# ANALYZING EVIDENCE OF ENVIRONMENTAL JUSTICE: A SUGGESTION FOR PROFESSOR BEEN*

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## I. INTRODUCTION

One effect of the environmental justice movement has been to draw attention to the prejudices inherent in some modern environmental policies. These prejudices are most apparent when analyzing the location of hazardous waste facilities throughout the country. Several recent environmental justice studies have debated whether the location of these facilities has a direct correlation to the percentage of minorities in the surrounding areas.

This article critiques some of the methodology of these recent studies, most notably that of Professor Vicki Been, to determine the rationale governing the placement of hazardous waste facilities. Furthermore, this article suggests that researchers should expand their evidentiary fields to include statistics regarding an area's standard of living to obtain a more accurate analysis of the correlation between the location of hazardous waste facilities and an area's minority population. Finally, this article concludes with a case study, applying this expanded method of analysis to demonstrate the inherent prejudices in choosing Noxubee County, Mississippi as a site for a hazardous waste facility.

## II. A CRITIQUE OF RECENT ENVIRONMENTAL JUSTICE STUDIES

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In 1987, the United Church of Christ Commission for Racial Justice published its controversial study, *Toxic Wastes and Race in the United States* (UCC Study).[1] The UCC Study concluded that a significant correlation exists between the number of hazardous waste facilities within an area and that area's minority population.[2] Importantly, the UCC Study insisted that this correlation is even stronger than the correlation between an area's zip code and inhabitant's income.[3]

Many scholars and commentators quickly criticized some of the UCC Study's conclusions. Above all, the criticisms focused on the UCC Study's use of zip codes as the appropriate unit of demographic analysis.[4] Although some commentators argued that the zip code approach was under-inclusive,[5] most commentators argued that the approach was problematic for other reasons.[6] Suggested alternatives included census tracts[7] or concentric rings drawn around environmentally-dangerous or threatening sites.[8]

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1. UNITED CHURCH OF CHRIST COMMISSION FOR RACIAL JUSTICE, TOXIC WASTES AND RACE IN THE UNITED STATES (1987) [hereinafter UCC Study]. Upon publication, the UCC Study brought much attention to the then-nascent environmental justice movement. *See* KENNETH A. MANASTER, ENVIRONMENTAL PROTECTION AND JUSTICE (1995); *see also* Vicki Been, *Analyzing Evidence of Environmental Justice*, 11 J. LAND USE & ENVTL. L. 1, 2 (1995) (citing legislation that paid homage to the UCC Study. "The study gave the environmental justice movement substantial credibility and is cited as the justification for many of the environmental justice proposals considered in recent years by Congress and state legislatures."); Colin Crawford, *Strategies for Environmental Justice: Rethinking CERCLA Medical Monitoring Lawsuits*, 74 B.U. L. REV. 267 (1994); Richard Lazarus, *Pursuing "Environmental Justice": The Distributional Effects of Environmental Protection*, 87 NW. U. L. REV. 101 (1993).

2. UCC Study, *supra* note 1, at 23.

3. *See id*. at 15-16. While the one study found that household incomes and "home values were substantially lower" in communities containing hazardous waste sites, the "minority percentage of the population remained the most significant factor . . . ." *Id.*

4. *See infra* notes 5-11 and accompanying text.

5. *See* Vicki Been, *What's Fairness Got to Do With It? Environmental Justice and the Siting of Locally Undesirable Land Uses*, 78 CORNELL L. REV. 1001, 1009 n.39 (1993)(citing an unpublished study by Rae Zimmerman that argues that the focus should be on the entire municipality); *see also* Rae Zimmerman, *Issues of Classification in Environmental Equity: How We Manage is How We Measure*, 21 FORDHAM URB. L.J. 633, 645 (1994).

6. *See infra* notes 9-19 and accompanying text.

7. *See* East Bibb Twiggs Neighborhood Ass'n v. Macon-Bibb County Planning and Zoning Comm'n, 706 F. Supp. 880 (M.D. Ga. 1989), *aff'd*, 896 F.2d 1264 (11th Cir. 1989); *see also* Bean v. Southwestern Management Corp., 482 F. Supp. 673, 677-78 (S.D. Tex.

Perhaps the most prominent critic of these proposals was New York University Law School Professor Vicki Been. In a 1993 article, Professor Been suggested that zip code analysis is flawed due to the varying size of the zip code areas used for comparison.[9] Subsequently, the University of Massachusetts Social and Demographic Research Institute (SADRI) released a study that supported Professor Been's suggestions.[10] The SADRI study covered the same ground as the seven-year-old UCC Study, finding *on the basis of census data* that no definitive correlation exists between racial and ethnic minorities and the location of hazardous waste sites.[11]

In the meantime, Professor Been and a colleague[12] were working on a study that analyzed communities that contain hazardous waste facilities or contaminated sites. Like SADRI, their study used census tracts. In her most recent, comprehensive

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1979), *aff'd*, 782 F.2d 1038 (5th Cir. 1986). Census tracts are comparatively more stable and arguably better reflect local perceptions of community boundaries than do zip code areas. *See* Been, *supra* note 1, at 4-5.

8. Prominent social scientists prefer this technique. *See* Bunyan Bryant & Paul Mohai, *Environmental Racism: Reviewing the Evidence*, *in* RACE AND THE INCIDENCE OF ENVIRONMENTAL HAZARDS 170-72 (Bryant & Mohai eds., 1992); *see also* Michael Greenberg, *Proving Environmental Inequity in Siting Locally Unwanted Land Uses*, *in* 4 RISK: Issues in Health & Safety 235, 238 (1993).

