67% Afro-American population and over 1416 Afro-American landowners, of whom 238 have been identified as owning properties listed in the Plat (property parcel) maps. The analysis was done at the census block-group (sub-county) level. Analysis of Census 2000 block-group data on income, employment and poverty rates shows that areas with higher concentrations of Afro-American landownership are more likely to have Afro-American populations with higher well-being. The research findings provide some insights into the theoretical, methodological and data requirements for a geographically expanded study of forestry practices, land tenure and well-being issues, at the sub-county level.

Keywords: Spatial analysis, sub-county level, poverty, Afro-American

INTRODUCTION

Schelhas *et al.* (2000) in assessing the need for forestry research in south-eastern USA surmised that 'In spite of the great socio-economic importance of forests in the South, we still know relatively little about the relationships between forests and minority and limited resource landowners'. In this paper the authors take up the challenge posed by Bliss *et al.* (1998) who contended that 'land ownership matters' and this can be explicitly shown by examining the spatial distribution of tenure arrangements. They argued for extending the analysis of land tenure and well-being beyond the efforts of Goldschmidt (1978), Gaventa and Horton (1984), Labao and Schulman (1991) and others. They reasoned that these studies have examined the relationship between well-being, farm size, ownership type and residency of owners but failed to unmask local tenure arrangements obscured by national

state-level aggregation of ownership data. Unraveling the geographic distribution of ownership types and sizes, Bliss *et al.* (1998) suggested, can help to understand better the geographic distribution of political and economic relations. A major factor limiting this type of analysis in states such as Alabama has been the ready availability of socio-economic information at the sub-county (e.g. the Census Block Group) level and the limited availability of landowner lists. At the same time, the cost of producing digitised landownership maps was both tedious and prohibitive. Recent developments, however, such as the sub-county data collected in the 2000 Census, a concerted effort to make landowner lists (in Alabama) available to researchers and the lower cost of scanning, digitising and rectifying maps have created new opportunities for analysing spatial relationships. This type of analysis has relevance in Alabama's Black-Belt region where poverty among the majority Afro-American population is endemic and land consolidation of small tracts into larger ownerships dates to the Antebellum period¹ (Walkingstick 1996). Nowadays, a better understanding of the linkages between forest consolidation and economic outcomes could help to shape economic development strategies for this under-developed (Black-Belt) region. In this paper, therefore, the authors provide some insights into the spatial distribution – by racial composition, ownership and land cover types and quality of life factors – at a sub-county level. This project provides some insights into the theoretical, methodological and data requirements for a geographically expanded study of forestry practices, land tenure and well-being issues, at the sub-county level.

BACKGROUND

The Western Black-Belt is an eight county corridor (Sumter, Perry, Hale, Marengo, Wilcox, Greene, Lowndes, Dallas) where Afro-Americans are over 50% of the population (US Census Bureau 2000). The Black-Belt region lies within the south coastal plain of the Gulf of Mexico, which is 65-78 kilometers wide and stretches 777 kilometers from eastern south-central Alabama into north-western Mississippi. The region is called the Black-Belt because of the predominant Afro-American population and the black soil in the area. The region is also a rich ecosystem with an abundance of natural forests, wildlife and bird species that have persisted despite the land cover changes. Currently, the Black-Belt region comprises 23% cropland, 24% woodland, 31% pastureland, 6% Conservation Reserve Program (CRP) and Wetland Reserve Program (WRP) land, and 17% rangeland, roads, residential areas and water (USDA 1999). The woodland is occupied by loblolly-short leaf pine (31% of area), oak-pine (18%), oak-hickory (33%), longleaf-slash pine (5%) and oak-gum cypress (12%). The area of loblolly pine plantations in this south-west quadrant of the state has grown threefold in the last 20 years from 161,878 ha in 1980 to 485,600 ha today (USDA Forest Service 1985, Hartsell and Brown 2002).

