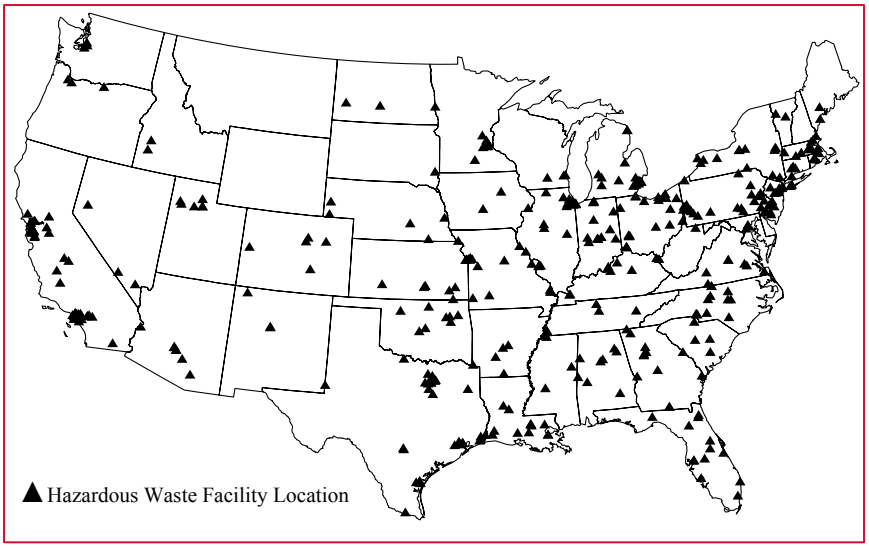
Toxic Wastes and Race at Twenty 1987—2007

A Report Prepared for the United Church of Christ Justice & Witness Ministries



Justice & Witness Ministries:
Rev. M. Linda Jaramillo
Executive Minister

Dr. Carlos J. Correa Bernier
Minister for Environmental Justice

Principal Authors:
Robert D. Bullard, Ph.D.
Paul Mohai, Ph.D.
Robin Saha, Ph.D.
Beverly Wright, Ph.D.

United Church of Christ
© March 2007

UNITED CHURCH OF CHRIST
God is Still Speaking,

ABOUT THE UNITED CHURCH OF CHRIST JUSTICE & WITNESS MINISTRIES

Justice and Witness Ministries of the United Church of Christ embraces God's transforming mission to do justice, seek peace, and build community. Therefore, in response to the call of Christ, we speak and act prophetically through public witness, policy advocacy, issue education, and grassroots empowerment to build a more just, compassionate and inclusive world.

Justice and Witness Ministries, one of four Covenanted Ministries in the United Church of Christ, helps local congregations and all settings of the church respond to God's commandments to do justice, seek peace and effect change for a better world. The work of Justice and Witness Ministries is guided by the pronouncements and resolutions approved by the United Church of Christ.

JWM has a long history of working to confront and dismantle racism. JWM's work serves as a catalyst for social transformation, particularly in the ushering in of a fully integrated multiracial, multicultural world – a world where diversity becomes the focal point of communal celebration. Our work for criminal and juvenile justice reform, toward the abolishment of capital punishment, and in support of political prisoners is aimed to remove the barriers that divide people, that they may be liberated to live as one.

JWM uses a variety of strategies to undertake justice advocacy. These strategies include mobilizing people to participate in public life so as to impact social policy. *Responding to legislative issues, JWM positively impacts the areas of global economy, public education, workers rights, health care, economic development, and the environment.*

Working as individuals, congregations, Associations, Conferences and national covenanted ministries, the UCC is engaged in diverse ministries of compassion, advocacy and reconciliation. We seek to be a church that is multiracial, multicultural, open and affirming, accessible to all.

We embrace God's transforming mission to do justice, seek peace, and build community. In response to Christ's call, we prophetically speak truth to power and act through public witness in over twenty social justice advocacy areas. Jesus calls us to be a more inclusive church and society.

Justice and Witness Ministries
United Church of Christ
700 Prospect Ave.
Cleveland, OH 44115
216-736-3704
jwm@ucc.org

Copyright © March 2007. The United Church of Christ. All rights reserved.

ABOUT THE AUTHORS

Robert D. Bullard is the Ware Distinguished Professor of Sociology and Director of the Environmental Justice Resource Center at Clark Atlanta University. He is the author of thirteen books that address sustainable development, environmental racism, urban land use, industrial facility siting, community reinvestment, housing, transportation and smart growth. His book, *Dumping in Dixie: Race, Class and Environmental Quality* (Westview Press, 2000), is a standard text in the environmental justice field. His most recent books include *Just Sustainabilities: Development in an Unequal World* (Earthscan/MIT Press, 2003), *Highway Robbery: Transportation Racism and New Routes to Equity* (South End Press, 2004), *The Quest for Environmental Justice: Human Rights and the Politics of Pollution* (Sierra Club Books, 2005), *Growing Smarter: Achieving Livable Communities, Environmental Justice and Regional Equity* (MIT Press, 2007) and *The Black Metropolis in the Twenty-First Century: Race, Power and the Politics of Place* (Rowman & Littlefield, forthcoming May 2007).

Paul Mohai is Professor in the School of Natural Resources and Environment, University of Michigan, Ann Arbor. He was an early and major contributor to the growing body of quantitative research examining the disproportionate environmental burdens in low-income and people of color communities. A significant outcome of this early research was the organization of the historic 1990 “Michigan Conference on Race and the Incidence of Environmental Hazards” with colleague Dr. Bunyan Bryant. Dr. Mohai also has been a major contributor to research examining the environmental attitudes of African Americans and their influence on the environmental movement. His current research involves national-level studies examining cause and effect relationships in the distribution of environmental hazards by race and class, including examining the role environmental factors play in accounting for racial and socioeconomic disparities in health. He is the author of numerous articles on the subject of race and the environment.

Robin Saha is Assistant Professor of Environmental Studies at the University of Montana and affiliated faculty with its School of Public and Community Health Sciences. He is among the leading scholars conducting quantitative studies of environmental inequality using Geographic Information Systems (GIS). His articles appear in leading social science journals including *Demography* and *Social Problems.* His teaching and research focuses on the intersection of environmental justice, health and policy with an emphasis on community engagement and empowerment. He is committed to providing assistance to contaminated communities and works actively on tribal environmental issues. One of his current community-based research projects focuses on substandard housing and environmental health on Montana Indian reservations. He also consults on environmental justice legal cases and conducts environmental justice analyses for a wide variety of nonprofit advocacy organizations.

Beverly Wright is a sociologist and the founding director of the Deep South Center for Environmental Justice (DSCEJ) at Dillard University (formerly at Xavier University of Louisiana) in New Orleans. She is a leading scholar, advocate and activist in the environmental justice arena. She served on the U.S. Commission of Civil Rights for the state of Louisiana and on the city of New Orleans' Select Committee for the Sewerage and Water Board. She is co-chair of the National Black Environmental Justice Network and the Environmental Justice Climate Change (EJCC) Initiative. She is the co-author of *In the Wake of the Storm: Environment, Disaster and Race after Katrina* (Russell Sage Foundation, May 2006). She is a native of New Orleans and a survivor of Hurricane Katrina.

CONTENTS

List of Tables, Figures, and Appendices V

Acknowledgments VI

Foreword VII

Preface VIII

Executive Summary X

Introduction 1

Chapter 1 7
Environmental Justice in the Twenty-First Century

Chapter 2 16
Environmental Justice Timeline/Milestones 1987-2007

Chapter 3 38
Racial and Socioeconomic Disparities in the Distribution of Environmental Hazards: Assessing the Evidence Twenty Years after *Toxic Wastes and Race*

Chapter 4 49
A Current Appraisal of Toxic Wastes and Race in the United States - 2007

Chapter 5 84
Impact of *Toxic Wastes and Race* on the EJ Movement: Speaking for Ourselves

Chapter 6 124
Wrong Complexion for Protection: Will the "Mother of All Toxic Cleanups" in New Orleans Be Fair?

Chapter 7 134
The "Poster Child" for Environmental Racism in 2007: Dickson, Tennessee

Chapter 8 152
Conclusions and Recommendations

List of Tables, Figures, and Appendices

List of Tables

Table 3.1 – Racial and Socioeconomic Characteristics of People Living Near Hazardous Waste Facilities
Table 4.1 – Racial and Socioeconomic Disparities between Host Neighborhoods and Non-Host Areas for the Nation's 413 Commercial Hazardous Waste Facilities (1990 and 2000 Census)
Table 4.2 – People of Color Percentages for Host Neighborhoods and Non-Host Areas by EPA Region
Table 4.3 – Racial Disparities between Host Neighborhoods and Non-Host Areas by EPA Region
Table 4.4 – Socioeconomic Disparities between Host Neighborhoods and Non-Host Areas by EPA Region
Table 4.5 – Racial and Socioeconomic Disparities between Host Neighborhoods and Non-Host Areas of Commercial Hazardous Waste Facilities in Metropolitan Areas
Table 4.6 – The 10 Metropolitan Areas with the Largest Number of People of Color Living in Hazardous Waste Facility Neighborhoods
Table 4.7 – Multivariate Analysis Comparing Independent Effect of Race on Facility Location (Logistic Regression)
Table 7.1 – History of Landfill Permitting in Dickson, Tennessee, Eno Road Community
Table 7.2 – Summary of TCE and DCE Results, Springs and Private Water Supplies Dickson County, Tennessee
Table 7.3 – Distance Dickson City Officials' Homes to the Dickson County Landfill
Table 7.4 – Distance Dickson County Officials' Homes to the Dickson County Landfill

List of Figures

Figure 3.1 – Comparing Methods of Matching Where People and Hazardous Waste Facilities Are Located
Figure 3.2 – Percent People of Color Living Near Hazardous Waste Facilities
Figure 3.3 – Comparing Results of Past Studies Using Unit-Hazard Coincidence Method with Results Using Distance-Based Methods
Figure 4.1 – People of Color Percentages in Neighborhoods with Clustered Facilities, Non-Clustered Facilities and No Facility
Figure 4.2 – EPA Regions
Figure 4.3 – States with the 10 Largest Differences in People of Color Percentages between Host Neighborhoods and Non-Host Areas
Figure 6.1 – Contamination Levels Left Behind by Hurricane Katrina
Figure 7.1 – Map of Dickson City Officials and Proximity to Dickson County Landfill
Figure 7.2 – Map of Dickson County Officials and Proximity to Dickson County Landfill

List of Appendices

Appendix 3.1 - People of Color Percentages in Host and Non-Host Areas Estimated from Distance-Based versus Unit-Hazard Coincidence Methods
Appendix 4.1 – Racial and Socioeconomic Characteristics for Clustered and Non-Clustered Facility Host Neighborhoods
Appendix 4.2 – People of Color Percentages for Clustered and Non-Clustered Facility Host Neighborhoods by EPA Region
Appendix 4.3 – People of Color Percentages by EPA Region and State
Appendix 4.4 – Hispanic or Latino Percentages by EPA Region and State
Appendix 4.5 – African American Percentages by EPA Region and State
Appendix 4.6 – Asian/Pacific Islander Percentages by EPA Region and State
Appendix 4.7 – Poverty Rates by EPA Region and State
Appendix 4.8 – People of Color Percentages in Host Neighborhoods ("Host") and Non-Host Areas for 80 Selected Metropolitan Areas
Appendix 4.9 – Asian/Pacific Islander Percentages for 25 Selected Metropolitan Areas
Appendix 4.10 – Multivariate Analysis Comparing Independent Effect of Race on Location of Facilities in Metropolitan Areas (Logistic Regression)

Acknowledgments

The research and production of this manuscript were made possible by support from the United Church of Christ. We would first like to thank Rev. Bernice Powell Jackson who initiated the project in 2005 while she was at the UCC Justice and Witness Ministries and Dr. Carlos Correa, Minister of Environmental Justice, and Rev. M. Linda Jaramillo, Executive Minister of Justice and Witness Ministries, for overseeing the report's completion in 2007. Robert D. Bullard would also like to thank the Environmental Justice Resource Center at Clark Atlanta University staff members Glenn S. Johnson and Angel O. Torres for their assistance in coordinating the "call for papers," tracking documents, retrieving archival photographs and general editing. Beverly Wright would like to give special thanks to two Deep South Center for Environmental Justice at Dillard University staff Judy Jackson and Mary Ivory Williams for their assistance and support on this report—even though they, like me, are still displaced from their New Orleans homes by Hurricane Katrina. We also owe a special thanks to Fred Wessell for copyediting and Croscina O. Crockett for the report layout.

The databases used for the analyses in Chapters 3 and 4 were created at the University of Michigan's School of Natural Resources and Environment between 2001 and 2004 through grants from the Sociology Program and Geography and Regional Science Program of the National Science Foundation (#0099123). The opinions, findings, conclusions and recommendations expressed in this report, however, are those of the authors and do not necessarily reflect the views of the NSF. Paul Mohai and Robin Saha extend thanks to graduate student research assistants Betsy Boatner Marsh, Sara Cohen, Luci Kim, Victoria McMillan and Theresa Weber for helping to compile the census and facility data. Robin Saha is grateful to Melissa Hayes, of the University of Montana Environmental Studies Program, for her assistance with the analysis of clustered facilities, state and metropolitan area racial disparities.

We want to especially thank the contributors who took time out of their busy schedules to craft "impact" essays for this report. We also would like to acknowledge our many friends and colleagues who shared with us milestones, honors and awards, victories and even some setbacks for the EJ Timeline. We extend special thanks to several representatives from the National Black Environmental Justice Network (NBEJN) for their comments, suggestions and policy recommendations: Deeohn Ferris, Donele Wilkins, Leslies Fields, Vernice Miller-Travis, Peggy Shepard, Lula Odom, Yolanda Sinde, Henry Clark and Michael Lythcott. The authors, of course, assume full responsibility for the report content.

Foreword

Twenty years ago, the United Church of Christ Commission for Racial Justice (CRJ) published a decisive report exposing the gross disregard for people of color as toxic waste landfills were sited in their communities throughout the nation. *Toxic Wastes and Race in the United States* proved to be a critical foundation for the environmental justice movement that continues today. *Toxic Wastes and Race at Twenty* marks the anniversary of widespread public reaction to this appalling demonstration of racism.

Prior to 1987, environmental issues and racial justice issues were commonplace in public debate, but not addressed as an inter-related problem. It was not until Benjamin F. Chavis, Executive Director of the CRJ, provoked the nation's consciousness by referring to toxic waste landfill siting in people of color communities as "environmental racism." Motivated by an appeal from UCC members in Warren County, North Carolina five years earlier, CRJ assigned Charles Lee to begin its investigation and found the problem multiplied in settings across the United States. Hazardous waste materials of all kinds were being dumped near homes, schools, and work places, affecting children and their parents and grandparents.

Thus began two decades of working with grassroots communities— from African Americans in so-called "cancer alley," the chemical manufacturing corridor between Baton Rouge and New Orleans, LA, to Native American communities like those near Prairie Island, MN, to Latino communities like those along the New River in southern California, where the *maquiladoras* (factories) located on the U.S.-Mexico border, dump their wastes. In 1991, CRJ sponsored the first People of Color Environmental Leadership Summit, bringing together hundreds of people of color who were working on these issues in their own communities. A movement was born.

In 2000, Justice and Witness Ministries assumed the responsibilities of six UCC agencies addressing justice issues including the Commission for Racial Justice. The movement continued under the leadership of Bernice Powell Jackson, who designated a program ministry portfolio specifically focused on environmental justice. Two years later, the Justice and Witness Ministries co-sponsored the Second People of Color Environmental Leadership Summit, or Summit II

It is ironic that twenty years after the original *Toxic Wastes and Race* report, many of our communities not only face the same problems they did back then, but now they face new ones because of government cutbacks in enforcement, weakening health protection, and dismantling the environmental justice regulatory apparatus. Our new report, *Toxic Wastes and Race at Twenty*, again signals clear evidence of racism where toxic waste sites are located and the way government responds to toxic contamination emergencies in people of color communities.

Long before Hurricane Katrina in August 2005 created the worst environmental disaster in U.S. history and the levee breach drowned New Orleans, millions of Americans from West Harlem to East Los Angeles learned the hard way that "waiting for government to respond can be hazardous to their health and the health of their community." Katrina blew the lid off the "dirty little secret" of race, vulnerable populations, disaster response, and unequal protection.

So, the best way to observe the 20th anniversary of the groundbreaking report, *Toxic Wastes and Race*, is by continuing the struggle for environmental justice today. To celebrate its birthday and to honor Earth Day weekend, on Saturday, April 21, we urge you not only to plant trees or clean up our parks but also join the people of devastated communities across the country in their fight to stamp out environmental racism and economic injustice. It will be our way of declaring to the world that our commitment to environmental justice and our outrage at environmental racism are as strong today as they were 20 years ago.

Join us and communities of color across the nation as we struggle to clean up our cities, our rural areas, our reservations, our playgrounds and our work sites. *La lucha continua*—the struggle continues.

Rev. M. Linda Jaramillo, Executive Minister
UCC Justice and Witness Ministries

Preface

In response to a request from a group of United Church of Christ (UCC) members in Warren County, North Carolina, the UCC got involved in what we understood was a matter of justice when in 1982 the State of North Carolina chose a poor predominantly African American community for the placement of a toxic waste landfill to dispose of PCBs illegally dumped along the roadway of fourteen counties. Back then, residents enlisted the support of the United Church of Christ Commission for Racial Justice (CRJ) to engage in a campaign of nonviolent civil disobedience.

In response to this experience, and from others across the nation, the CRJ commissioned a study to examine what was perceived at the time to be the intentional placement of hazardous waste sites, landfills, incinerators, and polluting industries in communities inhabited mainly by African Americans, Hispanics, Native Americans, Asians and Pacific Islanders, farm workers and the working poor. These groups were, and still are, particularly vulnerable because they are perceived as weak and passive citizens who will not fight back against the poisoning of their neighborhoods in fear that it may jeopardize jobs and economic survival.

In releasing the findings of the 1987 study written by Charles Lee, Rev. Benjamin Chavis, CRJ Executive Director, referred to intentionally selecting communities of color for wastes disposal sites and polluting industrial facilities – essentially condemning them to contamination – as “environmental racism.” He called on the United Church of Christ to be a champion working for environmental justice across the nation and across the world.

Since then the environmental justice movement has been trying to address inequalities that are the result of human settlement, industrial contamination and unsustainable development. Through the Environmental Justice Office, the United Church of Christ seeks to educate congregations and communities and to assist groups in organizing, mobilizing and empowering themselves to take charge of their lives, their communities and their surroundings. We also seek to address the issues of power imbalances, political disfranchisement and lack of resources in order to facilitate the creation and maintenance of healthy, livable and sustainable communities.

The environmental justice movement is as much concerned about the environment as any of the traditional environmental groups. There is only one environment. The environmental justice movement is concerned about wetlands, birds and wilderness areas; it is also concerned, however, about urban habitats, about reservations, about the things that are happening on the US-Mexican border, about children poisoned by lead in their own homes and about children playing in contaminated parks and playgrounds. The UCC is committed to keep bringing these issues to the attention of the large environmental groups and to the broader society. That is precisely the intention of our new *Toxic Wastes and Race at Twenty* report.

Knowing that the environmental justice movement is a dynamic one, a continuous struggle, we offer you *Toxic Wastes and Race at Twenty*. This updated report, however, is not the final word. It indicates, even twenty years after the original one, that there still is so much to do and that there still is so much out there to learn, understand and research.

Twenty years after the release of the *Toxic Wastes and Race* report, racial and socioeconomic disparities persist in the distribution of the nation’s commercial hazardous waste facilities. The conclusions of the 1987 Report are similar to those of our updated report. In fact, in *Toxic Wastes and Race at Twenty* report you will read that “people of color are found to be more concentrated around hazardous waste facilities than previously shown.” You will see that race matters. Place matters too. Unequal protection places communities of color at special risk. And polluting industries still follow the path of least resistance, among other findings.

It is my hope that in these pages you will be able to find not only the principles and values that guided the research project, which in 1987 helped galvanize the environmental justice movement, but that you also will be able to see the important role that the church plays today in the doing (promotion) of justice.

We won't be able to achieve sustainable development until we get justice in environmental protection, particularly in the enforcement of regulations. The church must be part of a long term active movement, not only within the border of the United States but keeping in mind the policies that are being exported abroad. The church also has a role in fighting racism, and I hope that this report will help us to embrace our call, while embracing the principles of the environmental justice movement opposing everything that relates to pollution, industrial contamination in poor communities and communities of color and greed-driven non-sustainable development and non-sustainable patterns of production.

Dr. C.J. Correa Bernier
Environmental Justice Office
United Church of Christ

EXECUTIVE SUMMARY

Introduction

In 1987, the United Church of Christ Commission for Racial Justice released its groundbreaking study *Toxic Wastes and Race in the United States*. The report was significant because it found race to be the most potent variable in predicting where commercial hazardous waste facilities were located in the U.S., more powerful than household income, the value of homes and the estimated amount of hazardous waste generated by industry.

This year, the United Church of Christ Justice and Witness Ministries commissioned a new report as part of the twentieth anniversary of the release of the 1987 report. The 2007 *Toxic Wastes and Race at Twenty* report uses 2000 census data. The report also chronicles important environmental justice milestones since 1987 and includes a collection of "impact" essays from environmental justice leaders on a range of topics. This new report also examines the environmental justice implications in post-Katrina New Orleans and uses the Dickson County (Tennessee) Landfill case, the "poster child" for environmental racism, to illustrate the deadly mix of waste and race.

Toxic Wastes and Race at Twenty is designed to facilitate renewed grassroots organizing and provide a catalyst for local, regional and national environmental justice public forums, discussion groups and policy changes in 2007 and beyond.

Approach

This new report includes the first national-level study to employ 2000 Census data and distance-based methods to a current database of commercial hazardous waste facilities to assess the extent of racial and socioeconomic disparities in facility locations in the U.S. Disparities are examined by region and state, and separate analyses are conducted for metropolitan areas, where most hazardous waste facilities are located.

Key Findings

The application of these new methods, which better determine where people live in relation to where hazardous sites are located, reveals that racial disparities in the distribution of hazardous wastes are greater than previously reported. In fact, these methods show that people of color make up the majority of those living in host neighborhoods within 3 kilometers (1.8 miles) of the nation's hazardous waste facilities. Racial and ethnic disparities are prevalent throughout the country.

National Disparities

More than nine million people (9,222,000) are estimated to live in circular host neighborhoods within 3 kilometers of the nation's 413 commercial hazardous waste facilities. More than 5.1 million people of color, including 2.5 million Hispanics or Latinos, 1.8 million African Americans, 616,000 Asians/Pacific Islanders and 62,000 Native Americans live in neighborhoods with one or more commercial hazardous waste facilities.

Host neighborhoods of commercial hazardous waste facilities are 56% people of color whereas non-host areas are 30% people of color. Percentages of African Americans, Hispanics/Latinos and Asians/Pacific Islanders in host neighborhoods are 1.7, 2.3 and 1.8 times greater (20% vs. 12%, 27% vs. 12%, and 6.7% vs. 3.6%), respectively. Poverty rates in the host neighborhoods are 1.5 times greater than non-host areas (18% vs. 12%)

Neighborhoods with Clustered Facilities

Neighborhoods with facilities clustered close together have higher percentages of people of color than those with non-clustered facilities (69% vs. 51%). Likewise, neighborhoods with clustered facilities have disproportionately high poverty rates. Because people of color and the poor are highly concentrated in neighborhoods with multiple facilities, they continue to be particularly vulnerable to the various negative impacts of hazardous waste facilities.

EPA Regional Disparities

Racial disparities for people of color as a whole exist in nine out of 10 U.S. EPA regions (all except Region 3). Disparities in people of color percentages between host neighborhoods and non-host areas are greatest in: Region 1, the Northeast (36% vs. 15%); Region 4, the southeast (54% vs. 30%); Region 5, the Midwest (53% vs. 19%); Region 6, the South, (63% vs. 42%); and Region 9, the southwest (80% vs. 49%). For Hispanics, African Americans and Asians/Pacific Islanders, statistically significant disparities exist in the majority or vast majority of EPA regions. The pattern of people of color being especially concentrated in areas where facilities are clustered is also geographically widespread throughout the country.

State Disparities

Forty of the 44 states (90%) with hazardous waste facilities have disproportionately high percentages of people of color in circular host neighborhoods within 3 kilometers of the facilities. States with the 10 largest differences in people of color percentages between host neighborhoods and non-host areas include (in descending order by the size of the differences): Michigan (66% vs. 19%), Nevada (79% vs. 33%), Kentucky (51% vs. 10%), Illinois (68% vs. 31%), Alabama (66% vs. 31%), Tennessee (54% vs. 20%), Washington (53% vs. 20%), Kansas (47% vs. 16%), Arkansas (52% vs. 21%) and California (81% vs. 51%). Thirty-five states have socioeconomic disparities, i.e., in poverty rates. In these states, the average poverty rate in host neighborhoods is 18% compared to 12% in non-host areas.

Metropolitan Disparities

In metropolitan areas, where four of every five hazardous waste facilities are located, people of color percentages in hazardous waste host neighborhoods are significantly greater than those in non-host areas (57% vs. 33%). Likewise, the nation's metropolitan areas show disparities in percentages of African Americans, Hispanics/Latinos and Asians/Pacific Islanders, 20% vs. 13%, 27% vs. 14% and 6.8% vs. 4.4%, respectively. Socioeconomic disparities exist between host neighborhoods and non-host areas, with poverty rates of 18% vs. 12%, respectively. One hundred and five of the 149 metropolitan areas with facilities (70%) have host neighborhoods with disproportionately high percentages of people of color, and 46 of these metro areas (31%) have majority people of color host neighborhoods.

Continuing Significance of Race

In 1987, *Toxic Wastes and Race in the United States* found race to be more important than socioeconomic status in predicting the location of the nation's commercial hazardous waste facilities. In 2007, our current study results show that race continues to be a significant and robust predictor of commercial hazardous waste facility locations when socioeconomic factors are taken into account.

Conclusions

Twenty years after the release of *Toxic Wastes and Race, s*ignificant racial and socioeconomic disparities persist in the distribution of the nation's commercial hazardous waste facilities. Although the current assessment uses newer methods that better match where people and hazardous waste facilities are located, the conclusions are very much the same as they were in 1987.

Race matters. People of color and persons of low socioeconomic status are still disproportionately impacted and are particularly concentrated in neighborhoods and communities with the greatest number of facilities. Race continues to be an independent predictor of where hazardous wastes are located, and it is a stronger predictor than income, education and other socioeconomic indicators. People of color now comprise a majority in neighborhoods with commercial hazardous waste facilities, and much larger (more than two-thirds) majorities can be found in neighborhoods with clustered facilities. African Americans, Hispanics/Latinos and Asian Americans/Pacific Islanders alike are disproportionately burdened by hazardous wastes in the U.S.