9. *See* Been, *supra* note 5, at 1015 n.75 ("Zip code areas, for example, may vary significantly in the land area included, and those variations limit the usefulness of comparisons between zip code areas."); Been, *supra* note 1, at 5 ("Zip codes . . . are constructed only for the convenience of the postal service, and do not necessarily coincide with neighborhoods."). Professor Been's articles are more concerned with criticizing other flaws in the methodology used to analyze environmental justice problems. She focuses specifically on her belief in "market dynamics," a situation that tort scholars call "coming to the nuisance." *See id.* at 21; Vicki Been, *Locally Undesirable Land Uses in Minority Neighborhoods: Disproportionate Siting or Market Dynamics?*, 103 YALE L.J. 1383, 1390 (1994).

10. *See* Douglas L. Anderton et. al., *Environmental Equity: Evaluating TSFD Siting Over the Past Two Decades*, WASTE AGE, July 1994, at 83.

11. *See id.* One recurrent criticism of this study, however, is that it was funded in part by waste management studies. *See, e.g.*, BENJAMIN A. GOLDMAN & LAURA FITTON, TOXIC WASTES AND RACE REVISTED 14-15 (1994). The Goldman and Fitton report updated the UCC Study, correcting some of the study's methodological errors and responding to various methodological criticisms. *See id.*

12. Frances Gupta, a doctoral candidate in New York University's department of economics.

elaboration of this approach, Professor Been thoroughly defended this choice:

> [C]ensus tracts are a more appropriate unit of analysis than zip codes. Census tracts are drawn up by local committees, and accordingly are more likely to reflect the community's view of where one neighborhood ends and another begins. Zip codes, on the other hand, are constructed only for the convenience of the postal service, and do not necessarily coincide with neighborhoods. Tracts also are comparable in population, while zip codes may contain widely varying numbers of people and cover areas of widely varying sizes. Tracts reflect the area right around the facility—the area that usually will bear its worst impacts. Zip codes may extend for miles beyond the facility, into areas where many people may not even be aware of the facility's presence.[13]

In contrast with the UCC Study, Professor Been's census-based study found "no statistically significant difference between the mean percentage of African Americans in host and non-host tracts."[14] However, Professor Been did discover "a statistically significant difference between host and non-host tracts in the mean percentage of all minorities (all races other than white, with all Hispanics, whether white or of another race)."[15] Moreover, her study found a strong correlation between income and residence near host sites.[16] In sum, Professor Been's research led her to conclude that "environmental justice is not a simplistic PIBBY—'put it in Black's backyards.'" It suggests, instead, a much more ambiguous and complicated entanglement of "class, race, educational attainment, occupational patterns, relationships between the metropolitan areas and rural or non-metropolitan cities, and possibly market dynamics."[17] To support this conclusion, Professor Been's study examined a variety of statistical measures used in census review, including racial balance, median family income and housing value, educational attainment, both

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13. Been, *supra* note 1, at 5 (citations omitted).

14. *Id.*

15. *Id*.

16. *See id*. at 6, 19-20.

17. *Id.* at 21 (disagreeing with ROBERT D. BULLARD, DUMPING IN DIXIE: RACE, CLASS, AND ENVIRONMENTAL QUALITY 5 (1990)).

manufacturing and professional employment, and mean population density.[18]

The effect of Professor Been's highly standardized conclusions, however, could lead to policy and legal judgments that ignore a more complex reality than uniform statistical measures will allow. Researchers like Professor Been should avoid making overly-broad conclusions that marginalize the particular needs of the communities facing the greatest risk of suffering environmental harms. Specifically, academic researchers trying to understand the causes and effects of environmental justice dilemmas should look at a wider array of available information.[19] Researchers should begin by examining data produced by state agencies. The remainder of this article will examine one environmental justice controversy in which such data would have helped academic researchers better understand the "ambiguous and complex" interrelation of factors identified by Professor Been.

## III. A CASE STUDY: NOXUBEE COUNTY, MISSISSIPPI

This case study explores the role that statistics such as the employment rate, illiteracy rate, welfare rate, and poverty rate play when hazardous waste companies are selecting sites for their facilities. Perhaps researchers like Professor Been will be persuaded to examine these broader evidentiary fields when conducting future environmental justice studies on this topic.

Noxubee County, Mississippi sits approximately thirty miles across the Mississippi-Alabama line from the nation's largest hazardous waste landfill in Emelle, Alabama. In the late 1980s, hazardous waste companies identified Noxubee as a possible site for yet another hazardous waste landfill.[20] Since that time, a

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18. *See id*.; *see also* Appendix, Tables 1-7 and notes 45-65.

19. If those academic researchers are lawyers untrained in social science methods, then this article suggests that these academic researchers seek the assistance of properly-trained professionals much in the same manner as Professor Been did in obtaining the help of an economic doctoral student. *See supra* note 12.