More than 50% of the private forestland is held by ownerships of more than about 200 ha and most of these larger tracts are in counties with large pulp and paper manufacturing facilities (Bliss *et al.* 1998). USDA Forest Inventory and Analysis

¹ The period prior to 1867, the end of the American Civil War, is termed the Antebellum period and is notable for the majority Afro-American slave populations and large plantations in southern USA counties.

statistics (Birch 1996) showed that in this region, in contrast to the national trend, consolidation of smaller forest tracts into larger ownerships appears to have taken place with the largest 1% of forestland owners increasing their holdings from 51% to 58% between 1978 and 1993. Despite a significant presence of the forest industry, however, the region is known as a rich land with poor people (Schulman 1991). Poverty rates² (34.9%) are almost twice the state's average of 18.8%. Today, five of the eight counties rank among the bottom 10 (of 67) counties on the Human Development Index for Alabama (Bukonya and Fraser 2003). The populations in these counties have relatively shorter life-spans, lower education attainment and lower average per capita income when compared with other Alabama counties. Joshi *et al.* (2000) suggested that the economic benefits of the forest industry are not overcoming the shortfalls in human capital development that threaten the long-term economic and social well-being of these communities. Land is a part of the social, political, and economic complexity and the distribution of land may have been a key element in economic underdevelopment, a point Gilbert *et al.* (2001) made after reviewing studies of black farmers and rural landowners. In those studies (Salamon 1979, Brown *et al.* 1994, Beauford and Nelson 1988, Pennick 1990), land ownership was found to be not only an important source of income but also a form of wealth. Land was also a critical base for cultural and political power, and a means to attain more civil rights, fuller citizenship and a more egalitarian distribution of wealth and power.

Gyawali *et al.* (2004) found that residency in the Black Belt of Alabama is still highly segregated across the landscape. In 161 census block groups across the eight counties, most (91) were overwhelmingly (more than two thirds) Afro-American while some (25) were overwhelmingly Caucasian. Analysis of Census 2000 data and Landsat 2000 images of the region revealed statistically significant relationships between ethnicity, poverty, population density and land cover. Forested census block groups were more likely than cropland census block groups to have higher percentages of Afro-Americans, higher population densities and lower poverty levels. These findings suggest that Afro-American owners of forestland have higher well-being than those living in farming areas. In this study, a closer assessment of landownership patterns in a county, Perry County, AL, is undertaken.

DATA AND METHODOLOGY

Data from the Gyawali *et al.* (2004) study were used in this analysis. The Landsat Enhanced Thematic Mapper (ETM) satellite image of 2000 was used to detect

² The official measure of poverty is established by the USA Office of Management and Budget (OMB) based on a statistical policy directive. Poverty thresholds were originally derived in 1963-1964, using U.S. Department of Agriculture food budgets designed for families under economic stress and data about what portion of their income families spend on food. If total family income is less than the current threshold appropriate for that family then all the members of that family are categorized as being below the poverty level. Poverty rates are percentages of the total population with family incomes below the poverty level.

different land use types. ETM data were geo-referenced to local UTM zone (WGS84 Datum), and were ortho-rectified and terrain corrected. The positional accuracy was ± 50 m Random Mean Square (RMS). Three scenes (Path-rows 20-38, 21-37 and 21-38) were combined to create a mosaic of the study area, and a vector layer of the UTM projected county boundary map was used to create a subset for further image analysis.

Demographic data at the Census Block Group (CBG) level were obtained from the Census 2000 database. There were 161 CBGs in the Black-Belt region, including 15 in Perry County. Population, race, income, education and poverty data were downloaded.

Plat maps of Perry county were digitised and six categories of owners were identified from the county tax records: Forest Industry, National Forest, Non-Industrial Corporate, Large Private (aggregate holdings of more than 202 ha), Mid-sized (40+ ha), and Small (< 40 ha) properties were identified. Afro-American (all categories) landowners were identified by using the race information on the county's voting list. The 15 Census Block Groups in Perry County were digitised as a map layer and used to identify the category of landowners in each block group.

The 1990 and the 1999 USDA Forest Inventory and Analysis (FIA) data and the 1992 and 1997 Agricultural Censuses for Perry County were obtained. Data on timberland (forestlands capable of producing 1.4 m^3 of industrial wood per hectares per year and not withdrawn from timber utilisation) by category of owners and species of trees were obtained from the former. Harvest cropland areas were obtained from the latter.

The measure of concentration of Afro-Americans was the percent population in a CBG. Measures of well-being were: educational attainment (percentages of high school graduates and university graduates) in the 25+ population; poverty levels (percentages of the population with less than 100% poverty-level income); employment levels (percentages of 16+ population employed full-time); and income levels (average per capita incomes and median household incomes). The population is 98% bi-racial (Afro-American or Caucasian) so comparisons were made between the two racial groups identified in the Census as Blacks and Whites. Data on health and mortality, the other factors considered in developing a Human Development Index, were not available at the CBG-level.

RESULTS

The results of the study are reported under five headings: landownership and land cover; categories of land ownership; Afro-American landownership; spatial distribution of landowners; and the concentration of Afro-American and their well-being.