Place matters. People of color are particularly concentrated in neighborhoods and communities with the greatest number of hazardous waste facilities, a finding that directly parallels that of the original UCC report. This current appraisal also reveals that racial disparities are widespread throughout the country, whether one examines EPA regions, states or metropolitan areas, where the lion's share of facilities is located. Significant racial and socioeconomic disparities exist today despite the considerable societal attention to the problem noted in this report. These findings raise serious questions about the ability of current policies and institutions to adequately protect people of color and the poor from toxic threats.

Unequal protection places communities of color at special risk. Not only are people of color differentially impacted by toxic wastes and contamination, they can expect different responses from the government when it comes to remediation—as clearly seen in the two case studies in Post-Katrina New Orleans and in Dickson County, Tennessee. Thus, it does not appear that existing environmental, health and civil rights laws and local land use controls have been adequately applied or adapted to reducing health risks or mitigating various adverse impacts to families living in or near toxic "hot spots."

Polluting industries still follow the path of least resistance. For many industries it is a "race to the bottom," where land, labor and lives are cheap. It's about profits and the "bottom line." Environmental "sacrifice zones" are seen as the price of doing business. Vulnerable communities, populations and individuals often fall between the regulatory cracks. They are in many ways "invisible" communities. The environmental justice movement served to make these disenfranchised communities visible and vocal.

The current environmental protection apparatus is "broken" and needs to be "fixed." The current environmental protection system fails to provide equal protection to people of color and low-income communities. Various levels of government have been slow to respond to environmental health threats from toxic waste in communities of color. The mission of the United States Environmental Protection Agency (EPA) was never to address environmental policies and practices that result in unfair, unjust and inequitable outcomes. The impetus for change came from grassroots mobilization that views environmental protection as a basic right, not a privilege reserved for a few who can "vote with their feet" and escape from or fend off locally undesirable land uses—such as landfills, incinerators, chemical plants, refineries and other polluting facilities.

Slow government response to environmental contamination and toxic threats unnecessarily endangers the health of the most vulnerable populations in our society. Government officials have knowingly allowed people of color families near Superfund sites, other contaminated waste sites and polluting industrial facilities to be poisoned with lead, arsenic, dioxin, TCE, DDT, PCBs and a host of other deadly chemicals. Having the facts and failing to respond is explicitly discriminatory and tantamount to an immoral "human experiment."

Clearly, the environmental justice movement over the last two decades has made a difference in the lives of people of color and low-income communities that are overburdened with environmental pollution. After years of intense study, targeted research, public hearings, grassroots organizing, networking and movement building, environmental justice struggles have taken center stage. However, community leaders who have been on the front line for justice for decades know that the lethargic, and too often antagonistic, government response to environmental emergencies in their communities is not the exception but the general rule. They have come to understand that waiting for the government to respond can be hazardous to their health and the health of their communities.

In fact, the U.S. EPA, the governmental agency millions of Americans look to for protection, has mounted an all-out attack on environmental justice and environmental justice principles established in the early 1990s. Moreover, the agency has failed to implement the Environmental Justice Executive Order 12898 signed by President Bill Clinton in 1994 or adequately apply Title VI of the Civil Rights Act.

Recommendations

Many of the environmental injustice problems that disproportionately and adversely affect low-income and people of color communities could be eliminated if current environmental, health, housing, land use and civil rights laws were vigorously enforced in a nondiscriminatory way—without regard to race, color or national origin. Many of the environmental problems facing low-income persons and people of color are systemic and will require institutional change, including new legislation. We also recognize that government alone cannot solve these problems, but need the assistance of concerned individuals, groups and organizations from various walks of life. With these considerations in mind, the following recommendations are offered:

Congressional Actions

Codify Environmental Justice Executive Order 12898. Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations" provides significant impetus to advance environmental justice at the federal level and in the states. Congress should codify Executive Order 12898 into law. Congress will thereby establish an unequivocal legal mandate and impose federal responsibility in ways that advance equal protection under law in communities of color and low-income communities.

Provide Legislative "Fix" for Title VI of the Civil Rights Act of 1964. Work toward a legislative "fix" of Title VI of the Civil Rights Act of 1964 that was gutted by the 2001 *Alexander v. Sandoval* U.S. Supreme Court decision that requires intent, rather than disparate impact, to prove discrimination. Congress should act to reestablish that there is a private right of action for disparate impact discrimination under Title VI.

Re-instate the Superfund Tax. Congress should act immediately to re-instate the Superfund Tax, re-examine the National Priorities List (NPL) hazardous site ranking system and reinvigorate Federal Relocation Policy in communities of color to move those communities that are directly in harms way.

Hold Congressional Hearings on EPA Response to Contamination in EJ Communities. We urge the U.S. Congress to hold hearings on the U.S. Environmental Protection Agency's (EPA's) response to toxic contamination in EJ communities, including post-Katrina New Orleans, the Dickson County (Tennessee) Landfill water contamination problem and similar problems throughout the United States.

Enact Legislation Promoting Clean Production and Waste Reduction. Require industry to use clean production technologies and support necessary R&D for toxic use reduction and closed loop production systems. Create incentives and buy-back programs to achieve full recovery, reuse and recycling of waste and product design that enhances waste material recovery and reduction.

Require Comprehensive Safety Data for All Chemicals. Chemical manufacturing companies must provide publicly available safety information about a chemical for it to remain on or be added to the market. The information must allow for reasonable evaluation of the safety of the chemical for human health and the environment and must include hazard, use and exposure information.

Executive Branch Actions

Implement EPA Office of Inspector General's Recommendations. The EPA Inspector General (IG) reports that the agency has not developed a clear vision or a comprehensive strategic plan to achieve environmental justice. The EPA should implement the EJ recommendations of the IG's 2004 and 2006 reports for addressing Executive Order 12898.

Fully Implement Environmental Justice Executive Order 12898. The U.S. EPA, FEMA, Army Corps of Engineers, Department of Labor, HUD and other federal agencies need to fully implement Executive Order 12898 in the cleanup and rebuilding in the hurricane-ravaged Gulf Coast region.

Protect Community Right-to-Know. Reinstate the reporting of emissions and lower reporting thresholds to the Toxic Release Inventory (TRI) database on an annual basis to protect communities' right to know.

End EPA Rollback of Environmental Justice Initiatives. EPA must **e**nd its attempts to roll back environmental justice, and it must take aggressive steps to implement EJ Executive Order 12898 and provide targeted enforcement where the needs are the greatest, and where unequal protection places low-income and people of color populations at special risk.

Require Cumulative Risk Assessments in Facility Permitting. EPA should require assessments of multiple, cumulative and synergistic exposures, unique exposure pathways, and impacts to sensitive populations in issuing environmental permits and regulations.

Require Safety Buffers in Facility Permitting and Fenceline Community Performance Bonds for Variances. The EPA (states and local governments too) should adopt site location standards requiring a safe distance between a residential population and an industrial facility. It should also require locally administered Fenceline Community Performance Bonds to provide for the recovery of residents impacted by chemical accidents.

State and Local Actions

Require State-by-State Assessments (Report Cards) on Environmental Justice. Require states to evaluate and report their progress made on environmental justice. From 1993 to present, nearly three dozen states have expressly addressed environmental justice. However, little is known about the efficacy of these laws and if in fact they are being enforced.

Require Brownfields Community Revitalization Analysis. Parties seeking to benefit from governmental subsidies should be required to conduct a Community Revitalization Analysis and take steps to address the most serious impacts identified in the analysis.

Establish Tax Increment Finance Funds to Promote Environmental Justice-Driven Community Development. Environmental justice organizations should become involved in redevelopment processes in their neighborhoods to integrate brownfields priorities into long-range neighborhood redevelopment plans. This will allow for the use of Tax Increment Finance funds for cleanup and redevelopment of brownfields sites expressly for community-determined uses.

Establish Community Land Trusts. Establish Community Land Trusts (CLTs), i.e., community-governed nonprofits, to allow communities to purchase or use brownfields sites at below-market rates and redevelop them to meet a variety of community needs, for example, to provide limited-equity housing.

Adopt Green Procurement Policies and Clean Production Tax Policies. State and local governments can show leadership in reducing the demand for products produced using unsustainable technologies that harm human health and the environment. Government must use its buying power and tax dollars ethically by supporting clean production systems.

Nongovernmental Organization (NGO) Actions

Increase Private Foundations' General Support Funding for Environmental, Economic and Climate Justice, and Healthy Communities. Increase private foundation support for efforts of environmental justice groups and their allies to craft and implement legislative, public policy and legal advocacy campaigns to address environmental and public health inequities. Environmental grant makers give a tremendous amount of attention to issues of climate change. However, more philanthropic support must be given to campaigns addressing economic and climate justice issues.

Fund Support for Training New Generations of Leaders. Environmental justice organizations, campaigns and collaborative partnerships, including environmental justice centers and academic programs at universities, remain the stepchild of philanthropic giving. Foundation support is sorely needed to increase the pool of young people of color in environmental fields.

Target the "Dirty Dozen" Environmental Justice Test Cases. We urge the national environmental, civil rights, human rights, faith-based and political organizations to "adopt" environmental justice test cases for targeted action by identifying a list of the twelve worst cases, the "Dirty Dozen," of private industry and government installations that have polluted African American, Native American, Latino American, Asian American and poor White American communities and their residents.

Step up Efforts to Diversify Mainstream Environmental Organizations. There must be a serious and sustained effort to redress the utter lack of diversity within the mainstream environmental movement. While a few environmental organizations took seriously the challenges put forward at the First National People of Color Environmental Leadership Summit in 1991, the overall lack of diversity at the staff, board and program levels remains staggering.

Continue to Strengthen Racial, Ethnic, Cross-Class Collaborations Among Environmental Justice Organizations. Some strides have been made by the environmental justice movement in building multi-racial, multi-ethnic coalitions and in developing strategic alliances with mainstream environmental groups, organized labor, faith-based groups and the scientific community. We encourage further efforts to build and nurture multi-racial, multi-ethnic, cross-sector working relationships.

Industry Actions

Adopt Clean Production Principles and Methods. Clean production is rooted in the Precautionary Principle and requires clean manufacturing processes that produce clean and safe products. Industry is urged to adopt toxic use reduction, waste reduction, zero waste and closed loop production systems that promote use of renewable energy, nontoxic materials, safer chemical practices and sustainable product design. Industry can begin by adopting the Louisville Charter for safe chemicals developed in 2004 by a broad set of environmental justice and health organizations and professionals.

Phase Out Persistent, Bioaccumulative or Highly Toxic Chemicals. Prioritize for elimination chemicals that are slow to degrade, accumulate in our bodies or living organisms, or are highly hazardous to humans or the environment, including those that disrupt hormones and the immune system and are particularly dangerous to children and other vulnerable populations.

Support Community and Worker Right-to-Know. An informed public, workers, and communities must have access to information about industries' use and release of toxic chemicals and industries' product chains. Disclose chemicals and materials, list quantities of chemicals produced, used, released and exported, and provide access to information.

Adopt and Uphold Legally-Binding Good Neighborhood Agreements. Uphold performance standards negotiated with fence line communities that may include community access to information, environmental and health monitoring, right to inspect the facilities, accident preparedness, pollution prevention and support of good local jobs, union jobs, local economic needs and means for dispute resolution.

Introduction

The environmental justice movement has come a long way since its humble beginning in Warren County, North Carolina, where a PCB landfill ignited protests and more than 500 arrests. Although the demonstrators were unsuccessful in stopping the PCB landfill from being sited, they put "environmental racism" on the map and launched the national environmental justice movement. The Warren County protests also led the United Church of Christ Commission for Racial Justice in 1987 to produce *Toxic Wastes and Race*, the first national study to correlate waste facility sites and demographic characteristics.[1]

The 1987 report was significant because it found race to be the most potent variable in predicting where these facilities were located—more powerful than household income, the value of homes and the estimated amount of hazardous waste generated by industry. The *Toxic Wastes and Race* study was revisited in 1994 using 1990 census data. The 1994 study found that people of color are 47 percent more likely to live near a hazardous waste facility than white Americans.[2]

About This Report

In 1987, the United Church of Christ Commission for Racial Justice released its groundbreaking study *Toxic Wastes and Race in the United States*. This year, the United Church of Christ Justice and Witness Ministries commissioned a new report as part of the twentieth anniversary of the release of the 1987 report. The 2007 *Toxic Wastes and Race at Twenty* report uses 2000 census data. The report also chronicles important environmental justice milestones since 1987 and a collection of "impact" essays from environmental justice leaders on a range of topics. This new report also examines the environmental justice implications in post-Katrina New Orleans and uses the Dickson County (Tennessee) Landfill case, the "poster child" for environmental racism, to illustrate the deadly mix of waste and race. *Toxic Wastes and Race at Twenty* is designed to facilitate renewed grassroots organizing and provide a catalyst for local, regional and national environmental justice public forums, discussion groups and policy changes in 2007 and beyond.

The Research Team was guided by the following questions: (1) What are the core or fundamental environmental justice issues surrounding waste and race? (2) What role has government played over the past two decades to address waste facility siting and related environmental disparities? (3) What progress has been made and what challenges exist? (4) What resources exist or need to be brought to bear to address the environmental justice issues? and (5) What policy and legislative changes are needed to address adverse and disproportionate impact of environmental and health threats to low-income and people of color populations and to ensure equal environmental protection for all?

It is important we make clear what this new report is and what it is not. We want to convey that this new report takes stock of what has happened (or not happened) over the past two decades, i.e., changes, milestones, accomplishments and the work that is still needed, in the EJ Movement. We also need to emphasize that the report "celebrates" the tenacity and endurance of the EJ Movement. While we emphasize that EJ is neither a Democrat nor Republican issue, we have chronicled the various government attempts by the Bush Administration to "roll-back" the hard-fought civil rights and human rights, environmental justice and health gains made over the past two decades.

Roots of Environmental Justice—The World Since 1987

A new movement has taken root in the United States, and spread around the world, that defines environment as "everything"—where we live, work, play, worship and go to school, as well as the physical and natural world. This relatively new national movement is called the environmental and economic justice movement. Two decades ago, the concept of environmental justice had not registered on the radar screens of environmental, civil rights, human rights or social justice groups. Nevertheless, one should not forget that Dr. Martin Luther King Jr. went to Memphis in 1968 on an environmental and economic justice

mission for the striking black garbage workers. The strikers were demanding equal pay and better work conditions. Of course, Dr. King was assassinated before he could complete his mission.

United Church of Christ Commission for Racial Justice briefing to release Toxic Wastes and Race report at National Press Club, Washington, DC, 1987 (United Church of Christ)

Environmental justice is defined as the "fair treatment and meaningful involvement of all people regardless of race, color, national origin or income with respect to the development, implementation and enforcement of environmental laws, regulations and policies. Fair treatment means that no group of people, including racial, ethnic or socio-economic groups, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal and commercial operations or the execution of federal, state, local and tribal programs and policies." Simply put, environmental justice demands that everyone (not just the people who can "vote with their feet" and move away from threats or individuals who can afford lawyers, experts and lobbyists to fight on their behalf) is entitled to equal protection and equal enforcement of our environmental, health, housing, land use, transportation, energy and civil rights laws and regulations.

Clearly, the world is much different since the report was first published in 1987. The UCC report propelled an entire generation of social science researchers investigating the interplay between race, class and the environment. The landmark study also spawned a series of academic books, including *Dumping in Dixie: Race, Class, and Environmental Quality* in 1990, the first to chronicle the convergence of two movements—the social justice movement and environmental movement—into the environmental justice movement. It also highlighted African Americans' environmental activism in the South, the same region that gave birth to the modern civil rights movement. What started out as local and often isolated community-based struggles against toxics and facility siting blossomed into a multi-issue, multi-ethnic and multi-regional movement.[3]

Two year later, in 1992, *Race and the Incidence of Environmental Hazards: A Time for Discourse* brought together papers from scholars, activists and policy analysts who had attended an environmental justice conference sponsored by Bunyan Bryant and Paul Mohai at the University of Michigan School of Natural Resources.[4] A half-dozen presenters from this historic gathering (later became known as the "Michigan Coalition") pressured the EPA to begin addressing environmental justice concerns voiced by low-income and people of color communities from around the country. In July 1992, after much prodding from environmental justice advocates, the U.S. Environmental Protection Agency (EPA) published

Environmental Equity: Reducing Risks for All Communities, one of the first EPA reports to acknowledge environmental disparities by race and class.[5]

Environmental justice leaders, later known as the "Michigan Coalition," gather for group photo after the University of Michigan Conference on Race and the Incidence of Environmental Hazards, 1990 (University of Michigan School of Natural Resources and Environment)

It is no accident that the Commission for Racial Justice, under the leadership of Reverend Benjamin Chavis, also was the impetus behind the First National People of Color Environmental Leadership Summit. The 1991 Summit was probably the most important single event in the movement's history. The Summit broadened the environmental justice movement beyond its early anti-toxics focus to include issues of public health, worker safety, land use, transportation, housing, resource allocation and community empowerment. The meeting also demonstrated that it is possible to build a multi-racial grassroots movement around environmental and economic justice.[6]

Held in Washington, D.C., the four-day Summit was attended by more than 650 grassroots and national leaders from around the world. Delegates came from all fifty states, Puerto Rico, Chile, Mexico and as far away as the Marshall Islands. People attended the Summit to share their action strategies, redefine the environmental movement and develop common plans for addressing environmental problems affecting people of color in the United States and around the world.

On October 27, 1991, Summit delegates adopted 17 "Principles of Environmental Justice." These principles were developed as a guide for organizing, networking and relating to government and nongovernmental organizations (NGOs). By June 1992, Spanish and Portuguese translations of the Principles were being used and circulated by NGOs and environmental justice groups at the Earth Summit in Rio de Janeiro.

A decade later, in September 2002, the UCC helped facilitate the Second People of Color Environmental Leadership Summit or EJ Summit II in Washington, D.C. The EJ Summit II was planned for 500 delegates. However, more than 1,400 individuals participated in this historic event—a clear indication that the environmental justice movement is alive and well.

People of Color Summit delegates hold rally on the steps of the U.S. Capitol building, Washington, DC, 1991 (Photo by R.D. Bullard)

Living and Dying with Pollution

In September 2005, the Associated Press released results from its analysis of an EPA research project showing African Americans are 79 percent more likely than whites to live in neighborhoods where industrial pollution is suspected of posing the greatest health danger.[7] Using EPA's own data and government scientists, the AP *More Blacks Live with Pollution*

study revealed that in 19 states, blacks were more than twice as likely as whites to live in neighborhoods where air pollution seems to pose the greatest health danger. Hispanics and Asians also are more likely to breathe dirty air in some regions of the U.S. The AP found that residents of the at-risk neighborhoods were generally poorer and less educated, and unemployment rates in those districts were nearly 20 percent higher than the national average.

The Associated Press analyzed the health risk posed by industrial air pollution using toxic chemical air releases reported by factories to calculate a health risk score for each square kilometer of the United States. The scores can be used to compare risks from long-term exposure to factory pollution from one area to another. The scores are based on the amount of toxic pollution released by each factory, the path the pollution takes as it spreads through the air, the level of danger to humans posed by each different chemical released and the number of males and females of different ages who live in the exposure paths.

Although the AP findings were important headline-grabbing news, they were not news to millions of African Americans and other people of color who have labored on the frontline for equal enforcement of the nation's environmental laws. The AP study results confirm a long string of reports that show race maps closely with the geography of pollution and unequal protection.

Historically, African American and other people of color communities have borne a disproportionate burden of pollution from incinerators, smelters, sewage treatment plants, chemical industries and even in their homes and neighborhoods.

Toxic Homes and Childhood Lead Poisoning

- Lead poisoning continues to be the number-one environmental health threat to children in the United States, especially poor children, children of color and children living in inner cities.[8]
- Black children are five times more likely than white children to have lead poisoning.[9]
- One in seven black children living in older housing has elevated blood lead levels.[10]
- About 22 percent of African American children and 13 percent of Mexican American children living in pre-1946 housing are lead poisoned, compared with 6 percent of white children living in comparable types of housing.
- Recent studies suggest that a young person's lead burden is linked to lower IQ, lower high school graduation rates and increased delinquency.[11]
- Lead poisoning causes about 2 to 3 points of IQ lost for each 10 ug/dl lead level.[12]

Toxic Neighborhoods

- The U.S. Government Accountability Office (formerly the U.S. General Accounting Office) estimates that there are between 130,000 and 450,000 brownfields (abandoned waste sites) scattered throughout the urban landscape from New York to California—most of which are located in or near low-income, working class and people of color communities.[13]
- More than 870,000 of the 1.9 million (46 percent) housing units for the poor, mostly minorities, sit within about a mile of factories that reported toxic emissions to the Environmental Protection Agency.[14]
- More than 600,000 students in Massachusetts, New York, New Jersey, Michigan and California were attending nearly 1,200 public schools, with largely African Americans and other children of color, that are located within a half mile of federal Superfund or state-identified contaminated sites.[15]
- More than 68 percent of African Americans live within 30 miles of a coal-fired power plant—the distance within which the maximum effects of the smokestack plume are expected to occur—compared with 56 percent of white Americans.[16]

Waiting for Government to Respond

Getting government to respond to environmental justice problems in communities of color has not been easy.[17] Government has been slow to ask the questions of who gets help and who does not, who can afford help and who cannot, why some contaminated communities get studied while others get left off the research agenda, why industry poisons some communities and not others, why some toxic dumps get cleaned up while others are not and why some populations are protected and others are not.

Over the past two decades, grassroots community resistance emerged in response to practices, policies and conditions that residents judged to be unjust, unfair and illegal. For many communities of color, the environmental protection apparatus was judged to be broken and in need of fixing. Similarly, federal and state environmental protection agencies were seen as managing, regulating and distributing risks—instead of protecting public health and the environment in low income and people of color communities. Environmental justice networks and grassroots community groups are making their voices heard loud and clear. Grassroots groups also are winning on the ground and in some of the courts. They are making a difference in the lives of people from West Harlem to East Los Angeles.

Working together, environmental justice leaders, activists and academicians have assisted public officials in identifying "at risk" populations, toxic "hot spots" and research gaps. They also have worked with decision makers to correct these imbalances. If this nation is to achieve environmental and economic justice, the environment in urban ghettos, barrios, reservations and rural "poverty pockets" must be given the same protection as that provided to the suburbs. All communities, black, brown, red, yellow or white, deserve to be protected from the ravages of pollution and environmental degradation. No community should become the dumping grounds for other people's toxic waste.

Endnotes

[1] Commission for Racial Justice, *Toxic Wastes and Race in the United States*. New York: United Church of Christ, 1987.
[2] Benjamin Goldman and Laura Fitton, *Toxic Wastes and Race Revisited*. Washington, DC: Center for Policy Alternatives, 1994.
[3] R.D. Bullard, *Dumping in Dixie: Race, Class and Environmental Quality. Westview Press*, 3rd ed., 2000.
[4]. Bunyan Bryant and Paul Mohai, *Race and the Incidence of Environmental Hazards: A Time for Discourse*. Boulder, CO: Westview Press, 1992.
[5] U.S. EPA, *Environmental Equity: Reducing Risks for All Communities*. Washington, DC: EPA, 1992.
[6]. See Dana Alston, "Transforming a Movement: People of Color Unite at Summit against Environmental Racism," *Sojourner* 21 (1992), pp. 30-31.
[7] David Pace, "AP: More Blacks Live with Pollution," *Associated Press*, December 14, 2005.
[8] National Institute of Environmental Health Sciences. *Environmental Diseases from A to Z*. NIH Publication No. 96-4145. http://www.nieehs.nih.gov
[9] Alliance for Healthy Homes. "Children at Risk, Disparities in Risk: Childhood Lead Poisoning." www.afhh.org/chil_ar_disparities.htm (accessed December 21, 2006). .
[10] Trust for America's Health, "Browse by Topic: Health Disparities – Lead," http://healthyamericans.org (Accessed December 15, 2006).
[11] See U.S. Centers for Disease Control and Prevention (2000). *MMWR*, 49 (RR-14): 1-13; also National Institutes of Health (NIH), National Institute of Environmental Health Sciences (NIEHS), Health Disparities Research, www.niehs.nih.gov/oc/factsheets/disparity/home.htm (accessed December 15, 2006).
[12] Peter Montague, "Pediatricians Urge a Precautionary Approach to Toxic Lead," September 29, 2005, *Rachel's Democracy and Health News*, #827 (September 2005), http://www.rachel.org/bulletin/bulletin.cfm?Issue_ID=2513.
[13] R. Twombly. "Urban Uprising." *Environmental Health Perspective* Vol. 105, (July 1997): 696-701.
[14] "Study: Public Housing Is Too Often Located Near Toxic Sites." *Dallas Morning News*, October 3, 2000. See http://www.cnn.com/2000/NATURE/10/03/toxicneighbors.ap/
[15] Child Proofing Our Communities Campaign. March 2001. *Poisoned Schools: Invisible Threats, Visible*

Actions. Falls Church, VA: Center for Health, Environment and Justice; See also http:www.childproofing.org/mapindex.html.

[16] See Clear the Air, Black Leadership Forum, Southern Organizing Committee for Economic and Social Justice and the Georgia Coalition for the Peoples Agenda. *Air of Injustice*: African Americans and Power Plant Pollution. Washington, DC: Clear the Air (October 2, 2002), http://cta.policy.net/proactive/newsroom/release.vtml?id=23901 (accessed December 15, 2006).

[17] Robert D. Bullard, *The Quest for Environmental Justice: Human Rights and the Politics of Pollution*. San Francisco: Sierra Club Books, 2005.

Chapter 1
Environmental Justice in the Twenty-First Century*

The nation's environmental laws, regulations and policies are not applied uniformly—resulting in some individuals, neighborhoods and communities being exposed to elevated health risks. In 1992, staff writers from the *National Law Journal* uncovered glaring inequities in the way the federal EPA enforces its laws. The authors write:

> There is a racial divide in the way the U.S. government cleans up toxic waste sites and punishes polluters. White communities see faster action, better results and stiffer penalties than communities where blacks, Hispanics and other minorities live. This unequal protection often occurs whether the community is wealthy or poor.[1]

These findings suggest that unequal protection is placing communities of color at special risk. The *National Law Journal* study supplements the findings of earlier studies and reinforces what many grassroots leaders have been saying all along: Not only are people of color differentially impacted by industrial pollution, they also can expect different treatment from the government. Environmental decision making operates at the juncture of science, economics, politics, special interests and ethics.

The dominant paradigm exists to manage, regulate and distribute risks.