20. *See, e.g.*, Keith Schneider, *Plan for Toxic Dump Pits Blacks Against Blacks*, N.Y. TIMES, Dec. 13, 1993, at A7; *see also* Adam Nossiter, *Toxic Waste Firms Dangle Sweet Deals, Officials Promise Jobs, Plenty of Perks to Poor Miss. County*, ATLANTA J. & CONST., May 31, 1991, at A3.

significant number of the nation's major hazardous waste management companies[21] have raced for the chance to locate a hazardous waste landfill in Noxubee County, which is nearly 70% African American.[22] Waste company executives and their public relations representatives insist that they have not chosen Noxubee County because of its poor, minority population which has less political clout. These companies insist that they have chosen Noxubee because its geology—specifically the allegedly impermeable Selma chalk formation underlying most of the county[23]—is ideal for locating a hazardous waste landfill.[24]

However, an examination of relevant state data suggests that other reasons may exist for choosing Noxubee County.[25] Health and mortality data,[26] literacy information,[27] public assistance data,[28] and detailed information regarding education[29] in Noxubee County reveal an economically devastated, politically vulnerable community—in essence, easy prey for powerful hazardous waste companies. To test this hypothesis, I compared Noxubee County to seven surrounding counties with similar geography and demographics: Clay, Kemper, Lowndes, Monroe, Neshoba, Oktibbeha and Winston.[30] All but Neshoba and Winston counties contain

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21. These companies include: Chemical Waste Management, Hughes Environmental Systems, Inc., Federated Technologies, Inc., Laidlaw, and USPCI. *See* COLIN CRAWFORD, UPROAR AT DANCING RABBIT CREEK: BATTLING OVER RACE, CLASS AND THE ENVIRONMENT (1996).

22. Similarly, Sumter County, Alabama, where the Emelle landfill is located, has a high percentage of minorities. *See id.*

23. *See* Letter from Edward H. Netherland, Chairman & Chief Executive Officer of Hughes Environmental Systems--Federal Technologies Mississippi, Inc., to Alice Tepper Marlin, Executive Director, Council of Economic Priorities 2 (Jan. 13, 1993) (on file with author) (indicating that the siting of the facility was based on the "location in Selma chalk--possibly the country's most impermeable and deep formations.").

24. *See* CRAWFORD, *supra* note 21, at 365.

25. *See* Appendix, Tables 1-7 and notes 48-77.

26. *See* Appendix, Table 5 and notes 69-73.

27. *See* Appendix, Table 7 and notes 74-77.

28. This data includes the federal Aid to Families with Dependent Children (AFDC). *See* Appendix, Tables 1-2 and notes 48-59.

29. *See* Appendix, Table 7 and notes 74-77.

30. *See* Appendix, Tables 1-7 and notes 48-77. A comprehensive study of this area should examine not only Mississippi counties but also statistics for Alabama counties that border Mississippi. Conceivably, this could present problems for a researcher because

significant deposits of Selma chalk while both Neshoba and Winston are demographically similar to the western portion of Noxubee County.[31] An analysis of these statistics outlining the standard of living in Noxubee County demonstrates that this largely African American county uniformly scores the lowest in nearly every category including welfare, infant mortality, unemployment, literacy, and per capita income.[32]

For instance, in the 1990 census, Noxubee's per capita income was the lowest at $6,654 while Kemper County had the second lowest per capita income at $8,033. Furthermore, Noxubee County consistently has scored far higher percentages of food stamp dependence than the other counties since 1983.[33] The percentages of people on food stamps were nearly 100% higher in Noxubee County than in all but Clay and Winston counties, both of which registered figures about two-thirds of Noxubee's.[34] In a state that had the highest percentage of food stamp dependence and emergency food assistance of any state in the nation in the mid-1980s, Noxubee County was always at least twelve percentage points higher than any county in its region from 1983-1994.[35]

The comparative analysis of the counties' dependence on the federal welfare program, AFDC, is similarly dismal.[36] Not only does 10% to 15% (usually closer to 15%) of Noxubee's population receive AFDC payments, but Noxubee also posts rates that are routinely two to three times higher than five of the seven surrounding counties.[37]

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neighboring states are unlikely to tabulate data in the same way, much less examine the same social phenomena. These problems, however, are simply matters with which the social scientist must contend.

31. Local citizens classify residents of Neshoba, Winston, and the western portion of Noxubee as "like-minded" individuals.

32. *See* Appendix, Tables 1-7 and notes 48-77.

33. *See* Appendix, Table 1 and notes 48-51.

34. *See id.*

35. *See id*.

36. *Compare* Appendix, Table 1 *with* Appendix, Table 2.

37. *See* Appendix, Table 2 and notes 52-59. The other two counties, Clay and Winston, did not distribute monies to 10% of their respective populations during those years; 9.6% was the highest figure registered (9.6% in Clay during 1991 and 1992). *See id.*

Another factor lending to Noxubee's disadvantaged status is the fact that from 1980-1994, Noxubee County registered the highest percentage of live births to unmarried African American women (at least 50% and closer to two-thirds in each of those years).[38] For example, in 1990, 62.4% of the African American babies born in Noxubee County were to unmarried women, a figure that escalated during the years that hazardous waste companies were competing for permits in Noxubee: 71.5% in 1991, 76.3% in 1992, 74.4% in 1993, and 73.4% in 1994.[39] In only one of these fourteen years was the rate of births to unmarried African Americans lower in Noxubee County than any other county in its region.[40]

Furthermore, Noxubee's status as a highly disadvantaged, impoverished community with a high percentage of minorities is evidenced by the rate of infant mortality.[41] In all but three out of fourteen years, Noxubee entered African American infant mortality figures as high as 35%, well above the state average.[42]

Noxubee County also had the highest annual average unemployment rate in its region for several years from 1970 to 1993, and if Noxubee didn't have the highest rank, it always ranked among the top three counties in its region.[43] From 1975 to 1993, the unemployment rate was in double digits for all but three years.[44] In 1975, 1982, 1983, and 1985, the annual unemployment rate was over 15%.[45]

One reason for Noxubee County's comparatively high unemployment figures is unquestionably the county's appallingly high

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38. *See* Appendix, Table 3 and notes 60-63.