Land Ownership and Land Cover

Perry County's forested area has increased in the past 10 years and most of the increase occurred on private individual properties. About 78% (144,475 ha) of Perry County's 186,362 ha are timberlands, the area increasing by about 10% between 1990 and 2000 in the county. The forest industry owned one-sixth and private individuals owned two-thirds of the timberland in 1999 (Hartsell and Vissage 2001).

This was a dramatic change in holdings from the 120,100 owned by the industry and the 65,600 ha owned by private individuals in 1990. The 24,282 ha sell-off by the industry was matched by increased area of National Forests (1012 ha), private corporations (2631 ha) and private individuals (33,791 ha). Much of the new timberland apparently resulted from the conversion of other lands (crop and pastureland) to timberland. The Agricultural Censuses for 1992 and 1997 reveal a 2024 ha decline in the harvested cropland in the county and FIA data show the areas of Oak-Pine and Mixed Hardwood stands increased. The decline in area of Pine stands suggests a slowing of tree-planting in the county and reversion of cropland to mixed hardwoods.

Categories of Land Ownership

A total of 5186 parcels covering 186,757 ha were identified in the Plat map of Perry County (Table 1). The estimates of 24,681 ha of Timber Industry land and 14,122 ha of National Forest owned land were almost perfect matches with the 24,484 ha Timber Industry and 13,112 ha National Forest owned land reported by Hartsell and Vissage (2001). The largest number (59%) of holdings was the 3083 categorised as small parcels holdings, which accounted for another 24% of the land. Owners of mid-sized or larger parcels (consolidated) parcels held only 22% of the parcels but owned 44% of the land. Comparison of these data with Alabama Forestry Commission data indicates that a significant component of the Non-Timber Industry Corporations' land (20,734 ha) is non-timber land (13,234 ha) rather than timberland (7487 ha) as reported by Hartsell and Vissage (2001). Satellite images show that 65% of the county is covered by forests and 34% by crops and pasture land. This estimate is close to the 1999 FIA estimate of 42,088 ha and provides some validation of the satellite image processing. Land area estimates obtained from the digitised parcels were only 405 ha (0.2%) above the official estimates of 186,362 ha. The digitisation process, therefore, provided estimates of land area, land cover and landownership information consistent with other readily available data.

Table 1. Number and size of landholdings by category of owner in Perry County

Category	Parcels (number)	Parcels (%)	Area (ha)	Area (%)	Mean (ha)	Maximum (ha)	Minimum (ha)	Median (ha)
Small Private	3,083	59	44,716	24	13	40	0	11
Mid Private	589	11	43,566	23	75	255	41	65
Large Private	551	11	38,938	21	70	261	3	51
Timber Industry	447	9	24,681	13	57	259	3	34
Non-Timber Corp.	348	7	20,734	11	59	266	2	33
National Forests	168	3	14,122	8	85	270	2	50
Totals	5,186	100	186,757	100	360			

Afro-American Landownership

The County Tax records identified 1416 Afro-American landowners, of which 1177 were not recorded on the Plat map while the other 238 were listed 354 times. Most (1044) of the unlisted landowners had Perry County addresses, including 500 listed in Marion, 423 in Uniontown, 66 in Newbern and 55 in Sprott. The others were listed in towns in adjacent Black Belt counties – Marion Junction (9), Selma (23), Greensboro (8), Safford (8), Browns (6) – and in Birmingham (8). Eight had addresses in Detroit, and five in Fort Wayne, MI, while others were listed in New York, New Jersey, Florida, Ohio, Texas, Illinois, Louisiana, and California. Interestingly, none were listed in neighboring states, Mississippi or Arkansas. These data indicate that most (83%) Afro-American landowners live on very small plots (or house-lots) and (11%) of this number are absentee owners.

There is a high level of absentee Afro-American ownership in the county. Of the 314 parcels listed on the Plat map: 230 had in-county addresses, 51 had in-state but not in-county addresses and 43 had out-of-state addresses. Addresses in the larger industrial cities of Chicago, Detroit/Fort Wayne, Cleveland, and Indianapolis were typical. The latter addressees had the highest average area, at 31 ha per holding, while the in-county holders had 27 ha per parcel and the in-state holders had 19 ha per parcel. A check of the Alabama Forestry Commission's 1999 list of minority landowners in the state yielded 24 owners in Perry County, seven of whom were neither listed on the Tax Records nor the Plat maps. These may well be heir properties - listed in deceased relatives' names. The availability of size, distribution and ownership patterns of Afro-American ownerships unveiled in this study is encouraging for land management agencies interested in the perplexing problems of absentee and heir property ownership among Afro-Americans. This data allow for identifying and locating properties in need of management and owners who may benefit from technical assistance and training in land management.