This chapter examines how the dominant environmental protection model places communities of color at special risk. The dominant paradigm reinforces instead of challenges the stratification of people (race, ethnicity, status, power, etc.), place (central cities, suburbs, rural areas, unincorporated areas, Native American reservations, etc.) and work (i.e., office workers are afforded greater protection than farm workers). The dominant paradigm exists to manage, regulate and distribute risks. As a result, the current system has institutionalized unequal enforcement, traded human health for profit, placed the burden of proof on the "victims" and not the polluting industry, legitimated human exposure to harmful chemicals, pesticides, and hazardous substances, promoted "risky" technologies such as incinerators, exploited the vulnerability of economically and politically disenfranchised communities, subsidized ecological destruction, created an industry around risk assessment, delayed cleanup actions and failed to develop pollution prevention as the overarching and dominant strategy.[2]

Toward an Environmental Justice Framework

The question of environmental justice is not anchored in a debate about whether or not decision makers should tinker with risk management. The framework seeks to prevent environmental threats before they occur.[3] The environmental justice framework incorporates other social movements that seek to eliminate harmful practices (discrimination harms the victim) in housing, land use, industrial planning, healthcare and sanitation services. The impact of redlining, economic disinvestment, infrastructure decline, deteriorating housing, lead poisoning, industrial pollution, poverty and unemployment are not unrelated problems if one lives in an urban ghetto or barrio, rural hamlet or reservation.

The environmental justice framework attempts to uncover the underlying assumptions that may contribute to and produce unequal protection. This framework brings to the surface the ethical and political questions of "who gets what, why and how much." Some general characteristics of the framework include:

The environmental justice framework incorporates the principle of the "right" of all individuals to be protected from environmental degradation. The precedents for this framework are the Civil Rights Act of

* The principal author of this chapter is Dr. Robert D. Bullard, Ware Distinguished Professor of Sociology and Director of the Environmental Justice Resource Center at Clark Atlanta University.

1964, Fair Housing Act of 1968 and as amended in 1988, and Voting Rights Act of 1965.

The environmental justice framework adopts a public health model of prevention (elimination of the threat before harm occurs) as the preferred strategy. Impacted communities should not have to wait until causation or conclusive "proof" is established before preventive action is taken. For example, the framework offers a solution to the lead problem by shifting the primary focus from *treatment* (after children have been poisoned) to *prevention* (elimination of the threat via abating lead in houses).

The environmental justice framework rests on the Precautionary Principle for protecting workers, communities and ecosystems. The Precautionary Principle asks, "How little harm is possible" rather than "How much harm is allowable." The Precautionary Principle demands that decision makers set goals for safe environments, examine all available alternatives for achieving the goals, and places the burden of proof of safety on those who are proposing to use inherently dangerous and "risky" technologies.[4] In summary, the Precautionary Principle states (1) if you have reasonable suspicion of harm and (2) you have scientific uncertainty, then (3) you have a duty to take action to prevent harm by (4) shifting the burden of proof of safety onto those people whose activities raised the suspicion of harm in the first place, and evaluating the available alternatives to find the least harmful way, using a decision-making process that is open, informed and democratic and that includes the people who will be affected by the decision. In 2003, San Francisco became the first city in the country to adopt the Precautionary Principle.[5]

The environmental justice framework shifts the burden of proof to polluters/dischargers who do harm, discriminate or who do not give equal protection to racial and ethnic minorities and other "protected" classes. Under the current system, individuals who challenge polluters must "prove" that they have been harmed, discriminated against or disproportionately impacted. Few impacted communities have the resources to hire lawyers, expert witnesses and doctors needed to sustain such a challenge.

Under the current system, individuals who challenge polluters must "prove" that they have been harmed.

The environmental justice framework would require the parties that are applying for operating permits (landfills, incinerators, smelters, refineries, chemical plants, etc.) to "prove" that their operations are not harmful to human health, will not disproportionately impact racial and ethnic minorities and other protected groups and are nondiscriminatory.

The environmental justice framework redresses disproportionate impact through "targeted" action and resources. This strategy would target resources where environmental and health problems are greatest (as determined by some ranking scheme but not limited to risk assessment). Reliance solely on "objective" science disguises the exploitative way the polluting industries have operated in some communities and condones a passive acceptance of the status quo. Human *values* are involved in determining *which* geographic areas are worth public investments.[6]

St. James residents block a Shintech PVC plant, 1998 (Photo by EJRC)

Impetus for Paradigm Shift

The mission of the federal EPA was never designed to address environmental policies and practices that result in unfair, unjust and inequitable outcomes. EPA is a regulatory agency—not a health agency. EPA and other government officials are not likely to ask the questions that go to the heart of environmental injustice: What groups are most affected? Why are they affected? Who did it? What can be done to remedy the problem? How can communities be justly compensated and reparations paid to individuals harmed by

industry and government actions? How can the problem be prevented? Vulnerable communities, populations and individuals often fall between the regulatory cracks. They are in many ways “invisible” communities. The environmental justice movement served to make these disenfranchised communities visible and vocal.

The environmental justice movement has changed the way scientists, researchers, policymakers, educators and government officials go about their daily work. This “bottom-up” movement has redefined environment to include where people live, work, play and go to school, and it has renewed calls for aligning industrial production with the goal of maintaining the integrity of ecological life support systems. The impetus for changing the dominant environmental protection paradigm did not come from within regulatory agencies, the polluting industry, academia or the "industry" that has been built around risk management. The environmental justice movement is led by a loose alliance of grassroots and national environmental and civil rights leaders who question the foundation of the current environmental protection paradigm. They view environmental justice as a basic civil right and human right.

Despite significant improvements in environmental protection over the past several decades, millions of Americans continue to live, work, play and go to school in unsafe and unhealthy physical environments.[7] Over the past three decades, the U.S. EPA has not always recognized that many of our government and industry practices (whether intended or unintended) have adverse impacts on poor people and people of color. Discrimination is a fact of life in America. Racial discrimination is unjust, unfair and is also illegal. Nevertheless, discrimination continues to deny millions of Americans their basic civil and human rights.

The EPA is mandated to enforce the nation’s environmental laws and regulations equally across the board. It is also required to protect all Americans from health threats that may result from locally undesirable land uses or LULUs—such as landfills, incinerators, chemical plants, refineries and other polluting facilities. Equity may mean different things to different people. Equity is distilled into three broad categories: procedural, geographic and social equity.

Procedural equity refers to the "fairness" question: the extent that governing rules, regulations, evaluation criteria and enforcement are applied uniformly across the board and in a nondiscriminatory way. Unequal protection might result from nonscientific and undemocratic decisions, exclusionary practices, public hearings held in remote locations and at inconvenient times, and use of English-only material as the language to communicate and conduct hearings for non-English-speaking publics.

Geographic equity refers to location and spatial configuration of communities and their proximity to environmental hazards and noxious facilities such as landfills, incinerators, sewage treatment plants, lead smelters, and refineries. For example, unequal protection may result from land-use decisions that determine the location of residential amenities and disamenities. Unincorporated, poor and communities of color often suffer a "triple" vulnerability of noxious facility siting.

Social equity assesses the role of sociological factors (race, ethnicity, class, culture, life styles, political power, etc.) on environmental decision making. Poor people and people of color often work in the most dangerous jobs, live in the most polluted neighborhoods, and their children are exposed to all kinds of environmental toxins on the playgrounds and in their homes.

Government Response to Environmental Injustice

For decades, grassroots activists have been convinced that waiting for the government to act has endangered the health and welfare of their communities. Unlike the federal EPA, communities of color did not first discover environmental inequities in the 1990s. The federal EPA only took action on environmental justice concerns in 1990 after extensive prodding from grassroots environmental justice activists, educators and academics.[8]

People of color have known about and have been living with inequitable environmental quality for decades—most without the protection of the federal, state and local governmental agencies.[9]

Environmental justice advocates continue to challenge the current environmental protection apparatus and offer their own framework for addressing environmental racism, unequal protection, health disparities and nonsustainable development in the United States and around the world.[10]

In 1990, after receiving a letter from the “Michigan Coalition,” EPA administrator William Reilly established the Environmental Equity Work Group and set up a series of meetings on Environmental Justice with grassroots leaders. In 1991, the Agency for Toxic Substances and Disease Registry convened the National Minority Environmental Health Conference in Atlanta, Georgia. A host of research scientists presented facts and figures detailing elevated environmental health risks experienced by people of color. As it turned out, having the facts was not sufficient to get government to act—especially when the problem disproportionately affects poor people and people of color.

After mounting scientific evidence and much prodding from environmental justice advocates, the EPA created the Office of Environmental Justice in 1992, and implemented a new organizational infrastructure to integrate environmental justice into its policies, programs and activities. The agency produced its own study, *Environmental Equity: Reducing Risks for All Communities*, finally acknowledging the fact that some populations shouldered greater environmental health risks than others.[11] The report found "clear differences between racial groups in terms of disease and death rates; racial minority and low-income populations experience higher than average exposures to selected air pollutants, hazardous waste facilities, contaminated fish and agricultural pesticides in the workplace; and great opportunities exist for EPA and other government agencies to improve communication about environmental problems with members of low-income and racial minority groups."

In September 1993, EPA established the National Environmental Justice Advisory Council (NEJAC). The NEJAC represented the first time that representatives of community, academia, industry, environmental, indigenous, as well as state/local/tribal government groups, were brought together in an effort to create a dialogue that can define and "reinvent" solutions to environmental justice problems.

In response to growing public concern and mounting scientific evidence, President William Clinton on February 11, 1994 (the second day of a national Symposium on Health Research Needs to Ensure Environmental Justice) issued Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." This Order attempts to address environmental injustice within existing federal laws and regulations.

President Clinton signs Executive Order 12898, Washington, DC, 1991 (Photo by White House Press Office)

Executive Order 12898 reinforces the four-decade-old Civil Rights Act of 1964, Title VI, which prohibits discriminatory practices in programs receiving federal funds. The Order also focuses the spotlight back on the National Environmental Policy Act (NEPA), a law that set policy goals for the protection, maintenance and enhancement of the environment. NEPA's goal is to ensure for all Americans a safe, healthful, productive and aesthetically and culturally pleasing environment. NEPA requires federal agencies to prepare a detailed statement on the environmental effects of proposed federal actions that significantly affect the quality of human health.

The Executive Order called for improved methodologies for assessing and mitigating impacts, health effects from multiple and cumulative exposure, collection of data on low-income and minority populations who may be disproportionately at risk, and impacts on subsistence fishers and consumers of wild game. It also

encourages participation of the impacted populations in the various phases of assessing impacts---including scoping, data gathering, alternatives, analysis, mitigation and monitoring.

The Executive Order focused on "subsistence" hunters and fishers. Everybody does not buy fish at the supermarket. There are many people who are subsistence fishers, who fish for protein, who basically subsidize their budgets and their diets by fishing from rivers, streams and lakes that are polluted by mercury, PCBs, flame retardants and other bio-accumulative persistent toxins, byproducts of industrial production. Likewise, many people of color, such as Alaskan Natives, rely heavily on wild game to meet their nutritional needs and maintain cultural traditions. These subpopulations may be underprotected when basic assumptions are made using the dominant risk management paradigm.

It is ironic that environmental justice at the U.S. EPA was initiated under the George H. W. Bush Administration. However, environmental justice faltered and became invisible at the EPA under the George W. Bush Administration. This fact is made crystal clear by a string of government reports that give EPA failing grades and the agency's attempts to dismantle the environmental justice apparatus, including the EJ Executive Order 12898.

Toxic drums are spread across the pristine Alaskan landscape, Savoonga, Alaska, 1998 (Photo by Alaska Community Action on Toxics)

The EPA has a spotty record protecting environmental civil rights under the statutory authority of Title VI of the Civil Rights Act, which prohibits discrimination on the bases or race, color and national origin. Federal agencies and recipients of federal assistance, including state environmental permitting programs, must ensure compliance with Title VI implementing regulations, and they must ensure prompt and fair resolution of discrimination complaints. In 1998, the EPA's Office of Civil Rights (OCR) issued its *Interim Guidance for Investigating Title VI Civil Rights Complaints*, which provided a framework for processing environmental discrimination complaints.

In August 2000, 125 community groups, environmental justice organizations, coalitions, networks, individuals and an Indian nation, in commenting on a revision to the guidance, provided testament of how their administrative complaints had languished for years.[12] By 2001, more than 100 complaints had been filed, yet few had been resolved, often without adequate investigation, such as the *Select Steel* case in Michigan. Furthermore, no rulings were in favor of the complainant, in what amounts to a "conscious policy of non-enforcement."[13] Although the EPA issued its final guidance in March 2006, it has yet to develop legally binding standards for what constitutes an adverse disparate impact and continues to abrogate its enforcement responsibility to oversee discriminatory practices of state environmental agencies in a credible manner.

In January and February 2003, the U.S. Commission on Civil Rights (USCCR) held hearings on environmental justice. Experts presented evidence of environmental inequities in communities of color, including disproportionate incidences of environmentally related disease, lead paint in homes, hazardous waste sites, toxic playgrounds and schools located near Superfund sites and facilities that release toxic chemicals. In its 2003 report, *Not in My Backyard: Executive Order and Title VI as Tools for Achieving Environmental Justice*, the USCCR concluded that "Minority and low-income communities are most often exposed to multiple pollutants and from multiple sources. . . . There is no presumption of adverse health risk from multiple exposures, and no policy on cumulative risk assessment that considers the roles of social, economic and behavioral factors when assessing risk."[14] The report was distributed to members of Congress and President Bush.

A March 2004 Office of Inspector General (OIG) report, *EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice*, summed up the treatment of environmental justice under the Bush administration. After a decade, EPA "has not developed a clear vision or a comprehensive strategic plan, and has not established values, goals, expectations and performance measurements" for integrating environmental justice into its day-to-day operations.[15]

A July 2005 U.S. Government Accountability Office report, *Environmental Justice: EPA Should Devote More Attention to Environmental Justice When Developing Clean Air Rules*, also criticized EPA for its handling of environmental justice issues when drafting clean air rules.[16] In July 2005, the EPA was met with a firestorm of public resistance when it proposed dropping race from its draft Environmental Justice Strategic Plan as a factor in identifying and prioritizing populations that may be disadvantaged by the agency's policies.[17]

On September 18, 2006, the EPA's Office of Inspector General (IG) issued another study, *EPA Needs to Conduct Environmental Reviews of Its Program, Policies and Activities*, chastising the agency for falling down on the job when it comes to implementing environmental justice.[18] The IG study may be new but its findings are not. The IG recommended and EPA accepted the following recommendations:

- *Require the Agency's program and regional offices to identify which programs, policies and activities need environmental justice reviews and require these offices to establish a plan to complete the necessary reviews.*

- *Ensure that environmental justice reviews determine whether the programs, policies and activities may have a disproportionately high and adverse health or environmental impact on minority and low-income populations.*

- *Require each program and regional office to develop, with the assistance of the Office of Environmental Justice, specific environmental justice review guidance, which includes protocols, a framework or directions for conducting environmental justice reviews.*

- *Designate a responsible office to (a) compile the results of environmental justice reviews, and (b) recommend appropriate actions to review findings and make recommendations to the decision-making office's senior leadership.*[19]

In recent years, the EPA has been hostile to environmental justice and environmental justice principles, Environmental justice advocates have always defended the rights of vulnerable populations, especially the rights of children. In late 2004, the EPA announced the launching of a study intended to learn more about how young children come into contact with household pesticides and other chemicals in their homes. According to the EPA's press release,[20] the study, called the Children's Environmental Exposure Research Study (CHEERS), would have involved following 60 children, ages 0 to 3 years, for two years. Funding for the project ($2.1 million) was provided by the American Chemistry Council, which represents 135 companies including pesticide manufacturers.[21]

Many environmental justice and children health groups grew concerned as details of the study were released. The researchers were planning to use six Duval county health department clinics and three local hospitals as the sites of participant recruitment. According to the study, the six health clinics "primarily serve individuals with lower incomes" and the three hospitals report 51% of all births were to non-white mothers, with 62% of all mothers having only received an elementary or secondary education.[22]

On April 8, 2005, under pressure from Sen. Barbara Boxer, D-California, and Sen. Bill Nelson, D-Florida, EPA's Acting Administrator Stephen L. Johnson cancelled the Children's Health Environmental Exposure Research Study.[23] The democratic senators said they would block Senate confirmation of the agency's new head if the pesticide study was not cancelled. In June 2006, EPA announced major changes to the Environmental Justice Strategic Plan. This proposal outraged EJ leaders from coast to coast. The EPA's 2006 Draft Environmental Justice Strategic Plan was described as a "giant step backward."[24] The changes

would clearly allow EPA to shirk its responsibility for addressing environmental justice problems in minority populations and low-income populations and divert resources away from implementing Executive Order 12898—actions that run counter to more than a decade of policy decisions and recent environmental justice legislation from the U.S. Congress.[25]

In the Fall 2005, EPA announced plans to change the Toxic Release Inventory (TRI) program. According to many environmental advocates, the new program would severely weaken the program, deny the public information and set back EPA efforts to confront the most serious public issues related to toxic chemicals.[26] In July 2006, EPA's Science Advisory Board Committee opposed these changes in a harsh letter to EPA administrator Stephen L. Johnson. In December 2006, the EPA announced final rules that undermine this critical program by eliminating detailed reports from more than 5,000 facilities that release up to 2,000 pounds of chemicals every year; and eliminating detailed reports from nearly 2,000 facilities that manage up to 500 pounds of chemicals known to pose some of the worst threats to human health, including lead and mercury. Some of the extraneous changes include a reporting requirement of every two years (instead of the more adequate yearly reporting currently in place), raising the threshold amount required to report toxic releases, the elimination of the requirement that forced industry to report more detailed reports and the weakening of other important programs at EPA because of the lack of relevant information previously generated with TRI data.[27] Since 1987, EPA has collected and stored TRI information in a central database that is accessible on the Internet. It has been used by thousands of neighbors, journalists and local officials to evaluate the environmental performance of nearby facilities. The program is widely credited with reducing releases of program chemicals by 65 percent.

Although EPA's library services remain high, EPA's libraries have been receiving less funding every year for the past four or five years.[28] In President Bush's proposed 2006 budget, the U.S. Environmental Protection Agency was slated to shut down its network of libraries that serve its own scientists as well as the public.[29] In addition to the libraries, the agency will shut down its electronic catalog which tracks tens of thousands of unique documents and research studies that are available nowhere else.

Under President Bush's plan, $2 million of a total agency library budget of $2.5 million will be lost, including the entire $500,000 budget for the EPA Headquarters library and its electronic catalog that makes it possible to search for documents through the entire EPA library network. Established in 1971, the EPA's library program offers a wide range of information on environmental protection and management, basic sciences such as biology and chemistry, applied sciences such as engineering and toxicology, and topics featured in legislative mandates, such as hazardous waste, drinking water, pollution prevention and toxic substances. The EPA operates a network of 28 libraries from its Washington, D.C., headquarters and 10 regional offices nationwide.

The size of the cuts will force the Headquarters library and most of the regional libraries to shut their doors and cease operations. Each year, the EPA libraries handle more than 134,000 research requests from its own scientific and enforcement staff, house and catalog an estimated 50,000 "unique" documents that are available nowhere else, operate public reading rooms and provide the public with access to EPA databases.

In the fall of 2006, EPA continued to dismantle long-standing environmental justice initiatives around the country. The EPA's Northwest regional office announced the elimination of the local environmental justice office. The proposal calls for the reassigning of members of its environmental-justice program to new divisions and eliminating its director's position, according to government officials.[30] According to EPA officials the changes are part of ongoing staff cuts and reorganization at the agency, but they will not diminish the importance of environmental justice or civil rights issues.[31]

As in previous budgets, the Bush Administration FY08 budget recommends a 28.4 percent cut to the budget of EPA's Office of Environmental Justice (recommending $4.58 million which is down from $6.34 million enacted in the FY 06 budget and FY07 continuing resolution).[32] The EPA has indicated the cuts will result in fewer grants for communities. The agency has not done an analysis of the impact this funding shortfall will have on environmental justice communities.

Conclusion

Clearly, the environmental justice movement over the last two decades has made a difference in the lives of people and communities that are overburdened with environmental pollution. This progress did not come easy. Nor has it been easy fending off attacks and proposals that would dismantle or weaken the hard fought gains made by individuals and groups that put their lives on the frontline.

Although environmental justice has now become a household word, the nation is still a long way from achieving it for all communities. Polluting industries still follow the path of least resistance—whether at home or abroad. For many industries, it is a "race to the bottom," where land, labor and lives are cheap. It's about profits and the "bottom line." Environmental "sacrifice zones" are seen as the price of doing business. Environmental justice activists and grassroots community leaders have served notice to polluting industries and government alike that their health and safety are not for sale at any price. These "frontline warriors" have drawn a line in the dirt and have vowed to protect their homes, playgrounds, neighborhoods and communities against toxic assaults. They refuse to accept their communities becoming environmental "sacrifice zones."

They are demanding that U.S. EPA end its attempts to roll back environmental justice and take aggressive steps to implement the EJ Executive Order 12898, provide targeted enforcement where the needs are the greatest and where unequal protection place low-income and people of color populations at special risk. They are also demanding ecologically sustainable and economically just redevelopment with clean production technologies and living wages for local residents as essential ingredients to protection of environmental civil rights and basic human rights.

Endnotes

[1] Marianne Lavelle and Marcia Coyle, "Unequal Protection," *National Law Journal*, September 21, 1992, pp. S1-S2.
[2.] Ibid.
[3] Robert D. Bullard, "Race and Environmental Justice in the United States," *Yale Journal of International Law* 18 (Winter 1993): 319-335; Robert D. Bullard, "The Threat of Environmental Racism." *Natural Resources & Environment* 7 (Winter 1993): 23-26, 55-56.
[4] Carolyn Raffensperger and Joel Tickner, *Protecting Public Health and the Environment: Implementing the Precautionary Principle*. Washington, DC: Island Press, 1999.
[5] Ruth Rosen, "Better Safe Than Sorry: SF Precautionary Principle Ordinance," *San Francisco Chronicle*, June 19, 2003.
[6] Robert D. Bullard, "Unequal Environmental Protection: Incorporating Environmental Justice in Decision Making," Pp. 237-266 in Adam M. Finkel and Dominic Golding, eds., *Worst Things First? The Debate over Risk-Based National Environmental Priorities*. Washington, DC: Resources for the Future, 1994.
[7] Paul Mohai and Bunyan Bryant, "Race, Poverty, and the Environment," *EPA Journal* 18 (March/April 1992): 1-8; R.D. Bullard, "In Our Backyards," *EPA Journal* 18 (March/April 1993): 11-12; D.R. Wernette and L.A. Nieves, "Breathing Polluted Air," *EPA Journal* 18 (March/April 1992): 16-17; Patrick C. West, "Health Concerns for Fish-Eating Tribes*?" EPA Journal* 18 (March/April 1992): 15-16.
[8] William K. Reilly, "Environmental Equity: EPA's Position," *EPA Journal* 18 (March/April 1992): 18-19.
[9] See R.D. Bullard and B.H. Wright, "The Politics of Pollution: Implications for the Black Community," *Phylon* 47 (March 1986): 71-78.
[10] Julian Agyeman, Robert. D. Bullard, and Bob Evans, *Just Sustainabilities: Development in an Unequal World*. MIT Press, 2003.
[11] United States Environmental Protection Agency. Release of Environmental Equity Report. Press Release. 1992, http://www.epa.gov/history/topics/justice/01.htm. (accessed 1/16/2007).
[12] Center on Race, Poverty & the Environment et al. "Comments on *Draft Revised Guidance for Investigating Title VI Administrative Complaints Challenging Permits and Draft Title IV Guidance for EPA Assistance Recipients Administering Environmental Permitting Programs,"* San Francisco, CA. Aug. 26, 2000.

[13] Margaret Kriz, "EPA Stuck with Backlog of Environmental Justice Decisions," *National Journal* July 30, 2001 http://www.govexec.com/daily/fed/0701/073001nj2.htm (accessed 8/1/2001); John Callewaert. "The Importance of Local History for Understanding and Addressing Environmental Injustice, *Local Environment* 7 no. 3 (2002), p. 257-267; Hurwitz and E. Quita Sullivan. "Using Civil Rights Laws to Challenge Environmental Racism: From Bean to Guardians to Chester to Sandoval," *Journal of Law in Society* 2 (Winter 2001), 5-70.
[14.] U.S. Commission on Civil Rights, *Not in My Backyard: Executive Order 12898 and Title VI as Tools for Achieving Environmental Justice*. Washington, DC: U.S. Commission on Civil Rights, 2003, p. 27.
[15] Office of the Inspector General. EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice. Washington, DC: US Environmental Protection Agency. Report No. 2004-P-00007, 2004, p. i.
[16] United States Government Accountability Office. Environmental Justice: EPA Should Devote More Attention to Environmental Justice When Developing Clean Air Rules. Washington, DC: US Environmental Protection Agency, 2005, pp. 3-6.
[17] M. Raju. EPA's Draft Equity Plan Drops Race as a Factor in Decision. Inside EPA, July 1, 2005, http://www.precaution.org/lib/06/prn_epa_drops_race_from_ej_guide.050701.htm (accessed 1/16/2007).
[18] Office of the Inspector General. Evaluation Report: EPA Needs to Conduct Environmental Justice Reviews of Its Programs, Policies, and Activities. Washington, DC: US Environmental Protection Agency. Report No. 2006-P-00034, 2006, p. 7.
[19] Ibid.
[20] US EPA Research & Development. News Release: EPA Conducts Study on Young Children's Exposures to Household Chemicals in Duval County, Florida. September 22, 2004, http://www.fluoridealert.org/pesticides/cheers/cheers.epa.news.sept.22.04.htm (accessed on February 3, 2006).
[21] Juliet Eilperin, "Chemical Industry Funds Aid EPA Study: Effect of Substances on Children Probed." *Washington Post* (October 26, 2004), p. A23.
[22] John Heilprin, "EPA Cancels Controversial Pesticide Study: EPA Cancels Study That Would Have Paid Families While Studying Children Exposed to Pesticides." *The Associated Press.* April 8, 2005, http://www.sfgate.com/cgi-bin/article.cgi?file=/news/archive/2005/04/08/national/w140609D36.DTL (accessed on February 3, 2006).
[23] Ibid.
[24] Robert D. Bullard. EPA's Draft Environmental Justice Strategic Plan -- A "Giant Step Backward." (7/15/2006). *Environmental Justice Resource Center*, **http://www.ejrc.cau.edu/BullardDraftEJStrat.html** (accessed December 27, 2006).
[25] Letter to Mr. Barry E. Hill, Director, Office of Environmental Justice, U.S. Environmental Protection Agency. RE: COMMENTS ON EPA ENVIRONMENTAL JUSTICE DRAFT FRAMEWORK/OUTLINE. July 15, 2005, http://www.ejrc.cau.edu/Comments_on_EPA_Draft.pdf (accessed December 27, 2006).
[26] OMB Watch. Changing the "Right to Know" to the Right to Guess: EPA's Plans to Modify Toxics Release Inventory Reporting. (No Date), http://www.ombwatch.org/tricenter/TRIpress.html. (accessed December 27, 2006).
[27] Ibid.
[28] EPA Library Network Workgroup, "EPA Library Network: Challenges for FY 2007 and Beyond," November 22, 2005, http://www.peer.org/docs/epa/06_9_2_library_network.pdf (accessed on February 1, 2007).
[29] Public Employees for Environmental Responsibility (PEER), "EPA Enforcement Threatened by Library Closures," PEER Press Release, August 28, 2006, http://www.peer.org/news/print_detail.php?row_id=735 (Accessed on February 1, 2007).
[30] Lisa Stiffler, "EPA Budget Reduction Could Expose More Minorities, Poor to Pollution." *The Seattle Post-Intelligencer*. October 16, 2006.
[31] James Hagengruber, "EPA Cutbacks Greeted with Criticism: Groups Say Office of Civil Rights and Environmental Justice Gutted." October 31, 2006, http://www.spokesmanreview.com/ldaho/story.asp?ID=157291&mail=yes (accessed 12/20/2006)
[32] "EPA FY08 Budget Expected To Exacerbate Steep Cuts To Core Programs," *Inside EPA*, February 1, 2007.