39. *See id*.

40. *See id*. In 1990, Noxubee County had a 62.4% live birth rate to unmarried African American women. This percentage was lower than that of the other eight counties in 1990. In contrast, Noxubee County registered the lowest percentage of live births to unmarried white women in its region for nine of the fourteen years. *See id.* Other counties in the region showed an increase in live births to unmarried white women. *See id.*

41. *See* Appendix, Table 5 and notes 69-73.

42. *See id*. The statistics usually hovered at about 20% *See id.*

43. *See* Appendix, Table 6.

44. *See id.* The years in which the unemployment rate did not rise into double digits were 1976, 1977, and 1979.

45. *See id*.

rate of functional illiteracy: just 51.34% of its adults have a high school diploma.[46] In all three basic categories for measuring literacy--the ability to read and understand basic prose, the ability to work with simple documents, and basic quantitative ability—Noxubee County ranked the lowest among all other counties in its region.[47]

After analyzing this data from Mississippi's state agencies, the conclusion that Noxubee is severely disadvantaged economically, politically, and socially is clear. The logical inference derived from this case study is that hazardous waste companies have found a community that is easily exploitable and that lacks the ability to fight against the placement of an undesirable hazardous waste facility.

## IV. CONCLUSION

Hazardous waste companies peddling an undesirable business activity would have difficulty finding a more desperate place than Noxubee County. The poor standard of living in Noxubee, along with its geological characteristics, makes it very attractive to companies wishing to build a hazardous waste facility.

Denying that Noxubee's poverty and political frailty plays no role in selecting a location for hazardous waste facilities betrays the essence of the environmental justice movement: to protect vulnerable populations from exposure to environmental hazards. The conclusion is inescapable: studies like Professor Been's longitudinal statistical analysis are important, promising starts. However, thoughtful environmental law and policy decisions will not be made unless the decisions also include more detailed analyses of communities currently burdened by—or, like Noxubee County, facing the threat of—future undesirable, environmentally threatening activities.

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46. *See* Appendix, Table 7 and notes 74-77.

47. ARTHUR G. COSBY ET AL., THE MISSISSIPPI LITERACY ASSESSMENT: A REPORT TO THE MISSISSIPPI EMPLOYMENT SECURITY COMMISSION AND THE GOVERNOR'S OFFICE FOR LITERACY (1991).

## V. APPENDIX: TABLES[48]

*Table 1: Food Stamp Recipients*[49]

| YR | NOX | KEM | LOW | NES | OKT | CLAY | MON | WIN | MS |
|---|---|---|---|---|---|---|---|---|---|
| 83 | 35 | 15-24 | 15-24 | 15-24 | 15-24 | 25-35 | 15-24 | 25-35 | 20 |
| 84 | 15+ | 5-10 | less 5.01 | 5-10 | 5-10 | 5-10 | 5-10 | 10-15 | 20.0 |
| 85 | 35+ | 15-25 | less 15 | 15-25 | 15-25 | 15-25 | 15-25 | 25-35 | 19.4 |
| 86 | 35+ | 15-25 | less 15 | 15-25 | 15-25 | 15-25 | 15-25 | 25-35 | 18.7 |
| 87[50] | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 19.1 |
| 88 | 38.1 | 21.3 | 14.3 | 16.0 | 16.7 | 20.3 | 13.6 | 25.4 | 18.7 |
| 89 | 38.7 | 2.4 | 14.7 | 17.1 | 16.3 | 19.8 | 12.5 | 24.8 | 18.8 |
| 90[51] | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | [20] |
| 91 | 38.3 | 20.8 | 15.8 | 18.4 | 16.3 | 24.8 | 14.7 | 26.6 | 20.7 |
| 92 | 38.8 | 20.6 | 16.7 | 18.6 | 16.6 | 24.8 | 14.2 | 26.6 | 20.8 |
| 93 | 37.7 | 19.8 | 16.5 | 19.1 | 16.0 | 24.9 | 13.6 | 25.1 | 20.0 |
| 94 | 36.6 | 20.1 | 15.8 | 17.5 | 14.7 | 23.9 | 12.0 | 23.1 | 18.7 |
| 95 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

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48. The explanatory key to the counties' abbreviations as used in this Appendix is as follows:

Clay = CLA
Kemper = KEM
Lowndes = LOW
Monroe = MON
Neshoba = NES
Noxubee = NOX
Oktibbeha = OKT
Winston = WIN
Mississippi = MS

49. This data is compiled in the Mississippi Department of Public Welfare Annual Fiscal Year Reports for the years 1983-1989 and in the Mississippi Department of Human Services Annual Fiscal Year Reports for the years 1990-1995.

50. The Department had no copies of data for this year. However, the state's percentage suggests that percentages remained relatively constant. Also, a new Commissioner began in 1986, which typically seems to mean that data collection lags the next year.