Spatial Distribution of Landowners

Figure 1 provides a graphic illustration of the land distribution of four of the categories of landowners. The diffuse arrangement of Afro-American and non-timber industry owned parcels stands in sharp contrast to the concentration of the public and timber industry owned parcels. Larger parcels (>40 ha) of privately owned holdings occupied over 40% of the land in nine of the CBGs (Table 2). The smaller individually owned parcels accounted for more than 20% of the land in 10 of the CBGs. Both of these categories were relatively uniformly distributed across the county. However, there was some evidence of concentration of the other four categories of owners. The Timber Industry parcels were held in the eastern and northern areas of the county – Heiberger, East Perry-N(orth), East Perry-S(outh) and Marion-S(outh)E(east) CBGs – close to the National Forests which had substantial holdings in East Perry-N. Non-Timber Industry Corporations held land in most of the CBGs but tended to be more concentrated in the southern cropland areas of the county. Afro-American landowners' holdings were scattered across the county but tended to be more concentrated around Marion, Uniontown and West Perry where they are the majority population (Table 2).

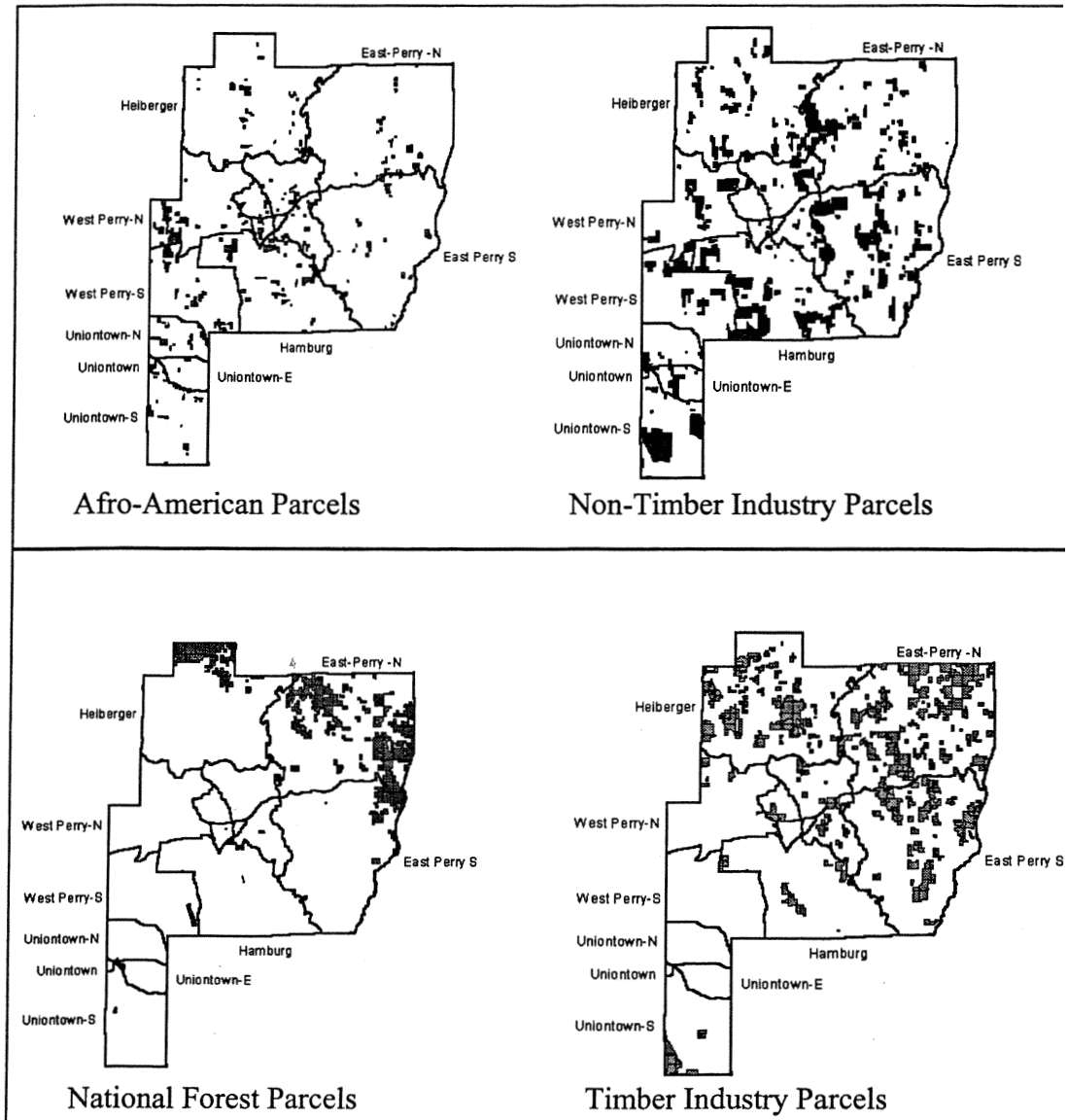


Figure 1. Distribution of four categories of owned land in the 15 Census Block Groups of Perry County, AL

Nine of the 15 Census Block Groups were predominantly (average 83%) forestland and the other six were predominantly (average 76%) croplands (Table 3). Sixty percent of the Afro-American population lived in the forested areas and made up 56% of the population in these CBGs. Eighty-five percent of the population in the cropland-dominated CBGs was Afro-American. This finding was very interesting because the 1997 Agriculture Census identified 75 Afro-American farmers who owned or operated 4204 ha in the county, at an average of 56 ha per farm (Table 4). Thirty farms generated an income while the other 45 reported only off-farm income. Fifty farms (with an average area of 34 ha) were operated by sole owners, 20 farms (average 120 ha) were co-owned and the other five (average 24 ha) were rented.