Chapter 2
Environmental Justice Timeline—Milestones 1987-2007*

Introduction

It has now been two decades since *Toxic Wastes and Race* was published in 1987. Over the past twenty years, environmental justice and environmental racism have become household words. Out of the small and seemingly isolated environmental struggles emerged a potent grassroots community-driven movement. Many of the on-the-ground environmental struggles in the 1980s, 1990s and through the early years of the new millennium have seen the quest for environmental and economic justice become a unifying theme across race, class, gender, age and geographic lines.

After two decades of intense study, targeted research, public hearings, grassroots organizing, networking and movement building, environmental justice struggles have taken center stage. Yet, all communities are still *not* created equal. Some neighborhoods, communities and regions are sill the dumping grounds for all kinds of toxins. Low-income and people of color populations are still left behind before and after natural and man-made disasters strike—as graphically demonstrated on August 29, 2005 when Hurricane Katrina made landfall and the levee breach flooded New Orleans, creating the "worst environmental disaster" in U.S. history.

People of color who have been fighting for decades know that the lethargic government response to environmental emergencies in their communities is no exception, but the general rule. They have come to understand that waiting for the government to respond can be hazardous to their health and the health of their communities. Many EJ groups are not waiting, but are mobilizing to force government to do the right thing—and do it in a timely manner.

While communities all across the nation celebrate the twentieth anniversary of *Toxic Wastes and Race*, they know all too well that there is still much work to be done before we achieve the goal of environmental justice for all. Much progress has been made in mainstreaming environmental protection as a civil rights and social justice issue. The key is getting government to enforce the laws and regulations equally across the board—without regard to race, color or national origin.

A dozen environmental justice networks exist today that were not around in 1987. The last decade has seen some positive change in the way groups relate to each other. We now see an increasing number of community based groups, environmental justice networks, environmental and conservation groups, legal groups, faith-based groups, labor, academic institutions and youth organizations teaming up on environmental and health issues that differentially impact poor people and people of color. Environmental racism and environmental justice panels have become "hot" topics at national conferences and forums sponsored by law schools, bar associations, public health groups, scientific societies, professional meetings and university lecture series.

In just a short time, environmental justice advocates have had a profound impact on public policy, industry practices, national conferences, private foundation funding, research and curriculum development. Environmental justice courses and curricula can be found at nearly every university in the country. Groups have been successful in blocking numerous permits for new polluting facilities and forced government and private industry buyout and relocation of several communities impacted by Superfund sites and industrial pollution.

---

* The principal author of this chapter is Dr. Robert D. Bullard, Ware Distinguished Professor of Sociology and Director of the Environmental Justice Resource Center at Clark Atlanta University.

Environmental justice has trickled up to the federal government and the White House with the signing of Executive Order 12989 in 1994. Activists and academicians were key actors who convinced the U.S. Environmental Protection Agency (under the first Bush Administration) to create an Office on Environmental Equity. Many of the policies, programs and initiatives that were begun under the first Bush administration were continued and expanded under the Clinton Administration. However, environmental justice stalled and was met with intense resistance inside the EPA beginning in 2000 and continues to the present day with proposed budget and program cuts.

About the Timeline-Milestones

The entries in this timeline-milestones report were derived from a national call to grassroots groups, community-based organizations, networks, academic centers, legal clinics, practitioners, analysts, foundations, labor, faith-based groups, government officials and others who have been involved in the environmental justice movement. The response was tremendous. No doubt some events and activities may have been inadvertently left out. The timeline is a work in progress and will be updated throughout 2007. If there are items you feel should be included, please send them to the Environmental Justice Resource Center, ejrc@cau.edu, and they will be incorporated in an updated version to be posted along with the *Toxic Wastes and Race at Twenty* report on the UCC Web site at http://www.ucc.org/justice/environment.htm**.**

ENVIRONMENTAL JUSTICE TIMELINE—MILESTONES

YEAR

1987

United Church of Christ Commission for Racial Justice issues the famous Toxic Wastes and Race in the United States report, the first national study to correlate waste facility siting and race.

Texas Southern University sociologist Robert D. Bullard publishes Invisible Houston: The Black Experience in Boom and Bust (Texas A&M University Press, 1987) that chronicles the social, economic, political, educational, land use and environmental quality of Black Houston neighborhoods as the “dumping grounds.”

1988

Revielletown buyout and relocation by Georgia Pacific (now Georgia Gulf).

Britain's Black Environment Network was formed **(**http://www.ben-network.org.uk/**).**

The Alston/Bannerman Fellowship Program was begun in 1988 to advance progressive social change by helping to sustain longtime activists of color. The program honors those who have devoted their lives to helping their communities organize for racial, social, economic and environmental justice. The program provides resources for organizers to take time out for reflection and renewal. Fellows receive a $25,000 award to take sabbaticals of three months or more. Since 1988, there have been 181 Fellows. They've worked on a broad range of issues from environmental justice to fair wages, from immigrant rights to native sovereignty, from political empowerment to economic revitalization. They are from 32 states, the District of Columbia, Puerto Rico and Guam.

Latino grassroots group Mothers of East L.A. defeats the construction of a huge toxic waste incinerator in their community.

In Dilkon, Arizona, a small group of Navajo community activists spearhead a successful effort to block siting of a $40 million toxic waste incinerator.

The Great Louisiana Toxics March led by the Gulf Coast Tenants and communities in "Cancer Alley" (corridor between Baton Rouge and New Orleans). The march brought public attention to their toxic living conditions in Louisiana's "Cancer Alley" – the 85-mile stretch from Baton Rouge to New Orleans.

1989

Morrisonville, Louisiana, relocation (Dow Chemical Company buyout).

Paul Mohai and Bunyan Bryant are appointed Faculty Investigators of the University of Michigan's 1990 Detroit Area Study (DAS) and begin the first comprehensive examination of environmental inequality in the Detroit metropolitan area.

In 1989, Indigenous communities, organizations, traditional societies and tribal nations begin meeting together on environmental and natural resource extraction issues. This leads to national meetings in 1990 on the Dine' (Navajo) territory and in 1991, near the sacred Bear Butte in South Dakota. The 1989 meeting ultimately led to the formation of the Indigenous Environmental Network in 1990.

Presidential Commission on the Outdoors held a conference focusing on *People of Color and the Environment.* The conference, organized by the Conservation Leadership Project, was held in Seattle, Washington, in August

1990

Under the leadership of Bunyan Bryant and Paul Mohai, the Michigan Conference on *Race and the Incidence of Environmental Hazards w*as convened at the University of Michigan's School of Natural Resources and Environment in January 1990, bringing together academics and activists to discuss the evidence and policy solutions bearing on disproportionate environmental burdens. The "Michigan Coalition" (an ad hoc group formed during the conference) wrote letters and met with William Reilly (EPA) and Michael Deland (CEQ) in September 1990.

The Bush EPA administrator William Reilly established the Environmental Equity Work Group.

Robert D. Bullard publishes Dumping-Dixie: Race, Class, and Environmental Quality, the first textbook on environmental justice.

The Southwest Network for Environmental and Economic Justice (SNEEJ) was established.

The *Proceedings of the Michigan Conference on Race and the Incidence of Environmental Hazards* are published in September 1990 and delivered to the U.S. Environmental Protection Agency (EPA).

First of four meetings on Environmental Justice was held between environmental justice leaders, also known as the "Michigan Coalition," and EPA Administrator William Reilly.

In January 1990, nine activists of color wrote a letter to the "Group of 10" national environmental organizations calling on them to dialogue with activists of color on the environmental crisis impacting communities of color and to hire people of color on their staffs and boards of directors.

In early April 1990, the Southwest Organizing Project (SWOP) convened over 80 representatives from 32 organizations working on environmental and economic justice issues in the southwest. From these efforts, the Indigenous Environmental Network (IEN) was established as a

grassroots-led Indigenous voice in regional, national and international forums on environmental and economic justice issues.

A second letter was sent to the Big 10, this time signed by 103 activists of color representing grassroots, labor, youth, church, civil rights, and social justice advocates and coalitions in the Southwest. The letter challenged and reinforced the first letter challenging mainstream environmentalists on issues of environmental racism and lack of accountability toward Third World Communities in the Southwest.

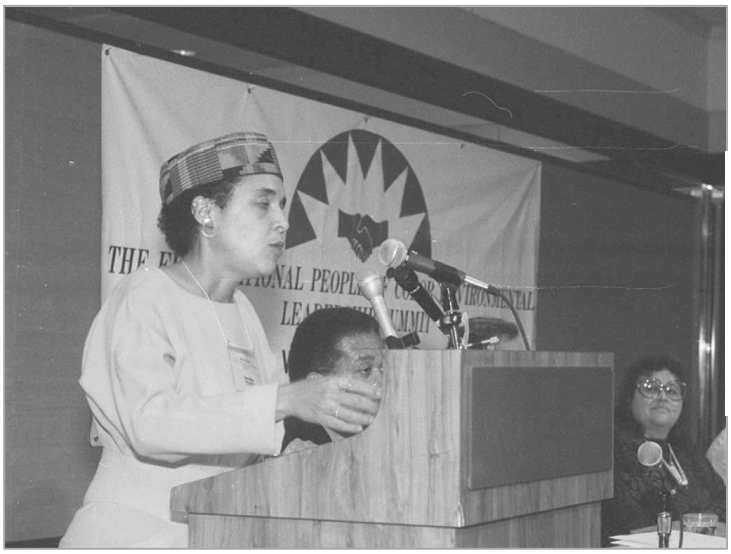
Paul Mohai publishes "Black Environmentalism" in the journal *Social Science Quarterly*, the first national-level study to dispel the myth that African Americans are less concerned about the environment than white Americans.

1991

December 30, *El Pueblo para el Aire y Agua Limpio v. County of Kings*, judge rules that permit process for toxic waste incinerator was flawed because failure to translate documents into Spanish meant affected public was not "meaningfully involved" in the environmental review, in a case brought by Center on Race, Poverty & the Environment.

The Agency for Toxic Substances and Disease Registry convenes the National *Minority Environmental Health Conference* in Atlanta, Georgia.

In October, The First National People of Color Environmental Leadership Summit was held in Washington, D.C., attracting more than 1,000 participants. The Seventeen Principles of Environmental Justice were developed at the four-day event.



Dana Alston makes a moving speech at the First National People of Color Environmental Leadership Summit, Washington, DC, 1991 (Photo by Commission for Racial Justice)

United Nations Commission on Human Rights Working Group on Indigenous Populations, 1991-2002.

The Environmental Protection Agency (EPA) Accountability Campaign was initiated by SNEEJ, their grassroots members, and joined by other Networks and their grassroots affiliates to ensure equitable treatment of communities of color by the EPA.

The Southern Organizing Committee for Economic and Social Justice held its 1992 post-summit.

"Dumping in Dixie" receives National Wildlife Federation Conservation Achievement Award for Science.

1992

First edition of the *People of Color Environmental Groups Directory* published by the Charles Stewart Mott Foundation.

The "Environmental Justice Act of 1992" was introduced into Congress by Congressman John Lewis (D-GA) and Senator Albert Gore (D-TN).

First Title VI administrative complaint filed with U.S. EPA by St Francis Prayer Center in Flint, Michigan, against Genessee Power. This complaint was lost by EPA and not found, and accepted for investigation, until 1994 (it is still under review).

The Deep South Center for Environmental Justice was founded at Xavier University of Louisiana (later moved to Dillard University in September 2005) in New Orleans, Louisiana.

Bunyan Bryant and Paul Mohai publish the book Race and the Incidence of Environmental Hazards: A Time for Discourse (Westview Press, 1992), containing the papers presented at the 1990 Michigan Conference and the first systematic review of the empirical evidence pertaining to racial disparities in the distribution of environmental hazards.

Governmental Accountability Campaign persuades the U.S. EPA and the Agency for Toxics Substances and Disease Registry (ATSDR) to clean up waste sites and support sustainable economic development efforts, enforce laws and regulation in communities.

Environmental justice delegation participates in the United Nations Conference on Environment & Development (UNCED) or Earth Summit, Rio de Janeiro, Brazil.

National Law journal publishes a special issue on *Unequal Environmental Protection* that chronicles the double standards and differential treatment of people of color and whites.

In 1992, after mounting scientific evidence and much prodding from environmental justice advocates, the EPA produced its own study, Environmental Equity: Reducing Risks for All Communities**,** finally acknowledging the fact that some populations shoulder greater environmental health risks than others. This was one of the first comprehensive government reports to examine environmental justice.

The Environmental Justice and Labor Conference, follow-up to the First National People of Color Environmental Leadership Summit and spearheaded by SOC, was held at Xavier University in New Orleans with more than 2,000 in attendance.

The EPA, ATSDR and NIEHS jointly sponsor the "Equity in Environmental Health: Research Issues and Needs" Workshop in Research Triangle Park, NC; papers from the workshop were later published in a 1993 special issue of *Toxicology and Industrial Health* journal.

The *EPA Journal* devotes its entire Volume 18, No. 1 (March/April) issue to environmental justice.

WE ACT, with the assistance of NRDC and the law firm of Paul, Weiss, Rifkind, Wharton & Garrison, sued the City of New York for operating the North River plant as a public nuisance to the people of the West Harlem Community. WE ACT settled its lawsuit with the City of New York and was awarded a $1 million dollar settlement, and the City of New York agreed to set aside $55 million in capital funds to repair the air pollution and engineering design problems at the North River Waste Water Treatment facility.

Two environmental justice leaders, Rev. Benjamin Chavis and Robert D. Bullard, were appointed to the Clinton-Gore Presidential Transition Team in the Natural Resources Cluster.

Deeohn Ferris coordinates national campaign for drafting of the "Environmental Justice Position Paper" for submission to the Clinton-Gore Transition Team.

Rigoberta Menchú Tum wins the Nobel Peace Prize. Rigoberta Menchú is a (Quiche) Mayan Indian from Guatemala who fought for indigenous and women's rights, ethno-cultural reconciliation as well as land reform in her country.

EPA publishes *Tribes at Risk: The Wisconsin Comparative Risk Project*, which documents that the Ojibwe and other Native nations in northern Wisconsin suffer a disproportionate environmental risk of illness and other health problems from eating fish, deer and other wildlife contaminated with industrial pollutants like airborne polychlorinated biphenyls (PCBs), mercury and other toxins deposited on land and water.

The World Uranium Hearing is convened in Salzburg, Austria. At this historic gathering indigenous people from all continents gave testimony about the daily deadly impact of uranium mining, atomic weapons testing and radioactive waste storage. The proceedings are published as *Poison Fire, Sacred Earth*.

1993

The Environmental Justice Act was redrafted and reintroduced in 1993 by Congressman Lewis (D-GA) and Senator Max Baucus (D-MT).

SOC worked with Communities at Risk and coordinated participation of Region IV Task Force Members to a Superfund Reauthorization Roundtable.

EPA established the 25-member National Environmental Justice Advisory Council (NEJAC).

Local community leaders and their allies defeated the Formosa Plastics Plant from locating in Wallace, Louisiana.

The first two EPA Title VI (Civil Rights Act) administrative complaints were filed against the MS Dept of Environmental Quality and LA Department of Environmental Quality. Other network members follow and file administrative Title VI complaints against state agencies and the EPA.

The *Second Race and the Incidence of Environmental Hazards Conference* held at the School of Natural Resources, University of Michigan.

Asian Pacific Environmental Network (APEN) forms in 1993 to inject an Asian Pacific Islander perspective into the environmental justice movement and to build an environmental justice framework and principles into work in API communities.

West Harlem Environmental Action (WEACT) leads fight over the North River Sewage Treatment Plant drawing in activists across 12 northeastern states. This initial gathering catalyzes the formation of a multi-state regional network: the Northeast Environmental Justice Network (NEJN).

The Farmworker Network for Economic and Environmental Justice (FNEEJ) was formed to support the struggle of more than 50,000 workers in nine independent farmworker organizations.

First wave of Title VI administrative complaints filed with EPA, by Tulane Environmental Law Clinic and Sierra Club Legal Defense Fund in New Orleans, on behalf of groups in Louisiana and Mississippi. More than 100 such complaints have since been filed.

Ken Sexton and Yolanda Banks Anderson serve as guest editors of *Toxicology and Industrial Health* Special issue on "Equity in Environmental Health: Research Issues and Needs," volume 9, number 5 (September/October).

The "Toxic Racism" documentary produced for WGBH Boston aired on PBS.

Predominantly Latino residents of Kettleman City, California, succeed in preventing siting of a toxic waste facility in their community.

Environmental justice courses approved at the University of Michigan School of Natural Resources and Environment—setting the stage for the schools' Environmental Justice Program (http://www.snre.umich.edu/degree_programs_environmental_justice.php)—the nation's first and only academic program to offer bachelors, masters and doctoral degrees in environmental justice.

1994

The Environmental Justice Resource Center at Clark Atlanta University was formed in Atlanta, Georgia.

The Environmental Justice Resource Center publishes 2nd edition of the *People of Color Environmental Groups Directory* that lists more than 600 groups in the U.S., Puerto Rico, Canada and Mexico.

The Environmental Law and Justice Center was formed at Texas Southern University Thurgood Marshall School of Law in Houston, Texas.

The Washington Office on Environmental Justice (WOEJ) opens in Washington, D.C.

Environmental justice delegates participate in the International Conference on Population & Development, Cairo, Egypt. Environmental justice leaders meet with Dr. Kenneth Olden, director of the National Institute for Environmental Health Sciences (NIEHS), to begin dialogue.

In February, the National Institute of Environmental Health Sciences, along with six other federal agencies, hold the "Symposium on Health and Health Research Needs to Ensure Environmental Justice," Washington, D.C.

On February 11, 1994, environmental justice reached the White House when President William J. Clinton signed Executive Order 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations. The Order mandated federal agencies to incorporate environmental justice into all their work and programs.

EPA's Interagency Working Group on Environmental Justice established.

Center for Policy Alternatives issues *Toxic Waste Revisited*. The updated report strengthens the association between race and siting of waste facilities.

Women of Color Environmental Justice Conference held at the University of Michigan in March.

University of Massachusetts issues study, funded by Waste Management Inc. challenging siting demographics. This study triggers the first wave of attacks on environmental justice.

The Title IV lawsuit *Labor/Community Strategy Center, Bus Riders Union, et al. v. Los Angeles County Metropolitan Transportation Authority* was filed. The lawsuit charged that the MTA operated separate and unequal bus and rail systems that discriminated against the poor minority bus riders of Los Angeles.

Los Angeles Bus Riders Union wins major victory worth billions against the MTA, 1996 (Labor/Community Strategy Center)

The Playas de Tijuana community after a great deal of organizing was able to defeat the Waste Management Incinerator, with help from the organization *El Pueblo y Agua Limpia* from Kettleman City, California, Environmental Health Coalition and SNEEJ.

The Mole Lake Sokaogon Chippewa became the first Wisconsin tribe granted independent authority under the federal Clean Water Act by the U.S. Environmental Protection Agency (EPA) to regulate water quality on their reservation. Tribal regulatory authority would affect all upstream industrial and municipal facilities, including Exxon's proposed Crandon mine. The state of Wisconsin immediately files suit against the EPA in federal court, demanding that the federal government reverse its decision to let Indian tribes establish their own water quality standards. www.wrpc.net.

1995

In January, the First Interagency Public Hearing on Environmental Justice Executive Order 12898 was held at Clark Atlanta University in Atlanta, Georgia.

The Environmental Justice Resource Center holds the Environmental Justice and Transportation: Building Model Partnerships at Clark Atlanta University, Atlanta, Georgia.

Dine' CARE was the first native community group to get the Department of Interior (BIA) to produce an Environmental Impact Statement (EIS) and a 10-year Forest Management Plan (FMP) for a federally recognized tribe (Navajo Nation). Before this, EIS were produced by Peabody Coal Company and other corporations rubberstamping EIS on Indian lands.

Environmental justice delegates participate in the 4th World Conference on Women, Beijing, China.

Laotian Organizing Project started as APEN's first organizing project in Richmond, CA, to organize the Laotian refugee community as a new voice in the EJ movement. LOP also forms Asian Youth Advocates (AYA) as a youth leadership development and organizing arm for high-school aged Laotian young women. AYA's formation marks APEN's push to include a gender, race and class framework into the EJ movement while committing to the development of a generation of new leaders.

The Environmental Justice Fund was founded by six networks to promote the creation of alternative funding strategies to support the grassroots EJ organizing. The six networks include: Asian Pacific Environmental Network, Southwest Network for Environmental and Economic Justice, Indigenous Environmental Network, Farmworker Network for Economic and Environmental Justice, Southern Organizing Committee for Economic and Social Justice and the Northeast Environmental Justice Network.

Region IV Environmental Justice Task Force supports *Communities at Risk Platform for Superfund Reauthorization*.

The National Institute for Environmental Health Sciences established the Minority Worker Training Program in September 1995 to provide a series of national pilot programs to test a range of strategies for the recruitment and training of young persons who live near hazardous waste sites or in the community at risk of exposure to contaminated properties, with the specific focus to obtain work in the environmental field.

1996

Washington Office on Environmental Justice facilitates environmental justice leaders' participation in the United Nations Conference on Human Settlements, Habitat II, Istanbul, Turkey.

The Environmental Justice Resource Center and CAU-TV co-produce the "Just Transportation" documentary.

Indigenous Anti-Nuclear Summit 1996, Albuquerque, New Mexico. Under sponsorship of the Seventh Generation Fund, with IEN and affiliate support, brought together a network of Indigenous peoples from North America and the Pacific negatively affected by the nuclear chain. A Declaration was developed that established the mandate of work on nuclear issues.

In July, a ten-person environmental delegation visits South Africa and meets with diverse community, labor, health, youth and other leaders who were struggling to throw off the shackles of apartheid.

Jean Sindab, an environmental justice trailblazer with the National Council of Churches, expires.

EPA Superfund Relocation Roundtable Meeting, Pensacola, Florida. Because of the hard work of Margaret Williams and local grassroots leaders, EPA decided to relocate the entire community of 358 African American and low-income households living next to the Escambia Wood Treatment Plant in Pensacola, Florida.

People of Color Disenfranchised Communities Environmental Health Network established. The Network addresses Department of Energy and Department of Defense federal facilities. Due to the Network's work, EPA formed the Federal Facilities Work Group in December.

ATSDR conducts the Community Tribal Forum.

Environmental Justice Enforcement and Compliance Assurance Round Table, was held in Texas, sponsored by the NEJAC Enforcement Committee and Region IX.

The African American Environmental Justice Action Network (AAEJAN) was established.

Institute of Medicine sponsored a Toxic Tour of "Cancer Alley" as part of its fact-finding mission and preparation for its report on health and environmental justice.

1997

Ingram Barge Spill of Toluene and Benzene at Southern University site in Baton Rouge, Louisiana.

The Environmental Justice Resource Center's Healthy and Sustainable Communities Conference brought several hundred EJ leaders from across the country to explore environmental justice and sustainable development strategies.

Community Tribal Advisory Board for the ATSDR Board of Scientific Counselors was established and Network members were appointed to this Board.

African American farmers bring a lawsuit against the USDA charging it with discrimination in denying them access to loans and subsidies.

The *Just Transportation: Dismantling Race and Class Barriers to Mobility* (edited by Robert D. Bullard and Glenn S. Johnson) is published. The book chronicles transportation racism cases across the United States.

Chattanooga Make the Link: Health and Environmental Justice major meeting.

President Clinton issues Executive Order 13045 protecting Children from Environmental Health and Safety Risks.

Citizens Against Nuclear Trash (CANT) and residents in Homer win a major victory over Louisiana Energy Services (LES) on Earth Day.

Citizens Against Nuclear Trash (CANT) stop the Louisiana Energy Services from building a uranium enrichment plant in the midst of Forest Grove and Center Springs, LA, 1997 (Photo by EJRC)

Waste Management Division of Region IV U.S. EPA and SOC hold Environmental Justice Summit.

Second Environmental Justice Enforcement Round Table sponsored by the NEJAC Enforcement Committee and Region IV Environmental Accountability Office.

Environmental Justice Action Group organized a regional environmental justice conference in Portland, Oregon, in October. The conference, attended by about 150 people, explored the formation of a Pacific Northwest environmental justice alliance.

Tennessee Legislature passes a resolution for Superfund sites, due to the work of the Defense Depot Memphis TN Concerned Citizens Committee. The resolution requires posting of warning signs at all Superfund sites.

EPA establishes the National Advisory Council on Policy and Technology (NACEPT), Title VI Implementation, to examine facility permitting.

In 1997 the community of El Florido in Baja California, Mexico, won a victory with the clean up of the 60,000 metric tons of lead waste from the Alco Pacifico Lead Smelter Site. This company had abandoned a major Superfund site complex in West Dallas, Texas. Organization from West Dallas also played a crucial role, along with Environmental Health Coalition and SNEEJ.

1998

EPA issues Interim Guidance for Investigating Title VI Administrative Complaints Challenging Permits.

United Church of Christ Commission on Racial Justice convenes an array of grassroots environmental justice, civil rights, faith-based, legal and academic centers leaders on the Shintech plant planned for Convent, Louisiana, and publishes From Plantations to Plant: Report of the Emergency National Commission on Environmental and Economic Justice in St. James Parish, Louisiana (September 15, 1998).

Japanese-owned Shintech suspends its effort to build PVC plant in Convent, Louisiana.

In 1998, the Conference of Black Trade Unionists (CBTU), the nation's oldest and largest independent black labor organization, initiated its Community Action and Response Against Toxics (CARAT) Team Program in an effort to address the fact that low-income and minority communities are more likely than other communities to suffer from exposure to poor quality air, polluted water sources and toxic hazards.

UN Environmental Progamme Negotiating Sessions on Elimination of Persistent Organic Polllutants (POPs) 1998-2001.