51. A new Commissioner, Bea Branch, began implementing the Mississippi Executive Reorganization Act.

*Table 2: Aid To Families With Dependent Children (AFDC)*[52]

| YR | NOX | KEM | LOW | NES | OKT | CLAY | MON | WIN | MS | US |
|---|---|---|---|---|---|---|---|---|---|---|
| 83 | 10-15 | 5-10 | 5-10 | <5.0 | 5-10 | 5-10 | <5.0 | 5-10 | n / a | |
| 84 | n / a | n / a | n / a | n / a | n / a | n / a | n / a | n / a | n / a | |
| 85 | 15+ | 5-10 | 5-10 | <5.0 | 5-10 | 5-10 | <5.0 | 5-10 | n / a | |
| 86 | 15+ | 5-10 | <5.0 | <5.0 | 5-10 | 5-10 | <5.0 | 5-10 | n / a | |
| 87[53] | n / a | n / a | n / a | n / a | n / a | n / a | n / a | n / a | n / a | |
| 88 | 14.7 | 5.7 | 5.9 | 4.2 | 6.7 | 7.9 | 4.8 | 8.6 | 6.8[54] | 4.4 |
| 89 | 14.5 | 5.6 | 6.0 | 4.2 | 6.6 | 8.2 | 4.0 | 8.1 | 7.0[55] | 4.4 |
| 90[56] | n / a | n / a | n / a | n / a | n / a | n / a | n / a | n / a | n / a | |
| 91 | 13.6 | 5.8 | 6.2 | 4.5 | 5.9 | 9.6 | 4.6 | 8.2 | 7.0[57] | 5.0 |
| 92 | 13.7 | 5.5 | 6.1 | 4.3 | 5.4 | 9.6 | 4.5 | 8.0 | 6.8[58] | 5.0 |
| 93 | 12.8 | 4.7 | 6.0 | 4.3 | 5.1 | 9.1 | 4.0 | 7.9 | 6.5 | |
| 94 | 11.6 | 4.8 | 5.6 | 4.1 | 4.4 | 8.6 | 3.5 | 6.9 | 6.4[59] | 5.4 |

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52. The data set forth in Table 2 is listed by percentage of county population from the following sources: Mississippi Department of Public Welfare Annual Fiscal Year Report for the years 1983-1989 and the Mississippi Department of Human Services Fiscal Year Report for the years 1990-1994. A fiscal year runs from July 1st to the following June 30th. Thus, fiscal year 1992 would run from July 1, 1991 to June 30, 1992.

53. No county-by-county breakdowns were prepared for this year.

54. Third highest in the nation, behind D.C. (7.9%) and Michigan (7.0%).

55. Highest state in the nation (D.C. was .7%).

56. The figures are in dollar amounts. The figures for Clay and Neshoba have increased, significantly in the case of Clay (about 15%). Kemper, Monroe and Noxubee have decreased. Lowndes and Oktibbeha remain stable.

57. Fourth highest in the nation, behind Michigan (7.4%), California (7.3%), and D.C. (8.8%).

58. Fourth highest in the nation, behind D.C. (9.1%), Michigan (7.4%), and California (7.1%).

59. Fourth highest in nation, behind California (8.1%), Michigan (7.3%), and D.C. (12.0%).

*Table 3: Live Births to Unmarried African American Women*[60]

| YR | CLAY | KEM | LOW | MON | NES | NOX[61] | OKT | WIN | MS |
|---|---|---|---|---|---|---|---|---|---|
| 80 | 36.9 | 34.6 | 53.3 (2) | 44.3 | 45.0 | 49.6 (3) | 54.8 (1) | 48.4 | 51.6 |
| 81 | 44.4 | 41.7 | 52.0 (3) | 45.1 | 42.1 | 59.5 (1) | 48.8 | 53.0 (2) | 53.2 |
| 82 | 42.8 | 48.8 | 57.4 (2) | 51.0 | 49.4 | 56.9 (3) | 58.9 (1) | 53.7 | 55.4 |
| 83 | 49.6 | 40.0 | 53.5 (3) | 47.8 | 48.7 | 58.1 (2) | 59.6 (1) | 53.0 | 56.8 |
| 84 | 47.1 | 50.5 | 59.0 (3) | 56.4 | 45.2 | 63.5 (1) | 56.6 | 59.5 (2) | 59.1 |
| 85 | 57.7 | 51.0 | 55.8 | 55.1 | 56.0 | 65.5 (1) | 58.2 (3) | 58.5 (2) | 60.1 |
| 86 | 56.6 | 55.0 | 58.7 | 64.1 (3) | 53.6 | 64.9 (2) | 57.0 | 65.5 (1) | 61.6 |
| 87 | 61.2 | 56.3 | 61.5 | 61.8 (3) | 56.7 | 67.2 (1) | 59.3 | 64.9 (2) | 62.8 |
| 88 | 63.5 | 62.8 | 62.7 | 72.6 (1) | 65.4 | 69.1 (2) | 61.0 | 65.6 (3) | 65.5 |
| 89 | 67.0 (3) | 65.7 | 63.7 | 66.5 | 63.7 | 71.6 (1) | 63.0 | 71.3 (2) | 67.9 |
| 90 | 65.2 (5) | 66.7 (3) | 65.8 (4) | 68.0 (2) | 64.0 (6) | 62.4 (8) | 63.2 (7) | 72.1 (1) | 68.9 |
| 91 | 71.5 (2) | 61.8 | 62.8 | 74.5 (1) | 65.5 | 71.5 (2)[62] | 62.8 | 70.7 (3) | 70.5 |
| 92 | 67.2 | 65.9 | 68.5 | 70.2 (3) | 66.4 | 76.3 (1) | 65.5 | 70.6 (2) | 71.6 |
| 93 | 73.4 | 75.8 (1) | 69.8 | 70.2 | 63.9 | 74.4 (3)[63] | 57.7 | 74.5 (2) | 72.8 |
| 94 | 73.0 | 68.0 | 68.0 | 79.1 (1) | 63.4 | 73.4 (3) | 67.9 | 78.0 (2) | 73.9 |