Table 2. Distribution (% of land) owned by the different categories of landowners across the 15 Census Block Groups in Perry County, AL

Block Group	Small parcels (%)	Blacks parcels (%)	Non timber corporations (%)	National forest (%)	Large private parcels (%)	Timber industry (%)
Heiberger	32	2	9	5	31	20
East Perry-N	20	1	9	24	19	25
East Perry-S	17	02	15	5	44	17
Marion-SW	47	23	3	1	3	2
Marion-SE	28	5	20	1	29	17
Marion	33	46	0	0	22	0
Hamburg	20	5	20	0	48	4
Uniontown-E	17	2	16	0	64	0
West Perry-S	14	6	14	2	64	0
Marion-NE	32	4	13	2	41	7
Marion-NW	31	6	0	0	44	10
West Perry-N	23	8	13	0	52	2
Uniontown-N	28	9	6	0	57	0
Uniontown-S	18	3	21	0	51	5
Uniontown	100	0	0	0	0	0

Table 3. Distribution of the Afro-American population and landowners and land cover types in 15 Census Block Groups in Perry County, AL

Block Group	Black- owned land (%)	Black- owned parcels (%)	Black Population (%)	Population per km ² (persons)	Crop Land (%)	Forest Land (%)	County Land (%)
Marion-NW	na	na	83	316	na	na	1
Marion	na	na	57	1,474	na	na	0
Marion-SW	na	na	51	648	na	na	1
Uniontown	na	na	99	1,870	na	na	0
East Perry-N	1	4	25	10	11	89	19
East Perry-S	2	4	47	16	21	77	17
Heiberger	2	4	23	21	10	89	17
Uniontown-E	2	7	72	111	81	17	2
Uniontown-S	3	8	94	78	73	26	6
Marion-NE	4	7	79	65	9	89	4
Marion-SE	5	7	53	70	13	86	3
Hamburg	5	9	64	23	70	29	12
West Perry-S	6	17	78	21	84	14	8
West Perry-N	8	18	83	41	35	64	8
Uniontown-N	9	17	89	148	83	16	3
Total	3	7	69		34	65	100

These numbers stand in sharp contrast to the Plat map data and is reflective of Gilbert *et al* (2002) contention that Agricultural Census data under-represent Afro-American landownership. The concentration of Afro-American land in the county reflect the concentration of Afro-Americans in CBGs – setting aside the four highly urbanised CBGs with population densities greater than 259 per square kilometre (Table 3). In the three large CBGs, which have 53% of the county land, Afro-Americans make up less than a third of the population and own less than 2% of the land. In the other CBGs, Afro-Americans make up more than 75% of the population and own between 4% (in areas around Marion and Uniontown) and 7% (in the western central portions of the county, including Hamburg, West Perry, and North of Uniontown). The concentration of Afro-American population will be used in examining well-being across the county.