UN Framework Convention on Climate Change, 1998-2002.

The First International Agricultural Worker Forum was held in 1998. The purpose of the Forum was to create a space for workers to present their problems and encourage leadership development through future training programs. More than 60 delegates attended.

IEN facilitated for the participation of Native grassroots, tribal traditional leadership and elders in the Native Peoples/Native Homelands Climate Change Workshop held in Albuquerque, New Mexico. This led to the development of the "Albuquerque Declaration" that was sent to the UN Fourth Conference of the Parties of the UN Framework Convention on Climate Change. From this point on, IEN has participated in climate change meetings at the local, regional, national and international levels.

EPA denies the Title VI Select Steel complaint, its first administrative decision under Title VI.

"Justice for All: Racial Equity and Environmental Well-being" conference attended by several hundred participants held at the University of Colorado – Boulder (September). This conference focused on diversity in the environmental institutions as well as access to open space for people of color and the poor.

The North Carolina Environmental Justice Network (NCEJ) grew out of the 1st Annual NC Environmental Justice Summit held in 1998 at the Historical Franklinton Center at Bricks.

Florida Legislature passes the 1998 Environmental Equity and Justice Act.

The Center for Environmental Equity and Justice is created at Florida A&M University in Tallahassee, Florida.

The U.S. Supreme Court dismisses the Chester, Pennsylvania, case because the Pennsylvania Department of Environmental Protection (PADEP) revoked the Permit at issue.

More than a dozen Bishops and church leaders in the Council of Black Churches participate in "Toxic Tour of Cancer Alley." The church leaders on the tour represent more than 17 million African Americans.

The Wisconsin Mining Moratorium Law is passed by the legislature after a major grassroots lobbying campaign by Indian Tribes, environmental and sport-fishing groups. The law prohibits the state from issuing a permit for metallic sulfide mining unless an applicant can provide at least one example from the United States or Canada where a metallic sulfide mine has operated for 10 years without pollution and been closed for 10 years without pollution www.dnr.state.wius/org/es/science /crandon/review/moratorium.htm.

1999

UN Intergovernmental Forum on Forests (IFF) Experts meeting in Costa Rica.

National Emergency Meeting of Blacks in the United States, New Orleans, Louisiana. Groups came from 37 states. This and subsequent meetings laid the foundation for the creation of the National Black Environmental Justice Network (NBEJN).

IEN established a Native POPs campaign office in Alaska in partnership with Alaska Community Action on Toxics (ACAT).

The Black farmer's discrimination case against the USDA settles for a reported $400 million to more than $2 billion.

Asian Youth Advocates (AYA) wins a campaign victory at Richmond High School in Richmond, California, that increases advisory and guidance services to students. AYA broadens the notion of environmental justice to recognize school environments as a key arena for youth.

Third Ministerial Conference of the World Trade Organization (WTO) was held in Seattle, Washington, (SNEEJ, SWU, IEN and IITC).

Congressional Black Caucus Chair James Clyburn (D-SC) convenes "Environmental Justice: Strengthening the Bridge between Economic Development and Sustainable Communities" at Hilton Head, South Carolina.

The Institute of Medicine (IOM) publishes Toward Environmental Justice: Research, Education and Health Policy Needs (National Academy Press).

Dana Alston, a heroine of the Environmental Justice Movement, best known for her famous speech at the 1991 First People of Color Environmental Leadership Summit, and We Speak for Ourselves booklet, expires.

U.S. Representative Hilda Solis, then a senator in the California legislature, introduces landmark environmental justice legislation in California establishing a working definition and requiring the California EPA to develop a mission, policy and guidance on environmental justice.

"America's Parks, America's People: A Mosaic in Motion" conference held in San Francisco in January. Hundreds of activists and government representatives attended this conference (Mosaic I) which focused on diversity and access to open space for people of color and the poor.

2000

Dursban – the most dangerous and widely used insecticide in the country – is taken off the market for indoor use thanks to a concerted national advocacy campaign focused on protecting children's health.

Environmental Justice Resource Center publishes 3rd edition of the People of Color Environmental Groups Directory that lists more than 1,000 environmental justice groups in the U.S., Puerto Rico, Canada and Mexico.

Special issue of *American Behavioral Scientist* titled Advances in Environmental Justice: Research, Theory and Methodology. Vol. 43 (4, January). Edited by Dorceta E. Taylor.

Dine' CARE also spearheaded a national organizing effort with a multi-racial and multi- state coalition to amend the Radiation Exposure Compensation Act (RECA) legislation.

IEN developed a training partnership with Project Underground to hire and train a Native mining campaigner to address mining issues. This launched the Indigenous Mining Campaign Project as a response to address unsustainable mining and oil development in Native lands.

Hundreds of environmental justice leaders participate in the Climate Justice Summit in The Hague, Netherlands.

In December 2000, the Congressional Black Caucus (CBC) Environmental Justice Braintrust forms National Environmental Policy Commission (NEPC).

The North Carolina General Assembly released $7 million in appropriations to begin the detoxification of the Warren County PCB Landfill.

Macon County Citizens for a Clean Environment successfully wage a major fight to stop the siting of a mega landfill near historic Tuskegee University campus.

NBEJN holds National Press Conference on "End Toxic Terror in Black Communities," Washington, D.C.

NBEJN coordinates Congressional Black Caucus Hearing on environmental justice, Washington, D.C.

The Fort Ord Environmental Justice Network hosted first EJ Forum in Monterey County, California, at California State University Monterey Bay.

2001

National Black Environmental Justice Network lends its support and expertise to the African/African Descent Caucus. The goal is to get the African/African Descendent declared a Major Group in the United Nations.

Jesus People Against Pollution founder Charlotte Keys wins the Robert Wood Johnson Health Leadership Award for her work in Columbia, Mississippi.

The "Trade Secrets" documentary airs on PBS.

The "Celebrity Tour of Cancer Alley Louisiana" held. This event sparked some celebrities, including writer Alice Walker and Congresswoman Maxine Waters, to revisit and work with some of the impacted communities located along the Mississippi River chemical corridor.

EPA clean-up at Agriculture Street Landfill neighborhood begins (completed 2001).

Judge Orlofsky rules in *South Camden Citizens in Action v. NJ Dept of Environmental Protection* that compliance with environmental laws does not equal compliance with civil rights laws, and determines that NJ has violated Title VI of the Civil Rights Act of 1964, the first EJ case to prevail under this theory. Decision later overturned by Third Circuit on grounds that plaintiffs do not have the right to enforce EPA's disparate impact regulations.

On April 25, 2001, residents of Anniston, Alabama, Sweet Valley/Cobb Town Environmental Task Force won a $42.8 million settlement against Monsanto chemical company. The community had to be relocated because of PCB contamination.

People of color make their voices heard at the World Conference Against Racism, Durban, South Africa, 2001 (Photo by EJRC)

Environmental justice leaders participate in World Conference against Racism (WCAR) held in Durban, South Africa.

Warren County, North Carolina, PCB landfill community secures state and federal resources to detoxify the PCB landfill and build strategy for community-driven economic development.

Environmental justice leaders participate in the Environmental Justice and Labor Conference held at the University of Niteroi, Niteroi, Rio de Janeiro, Brazil. The university and nongovernmental organizations are interested in starting a community-university center.

Native American activists and their allies succeed in preventing siting of a nuclear waste dump in Ward Valley, California, after 10 years of struggle.

In April 2001, U.N. Commission on Human Rights lists living free of pollution as a basic human right.

2002

California voters pass Proposition 40, the largest resource bond in United States history, which provided $2.6 billion for parks, clean water and clean air, with an unprecedented level of support among communities of color and low-income communities.

The National Black Environmental Justice Network formed a partnership with the South African Environmental Justice Networking Forum (EJNF) to host a week-long pre-WSSD side events, workshops and site tours.

Environmental justice delegates participate in the World Summit on Sustainable Development (WSSD), Rio +10 Earth Summit, in Johannesburg, South Africa.

Activists from around the world join the Landless Peoples Movement march at the WSSD in Johannesburg, South Africa, 2002 (Photo by EJRC)

Norco, Louisiana's Diamond Community secures full relocation and buyout by the Shell Chemical Refinery.

The *Fenceline: A Company Town Divided*, a documentary film by Slawomir Grünberg with Jane Greenberg, aired July 23, 2002 on PBS television.

The First North American Indigenous Mining Summit was held that formed working groups to develop action plans to address coal, uranium and metallic mining activities in Native lands. In 2002, a Native oil campaigner was hired.

Project Return to Sender (a coalition of Haitian, Haitian American, and U.S. and European EJ and environmental groups) succeeds in returning a load of incinerator ash to the U.S., which was dumped on a beach at Gonaives, Haiti, 15 years earlier in 1987.

Paul Mohai and David Kershner publish "Race and Environmental Voting in the U.S. Congress" in the journal *Social Science Quarterly*, demonstrating that members of the Congressional Black Caucus (CBC) have consistently voted more pro-environmentally than Republican or Democratic Congressional colleagues over a two decade period.

Power in Asians Organizing (PAO) founded as APEN's second organizing project in Oakland, California, to organize a multi-ethnic Asian constituency for environmental justice. PAO and LOP work together and choose housing as its next campaign, looking at housing affordability and community displacement as issues to broaden the EJ movement.

The New Jersey Environmental Justice Alliance is formed with 40 member organizations from local community groups, traditional environmental groups, civil rights organizations, labor unions and other groups.

The Air of Injustice - African Americans & Power Plant Pollution report was published in October 2002 in coalition with Black Leadership Forum, The Southern Organizing Committee for Economic and Social Justice, The Georgia Coalition for the Peoples' Agenda, and Clear the Air.

Latinos and the Environment Conference organized by the University of Michigan's School of Natural Resources and Environment's Environmental Justice Initiative.

Women of color honored at the EJ Summit II, Washington, DC, 2002 (Photo by EJRC)

The Second People of Color Environmental Leadership Summit or EJ Summit II was convened on October 24-27, 2002 in Washington, D.C. The event attracted more than 1,400 attendees.

2003

New York State Department of Environmental Conservation adopts a new policy requiring environmental justice reviews before the issuance of permits.

In a 2003 report, Not in My Backyard: Executive Order 12,898 and Title VI as Tools for Achieving Environmental Justice, the U.S. Commission on Civil Rights concluded that "Minority and low-income communities are most often exposed to multiple pollutants and from multiple sources. . . . There is no presumption of adverse health risk from multiple exposures, and no policy on cumulative risk assessment that considers the roles of social, economic and behavioral factors when assessing risk."

The U.S. Navy was forced to close down Camp García, the firing zone in Vieques, Puerto Rico on May 1, 2003, after using the area for target practice since the 1940s.

Island residents protest Navy bombing on Vieques, Puerto Rico 2003 (Photo by Sara Peisch)

In September, Peggy M. Shepard received the Heinz Award for the Environment for her courageous advocacy and determined leadership in combating environmental injustice within urban America. She is the co-founder and executive director of West Harlem Environmental Action (WE ACT), a platform from which she has helped do battle locally against environmental hazards as well as serve nationally as a model for grassroots activism and coalition building. An environmental crusader and tireless champion for ecological equality on behalf of inner cities, she raised her voice – and later a veritable army – against a systemic form of racism that threatens to sacrifice the environmental health of poor urban areas.

University of California Sociology Professor David N. Pellow's Garbage Wars: The Struggle for Environmental Justice in Chicago was named winner of the American Sociological Association C. Wright Mills Award in 2003.

Paul Mohai publishes "Dispelling Old Myths: African American Concern for the Environment" in the journal *Environment* and provides a comprehensive examination of African American concern for the environment over a three-decade period. The evidence shows that African Americans care as much about the environment as white Americans, often surpassing their concerns.

The Minority Environmental Leadership Development Initiative (MELDI) launched at the University of Michigan's School of Natural Resources and Environment in January. MELDI's goal is to provide resources to enhance career and leadership development opportunities for people of color interested in environmental professions.

Cleanup of the Warren County, North Carolina, PCB Landfill was completed at a cost of $l7.1 million. And plans for the "Justice Park" on the site by Warren County Government began.

PCB Landfill detoxified after twenty-one years polluting Warren County, North Carolina, 2003 (Photo by EJRC)

2004

The American Bar Association Special Committee on Environmental Justice Environmental Justice For All: A Fifty-State Survey Of Legislation, Policies, and Initiatives (2004) report identifies the statutes, policies, initiatives or other commitments that states have undertaken to give force of law and/or tangible meaning to the goal of environmental justice. Importantly, the report finds that from the first policy issued in 1993 to 2004 more than 30 states have expressly addressed environmental justice, demonstrating increased attention to the issue at a political level. The wide range and variety of policy strategies and approaches used by states, however, suggests that the issue will continue to mature over the coming years.

New Jersey Gov. James McGreevey signs the state's first Environmental Justice Executive Order. The Ex. Order requires all executive bodies (depts., etc.) that are involved in decisions that "may affect environmental quality and public health" to provide meaningful opportunities for public input; the periodic review of government programs intended to protect human health and the environment to see it they "meet the needs" of communities of color and low-income communities and to see if they "seek to address disproportionate exposure to environmental hazards;" the creation of a multi-department state EJ Task Force and the recommissioning of the EJ Advisory Council to the NJ Dept. of Environmental Protection; and requires a process whereby any community and workers can file a petition with the EJ Task Force to address claims of disproportionate exposure to environmental health risks and/or disparities in the implementation of laws affecting public health and/or the environment.

The Los Angeles, California, Harbor Hispanic Environmental Justice organization the Coalition for a Safe Environment and San Pedro residents win a victory when the California South Coast Air Quality Management District Arbitration Board finds San Pedro Kinder Morgan Fuel Storage Tank

Facility guilty of not negotiating in good faith and cancels their permit to conduct future business permanently.

A March 2004 Office of Inspector General (OIG) report, EPA Needs to Consistently Implement the Intent of the Executive Order on Environmental Justice, summed up the treatment of environmental justice under the Bush administration. After a decade, EPA "has not developed a clear vision or a comprehensive strategic plan, and has not established values, goals, expectations and performance measurements" for integrating environmental justice into its day-to-day operations.

On April 19, 2004, Margie Eugene Richard made history by becoming the first African American to win the prestigious Goldman Environmental Prize, the award begun in 1990. The Goldman Environmental Prize is the world's largest award for grassroots environmentalism and carries a cash award of $125,000 for each winner. The awards ceremony, attended by 3,000 guests, was presented in San Francisco. Margie is a retired schoolteacher, a grandmother and an ardent environmental justice activist from the tiny African American Diamond community in Norco, Louisiana. She follows in the footsteps of other black leaders who refused to give in to racial injustice.

In October 2004, Wangari Muta Maathai, a professor and environmental justice activist from Kenya, became the first African woman to win the Nobel Peace Prize. Professor Maathai founded the Green Belt Movement where, for nearly thirty years, she has mobilized poor women to plant some 30 million trees. Click on link for Nobel Peace Prize presentation and photographs.

The University of Michigan's School of Natural Resources and Environment's Environmental Justice Initiative organized an international *Climate Change Conference*.

2005

The Oakland-based Environmental Justice Coalition for Water released its report Thirsty for Justice: A Blueprint for California Water. Key topics include: Origins of Environmental Discrimination in California Water Policy, Environmental Injustice in Water Governance, The Continuing Struggle for Water Justice and Policy Recommendations.

The NJ Work Environment Council organized a successful campaign that led to the adoption of an Administrative Order by the NJDEP that allows workers and union representatives to participate in investigations of facilities that use extremely hazardous chemicals. This is the first agreement of its kind in the nation and will help protect workers and fenceline communities from toxic dangers.

The John D. and Catherine T. MacArthur Foundation named Majora Carter a 2005 MacArthur Fellow. Carter, who holds an M.F.A. in creative writing from NYU, will receive $500,000 in support over the next five years for her work as executive director of Sustainable South Bronx, which she founded in 2001. A native of Hunts Point, Carter seeks to address the disproportionate environmental and public health burdens experienced by residents of the South Bronx. Her organization works in partnership with local government, businesses and neighborhood organizations to create new opportunities for transportation, fitness and recreation, nutrition and economic development.

Congress passes an amendment to the EPA's appropriations bill directing the agency not to spend any congressionally appropriated funds in a manner that contravenes Executive Order 12898 or delays its implementation.

A July 2005 U.S. Government Accountability Office report, Environmental Justice: EPA Should Devote More Attention to Environmental Justice When Developing Clean Air Rules, also criticized EPA for its handling of environmental justice issues when drafting clean air rules.

In July 2005, the EPA was met with a firestorm of public resistance when it proposed dropping race from its draft Environmental Justice Strategic Plan as a factor in identifying and prioritizing populations that may be disadvantaged by the agency's policies. The proposal was described as a giant step backward and "a road map for other federal agencies to do nothing." A letter from more than 45 environmental justice and mainstream environmental groups opposed the EPA's plan.

Twenty-five Democrats in the Senate and House send a letter to the EPA for its failure to apply the Executive Order 12898 in its flawed "strategic plan for environmental justice."

The General Accounting Office (now the U.S. Government Accountability Office) releases a report finding that the EPA generally devoted little attention to environmental justice issues while drafting three significant clean air rules on gasoline, diesel and ozone between fiscal years 2000 and 2004.

In August 2005, the Minority Environmental Leadership Diversity Initiative (MELDI) held a National Diversity Summit at the University of Michigan's School of Natural Resources and Environment in Ann Arbor, Michigan. The conference was attended by 230 participants from federal agencies, mainstream environmental NGOs, environmental justice organizations, academics, students, environmental grantmakers, and race-relations and diversity experts. The MELDI published and distributed *The Paths We Tread*, a book of profiles of more than 70 people of color who have had outstanding careers in the environmental field.

The California EPA - Air Resources Board selects the Hispanic community of Wilmington for a two-year Children's Environmental Risk Reduction Program and Cumulative Impact Assessment. The Cumulative Impact Assessment when completed in 2007 will be the most comprehensive assessment, identification and mapping of toxic industries and sites in an Environmental Justice community in California and U.S. history. The Coalition for a Safe Environment is the lead community organization participant.

Hurricane Katrina hits New Orleans, tearing the lid off and exacerbating decades of environmental injustices in the Deep South and New Orleans. In the wake of the storms, authorities receive reports of 575 oil and toxic chemical spills. Of these, ten major oil spills result in a total volume approaching 8 million gallons. The spills affect residential communities. The hurricanes also generated more than 100 million cubic yards of debris – enough to cover 1,000 football fields with a six-story high mountain of trash. The massive amounts of debris result in hastily permitted urban landfills near people of color residential areas.

Summit 2005: Diverse Partners for Environmental Progress was held in October 2005 where approximately 85 leaders, supporters and funders representing diverse segments of the environmental, environmental justice, civil rights, environmental health, faith and conservation communities came together in Wakefield, Virginia.

A December 2005 study from the Associated Press finds More Blacks Live with Pollution. The AP found that black Americans are 79 percent more likely than whites to live in neighborhoods where industrial pollution is suspected of posing the greatest health danger.

2006

The Concerned Citizens of Agriculture Landfill, after thirteen years of litigation, wins their class-action lawsuit to be relocated and bought out from their contaminated community. Although Hurricane Katrina created a forced relocation, in January 2006, five months after Katrina, Seventh District Court Judge Nadine Ramsey ruled in favor of the residents. Judge Ramsey described the plaintiffs as overwhelmingly poor minority citizens who "were promised the American dream of first-time home ownership. The dream turned out to be a nightmare."

Plans for the "Justice Park" on the site of the Warren County's PBC Landfill by Warren County (North Carolina) Government began.

A Green Los Angeles. Recommendations to the City of Los Angeles from Green LA, a working group for a just and sustainable future. More than 50 Environmental, Environmental Justice Organizations, Unions and Academic Institutions participated for over a year to release the abstract of the top 18 recommendations in six environmental categories.

Environmental justice scholars Manuel Pastor, Robert D. Bullard, James K. Boyce, Alice Fothergill, Rachel Morella-Frosch and Beverly Wright publish In the Wake of the Storm: Environment, Disaster, and Race After Katrina (Russell Sage Foundation, May 15, 2006).

Paul Mohai and Robin Saha publish "Reassessing Racial and Socioeconomic Disparities in Environmental Justice Research" in the journal *Demography*, demonstrating that newer methods that better match where people live and hazardous sites are located reveal far greater racial disparities around hazardous waste sites than previously reported.

On September 18, 2006, the EPA's Office of Inspector General (IG) issued another study, EPA Needs to Conduct Environmental Reviews of Its Program, Policies, and Activities, chastising the agency for falling down on the job when it comes to implementing environmental justice.

In September 2006, Dr. Beverly Wright, Director of the Deep South Center for Environmental Justice at Dillard University, was honored with the Special Gulf Coast Award for outstanding leadership in the aftermath of Hurricane Katrina by the Robert Wood Johnson Community Health Leadership Program (CHLP).

The Oakland based Pacific Institute releases a Ditching Dirty Diesel Collaborative Report titled Paying with Our Health – The Real Cost of Freight Transport in California. The report presents new data and insight from an Environmental Justice perspective and includes 14 EJ Community organizations and a union.

The environmental justice organizations Communities for a Better Environment, the Coalition for a Safe Environment and California Environmental Rights Alliance lead a campaign in which the California South Coast Air Quality Management District Board votes unanimously to adopt the most stringent oil refinery anti-flaring rules in California and U.S. history.

The 32-acre Los Angeles State Historic Park at the Cornfield opened in September 2006 after the community stopped a proposal to build warehouses there by the City of Los Angeles and wealthy developers in the last vast open space in downtown Los Angeles.

Beginning on Sunday, September 24, 2006, a coalition of more than 70 environmental justice, social justice, public health, human rights and workers' rights groups launched the National Environmental Justice for All Tour to highlight the devastating impact of toxic contamination on people of color and in poor communities across the United States.

The Deep South Center for Environmental Justice (DSCEJ) at Dillard University held the Race, Place and the Environment after Katrina: Looking Back to Look Forward Symposium held in New Orleans, October 19-21, 2006. More than 250 people attended the three-day symposium.

In December 2006, EPA announced its decision to finalize gutting changes to the Toxic Release Inventory (TRI) program. Changes announced by the EPA will exempt nearly 3,000 facilities that release up to 2,000 pounds of toxic chemicals from issuing detailed reports and also will exempt companies that manage up to 500 pounds of the most dangerous substances, including mercury and lead.

In December 2006, the Indigenous World Uranium Summit (individuals, tribes and organizations from Indigenous Nations and from Australia, Brazil, Canada, China, Germany, India, Japan, the United States and Vanuatu) drafted and approved a Declaration calling for a ban on uranium mining**,** processing, enrichment, fuel use, weapons testing and deployment, and nuclear waste dumping on Indigenous Lands. The ban is justified on the basis of the extensive record of "disproportional impacts" of the nuclear fuel chain on the health, natural resources and cultures of Indigenous Peoples. The Declaration calls attention to "intensifying nuclear threats to Mother Earth and all life," and asserts that nuclear power — the primary use for uranium — is not a solution to global warming.

2007

On January 24, 2007 Congressman Alcee Hastings (D-FL) and the Congressional Black Caucus Foundation held an Environmental Justice Policy Forum in Washington, D.C., to examine: What challenges hinder the implementation of the EJ Executive Order 12898? What resources would empower community organizers to assist federal agencies in this effort?

The two-square-mile Baldwin Hills Park, in the historic African American heart of Los Angeles is the largest urban park designed in the U.S. in over a century. Community efforts defeated efforts to site a power plant and garbage dump there.

Chapter 3

Racial and Socioeconomic Disparities in the Distribution of Environmental Hazards: Assessing the Evidence Twenty Years after *Toxic Wastes and Race**

The publication in 1987 of the United Church of Christ (UCC) Report, *Toxic Wastes and Race in the United States*, led to increasing public awareness about disproportionate environmental burdens in people of color communities and further fueled the growing environmental justice movement. It also led to a closer examination by academic researchers of the claims of the Report and movement about the extent, causes and consequences of disproportionate environmental burdens.

One of the most comprehensive examinations of the links between race, class and environmental quality in the wake of the 1987 UCC Report was provided in 1990 by Professor Robert D. Bullard's groundbreaking book *Dumping in Dixie*. The UCC Report and growing visibility of the environmental justice movement also spurred Professors Bunyan Bryant and Paul Mohai of the University of Michigan's School of Natural Resources and Environment to organize in 1990 the "Michigan Conference on Race and the Incidence of Environmental Hazards." The Michigan Conference was the first to bring together researchers from around the nation examining the links between race, poverty and environmental burdens. Conference participants presented the findings of their latest research, which were published in the Conference Proceedings[1] and forwarded to the U.S. Environmental Protection Agency (EPA).

The growing environmental justice movement, UCC Report, Michigan Conference Proceedings and a direct appeal made to U.S. EPA Administrator William Reilly by Michigan Conference participants (later dubbed by EPA as the "Michigan Coalition"[2]) led to the EPA's own investigation of the issues. In 1992 the EPA published the report *Environmental Equity: Reducing Risk for All Communities*, which summarized EPA's findings and outlined draft recommendations for dealing with the issues of environmental injustice. This chain of events led to further political and academic interest. A major policy milestone was reached when in 1994 President Bill Clinton issued Environmental Justice Executive Order 12898, which calls upon all agencies of the federal government, not just the EPA, to take into account the environmental justice consequences of their actions. At the same time, the number of research studies examining racial and socioeconomic disparities around environmentally hazardous sites grew dramatically and steadily over the 20 years since publication of the 1987 UCC report.

The number of research studies examining racial and socioeconomic disparities around environmentally hazardous sites grew dramatically and steadily over the 20 years since publication of the 1987 UCC report... Reviews have found a preponderance of evidence that environmental hazards of a wide variety are distributed inequitably.

In that time period, three systematic reviews of the existing research have been conducted (Mohai and Bryant 1992; Goldman 1994; Ringquist 2005). All these reviews have found a preponderance of evidence that environmental hazards of a wide variety are distributed inequitably by race and socioeconomic status. Most studies have found the racial and socioeconomic disparities to be statistically significant. However, the disparities often have been found to be modest (Ringquist, 2005). Some studies have found no statistically significant disparities (e.g., Anderton et al., 1994; Oakes et al., 1996; and Davidson & Anderton, 2000). In a recent paper published in the journal *Demography,* Professors Paul Mohai and Robin Saha (2006) explain how much of the early environmental justice research has employed methods

* The principal author of this chapter is Dr. Paul Mohai, Professor, School of Natural Resources & Environment, University of Michigan, Ann Arbor.

that failed to adequately account for where people live in relation to hazardous sites. If it is true that a disproportionate number of people of color and poor people live near where environmental hazards are located, then failure to adequately match the location of where people live and where environmentally hazardous sites are located will lead to an underestimation of these disparities.