60. The following data is compiled in: MISSISSIPPI STATE DEPARTMENT OF HEALTH, VITAL STATISTICS MISSISSIPPI. The State Department of Health actually uses the category "non-white" rather than African American. The figures in parentheses display that county's rank from the lowest to highest percentages.

61. The number in parenthesis is the county's rank among other counties in its region.

62. Tied in second place with Kemper County.

63. This is only one-third of a percentage point lower than second place, Winston County.

*Table 4: Live Births to Unmarried White Women*[64]

| YR | CLAY | KEM | LOW | MON | NES | NOX[65] | OKT | WIN | MS |
|---|---|---|---|---|---|---|---|---|---|
| 80 | 7.7 | 2.4 (3) | 6.9 | 7.1 | 1.2(1) | 4.9 (5) | 2.2 (2) | 2.8 (4) | 5.9 |
| 81 | 7.5 | 2.1 (1)[66] | 4.4 | 4.3 | 4.9 | 3.2 (4) | 3.1 (3) | 2.1 (1) | 5.8 |
| 82 | 4.1 | 3.8 | 4.5 | 5.8 | 3.1 | 1.6 (1) | 2.9 (3) | 1.7 (2) | 6.1 |
| 83 | 7.6 | 2.0 (2) | 5.4 | 6.6 | 4.7 | 1.6 (1) | 4.5 | 2.8 (3) | 7.0 |
| 84 | 8.7 | -- | 5.5 (3) | 5.5 (3) | 5.8 | 3.3 (2) | 4.5 (2) | 6.4 | 7.5 |
| 85 | 11.8 | -- (1) | 7.0 | 8.9 | 4.7 | -- (1)[67] | 4.8 | 2.8 (3) | 8.5 |
| 86 | 6.8 | 4.2 (1) | 7.5 | 8.8 | 6.4 (2)[68] | 7.3 (6) | 6.4 (2) | 6.7 | 9.2 |
| 87 | 12.4 | 4.6 (2) | 7.4 | 9.4 | 9.4 | 1.8 (1) | 4.7 (3) | 8.3 | 9.8 |
| 88 | 12.9 | 4.4 (3) | 8.1 | 9.2 | 8.8 | -- (1) | 4.0 (2) | 6.4 | 11.4 |
| 89 | 5.7 (1) | 9.3 | 12.1 | 9.6 | 12.4 | 6.1 (2) | 6.7 (3) | 7.7 | 12.4 |
| 90 | 10.8 (6) | 7.5 (3) | 12.7 (7) | 10.3 (4) | 10.7 (5) | 14.0 (8) | 6.2 (2) | 5.6 (1) | 13.3 |
| 91 | 10.9 | 20.8 | 15.2 | 13.6 | 14.0 | 4.3 (1) | 5.0 (2) | 7.3 (3) | 15.0 |
| 92 | 12.4 | 13.3 | 14.4 | 13.5 | 11.4 | 6.4 (1) | 7.2 (3) | 6.7 (2) | 15.1 |
| 93 | 12.6 | 14.0 | 13.7 | 15.8 | 13.6 | 4.5 (1) | 6.5 (2) | 9.3 (3) | 16.5 |
| 94 | 11.3 (3) | 13.3 | 17.4 | 21.5 | 15.4 | 6.4 (1) | 10.0 (2) | 16.4 | 18.4 |

64. Figures in parentheses rank from lowest to highest percentages.
65. Number in parenthesis is county's rank in its region.
66. Tied with Winston County.
67. Tied with Kemper County.
68. Tied with Oktibbeha County.

*Table 5: African American Infant Mortality*[69]