Table 4. Statistics from the 1997 Agricultural Census of farmland in Perry County AL

Item	Number of farms	Area (ha)	Average farm area (ha)
All farms	340	58,538 ^a	172
Black and other races, land in farms ^b	75	4,204	56
Black and other races, full owners	50	1,688	34
Black and other races, part owners	20	2,395	120

^a Total woodland.

^b Woodland not pastured (16,312 ha).

Concentration of Afro-Americans and their Well-Being

Analysis of well-being at the sub-county level lends credence to county-level analyses of earlier studies (Gilbert *et al.* 2001, Bliss *et al.* 1993, Joshi *et al.* 2000). CBG data were aggregated by race into three groups (Table 5) – predominantly black (>66%), predominantly white (>66%) and mixed populations. In the two sparsely populated CBGs (covering over a third of the county and containing an eighth of the population) where Afro-Americans are a significant minority (less than 25% of the population) the gaps – in education, employment and income – between the races are startling (Table 5). Afro-American graduation rates from high school (18%) and colleges (1%) are much lower than graduation rates for Whites (41% and 6%, respectively) (Table 5). There were major disparities in income levels (\$6800 per capita and \$23,800 median household income gaps) between the two racial groups, which may be a reflection of the 24% gap in employment rates. Because poverty rates are not disaggregated by race at the CBG-level it is not quite clear how many of the 23% below the poverty-level in this area are Afro-Americans. It is worth noting that Timber Industry and National Forest owned lands are most prevalent in these two CBGs (Table 2) which are predominantly (average 85%) forested areas (Table 3).

Afro-Americans seem to fare better in the five CBGs where there is some racial and land-cover balance. These areas cover just over a third of the county's land (a quarter of which is the residence of the county's population). Afro-Americans comprise 54% of the population and own 4% of the land, which is 52% forested. Here, the percentage of Afro-American high-school and college graduates is the

highest in the county. However, poverty rates are higher (31%), the per capita income gap is at its widest (\$11,100) and the employment rate is at its lowest (28%). Private individual landowners own most of the land in this area.

Table 5. Education and poverty statistics for Afro-Americans and Whites in 15 Census Block Groups in Perry County, AL

Block group	Black (%)	White 25+ high school grads (%)	Black 25+ high school grads (%)	White 25+ degree (%)	Black 25+ degree (%)	Poverty rate (%)
Heiberger ^a	23	46	27	7	0	15
East Perry-N ^a	25	36	8	4	3	32
East Perry-S	47	20	32	4	4	11
Uniontown-E	51	14	27	23	11	25
Marion	53	45	21	9	2	39
Hamburg	57	17	41	21	2	49
Marion-NE	64	39	40	0	2	32
Uniontown-N ^b	72	32	36	6	3	33
West Perry-S ^b	78	30	38	0	3	25
Marion-SE ^b	79	19	21	0	1	30
Marion-SW ^b	83	46	31	13	3	42
West Perry-N ^b	83	16	29	19	1	41
Marion-NW ^b	89	27	34	18	2	55
Uniontown ^b	94	3	33	10	2	49
Uniontown-S ^b	99	0	20	0	5	37
Dominant White ^a	24	41	18	6	1	23
Mixed	54	27	32	12	4	31
Dominant Black ^b	85	22	30	8	3	39

^a Predominantly white CBGs.

^b Predominantly black CBGs.

Afro-Americans fare best in the eight CBGs in which they predominate (Table 6). This area is less than 30% of the county but home to 58% of the population, 85% of whom are Afro-Americans. Employment levels (37%) are highest for Afro-American in the county and on par with Whites (36%). The income gap is lowest (\$6100 median household income) in the county. Afro-American high-school graduation rates are higher than whites. However, these CBGs have the highest poverty rates in the county even though the per capita incomes for Afro-Americans are about the same as in the rest of the county. Of note, these areas have the highest concentration of Afro-American landowners and are the locations of most of the Non-Timber Industry Corporations' properties (Table 2). These areas are predominantly (68%) cropland areas (Table 3).