In this chapter, we describe advances in environmental justice research that better determine where people live in relation to where hazardous sites are located than do earlier, more traditional methods. We show in this chapter and in the next that, by better matching the locations of people and hazardous sites, racial and socioeconomic disparities around the nation's hazardous waste facilities are found to be far greater than what previous studies have shown. The differences are even greater than those reported in the 1987 UCC Report.

The Traditional Method of Conducting Environmental Justice Analyses

The traditional method of conducting environmental justice analyses has been to use census data to look at the racial and socioeconomic characteristics of people living inside geographic units, such as zip code areas and census tracts,[3] containing or "hosting" hazardous sites, and then compare these against the racial and socioeconomic characteristics of the geographic units not containing or hosting the sites. In making this comparison, researchers have tended to assume that people living in the host units are located closer to the hazardous sites under investigation than those living in the non-host units. However, this is not necessarily true. First, the hazardous sites may be near the boundary of the host units, and hence the area and populations of neighboring units may be as close to the sites as those of the hosts. Note the proximity of adjacent units west and south of the unit containing a commercial hazardous waste facility in Figure 3.1A. That hazardous waste facilities and other potential environmental hazards are located near the boundaries of their host units is not a rare event. Mohai and Saha (2006), for example, found that almost 50% of commercial hazardous waste facilities are located within a quarter mile of their host tract boundaries while more than 70% are located within a half mile.

Almost 50% of commercial hazardous waste facilities are located within a quarter mile of their host tract boundaries while more than 70% are located within a half mile.

Second, there is a great deal of variation in the size of the geographic units typically used in environmental justice analyses and, depending on the size, not all the units do an equally good job of controlling for the proximity between hazardous sites and nearby residential populations. Again as an illustration, Mohai and Saha (2006) found that the smallest census tract containing a commercial hazardous waste facility is less than one-tenth of a square mile, while the largest is over 7,500 square miles, with all sizes in between. When a host unit is small, such as the tract that is only one-tenth of a square mile, then anyone living in it will necessarily live close to the facility. However, if a host unit is large, such as the tract that is over 7,500 square miles in area, most people in it likely live quite far from the facility, especially if the facility is located on the tract's boundary, as it is in this case (see Figure 3.1B).

Newer Methods of Matching Where People and Hazards Are Located

As environmental justice research efforts have progressed, newer methods have been introduced that do a better of job of matching where people live with where environmental hazards are located. Mohai and Saha (2006) have referred to these methods as "distanced-based" methods. Earlier research did not determine precise geographic locations, just that the environmental hazard and geographic unit were "coincident" (thus the term "unit-hazard coincidence method" has been used to refer to this method). In applying distance-based methods, however, the precise geographic locations of the environmental hazards are determined. Once the precise geographic location of the hazard is known, *all* geographic units within a specified distance of the hazard - not just the host unit – are combined to form the host *neighborhood* around the hazard. The racial and socioeconomic characteristics of the host neighborhood are then compared against the characteristics of areas outside the neighborhood.

Figure 3.1 – Comparing Methods of Matching Where People and Hazardous Waste Facilities Are Located

Figure 3.1A: Host tract and 1, 3, and 5 km. circles

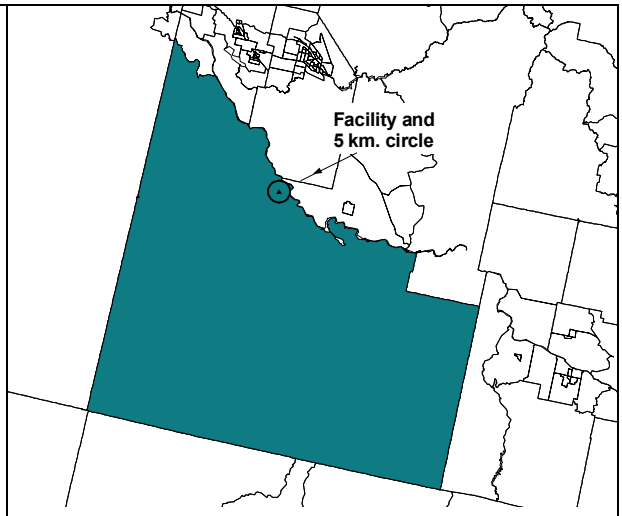


Figure 3.1B: Largest host tract in U.S.

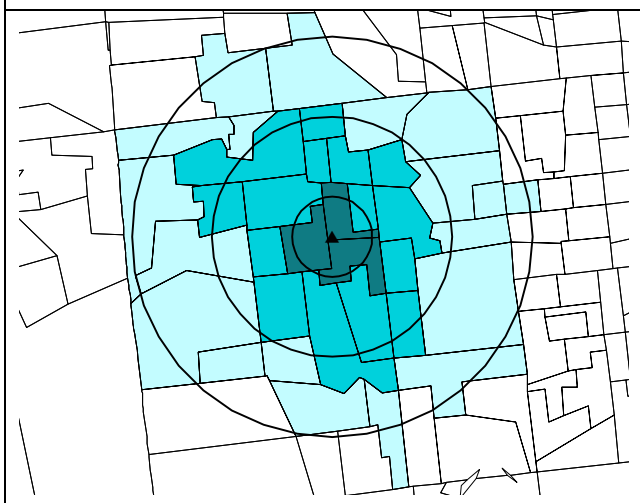


Figure 3.1C: 1, 3, and 5 km. host neighborhoods using 50% areal containment method

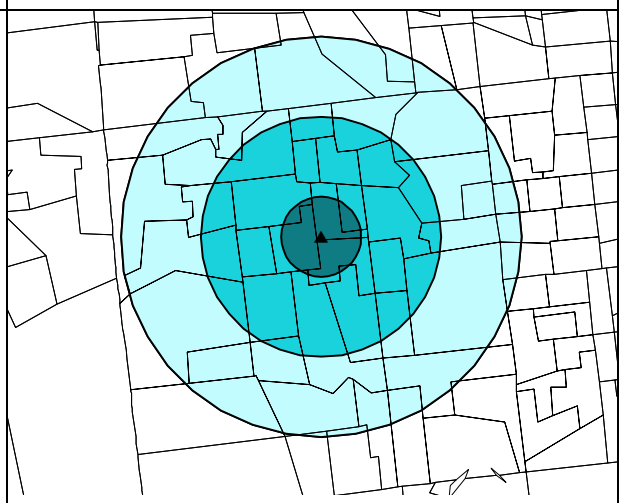


Figure 3.1D: 1, 3, and 5 km. host neighborhoods using areal apportionment method

Figures 3.1C and 3.1D provide illustrations of neighborhoods around the hazardous waste facility that are at distances of one, three and five kilometers (0.6, 1.8 and 3.1 miles, respectively) from the facility. Note in these figures that not all the neighboring units (in this case census tracts) fit neatly within the specified distances. Some neighboring units may be only partially inside the distance. Should the partially "captured" unit be considered a part of the host neighborhood? If most of the unit (say 90% of it) is within the specified distance, the decision to include it is probably a reasonable one. However, what if only 10% of the unit is captured? Figures 3.1C and 3.1D illustrate the results of applying two different rules or methods for making this decision. Mohai and Saha (2006) refer to these as the "50% areal containment" and "areal apportionment" methods.

Figure 3.1 (continued)

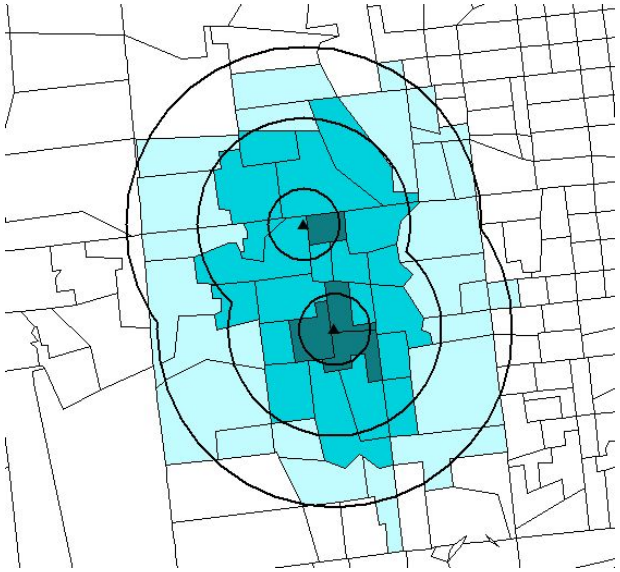


Figure 3.1E: Overlapping host neighborhoods using 50% areal containment method

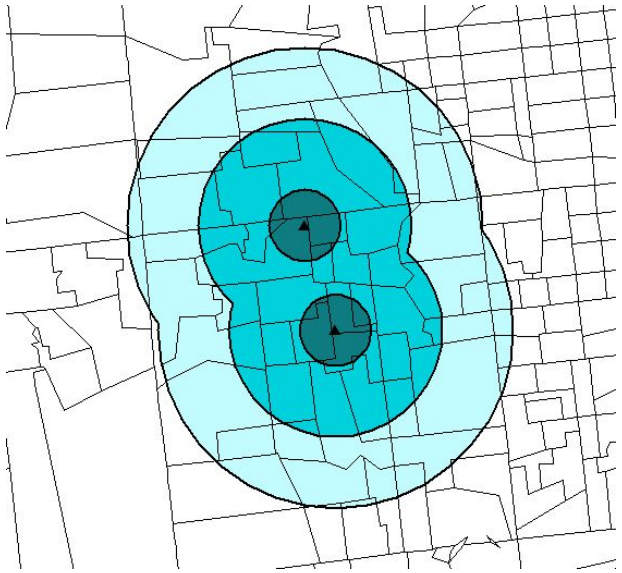


Figure 3.1F: Overlapping host neighborhoods using areal apportionment method

In applying the 50% areal containment method, any unit in which at least 50% of its area is within the specified distance of the hazard is considered to be part of the host neighborhood. The result is a roughly circular neighborhood as illustrated in Figure 3.1C. In applying the areal apportionment method, every unit that is at least partially inside the specified distance, no matter how little is captured, is given some weight in constructing the host neighborhood. Specifically, a portion of the unit's population is used to estimate the population characteristics within the distance. This portion is based on the proportion of the unit's area that lies inside the distance. For example, if 20% of the area of a unit is captured, then 20% of its population is used. If 90% of the area is captured, then 90% of the unit's population is used, and so on. The sum (or aggregate) of these populations are then used to determine the population characteristics within perfectly circular neighborhoods within the specified distances, as illustrated in Figure 3.1D. If the hazardous sites "cluster" (i.e., are so close to each other that their respective neighborhood boundaries overlap), the respective boundaries can be merged such as in Figures 3.1E and 3.1F.

Mohai and Saha (2007) found distance-based methods to be robust. In other words, both 50% areal containment and areal apportionment methods lead to similar estimates about the racial and socioeconomic characteristics of the neighborhoods within specific distances of the nation's hazardous waste facilities. The use of different building block units to construct the neighborhoods - such as census tracts, zip code areas or other geographic units (e.g., census block groups) - also leads to similar estimates of the characteristics of these neighborhoods.

Data and Analysis

Commercial hazardous waste treatment, storage and disposal facilities (TSDFs) analyzed in this chapter and the next were identified from information provided in 1) the U.S. Environmental Protection Agency's *Biennial Reporting System* (BRS), 2) EPA's *Resource Conservation and Recovery Information System* (RCRIS), 3) EPA's *Envirofacts Data Warehouse* and 4) the *Environmental Services Directory* (EDS).[4] These databases were cross-checked and used to identify commercial hazardous waste TSDFs receiving waste from off-site operating in the U.S. at the time data for the 2000 Census were being collected (in 1999). All together, 413 facilities were identified (more details about how hazardous waste facilities were identified are given in the next chapter). The status of the facilities, their addresses and precise

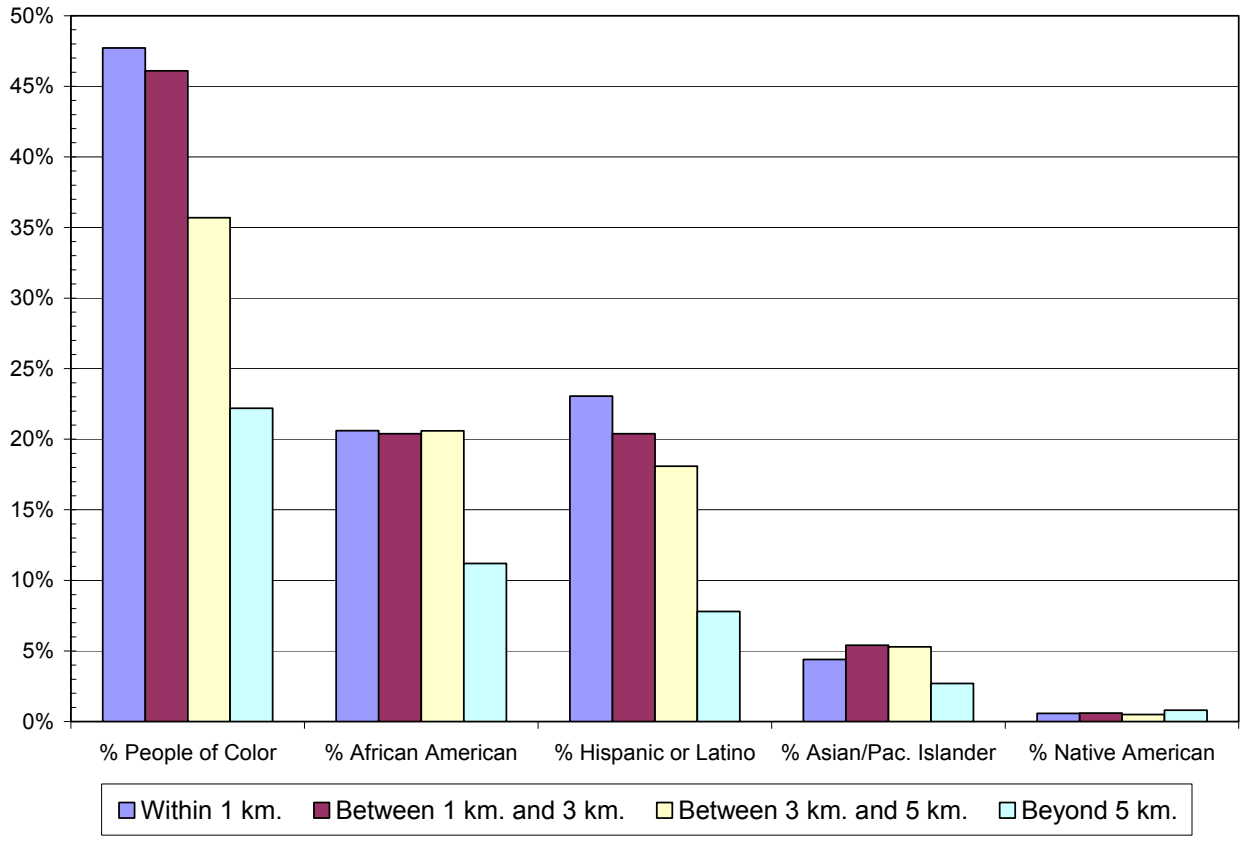
geographic locations (determined by Geographic Information Systems' [GIS] geocoding procedures) were verified by contacting the companies. Using census tracts as the building block units, GIS also was used to construct circular neighborhoods within one, three and five kilometers of the facilities by applying the 50% areal containment and areal apportionment methods. These distances were chosen because they are well within the distances used in prior studies and within which health, economic and other quality of life impacts have been found to exist (Mohai and Saha, 2006, 2007).

The demographic characteristics of these neighborhoods were determined using 1990 census data (U.S. Bureau of the Census, 1990). The 1990 census data were used in order to better compare the results of using distance-based methods with those using the more traditional unit-hazard coincidence method since most of the earlier studies relied on the 1990 census. In the next chapter people of color percentages around the nation's hazardous waste facilities are given using the more recent 2000 census.

Results

Figure 3.2 and Table 3.1 display people of color percentages in the circular neighborhoods around the nation's hazardous waste treatment, storage and disposal facilities using the areal apportionment method (see Figure 3.1D). The 50% areal containment method yields similar results and thus the results are not shown. People of color percentages are given in the circular neighborhoods at the varying distances from the sites. These include: 1) within one kilometer, 2) between one and three kilometers, 3) between three and five kilometers and 4) beyond five kilometers. People of color percentages are examined within these distances in order to see how these percentages change with varying distances to the facilities.

Figure 3.2 – Percent People of Color Living Near Hazardous Waste Facilities



It is clear from an examination of Figure 3.2 and Table 3.1 that the proportions of people of color are higher closer to the facilities (poverty rates are also higher, as seen in the table, while mean household incomes and mean housing values are lower). Beyond five kilometers of the nation's hazardous waste facilities the proportion of people of color is only 22.2%. However, at distances between three and five kilometers, the proportion of people of color increases to 35.7%. It increases again to 46.1% between the distances of one and three kilometers, and reaches 47.7% within a distance of one kilometer. Figure 3.2displays the percentages of African Americans, Latinos, Asian and Pacific Islanders, and Native Americans individually within the varying distances of the sites. In all cases except for Native Americans, the percentages within five kilometers of a hazardous waste facility are larger than the percentages beyond five kilometers.

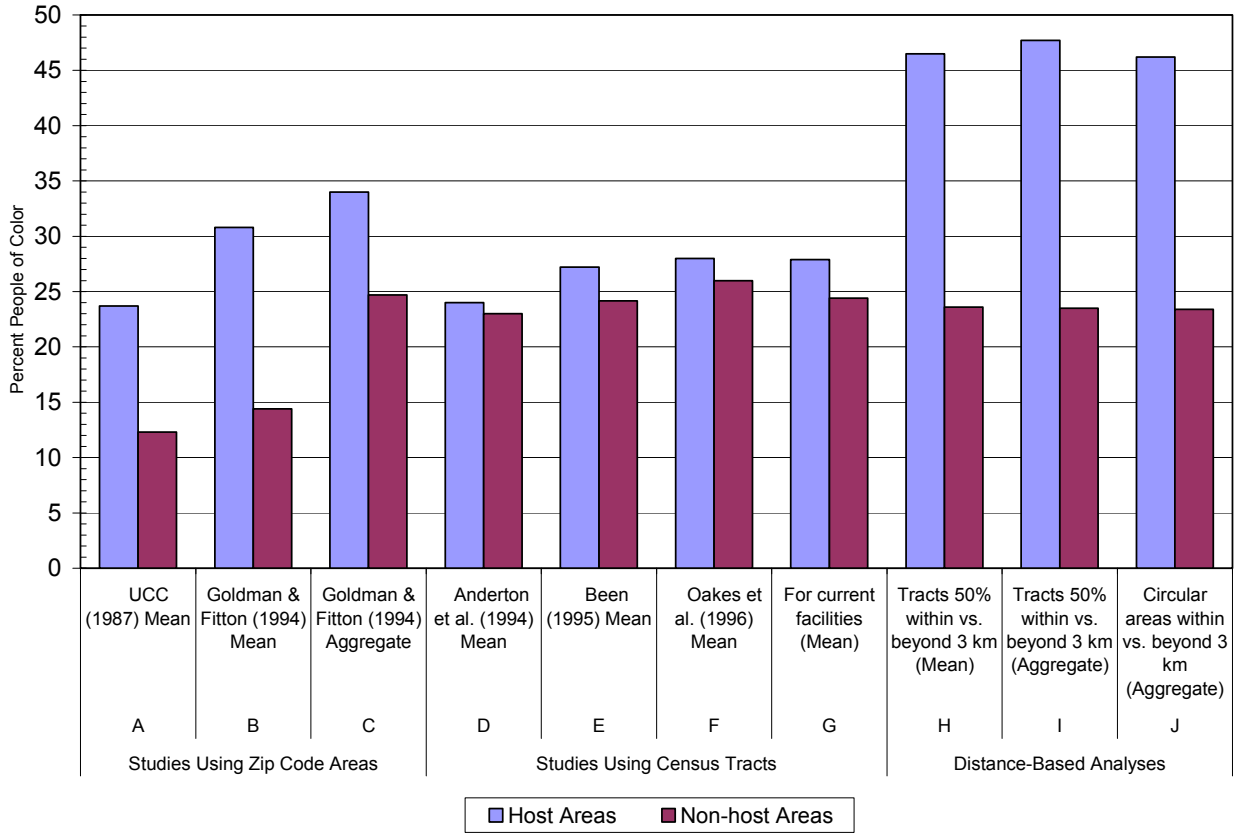
Table 3.1 – Racial and Socioeconomic Characteristics of People Living Near Hazardous Waste Facilities

	Within 1 km.	Between 1 km. and 3 km.	Between 3 km. and 5 km.	Beyond 5 km.
Population				
Total Population (1000s)	845	7,828	14,101	225,936
Population Density (persons per square kilometer)	690	840	810	24
Race/Ethnicity				
Percent People of Color	47.7%	46.1%	35.7%	22.2%
Percent African American	20.6%	20.4%	20.6%	11.2%
Percent Hispanic	23.1%	20.4%	18.1%	7.8%
Percent Asian/Pacific Islander	4.4%	5.4%	5.3%	2.7%
Percent Native American	0.6%	0.6%	0.5%	0.8%
Socioeconomic Characteristics				
Poverty Rate	20.1%	18.3%	16.9%	12.7%
Mean Household Income	$31,192	$33,318	$36,920	$38,745
Mean Housing Value	$93,985	$102,594	$111,915	$111,956

The estimated percentages of people of color near hazardous waste facilities appear much less if the unit-hazard coincidence method is employed. Figure 3.3 displays the results of the past studies that have used this approach (see Appendix 3.1 for exact values). Columns A, B and C show the results of the studies that have used zip code areas to identify the areas containing ("hosting") or not containing hazardous waste facilities. Columns D, E, F and G show the results of studies that have used census tracts to identify host and non-host areas. Generally, studies using zip code areas have found bigger differences in the people of color percentages between host and non-host areas than the studies using census tracts. For example, the 1987 United Church of Christ study, using 1980 census data, found that the average people of color percentage in zip code areas containing a hazardous waste facility to be 23.7% compared to only 12.3% for zip code areas not containing a facility (Column A). In their update to the UCC study, Goldman and Fitton (1994) used 1990 census data and found that the average people of color percentages for host and non-host zip code areas were 30.8% vs. 14.4% (Column B). In summing (aggregating) populations in zip code areas, instead of averaging them, Goldman and Fitton found the people of color percentages in host and non-host zip code areas were 34.0% and 24.7%, respectively (Column C).

As mentioned, estimated disparities using the unit-hazard coincidence method have been even less when census tracts instead of zip code areas have been used. For example, Anderton et al. (1994) using the 1980 census data found the average people of color percentages in host and non-host tracts to be 24.0% vs. 23.0%, respectively (Column D). Oakes et al. (1996) using 1990 census data found these percentages to be 28.0% vs. 26.0%, respectively (Column F).[5] However, both Anderton et al. and Oakes et al. omitted rural areas and some metropolitan areas from their analyses, and thus did not design their studies similarly to the UCC and Goldman and Fitton studies. However, even when the study designs are constructed similarly to that of the UCC, the differences in the average people of color percentages between host and non-host census tracts, although somewhat bigger, are still relatively small. For example, Been (1995) using 1990 census data found these to be 27.2% vs. 24.2%, respectively (Column E), while applying the unit-hazard coincidence method and 1990 census to the current universe of 413 hazardous waste facilities leads to similar results (27.9% vs. 24.4%; see Column G).

Figure 3.3 – Comparing Results of Past Studies Using Unit-Hazard Coincidence Method with Results Using Distance-Based Methods



As indicated in Figure 3.3, the newer, distance-based methods, which better match where people and environmentally hazardous sites are located, reveal much larger racial disparities in the distribution of hazardous waste facilities. In order to make a more direct comparison with the earlier studies, Columns H, I and J in Figure 3.3 (see also Appendix 3.1) display the people of color percentages within and beyond three kilometers of the nation's hazardous waste TSDFs using 50% areal containment and areal apportionment methods. Column H shows differences in the people of color percentages applying the 50% areal containment method in which percentages for census tracts have been averaged. Column I also shows differences in the people of color percentages applying the 50% areal containment method, but in which the populations of the tracts have first been aggregated (summed).

Column J shows differences in the people of color percentages applying the areal apportionment method, and here also the percentages are for the aggregate populations within and beyond the three-kilometer distances.

Newer methods which better match where people and environmentally hazardous sites are located reveal much larger racial disparities in the distribution of hazardous waste facilities than previously reported.

As can be seen, regardless of which distance-based method is applied (and regardless of whether populations are averaged or summed), the proportion of people of color estimated to be within three kilometers of a hazardous waste facility is between 46% and 48%, while the proportion of people of color estimated to be beyond this distance is between 23% and 24%. Thus, both the concentration of people of color around the nation's hazardous waste facilities (about 46%) and disparities between host and non-host areas (over 20%) are far greater when distance-based (Columns H to J), as opposed to unit-hazard coincidence (Columns A to G), methods are applied.

Conclusions

The 1987 UCC Report has had a major impact in the U.S. and worldwide in raising public awareness about the issues of environmental injustice. It has spurred academic researchers to take a close look at the extent, causes and consequences of disproportionate environmental burdens in poor and people of color communities, fueled public policy debates about how environmental injustices should be remedied, and further stimulated the environmental justice movement. The number of research studies has grown steadily and dramatically over the past 20 years. The majority of these have found significant racial and socioeconomic disparities in how environmental hazards of a wide variety are distributed. Nevertheless, newer methods that better match where people and environmental hazards are located indicate that such disparities are even greater than what these previous studies have shown. Given the attention to environmental injustice fueled by the evidence of the 1987 UCC Report and other prior studies, a finding that racial and socioeconomic disparities around hazardous sites are even greater than previously reported when these methods are applied underscores the urgency of finding solutions to this problem.

A finding that racial and socioeconomic disparities around hazardous sites are even greater than previously reported when these methods are applied underscores the urgency of finding solutions to this [environmental injustice] problem.

In the next chapter, the newer methods are applied to the most recent data on hazardous waste facility location and the 2000 census in order to make a more detailed and up-to-date assessment of the current extent of racial and socioeconomic disparities in the distribution of the nation's hazardous waste facilities.

Endnotes

[1] The Conference Proceedings were subsequently edited and published in 1992 by Westview Press under the title, *Race and the Incidence of Environmental Hazards: A Time for Discourse*, Bunyan Bryant and Paul Mohai, editors.
[2] Representatives of the Michigan Conference were invited to meet with EPA Administrator William Reilly in September 1990 to talk about the disproportionate environmental burdens in people of color and poor communities and what steps EPA could take to address this issue. These representatives were dubbed the "Michigan Coalition" by

EPA and included Bunyan Bryant, Robert D. Bullard, Ben Chavis, Michel Gelobter, David Hahn-Baker, Charles Lee, Paul Mohai and Beverly Wright.