| YR | CLAY | KEM | LOW | MON | NES | NOX | OKT | WIN | MS |
|---|---|---|---|---|---|---|---|---|---|
| 80[70] | 27.2 | 28.6 (3) | 26.9 | 22.4 | 24.7 | 35.5 (1)[71] | 33.7 (2) | 19.9 | 25.4 |
| 81 | 22.9 | 23.4 | 23.8 (3) | 20.0 | 23.7 | 28.0 (2) | 32.4 (1) | 17.5 | 23.8 |
| 82 | 23.2 | 26.6 (2) | 23.4 | 18.4 | 24.3 | 26.1 (3) | 27.7 (1) | 14.8 | 23.0 |
| 83 | 20.4 | 18.8 | 23.2 (3) | 19.2 | 20.6 | 24.0 (1) | 23.4 (2) | 18.5 | 21.7 |
| 84 | 20.6 (1) | 17.7 | 19.7 (4) | 18.6 | 19.6 (5) | 18.7 (6) | 20.5 (2) | 19.8 (3) | 21.0 |
| 85 | 17.4 | 21.6 (1) | 14.1 | 18.7 (4) | 20.6 (2) | 17.9 (5) | 15.4 | 19.4 (3) | 19.9 |
| 86 | 17.1 | 18.5 (4) | 14.2 | 19.5 (3) | 21.3 (1) | 17.8 (5) | 12.5 | 19.7 (2) | 19.0 |
| 87 | 18.6 | 15.4 | 16.2 | 19.0 (3) | 17.7 | 19.1 (2) | 15.1 | 19.5 (1) | 18.4 |
| 88 | 18.2 (2) | 13.9 | 14.8 | 15.4 | 21.0 (1) | 18.2 (2)[72] | 16.6 | 16.5 | 17.6 |
| 89 | 16.2 | 17.6 | 14.9 | 17.9 (3) | 19.6 (1) | 19.4 (2) | 15.2 | 16.2 | 16.8 |
| 90 | 18.1 (3) | 13.6 | 16.5 | 17.3 | 20.0 (1) | 20.0 (1)[73] | 15.9 | 15.5 | 16.2 |
| 91 | 17.5 | 17.6 (3) | 17.6 (3) | 16.4 | 18.0 (2) | 19.2 (1) | 16.5 | 16.8 | 16.0 |
| 92 | 16.7 | 18.1 (3) | 16.0 | 19.4 (2) | 22.5 (1) | 17.1 (4) | 13.7 | 15.2 | 15.7 |
| 93 | 15.1 | 16.6 | 20.1 (1) | 17.1 | 18.3 | 17.7 (3) | 9.9 | 16.7 | 15.4 |
| 94 | 15.7 | 12.6 | 19.9 | 15.8 | 21.6 | 18.3 (3) | 7.6 | 16.2 | 15.4 |

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69. The following data is compiled in: MISSISSIPPI STATE DEPARTMENT OF HEALTH, VITAL STATISTICS MISSISSIPPI. This data reflects mortality rates for infants of an age less than one year. The State Department of Health uses the classification "non-white" rather than African American.

70. Figures in this table are all five-year averages. Thus, for example, the 1980 figure is for 1976-1980, 1981 is for 1977-1981, and so on.

71. The numbers in parentheses indicate the highest rank to the lowest in region.

72. Tied with Clay County.

73. Tied with Neshoba County.

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | (2) | | (1) | | | | |

*Table 6: Mississippi Unemployment Statistics 1970-1992*

| UNEMP RATE | NOX | KEM | LOW | NES | OKT | WIN | CLA | MON | MS |
|---|---|---|---|---|---|---|---|---|---|
| Nov. 93 | 6.7 | 6.8 | 4.4 | 3.9 | 3.0 | 7.4 | 6.6 | 5.5 | |
| Jan. 93 | 8.8 | 8.7 | 5.8 | 4.3 | 4.0 | 10.7 | 6.8 | 6.0 | |
| 1992 | 10.7 | 10.8 | 7.9 | 6.7 | 6.2 | 15.3 | 9.9 | 8.8 | |
| 1991 | 12.9 | 10.4 | 8.3 | 8.1 | 5.5 | 12.9 | 10.0 | 10.2 | |
| 1990 | 13.0 | 10.8 | 6.3 | 7.1 | 4.8 | 8.1 | 9.9 | 8.1 | |
| 1989 | 12.6 | 11.6 | 6.2 | 10.2 | 4.5 | 7.9 | 8.1 | 6.8 | |
| 1988 | 12.3 | 12.1 | 7.8 | 8.6 | 4.9 | 8.9 | 6.8 | 6.4 | |
| 1987 | 12.4 | 16.6 | 8.5 | 9.4 | 5.6 | 11.5 | 9.0 | 8.3 | |
| 1986 | 14.7 | 16.0 | 9.8 | 12.8 | 8.6 | 13.9 | 13.6 | 11.4 | |
| 1985 | 15.3 | 19.3 | 8.3 | 12.7 | 7.5 | 11.6 | 11.0 | 10.0 | |
| 1984 | 13.9 | 17.5 | 9.1 | 10.0 | 7.5 | 11.6 | 10.2 | 8.6 | |
| 1983 | 16.4 | 13.6 | 10.7 | 13.0 | 7.9 | 18.1 | 11.8 | 10.5 | |
| 1982 | 17.3 | 16.5 | 10.2 | 13.6 | 7.1 | 19.1 | 9.1 | 11.2 | |
| 1981 | 10.6 | 11.8 | 8.3 | 8.4 | 4.9 | 10.0 | 7.0 | 8.3 | |
| 1980 | 11.9 | 10.1 | 8.0 | 8.7 | 4.6 | 10.5 | 6.6 | 7.1 | |
| 1979 | 7.6 | 8.7 | 5.3 | 5.6 | 3.8 | 7.4 | 5.0 | 5.3 | |
| 1978 | 10.2 | 9.4 | 6.1 | 7.0 | 4.6 | 8.8 | 7.6 | 6.6 | |
| 1977 | 8.9 | 9.9 | 5.1 | 7.3 | 4.7 | 10.4 | 6.1 | 5.5 | |
| 1976 | 8.5 | 10.5 | 4.9 | 7.6 | 4.2 | 9.2 | 5.1 | 5.7 | |
| 1975 | 15.3 | 11.9 | 8.7 | 10.7 | 6.1 | 13.6 | 7.7 | 12.5 | |
| 1974 | 5.8 | 5.3 | 4.7 | 3.9 | 3.1 | 5.0 | 5.0 | 4.8 | |
| 1973 | 3.9 | 4.4 | 3.2 | 3.6 | 2.1 | 3.1 | 3.9 | 3.1 | |
| 1972 | 4.8 | 6.0 | 3.2 | 5.0 | 2.8 | 4.1 | 5.3 | 3.6 | |
| 1971 | 5.7 | 8.9 | 4.0 | 6.4 | 4.1 | 5.7 | 6.5 | 3.7 | |
| 1970 | n / a | n / a | 4.3 | 5.5 | n / a | 6.2 | 5.3 | 4.5 | |