Table 6. Employment (16 years and older), per capita income (PCI), and median household income (MHHI) for Afro-Americans and Whites in 15 Census Block Groups in Perry County, AL

Block Group	Black (%)	Black employed (%)	White employed (%)	White PCI (\$)	Black PCI (\$)	White MHHI (\$)	Black MHHI (\$)
Heiberger ^a	23	36	57	15,730	8,301	36,691	17,083
East Perry-N ^a	25	24	52	14,106	8,064	40,000	11,932
East Perry-S	47	40	52	22,382	10,128	44,028	32,946
Uniontown-E	51	24	54	19,289	7,753	52,656	13,958
Marion	53	17	46	17,735	6,593	33,942	10,260
Hamburg	57	24	37	12,395	5,501	25,833	16,875
Marion-NE	64	34	72	22,086	8,082	39,453	23,250
Uniontown-N ^b	72	42	38	11,819	7,424	20,000	11,932
West Perry-S ^b	78	33	54	18,434	12,576	33,393	28,750
Marion-SE ^b	79	45	42	14,353	7,056	26,250	18,472
Marion-SW ^b	83	30	49	15,315	9,135	19,107	16,650
West Perry-N ^b	83 [*]	36	30	25,040	10,026	25,833	14,375
Marion-NW ^b	89	36	27	21,897	5,583	39,167	10,417
Uniontown ^b	94	34	49	11,193	6,223	17,083	14,554
Uniontown-S ^b	99	40	0	0	12,197	0	17,500
Predominant White ^a	24	30	54	14,918	8,183	38,346	14,508
Mixed	54	28	52	18,777	7,611	39,182	19,458
Predominant Black ^b	85	37	36	14,756	8,778	22,604	16,581

^a Predominantly white CBGs^b Predominantly black CBGs

SUMMARY AND CONCLUSION

This exploratory spatial analysis provides some insights into the theoretical methodological and data requirements for a geographically expanded study of forestry practices, land tenure and well-being issues, at the sub-county level. First the land cover classification of satellite images provides information representative of readily available forest and agricultural data, with the added advantage of providing spatial distribution of these data. Second, the distribution of landowner attributes such as race and parcel size could be spatially analysed if digitised landowner maps were available. Third, correlations between landownership, land cover and other digitised physical attributes (such as soil types, roads) with readily available sub-county socio-economic data could be explicitly examined. However there are data limitations: some statistics such as health and mortality data are not readily available; socio-economic data collection has improved over time but inconsistencies limit temporal analyses; creating the digitised landowner maps are expensive and time consuming; and the use of politically defined units such as

CBGs present some challenges to using other types of data such as physical information at the regional level.

Perry County is a highly segregated county with enormous and startling education, employment and income gaps between the races. The northern half of the county is heavily forested with substantial land ownership by the USDA Forest Service and the Timber Industry. This area is sparsely populated with a predominantly white population. Poverty levels are lowest in this part of the county, yet Afro-Americans fare their worst here. At the other end of the county, where Afro-Americans are predominant, they fare much better despite extraordinarily high poverty rates. Education attainment and employment levels are much higher but the income gap between the races is considerable. Non-Timber Industry Corporations tend to have their larger holdings in this area. The finding of this study, that Afro-Americans properties are in the cropland/woodland interface, is consistent with the Gilbert *et al.* (2002) analysis of the USDA's Agricultural Economics and Land Ownership Survey of 1999. At the same time, these findings suggest spatial arrangements that are eerily reminiscent of Powell's (1999) contentions about the racial configuration of urban spaces. He found that economic and political isolation of poor minorities in the inner cities has created residential segregation and the concentration of poverty in neighbourhoods inhabited by Blacks.

The extent of racial segregation, the racial gaps in income and education, and the disparity between race and landownership in Perry County raise some compelling questions about Alabama's Black Belt. Why, for example, is the Timber Industry concentrated in the northern tier of the county and close to the National Forests? What explains racially segregated space? Are there similarities between racial configuration of rural and urban spaces? What physical, political and economic attributes explain the organisation and use of forested spaces in this region? These are questions which need to be addressed, through examining the clustering of land ownership as a component of concentration. This type of research is useful if carried out at the individual ownership level. The authors plan to conduct future research focused on expanding the study to the eight-county Black-Belt region, by incorporating Plat map data into analyses.

REFERENCES

- Beauford, E.Y. and Nelson, M.C. (1988), Social and Economic Conditions of Black Farm Households: Status and Prospects, in L. J. Beaulieu (ed.), *The Rural South in Crisis: Challenges for the Future*, Westview Press, Boulder, pp. 99-119.
- Birch, T.W. (1996), 'The Private Forest-land Owners of the United States, 1994', U.S. Department of Agriculture, Forest Service Northeast Forestry Experiment Research Station NE-134, Radnor, PA.
- Bliss, J.C., Howze, G.R., Teeter, L. and Bailey, C. (1993), 'Forestry and Poverty in Alabama's Black Belt', Proceedings of the 1993 Southern Forest Economics Workshop on *Policy and Forestry: Design, Evaluation, and Spillovers*, Duke University, Durham, North Carolina, 21-23 April, pp. 221-227.
- Bliss, J.C., Sisock, M. and Birch, T. (1998), 'Ownership Matters: Forestland Concentration in Rural Alabama', *Society and Natural Resources*, 11(4): 401-410.
- Brown, A. Jr, Christy, R.D. and Gebremedhin, T.G. (1994), 'Structural Changes in US Agriculture: Implications for African American Farmers', *Review of Black Political Economy*, 22(4): 51-71.