[3] Zip code areas are geographic areas consisting of "a section of a street, a collection of streets, an establishment, structure or group of post office boxes" assigned a five- to eleven-digit code by the U.S. Postal Service for the purpose of delivering mail. Census tracts are small geographic subdivisions of counties drawn "by a local committee of census data users for the purpose of presenting data." Averaging about 4,000 inhabitants, tracts are "designed to be relatively homogeneous units with respect to population characteristics, economic status and living conditions" (http://www.census.gov/main/www/cen2000.html).

[4] These are available, respectively, from: 1) U.S. Environmental Protection Agency (2003); 2) U.S. Bureau of the Census (1993); 3) U.S. Environmental Protection Agency 2001/2002; and 4) Environmental Information Ltd. (2001/2002). See "References."

[5] Neither Anderton et al. (1994) nor Oakes et al. (1996) presented the overall people of color percentages as did the UCC (1987), Goldman and Fitton (1994) and Been (1995) studies. Instead, they presented percentages for African Americans and Latinos separately. In order to more easily compare the results of the two former studies with those of the latter, the African American and Hispanic percentages were summed to produce an overall people of color percentage. As Mohai (1995) points out, such summing is a reasonable approximation of the overall people of color percentages in the U.S. since the proportion of other racial and ethnic groups other than African Americans and Latinos is in comparison small. The overlap between the African American and Latino percentages is likewise very small. For example, in the 1980 census African Americans and Latinos made up 97.7% of all racial and ethnic minorities while the overlap between these two categories was less than 1.0%.

References

Anderton, Douglas L., Anderson, Andy B., Oakes, John Michael, & Fraser, Michael R. (1994). Environmental equity: The demoraphics of dumping. *Demography, 31*(2), 229-248.

Been Vicki (1995). Analyzing evidence of environmental justice. *Journal of Land Use & Law, 11*(1), 1-36.

Bryant, Bunyan, & Mohai, Paul (1990). *The proceedings of the Michigan Conference on Race and the Incidence of Environmental Hazards*. Ann Arbor: University of Michigan School of Natural Resources.

Bryant, Bunyan, & Mohai, Paul (1992a). *Race and the incidence of environmental hazards: A time for discourse*. Boulder, CO: Westview Press.

Bryant, Bunyan, & Mohai, Paul (1992b). The Michigan conference: A turning point. *EPA Journal, 18*(1), 9-10.

Bullard, Robert D. (1990). *Dumping in Dixie: Race, class and environmental quality*. Boulder, CO: Westview Press.

Davidson, Pamela, & Anderton, Douglas L. (2000). The demographics of dumping II: Survey of the distribution of hazardous materials handlers. *Demography, 37*(4), 461-466.

Environmental Information Ltd. 2001/2002. *Environmental Services Directory* [online paid subscription service and database]. Edina, MN: Environmental Information Ltd. [Available at http://www.envirobiz.com/newSearch/EnvSerDir.asp].

Goldman, Benjamin A. (1994). *Not just prosperity: Achieving sustainability with environmental justice.* Washington, D.C.: National Wildlife Federation.

Goldman, Benjamin A., & Fitton, Laura (1994). *Toxic wastes and race revisited: An update of the 1987 report on the racial and socioeconomic characteristics of communities with hazardous waste sites.* Washington, D.C.: Center for Policy Alternatives.

Mohai, Paul (1995). The demographics of dumping revisited: Examining the impact of alternate methodologies in environmental justice research. *Virginia Environmental Law Journal, 14*, 615-652.

Mohai, Paul, & Bryant, Bunyan (1992). Environmental racism: Reviewing the evidence. In B. Bryant and P. Mohai (Eds.), *Race and the incidence of environmental hazards: A time for discourse* (163-176). Boulder, CO: Westview Press.

Mohai, Paul, & Saha, Robin (2006). Reassessing racial and socioeconomic disparities in environmental justice research. *Demography, 43*(2), 383-399.

Mohai, Paul, & Saha, Robin (2007). Racial inequality in the distribution of hazardous waste: A national-level reassessment. *Social Problems*.

Oakes, John Michael, Anderton, Douglas L., & Anderson, Andy B. (1996). A longitudinal analysis of environmental equity in communities with hazardous waste facilities. *Social Science Research, 25*, 125-148.

Ringquist, Evan J. (2005). Assessing evidence of environmental inequities: A meta-analysis. *Journal of Policy Analysis and Management, 24*(2), 223-247.

United Church of Christ (1987). *Toxic wastes and race in the United States: A national report on the racial and socioeconomic characteristics of communities with hazardous waste sites*. New York Commission for Racial Justice, United Church of Christ.

U.S. Bureau of the Census (1990). *1990 census of housing, summary tape file 1 technical documentation: Appendix A-Area Classifications*. Washington, D.C.: U.S. Government Printing Office.

U.S. Bureau of the Census (1993). LandView III [RCRIS and other computer files on CD-ROM]. Washington D.C.: U.S. EPA and U.S. Department of Commerce, Bureau of the Census (producers), U.S. Department of Commerce, Bureau of the Census (distributor).

U.S. Environmental Protection Agency (1992). *Environmental equity: Reducing risks for all communities.* EPA 230-R-92-008. Washington, D.C.: U.S. Environmental Protection Agency.

U.S. Environmental Protection Agency (2001-2002). *Envirofacts data warehouse*. (Data accessed online through technical user platform from approximately March 2001 to June 2002. See http://www.epa.gov/enviro/html/technical.html.

U.S. Environmental Protection Agency (2003). *National biennial RCRA hazardous waste report: Basedon 2001 data*. 530-R-03-007. Washington, D.C. Office of Solid Waste and Emergency Response. Available at http://www.epa.gov/epaoswer/hazwaste/data/biennialreport/index.htm.

Appendix 3.1 - People of Color Percentages in Host and Non-Host Areas Estimated from Distance-Based versus Unit-Hazard Coincidence Methods

	Unit-Hazard Coincidence Studies Using Zip Code Areas			Unit-Hazard Coincidence Studies Using Census Tracts				Distance-Based Analyses		
	A	B	C	D	E	F	G	H	I	J
	UCC (1987) (Mean)	Goldman & Fitton (1994) (Mean)	Goldman & Fitton (1994) (Aggregate)	Anderton et al. (1994) (Mean)	Been (1995) (Mean)	Oakes et al. (1996) (Mean)	For current facilities (Mean)	Tracts 50% within vs. beyond 3 km (Mean)	Tracts 50% within vs. beyond 3 km (Aggregate)	Circular areas within vs. beyond 3 km (Aggregate)
Percent People of Color in Host Areas	23.7%	30.8%	34.0%	24.0%	27.2%	28.0%	27.9%	46.5%	47.7%	46.2%
Percent People of Color in Non-host Areas	12.3%	14.4%	24.7%	23.0%	24.2%	26.0%	24.4%	23.6%	23.5%	23.4%

Chapter 4
A Current Appraisal of Toxic Wastes and Race in the United States – 2007*

As shown in the previous chapter, distance-based methods reveal racial and socioeconomic disparities in the location of the nation's commercial hazardous waste facilities that are much greater than previously reported. Compared to approaches used in prior research, these new methods are more reliable and accurate because they count persons living within the same proximity to each hazardous waste facility as part of the impacted population. To aid in the comparison with prior studies, the previous chapter used 1990 census data and applied distance-based methods to a current database of commercial hazardous waste facilities.

This chapter employs the same methods and database of facilities as the previous chapter, but utilizes 2000 census data to assess the current extent of racial and socioeconomic disparities for the nation as a whole. Disparities also are examined by region and state, and separate analyses are conducted for metropolitan areas, where most hazardous waste facilities are located. Using the most recent census data, this current appraisal will answer the following questions:

1. *What is the current extent of racial and socioeconomic disparities in the location of the nation's commercial hazardous waste facilities?*

2. *Did disparities increase during the 1990s?*

3. *Are disparities greater for host neighborhoods with clustered facilities?*

4. *How are racial and socioeconomic disparities distributed in different regions of the country?*

5. *How important is race in predicting facility location in comparison to socioeconomic status and other non-racial factors?*

To answer the first question, we will examine percentages of people of color as a whole and specific racial and ethnic groups living in neighborhoods and communities with commercial hazardous waste facilities. The neighborhood socioeconomic characteristics will be similarly compared to areas without facilities using indicators such as poverty rates, incomes and housing values.

Toxic Wastes and Race Revisited, the 1994 update of the original United Church of Christ (UCC) report, *Toxic Wastes and Race in the United States,* showed that racial and socioeconomic disparities associated with the location of the nation's hazardous waste facilities increased from 1980 to 1993 (Commission for Racial Justice, 1987; Goldman and Fitton, 1994).[1] The second question above asks whether this trend continued throughout the 1990s.

Both of the previous UCC reports found that people of color were concentrated in the most environmentally hazardous communities as measured by the number of commercial hazardous waste facilities and amounts of hazardous wastes handled. To answer the third question, a similar analysis is conducted in this current update, which examines neighborhoods where multiple facilities are clustered.

The fourth question examines the extent to which racial and socioeconomic disparities are confined to particular regions of the country and if disparities are substantially greater in certain regions compared to

* The principle author of this chapter is Dr. Robin Saha, Assistant Professor, Department of Environmental Studies and School of Public and Community Health Sciences, University of Montana, Missoula, MT.

others. Following the example of the previous UCC reports, this chapter examines racial and socioeconomic disparities for states and metropolitan areas. This allows us to detect environmental justice "hot spots," i.e., areas with high concentrations of hazardous wastes and large racial or socioeconomic disparities.

The final question asks whether the racial characteristics of neighborhoods independently predict the location of the nation's commercial hazardous waste facilities, separate from poverty levels and other socioeconomic characteristics. The preponderance of environmental inequality studies have found that race is an independent predictor of the location of polluting industrial facilities (Mohai and Bryant, 1992; Ringquist, 2005). Indeed, the 1987 UCC report was the first study to find race to be an independent predictor of the location of the nation's commercial hazardous waste facilities. It also found race to be a much stronger predictor than socioeconomic status. Sorting out whether racial factors are associated with facility location regardless of socioeconomic status can be accomplished with multivariate statistical tests. It can thereby be determined if the significance of race noted in *Toxic Wastes and Race in the United States* persists 20 years later.

Hazardous Waste Management in the United States

In 2001, industry generated more than 41 million tons of hazardous wastes in the United States (U.S. EPA, 2003). Some of these wastes are shipped out of state and even out of the country. Because of their toxicity, hazardous wastes are regulated by the U.S. Environmental Protection Agency (EPA) and state environmental agencies. Under the Resource Conservation and Recovery Act of 1976 (RCRA), hazardous wastes must be managed by specially designed facilities referred to as treatment, storage and disposal facilities. Companies operating such facilities must obtain permits from state and sometimes federal environmental agencies and conform to local land use regulations.

As the recent explosion of stored hazardous wastes in Danvers, Massachusetts, illustrates, even when operated according to accepted specifications, hazardous waste facilities can adversely impact nearby residents (Daley 2006).[2] The city of East Palo Alto is home to another poorly operated facility, Romic Environmental Technologies (Jayadev, 2007). Institutional discrimination in the form of lax governmental enforcement has contributed to numerous problems with chemical leaks, accidents and explosions at the plant. Indeed, hazardous wastes are well-known to pose serious risks to health, property and quality of life.[3] Because of these ordinary and extraordinary risks, public opposition to siting of these facilities is nearly universal, particularly regarding high-profile facilities such as incinerators and landfills. As a result, new facility sitings have tended to follow the path of least political resistance (Bullard and Wright, 1987; Saha and Mohai, 2005). Although in recent decades communities of color have begun to mount their own resistance, their limited scientific, technical and legal resources have historically made such communities vulnerable to facility sitings (Bullard, 1983, 1990; Taylor, 1998).

Data and Analysis

As indicated in Chapter 3, several databases were used to identify currently operating commercial hazardous waste facilities in the U.S.: EPA's Biennial Report System (BRS); EPA's Resource Conservation and Recovery Information System (RCRIS); and the Environmental Services Directory (ESD), a private industry listing (U.S. EPA, 2001a, 2001b; U.S. Census Bureau, 1993; Environmental Information Ltd., 2001/2002). The EPA's Envirofacts Data Warehouse also was used to cross-reference information and obtain the most recent data for facilities, for example, if a facility recently received a new operating permit and therefore was not included in the aforementioned databases (U.S. EPA, 2001/2002). A facility was included if it met all the following criteria: (1) it was a private, non-governmental business, (2) designated in 1999 as a hazardous waste Treatment, Storage and Disposal Facility (TSDF) under the Resource Conservation and Recovery Act (RCRA) and (3) operated as a commercial facility in 1999, i.e., received off-site wastes from another entity for pay. Geographic Information Systems (GIS) were used to precisely map facility locations. The current operating status and locations were verified by contacting the companies or in some case regulatory agencies (see the Methods Appendix for more details about the procedures used to identify and locate the nation's currently operating facilities).

In all, 413 facilities were identified. These represented all the commercial hazardous waste facilities operating in the U.S. in 1999. By using 2000 Census data, collected by the U.S. Census Bureau in 1999, it was possible to determine the racial and socioeconomic characteristics of neighborhoods containing these facilities that corresponded to *the same time the facilities were known to be in operation* (Rhodes, 2002).

The *areal apportionment method* (see Chapter 3) was used to estimate the racial and socioeconomic characteristics of circular host neighborhoods of 1, 3 and 5 kilometer radius around the 413 facilities. Because the results were very consistent regardless of the radius, only findings pertaining to the 3-kilometer radius are reported below to streamline the presentation. This radius, approximately 1.8 miles, corresponds to the distance within which empirical studies have noted adverse health, property value and quality of life impacts associated with hazardous waste sites, including hazardous waste facilities (see Methods Appendix).

This radius is in line with those used in other environmental justice studies employing distance-based methods (see Mohai and Saha, 2006, 2007). The circumscribed area is also about the size of the heavily polluted Greenpoint/Williamsburg neighborhood in Brooklyn (Corburn, 2005). The City of Vernon, located near heavily polluted areas of East Los Angeles, is also similar in size. Vernon has several commercial hazardous waste facilities and numerous polluting industrial facilities (see Pulido, Sidawi, and Vos, 1996).

Unless otherwise indicated, findings reported are aggregate values for all host neighborhoods (i.e., neighborhoods within 3 kilometers of a facility), not averages of each host neighborhood and the census tracts comprising them. This means that populations were summed for all neighborhoods to compute people of color percentages. For example, to compute people of color percentages for all host neighborhoods, the total number of people of color within 3 kilometers of any hazardous waste facility was divided by the total population within the same circular host neighborhoods. Similar procedures were used to compute poverty rates, mean households incomes and mean property values. The resulting values represent the overall racial and socioeconomic characteristics of the defined impacted areas (see Methods Appendix).

Assessing Racial and Socioeconomic Disparities

To assess racial and socioeconomic disparities, the characteristics of the neighborhoods of 3-kilometer radius containing a commercial hazardous waste facility ("host neighborhoods") are compared to the characteristics of areas that lie beyond 3 kilometers ("non-host areas"). For the national-level analysis, non-host areas include all areas in the U.S. that lie beyond 3 kilometers of a facility. Likewise, for the state-level analysis, non-host areas in each state include all areas that lie beyond 3 kilometers of a facility (additional information is provided below regarding the metropolitan area analyses).

If people of color percentages are higher in host neighborhoods than in the non-host comparison areas, then a racial disparity is therefore said to exist. Likewise, socioeconomic disparities exist if poverty rates are higher, or mean household incomes and housing values are lower, in host neighborhoods than in the non-host areas. These disparities are consistent with an environmental justice claim.

Disparities in percentages of specific people of color groups were examined, including percentages of African Americans, Hispanics or Latinos, Asians/Pacific Islanders and American Indians/Alaskan Natives.[4] It should be noted that the U.S. Census Bureau defines Hispanic as an ethnic, not a racial category. Hispanics can belong to any of the recognized races, including the white category. Race, in fact, is a socially constructed notion (Jacobson, 1998). Hispanics, or Latinos as they generally self-identify, suffer from similar forms of racial and institutional discrimination as other people of color (Cole and Foster, 2002). Thus, for convenience, Hispanic or Latino disparities also will be referred to as racial disparities.

Two approaches are used to assess the magnitude of racial and socioeconomic disparities: (1) differences in values (percentages of people of color, poverty rates, mean household income, mean housing values, etc.) between host neighborhoods and non-host areas; and (2) ratios of host

neighborhood values to non-host area values. For example, if Hispanic or Latino percentages were 30% and 10%, respectively, then differences would be 30% minus 10%, or 20%, and the ratio would be 30% divided by 10%, or 3.

Tests also were done to determine if these disparities were statistically significant (i.e., were not likely to be merely the result of random chance) and to assess the importance of race in predicting facility locations. A statistically significant disparity is defined as one where there is less than a 5% chance (1 in 20) that the disparity is due to random chance as determined by t-tests and logistic regressions (see Methods Appendix).

Findings

More than nine million people (9,222,000) are estimated to live within 3 kilometers (1.8 miles) of the nation's 413 commercial hazardous waste facilities. This represents 3.3% of the U.S. population (281,422,000). More than 5.1 million people of color, including 2.5 million Hispanics or Latinos, 1.8 million African Americans, 616,000 Asians/Pacific Islanders and 62,000 Native Americans, live in neighborhoods with one or more commercial hazardous waste facility.

Host neighborhoods are densely populated, with more than 870 persons per square kilometer (2,300 per mi^2), compared to 30 persons per square kilometer (77 per mi^2) in non-host areas. Not surprisingly, 343 facilities (83%) are located in metropolitan areas.

Additional findings presented below begin with a look at racial and socioeconomic disparities for the nation as a whole, an assessment of changes from 1990 to 2000 and an analysis of disparities in neighborhoods with clustered facilities (i.e., host neighborhoods where the facilities are so close together that the 3-kilometer areas around them overlap; see Figure 3.1E). These findings are followed by similar analyses for the 10 EPA regions, states and metropolitan areas. This chapter concludes with an analysis of the importance of race in predicting facility locations.

National Disparities

Table 4.1 compares the racial and socioeconomic characteristics of the 3-kilometer circular host neighborhoods of the nation's 413 commercial hazardous waste facilities to the same characteristics of non-host areas. Data from the 1990 and 2000 Census are shown. For 2000, host neighborhoods with commercial hazardous waste facilities are 56% people of color whereas non-host areas are 30% people of color.[5] In other words, percentages of people of color as a whole are 1.9 times greater in host neighborhoods than in non-host areas. Similarly, percentages of African Americans, Hispanics and Asians/Pacific Islanders in host neighborhoods are 1.7, 2.3 and 1.8 times greater in host neighborhoods than non-host areas (20% vs. 12%, 27% vs. 12%, and 6.7% vs. 3.6%, respectively). However, percentages of American Indians/Alaskan Natives (hereafter referred to as Native Americans) in host neighborhoods and non-host areas are very small and roughly equal (0.7% vs. 0.9%).

Table 4.1 also reveals significant socioeconomic disparities. Poverty rates in the host neighborhoods are 1.5 times greater than those in non-host areas (18% vs. 12%), and mean annual household incomes in host neighborhoods are 15% lower ($48,234 vs. $56,912). Mean owner-occupied housing values are also disproportionately low in neighborhoods with hazardous waste facilities. These data reveal depressed economic conditions in host neighborhoods of the nation's hazardous waste facilities.

Education and employment disparities also can be noted in Table 4.1. The percentage of persons 25 years and over with a four-year college degree are much lower in host neighborhoods than in non-host areas (18% vs. 25%, respectively). Similar disparities exist for the percentage of persons employed in professional "white collar" occupations, while percentages employed in "blue collar" occupations are disproportionately high in host neighborhoods.

The above racial and socioeconomic disparities are statistically significant at the 0.001 level, which means that there is less than a 0.1% (1 in 1000) chance that the differences are merely the result of random chance.

Changes During the 1990s

Table 4.1 shows that racial and socioeconomic disparities also existed in 1990 (also see Chapter 3). The 1990 and 2000 data allow us to consider whether disparities increased in magnitude during the 1990s. People of color percentages in host neighborhoods increased from 46% to 56%, whereas percentages in non-host areas increased from 23% to 30%. Thus, the overall difference in people of color percentages between host neighborhoods and non-host areas increased from 23% to 26% during the 1990s. However, the ratio of the percentages between host neighborhoods and non-host areas decreased slightly from 1.97 to 1.86. Similar trends can be noted for racial subgroups and with respect to poverty, income and housing value indicators of neighborhood socioeconomic status. The education and employment measures show no change during the 1990s.[6]

Table 4.1 – Racial and Socioeconomic Disparities between Host Neighborhoods and Non-Host Areas for the Nation's 413 Commercial Hazardous Waste Facilities (1990 and 2000 Census)

	2000				1990			
	Host	Non-Host	Diff.	Ratio	Host	Non-Host	Diff.	Ratio
Population								
Total Pop. (1000s)	9,222	272,200	-262,979	0.03	8,673	240,037	-231,364	0.04
Population Density	870	29.7	840	29.0	820	25.1	790	27.3
Race/Ethnicity								
% People of Color	55.9%	30.0%	25.9%	1.86	46.2%	23.4%	22.8%	1.97
% African American	20.0%	11.9%	8.0%	1.67	20.4%	11.7%	8.7%	1.74
% Hispanic or Latino	27.0%	12.0%	15.0%	2.25	20.7%	8.4%	12.3%	2.47
% Asian/Pac. Is.	6.7%	3.6%	3.0%	1.83	5.3%	2.8%	2.5%	1.88
% Native American	0.7%	0.9%	-0.2%	0.77	0.6%	0.8%	-0.3%	0.68
Socioeconomics								
Poverty Rate	18.3%	12.2%	6.1%	1.50	18.5%	12.9%	5.6%	1.43
Mean Household Income	$48,234	$56,912	-$8,678	0.85	$33,115	$38,639	-$5,524	0.86
Mean Owner-Occpd. Housing Value	$135,510	$159,536	-$24,025	0.85	$101,774	$111,954	-$10,180	0.91
% with 4-Year College Degree	18.5%	24.6%	-6.1%	0.75	15.4%	20.5%	-5.1%	0.75
% Professional "White Collar" Occp.	28.0%	33.8%	-5.8%	0.83	21.8%	26.6%	-4.8%	0.82
% Employed in "Blue Collar" Occupations	27.7%	24.0%	3.7%	1.15	30.0%	26.1%	3.9%	1.15

NOTES: Data computed using *areal apportionment method* (see Ch. 3). Differences and ratios are between host neighborhood and non-host area values. Differences may not precisely correspond to other values due to rounding off. Population density is in persons per square kilometer (rounded off). Mean housing values pertain to owner-occupied housing units. Percent employed in "white collar" and "blue collar" occupations are not directly comparable between 1990 and 2000, because of changes in Census Bureau definitions (see Methods Appendix).

People of color now comprise a majority of the population living near the nation's commercial hazardous waste facilities

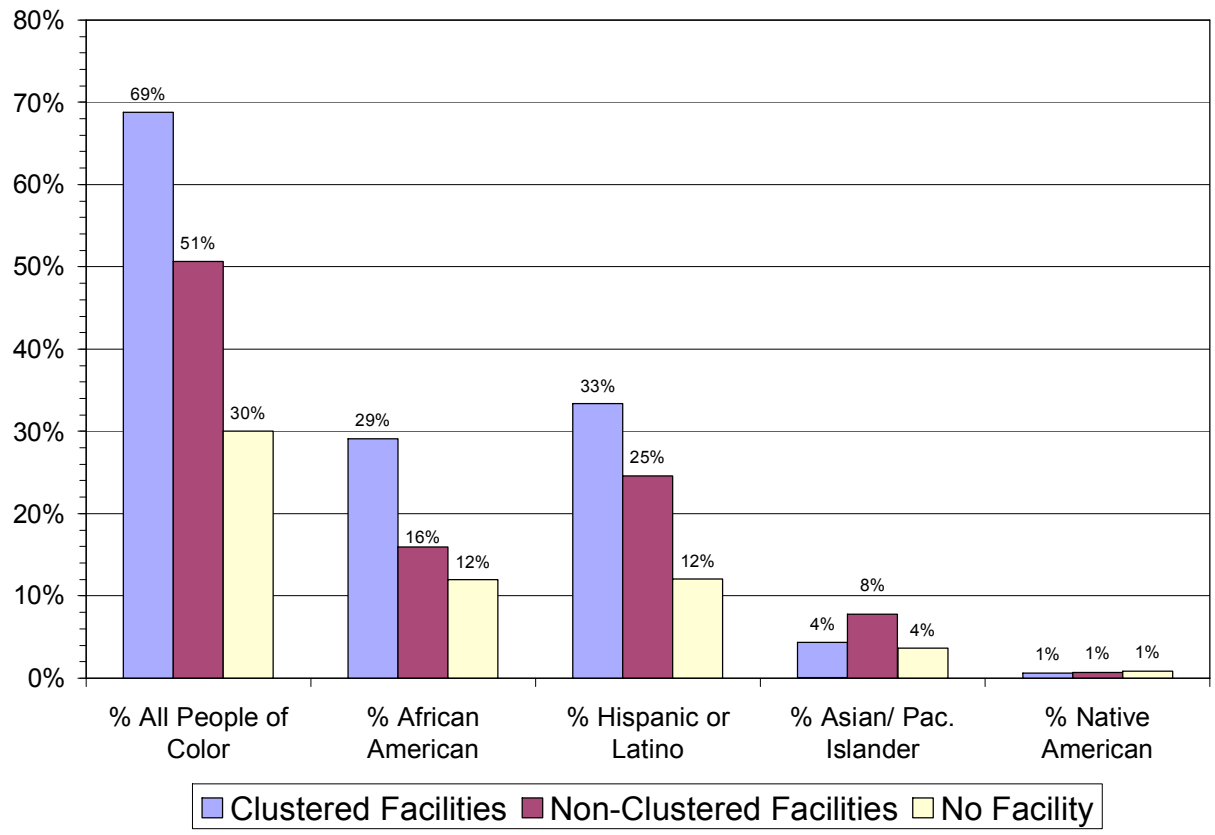
Overall, Table 4.1 shows that the magnitude of racial and socioeconomic disparities did not change appreciably between 1990 and 2000. It is notable, however, that during the 1990s the percentages of people of color increased in the United States such that people of color now comprise a majority of the population living near the nation's commercial hazardous waste facilities.

Neighborhoods with Clustered Facilities

Figure 4.1 shows that people of color percentages in neighborhoods with clustered facilities (i.e., multiple facilities), non-clustered facilities (i.e., a single facility) and no facility.[7] Neighborhoods with clustered facilities have higher percentages of people of color than those with non-clustered facilities (69% vs. 51%). Likewise, neighborhoods with clustered facilities have disproportionately high poverty rates. These differences are statistically significant at a 0.001 level.