*Table 7: Mississippi Comparative School Performance Data*[74] *1993*

| Category | NOX | KEM | LOW | NES | OKT | WIN | CLA | MON |
|---|---|---|---|---|---|---|---|---|
| Per Cap Income ($$) | 6,700 | 8,000 | 10,000 | 7,700 | 8,500 | 8,900 | 7,700 | 9,700 |
| Avg Pupil Exp ($$$) | 3,432 | 3,745 | 3,161 | 2,974 | 4,128 | 3,338 | 4,208 | 3,311 |
| Avg Exp-end Rank | 77 | 41 | 132 | 144 | 12 | 93 | 7 | 101 |
| # Measures Neg Chg | 3/13 | 1/13 | 0/13 | 4/13 | 2/13 | 7/13 | 7/13 | 2/13 |
| % Elig Free Lunch | 90.01 | 78.23 | 40.00 | 41.42 | 80.39 | 62.57 | 85.56 | 31.24 |
| Lunch Rank | 141 | 116 | 26 | 31 | 121 | 88 | 131 | 12 |
| ACT Rank (of 153) | 132 | 113 | 76 | 76 | 137 | 80 | 142 | 33 |
| IHL Rank | 142 | 116 | 109 | 74 | 131 | 64 | 137 | 61 |
| AP? /# | no | no | yes/3 | no | no | yes/1 | no | no |
| Gifted Ed | no | yes | yes | yes | no | yes | no | no |
| Gifted Ed Rank | 133 | 110 | 61 | 65 | 133 | 85 | 133 | 133 |
| L.Q. Gr.4 | 35.3 | 33.1 | 15.7 | 14.0 | 36.7 | 28.2 | 60.8 | 20.7 |
| L.Q. Rank Grade 4 | 124 | 117 | 33 | 25 | 128 | 99 | 149 | 56 |
| L.Q. Gr.6 | 16.7 | 5.3 | 24.0 | 19.7 | 26.1 | 29.9 | 44.2 | 20.7 |
| L.Q. Rank Grade 6 | 35 | 5 | 78 | 56 | 86 | 108 | 146 | 62 |
| L.Q. Gr.8 | 23.5 | 50.0 | 25.2 | 36.8 | 47.6 | 33.2 | 41.7 | 21.0 |
| L.Q.Rank Grade 8 | 49 | 142 | 60 | 118 | 139 | 100 | 130 | 32 |
| FLE Comp | 34.0 | 35.4 | 21.1 | 33.5 | 36.6 | 25.8 | 56.3 | 18.6 |
| FLE Comp Rank | 121 | 125 | 53 | 119 | 127 | 76 | 151 | 43 |
| State Algebra I | 56.4 | 32.2 | 30.8 | 16.7 | 48.4 | 23.4 | 4.8 | 9.7 |
| State Algebra I Rank | 145 | 114 | 111 | 62 | 137 | 88 | 9 | 32 |
| Grad Rate | 87.40 | 72.20 | 80.30 | 73.90 | 69.30 | 72.50 | 70.00 | 79.60 |
| Grad Rate Rank | 14 | 108 | 54 | 98 | 120 | 105 | 117 | 64 |
| Ch 1 Schools[75] | 5 | 3 | 6 | 2 | 5 | 6 | 2 | 5 |
| Ch 1 Fail[76]/Rank | 3/136 | 1/93 | 0/1 | 0/1 | 2/116 | 0/1 | 0/1 | 0/1 |
| White Pop % | 31.42 | 42.54 | 70.14 | 70.06 | 48.84 | 57.45 | 43.81 | 89.14 |
| Black Pop % | 67.93 | 55.39 | 29.36 | 12.25 | 51.16 | 41.81 | 54.67 | 10.45 |

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74. The following data is compiled in: MISSISSIPPI DEPARTMENT OF EDUCATION, MISSISSIPPI REPORT CARD (1993). Rank totals can reach 153, consisting of the state's 149 school districts and four agricultural high schools. For purposes of this table, "WIN" is actually the Louisville Municipal School District. "L.Q." refers to students in the lower quarter.

75. This category refers to the number of schools participating in Chapter 1 programs.

76. This category refers to the number of schools that fail to meet their Chapter 1 achievement standards for three consecutive years.

| Category | NOX | KEM | LOW | NES | OKT | WIN | CLA | MON |
|---|---|---|---|---|---|---|---|---|
| Accred Level[77] | 2 | 2 | 3 | 3 | 2 | 3 | 1 | 3 |

77. Accreditation levels are based on process and performance standards and are divided into five levels: Level 1 = At Risk; Level 2 = Deficient; Level 3 = Adequate; Level 4 = Distinguished Achievement; and Level 5 = Model District.