- Bukenya, J. and Fraser, R. (2003), 'Human Development Index for Alabama', Proceedings of the Southeast Decision Sciences Institute, Williamsburg, VA, Feb 26-28, pp. 45-50.
- Gaventa, J. and Horton, B. (1984), 'Land Ownership and Land Reform in Appalachia', in C.C. Geisler and F.J. Popper (eds), *Land Reform American Style*, Rowman and Allenhead Totowa, NJ, pp. 233-244.
- Gilbert, J., Sharp, G. and Felin, M.S. (2001), 'The Decline (and revival?) of Black Farmers and Rural Landowners: A Review of the Research Literature', Working Paper No. 44, North America Series, Land Tenure Center, University of Wisconsin-Madison.
- Gilbert, J., Wood, S.D. and Sharp, G. (2002), 'Who Owns the Land? Agricultural Land Ownership by Race/Ethnicity', *Rural America*, 17(4): 55-62.
- Goldschmidt, W. (1978), *As You Sow: Three Studies in the Social Consequences of Agribusiness*, Allenheld Osmun, Montclair, NJ.
- Gyawali, B., Fraser R., Wang, Y. and Tadesse, W. (2004), 'Landscape and Socio-economic Characteristics in the Black-belt Region of Alabama', proceedings of American Water Resource Association (AWRA) spring Specialty Conference, Nashville, Tennessee, 14-17 May, 2004, pp 1-5.
- Hartsell, A.J. and Vissage, J.S. (2001), Forest Statistics for West-Central Alabama 1999, United States Department of Agriculture, Southern Research Station, SRS-60, Asheville, NC.
- Hartsell A.J. and M. J. Brown. 2002. Forest Statistics for Alabama, 2000. United States Department of Agriculture, Southern Research Station, SRS-67. Asheville, NC.
- Joshi, M.L., Bliss, J., Bailey, C., Teeter, L. and Ward, K. (2000), 'Investing in Industry, Under-investing in Human Capital: Forest-Based Rural Development in Alabama', *Society and Natural Resources*, 13(4): 291-319.
- Labao, L., and Schulman, M. (1991), 'Farming Patterns, Rural Restructuring, and Poverty: A Comparative Regional Analysis', *Rural Sociology*, 56(4): 656-602.
- Pennick, E.J. (1990), 'Land Ownership and Black Economic Development', *Black Scholar*, 21(1): 43-46.
- Powell, J. (1999), 'Race and Space', Poverty and Race Research Action Council, Washington, DC.
- Salamon, L.M. (1979), 'The Future of Black Land in the South', in L. McGee and R. Boone (eds) *The Black Rural Landowner- Endangered Species: Social, Political, and Economic Implications*, Greenwood Press, Westport, CT, pp. 155-196.
- Schelhas, J., Zabawa, R. and Molnar, J. (2003), 'New Opportunities for Social Research on Forest Landowners in the South', *Southern Rural Sociology*, 19(1): 60-69.
- Schulman, B.J. (1991), *From Cotton Belt to Sun Belt: Federal Policy, Economic Development and the Transformation of the South, 1938-1980*, Oxford University Press, Oxford.
- US Census Bureau. (2000), Quick Facts on Alabama: Selected Counties, <http://www/census.gov/> accessed Dec 5, 2003.
- USDA National Agricultural Statistical Service, (1999), 1997 Census of Agriculture, Alabama State and County Data, Volume 1, Geographic Area Series Part 1.
- USDA Forest Service (1985), Forest Statistics for Alabama Counties in 1982, Resource Bulletin SO-97, Southern Forest Experimentation Station, New Orleans, LA.
- Walkingstick, T. L. (1996), Pulpwood, Dinettes, and Doublewides: A Case Study of Forest Dependency in Alabama, unpublished Ph.D. dissertation, Auburn University, Auburn, AL.
- Wood, S.D. and Gilbert, J. (2000), 'Returning Afro-American Farmers to the Land: Recent Trends and a Policy Rationale', *Review of Black Political Economy*, 27(4): 43-64.