In addition, percentages of African Americans and Hispanics in the neighborhoods with clustered facilities are significantly higher than neighborhoods with non-clustered facilities (29% vs. 16% and 33% vs. 25%, respectively). Although Asians/Pacific Islanders are disproportionately located in all host neighborhoods (see Table 4.1), they are found in lower percentages in the neighborhoods with clustered facilities than in non-clustered facility neighborhoods (4.3% vs. 7.8%).

Figure 4.1 – People of Color Percentages in Neighborhoods with Clustered Facilities, Non-Clustered Facilities and No Facility



Native American percentages are very small and nearly equal (0.7%) in clustered and non-clustered facility host neighborhoods (see Figure 4.1). While there may be individual cases with striking disparities in Native American percentages, they would be masked in this national level study. A definitive analysis of environmental injustices facing Native Americans is beyond the scope of this study. Environmental injustices in Indian Country have been well-documented, and Native Americans have been an important group in the struggle for environmental justice.[8] Indeed, 13 facilities analyzed in this study are located on Indian reservations, including a controversial facility on the Gila River Indian Community reservation in Arizona (Jayadev, 2007). However, because of their small numbers relative to the other groups in this particular analysis, they are not included in subsequent tables.

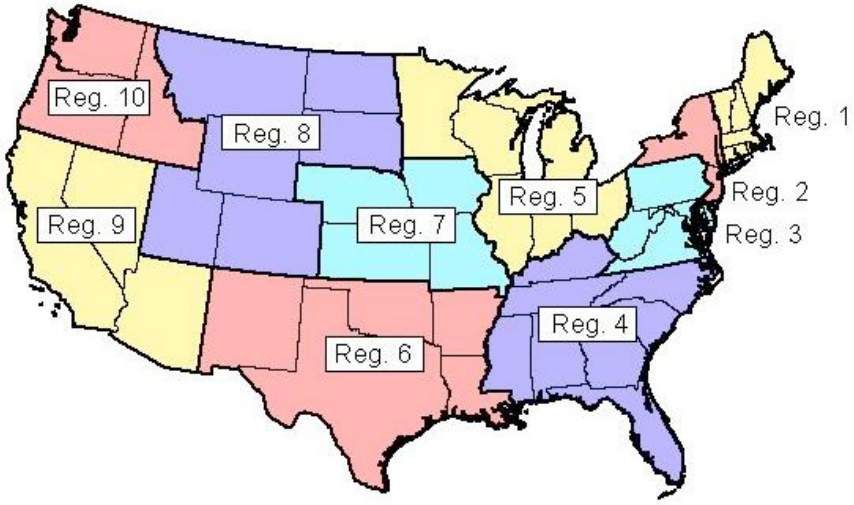
Poverty rates in the neighborhoods with clustered facilities are high compared to non-clustered facility neighborhoods: 22% vs. 17%. Mean household incomes are 10% lower in neighborhoods with clustered facilities ($44,600 vs. $49,600), and mean housing values are 14% lower ($121,200 vs. $141,000). These data are shown in Appendix 4.1.

All racial and socioeconomic disparities between neighborhoods with clustered and non-clustered facility host neighborhoods are statistically significant at the 0.01 level. Although measuring the concentration of hazardous waste activity in a slightly different way, these findings are similar to those of the previous UCC reports, which found that zip code areas with higher levels of hazardous waste activity also had relatively higher percentages of people of color and higher poverty rates.[9] People of color and the poor thus continue to be particularly vulnerable to the various negative impacts of hazardous waste facilities. Moreover, the present findings show that this is the case for African Americans, Hispanics and Asians/Pacific Islanders.

EPA Regional Disparities

Racial and socioeconomic disparities were assessed for all 10 EPA regions, each comprising between 2 and 8 contiguous states (see Figure 4.2). Table 4.2 shows that regions with the greatest number of facilities include: Region 5, Great Lakes states (85 or 21%); Region 4, the southeast (67 or 16%); Region 6, south central states (61 or 15%); and Region 9, the West (55 or 13%). The fewest facilities are found in: Region 1, the Northeast (23 or 6%); Region 8, the mountain west (15 or 4%); and Region 10, the Pacific Northwest (8 or 2%).

Figure 4.2 – EPA Regions



NOTES: Region 2 includes New York and New Jersey only. Region 3 includes Maryland, Pennsylvania, Virginia, West Virginia and Washington D.C. Region 10 also includes Alaska and Hawaii (not shown).

EPA regional offices provide direct oversight of state environmental programs, which in turn monitor and enforce the operation of existing hazardous waste facilities and issue permits for the siting of new ones. This EPA regional analysis allows us to see how geographically widespread the racial and socioeconomic disparities noted above are. We also can identify regions with pervasive and severe racial disparities, regions where regulatory intervention may be needed to ensure environmental justice.

Table 4.2 shows that racial disparities for people of color as a whole exist in 9 out of 10 EPA regions (all except Region 3). These disparities are statistically significant at the 0.001 level. Disparities in people of color percentages between host neighborhoods and non-host areas are greatest in: Region 1 (36% vs. 15%), Region 4 (54% vs. 30%), Region 5 (53% vs. 19%), Region 6 (63% vs. 42%) and Region 9 (80% vs. 49%).[10]

Table 4.2 – People of Color Percentages for Host Neighborhoods and Non-Host Areas by EPA Region

	Number of Facilities	Host Neighborhoods	Non-Host Areas	Difference	Ratio
U.S. Total	413	55.9%	30.0%	25.9%	1.86
Region 1	23	36.3%	15.0%	21.3%	2.43
Region 2	32	51.5%	36.0%	15.6%	1.43
Region 3	35	23.2%	24.5%	-1.33%	0.95
Region 4	67	54.3%	30.4%	23.8%	1.78
Region 5	85	52.6%	18.8%	33.8%	2.80
Region 6	61	62.7%	41.8%	20.9%	1.50
Region 7	32	29.1%	13.4%	15.7%	2.17
Region 8	15	31.2%	18.2%	13.0%	1.72
Region 9	55	80.5%	49.4%	31.1%	1.63
Region 10	8	38.9%	19.1%	19.9%	2.04

NOTES: Data computed using 2000 Census data and *areal apportionment method* (see Ch. 3). Differences may not precisely correspond to other values due to rounding off.

Seven EPA regions have statistically significant disparities in African American percentages, seven EPA regions also have statistically significant disparities in Hispanic or Latino percentages, and six EPA regions have statistically significant disparities in percentages of Asians/Pacific Islanders. Table 4.3 shows the descriptive statistics for these racial and ethnic groups for each EPA region.

Geographically widespread socioeconomic disparities also can be noted (see Table 4.4). For example, nine EPA regions have disproportionately high poverty rates and disproportionately low mean household incomes and housing values. Differences in poverty rates between host neighborhoods and non-host areas are greatest for Region 1 (16% vs. 8.7%), Region 2 (19% vs. 12%), Region 5 (19% vs. 9.6%), Region 7 (15% and 10%), Region 8 (15% and 10%) and Region 9 (21% vs. 13%). Socioeconomic disparities are statistically significant in 9 of the 10 EPA regions, all but Region 9.

Disproportionately high percentages of people of color are found in 7 of the 9 regions with neighborhoods with clustered facilities (see Appendix 4.2). Differences between clustered and non-clustered facility host neighborhoods are greatest in Region 5 (62% and 46%), Region 7 (59% vs.25%), Region 8 (55% vs..

Table 4.3 – Racial Disparities between Host Neighborhoods and Non-Host Areas by EPA Region

	Percent African American				Percent Hispanic or Latino/a				Percent Asian/Pacific Islander			
EPA Region	Host	Non-Host	Diff.	Ratio	Host	Non-Host	Diff.	Ratio	Host	Non-Host	Diff.	Ratio
Region 1	9.6%	4.8%	4.8%	2.00	19.5%	5.5%	13.9%	3.52	4.9%	2.6%	2.4%	1.91
Region 2	16.0%	15.0%	1.0%	1.07	23.3%	14.0%	9.3%	1.66	9.7%	5.4%	4.3%	1.81
Region 3	15.1%	16.6%	-1.5%	0.91	4.7%	3.7%	1.0%	1.26	2.0%	2.7%	-0.7%	0.75
Region 4	37.0%	20.4%	16.6%	1.82	13.7%	7.2%	6.5%	1.91	2.2%	1.4%	0.8%	1.59
Region 5	35.8%	10.1%	25.7%	3.55	11.3%	5.0%	6.3%	2.27	3.2%	2.0%	1.2%	1.59
Region 6	20.4%	13.5%	6.9%	1.51	37.9%	23.1%	14.7%	1.64	2.5%	2.1%	0.4%	1.17
Region 7	16.1%	6.7%	9.4%	2.40	8.9%	3.6%	5.3%	2.50	1.7%	1.3%	0.4%	1.30
Region 8	1.9%	2.0%	-0.1%	0.95	22.9%	10.5%	12.4%	2.19	3.1%	1.7%	1.4%	1.80
Region 9	11.8%	5.6%	6.2%	2.10	54.1%	28.7%	25.3%	1.88	12.3%	10.8%	1.5%	1.14
Region 10	6.6%	2.3%	4.2%	2.84	10.1%	7.5%	2.6%	1.35	17.1%	4.2%	12.9%	4.07

NOTES: Differences and ratios are between host neighborhood and non-host areas. Differences may not precisely correspond to other values due to rounding off.

Table 4.4 – Socioeconomic Disparities between Host Neighborhoods and Non-Host Areas by EPA Region

	Poverty Rates				Mean Household Income				Mean Housing Value			
EPA Region	Host	Non-Host	Diff.	Ratio	Host	Non-Host	Diff.	Ratio	Host	Non-Host	Diff.	Ratio
Region 1	15.7%	8.7%	7.0%	1.80	$48,368	$65,296	-$16,928	0.74	$143,840	$202,102	-$58,261	0.71
Region 2	19.4%	12.3%	7.1%	1.57	$50,793	$66,137	-$15,344	0.77	$171,083	$202,579	-$31,496	0.84
Region 3	12.6%	10.7%	1.9%	1.18	$47,493	$57,479	-$9,986	0.83	$97,971	$139,278	-$41,307	0.70
Region 4	15.7%	13.7%	2.0%	1.15	$45,811	$50,931	-$5,120	0.90	$97,673	$118,962	-$21,288	0.82
Region 5	19.4%	9.6%	9.7%	2.01	$44,933	$56,955	-$12,022	0.79	$103,812	$137,470	-$33,658	0.76
Region 6	18.8%	16.0%	2.8%	1.18	$45,072	$50,616	-$5,545	0.89	$83,602	$101,518	-$17,916	0.82
Region 7	15.0%	10.4%	4.7%	1.45	$44,084	$50,308	-$6,224	0.88	$84,028	$106,808	-$22,780	0.79
Region 8	14.8%	10.3%	4.4%	1.43	$40,801	$55,413	-$14,612	0.74	$105,286	$163,390	-$58,104	0.64
Region 9	20.7%	13.5%	7.2%	1.54	$52,947	$64,146	-$11,199	0.83	$218,576	$246,673	-$28,096	0.89
Region 10	10.9%	11.0%	-0.1%	0.99	$55,599	$55,889	-$290	0.99	$180,716	$179,522	$1,193	1.01

NOTES: Differences and ratios are between host neighborhood and non-host areas. Differences may not precisely correspond to other values due to rounding off.

26%) and Region 9 (89% vs. 75%). Regions 1, 3 and 4 also have large disparities between clustered and non-clustered facility neighborhoods

For Hispanics, African Americans and Asians/Pacific Islanders, statistically significant disparities exist in the majority or vast majority of EPA regions.

In sum, racial disparities in the location of the nation's commercial hazardous waste facilities exist in all EPA regions. For Hispanics, African Americans and Asians/Pacific Islanders, statistically significant disparities exist in the majority or vast majority of EPA regions. Moreover, the pattern of people of color being especially concentrated in areas where facilities are clustered is also geographically widespread throughout the country.

State Disparities

Given the widespread geographic distribution of racial and socioeconomic disparities associated with the location of hazardous waste facilities among EPA regions, one could expect such disparities to be distributed widely among states as well. EPA regional offices and their environmental justice programs provide guidance to and oversight of state environmental programs (such as RCRA, Clean Air Act and Clean Water Act). States also are beginning to develop environmental justice and enhanced enforcement programs of their own to reduce risks to environmentally overburdened communities (Targ, 2005). Thus, it is helpful to identify states where racial and socioeconomic disparities are the greatest. It is in these states where more stringent regulatory action may be warranted.

Alaska, Delaware, Hawaii, New Hampshire, Montana, Wyoming and the District of Columbia did not have licensed and operating commercial hazardous waste facilities in 1999. Forty of the remaining 44 states with facilities have disproportionately high percentages of people of color in circular host neighborhoods. The average of these 40 states' percentage of people in color in host neighborhoods is about two times greater than the average of non-host areas for those states (44% vs. 23%).[11] Host neighborhoods in 19 states are majority people of color.

Figure 4.3 shows states with the 10 largest differences in people of color percentages between host neighborhoods and non-host areas. These states are shown in order (left-to-right) by the largest percentages of people of color living in the host neighborhoods. For both California and Nevada, these percentages are about 80%. For three additional states, people of color make up a two-thirds or more majority in these neighborhoods. In descending order of by the size of the differences between host and non-host areas, these states are: Michigan (66% vs. 19%), Nevada (79% vs. 33%), Kentucky (51% vs. 10%), Illinois (68% vs. 31%), Alabama (66% vs. 31%), Tennessee (54% vs. 20%), Washington (53% vs. 20%), Kansas (47% vs. 16%), Arkansas (52% vs. 21%) and California (81% vs. 51%). Differences in these percentages range from a high of 47% for Michigan to 30% for California.

Numerous other states have large disparities in people of color percentages. Many of these have majority people of color host neighborhoods, including Arizona, Florida, Georgia, Louisiana, New Jersey, New York, North Carolina and Texas (see Appendix 4.3). People of color disparities are statistically significant for 32 states, including all the aforementioned states.

Host neighborhoods in an overwhelming majority of the 44 states with commercial hazardous waste facilities have disproportionately high percentages of Hispanics (35 states), African Americans (38 states) and Asians/Pacific Islanders (27 states). Among these states, the average disparity between host neighborhoods and non-host areas is 17% vs. 9.0% for Hispanics, 24% vs. 11% for African Americans and 4.5% vs. 2.2% for Asians/Pacific Islanders.[12] Additional highlights regarding these racial disparities include the following findings:

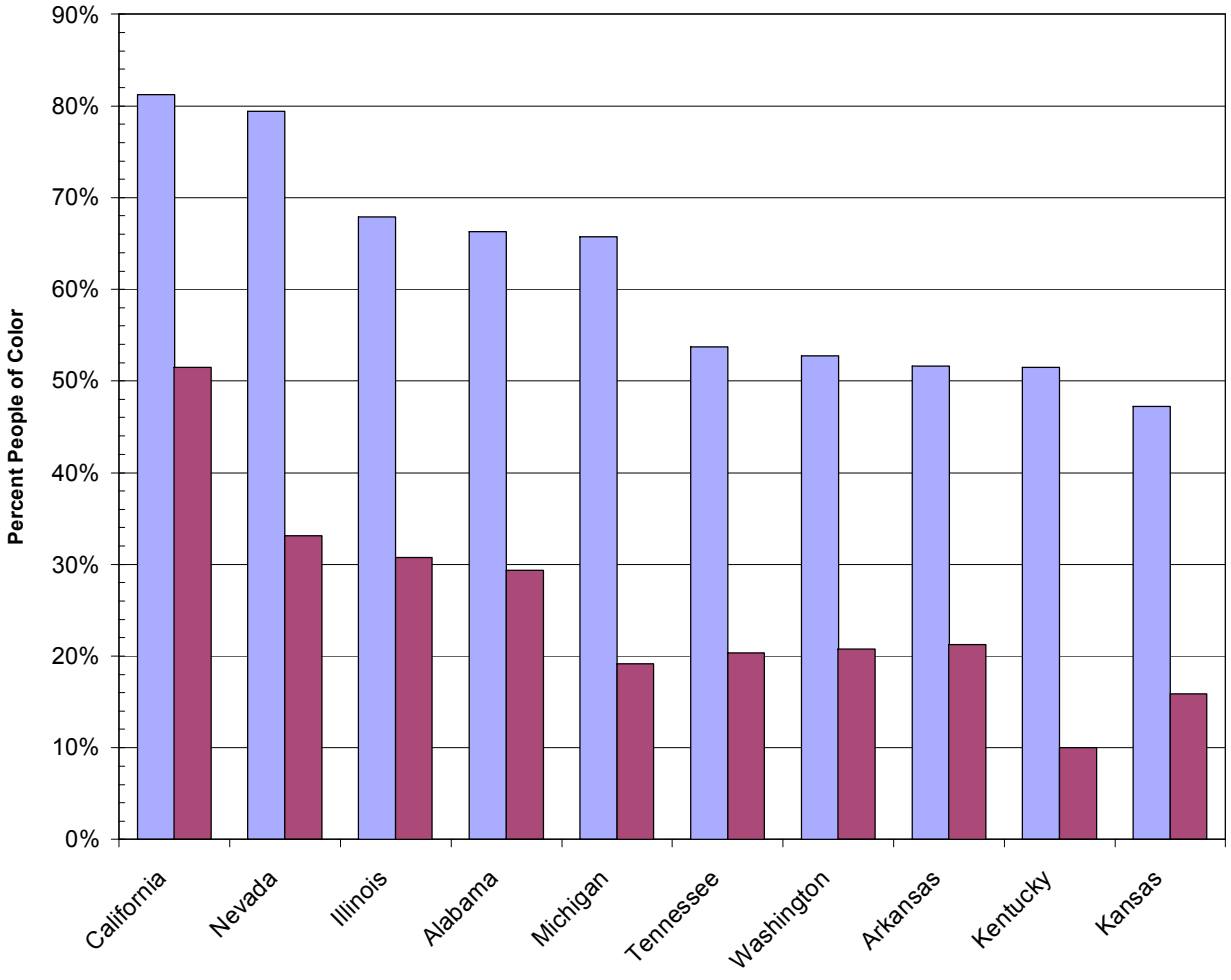
- Host neighborhoods in Arizona, California and Nevada are majority Hispanic or Latino. Other states with very large disparities in Hispanic or Latino percentages include Colorado,

Connecticut, Florida, Illinois, Kansas and Utah (see Appendix 4.4 for a compete listing). Differences in these percentages between host neighborhoods and non-host areas range from a high of 32% for Nevada to 13% for Kansas.

- Host neighborhoods in Alabama and Michigan are majority African American. Other states with very large disparities in African American percentages: Arkansas, Illinois, Kentucky, Nevada, North Carolina, Ohio, Tennessee and Wisconsin. Differences in percentages between host neighborhoods and non-host areas range from 46% (Michigan) to 19% (Nevada). Twenty-eight other states have African American disparities (see Appendix 4.5).

- The state of Washington has the largest disparity in the percentage of Asians/Pacific Islanders (26% vs. 5.6%). Other states with Asian/Pacific Islander disparities: California, Massachusetts, Minnesota, New York, Oregon, Rhode Island and Utah (see Appendix 4.6).

Figure 4.3 – States with the 10 Largest Differences in People of Color Percentages between Host Neighborhoods and Non-Host Areas



Thirty-five states have socioeconomic disparities as indicated by poverty rates. For these states, the average poverty rate in host neighborhoods is 18% compared to 12% in non-host areas. States with very large poverty rate disparities include Arizona, Connecticut, Michigan, Minnesota, Nevada and Ohio. In these states, poverty rates in host neighborhoods are more than two times greater than those in non-host

areas (see Appendix 4.7). Poverty rate disparities are statistically significant for a majority of states with commercial hazardous waste facilities (23 out of 44).

This analysis shows that statistically significant racial and socioeconomic disparities in the location of commercial hazardous waste facilities are very prevalent among the states and thus throughout the country. This reinforces the findings for the EPA regions and should allow more focused and effective attention to be devoted to regional environmental injustices. This might include additional research, since few published environmental justice studies have been conducted for many of these states where environmental justice claims could be made on the basis of these findings.

Racial disparities are more prevalent and extensive than socioeconomic disparities, suggesting that race has more to do with the current distribution of the nation's hazardous waste facilities than poverty.

This analysis of the states also shows that racial disparities are more prevalent and extensive than socioeconomic disparities, suggesting that race has more to do with the current distribution of the nation's hazardous waste facilities than poverty. The question of the relative importance of race and socioeconomic status is systematically examined below.

Metropolitan Area Disparities

The state-wide disparities may in part reflect the fact that most commercial hazardous waste facilities are located in large cities where people of color are generally found in relatively high percentages. Various scholars have suggested examining host neighborhoods in metropolitan areas by themselves to avoid possible confounding effects of counting rural areas, which have relatively low percentages of people of color, among the non-host areas (see e.g., Anderton et al., 1994; Mohai, 1995). Such a comparison is more conservative in that the likelihood of finding disparities is reduced.

Metropolitan Areas (MAs) are prescribed by the Office of Budget and Management (OMB) to gather statistics and allocate resources to various federal programs. They are not political jurisdictions like incorporated towns, cities and counties. A single metropolitan area may encompass several counties and cities, which in turn may be located in adjoining states.

In 2000, 149 of the nation's 331 metropolitan areas (45%) contained 343 of the nation's 413 commercial hazardous waste facilities (87%). More than 9 million people reside in host neighborhoods of facilities located in metropolitan areas. This represents 98% of the total population living in host neighborhoods of all 413 facilities.

Table 4.5 compares the racial and socioeconomic characteristics of the metropolitan host neighborhoods to the characteristics of non-host areas. In this comparison, non-host areas include areas in all 331 U.S. MAs that lie beyond the 3-kilometer circular host neighborhoods. See the Methods Appendix note 9 for further details.

In metropolitan areas, people of color percentages in host neighborhoods are significantly greater than those in non-host areas (57% vs. 33%). Likewise, the nation's metropolitan areas show disparities in percentages of African Americans, Hispanics and Asians/Pacific Islanders, 20% vs. 13%, 27% vs. 14% and 6.8% vs. 4.4%, respectively. Table 4.5 also shows socioeconomic disparities between host neighborhoods and non-host areas, for example, in poverty rates (18% vs. 12%). Mean household incomes and housing values in host neighborhoods are about 20% lower than those in non-host areas ($48,400 vs. $60,000 and $136,900 vs. $173,700, respectively). These racial and socioeconomic disparities are statistically significant at the 0.001 level.

One hundred and five of the 149 MAs with facilities (70%) have host neighborhoods with disproportionately high percentages of people of color, and 46 of these MAs (31%) have majority people of color host neighborhoods. These MAs are widely distributed across the country. Metropolitan areas

with large disparities in Hispanic or Latino percentages are also located in all regions, whereas MAs with large disparities in African American percentages are located primarily in the South and Midwest.

Table 4.5 – Racial and Socioeconomic Disparities between Host Neighborhoods and Non-Host Areas of Commercial Hazardous Waste Facilities in Metropolitan Areas

	Host Neighborhoods	Non-Host Areas	Difference	Ratio
Population				
Total Population (1000s)	9,035	216,920	-207,885	0.04
Population Density	1,040	120	920	8.67
Race/Ethnicity				
% People of Color	56.6%	33.1%	23.5%	1.71
% African American	20.1%	12.8%	7.3%	1.57
% Hispanic or Latino/a	27.4%	13.7%	13.8%	2.01
% Asian/Pacific Islander	6.8%	4.4%	2.4%	1.56
Socioeconomics				
Poverty Rate	18.3%	11.6%	6.8%	1.59
Mean Household Income	$48,391	$60,438	-$12,048	0.80
Mean Housing Value	$136,880	$173,738	-$36,858	0.79

NOTES: Differences and ratios are between host neighborhood and non-host area percentages. Differences may not precisely match other values due to rounding off. Population density is persons per square kilometer (rounded off). Mean housing values pertain to owner-occupied housing units.

Table 4.6 – The 10 Metropolitan Areas with the Largest Number of People of Color Living in Hazardous Waste Facility Neighborhoods

Metropolitan Area	Number of Facilities / Host Neighborhoods	People of Color in Host Neighborhoods	People of Color per Host Neighborhood	% People of Color in Host Neighborhoods
Los Angeles	17	1,115,412	65,612	90.9%
New York	3	451,746	150,582	61.0%
Detroit	12	315,975	26,331	69.3%
Chicago	9	294,437	32,715	71.6%
Oakland	6	219,978	36,663	76.0%
Orange County (CA)	3	176,368	58,789	69.8%
Houston	10	165,729	16,573	78.6%
Newark	4	143,540	35,885	66.8%
San Jose	2	132,720	66,360	77.1%
Minneapolis--St. Paul	9	101,455	11,273	35.3%
TOTAL	75	3,117,360		

NOTE: See Appendix 4.8 for a listing of 80 selected metropolitan areas.

Appendix 4.8 has listings of people of color percentages for 80 selected metropolitan areas. Thirteen metropolitan areas have large disparities (host-non-host area differences of 3% or more) in Asian/Pacific Islander percentages. These also are distributed throughout the country (see Appendix 4.9, which lists 25 selected metropolitan areas).

Table 4.6 above shows the 10 metropolitan areas with the largest number of people of color living in neighborhoods with hazardous waste facilities. Host neighborhoods in these 10 metropolitan areas have a total of 3.12 million people of color, which represents 60% of the total population of people of color in all host neighborhoods in the country (5.16 million). Six metropolitan areas account for half of all people of color living in close proximity to all of the nation's commercial hazardous waste facilities (Los Angeles, New York, Detroit, Chicago, Oakland and Orange County, CA). Los Angeles alone accounts for 21% of the people of color in host neighborhoods nationally.

In sum, there is no doubt that significant racial disparities exist within the nation's metropolitan areas, which contain 4 out of every 5 commercial hazardous waste facilities. Racial disparities exist in a large majority of metropolitan areas that have facilities (105 out of 141), and these metropolitan areas are widely distributed throughout the country. The magnitude of these disparities is often quite substantial. Moreover, these disparities are not confined to a single racial group but can be found among African Americans, Hispanics and Asians/Pacific Islanders. The significant disparities found when separately examining the nation's metropolitan areas as a whole, as well as individual metropolitan areas, demonstrate the robustness of the findings and underscore those of the EPA regional and state analyses.

The Race Factor

Toxic Wastes and Race in the United States found race to be more important than socioeconomic status in predicting the location of the nation's commercial hazardous waste facilities. Thus, it is appropriate to ask whether racial disparities reported above in the current distribution of hazardous wastes are a function of neighborhood socioeconomic characteristics. Because race is often highly correlated with socioeconomic status, it is difficult to tell if race plays an independent role in accounting for facility locations without conducting statistical tests (i.e., multivariate analyses) to isolate the effect of race alone.

To determine the independent effect of race, socioeconomic factors believed to be associated with race must be statistically controlled. A number of income, occupation, employment and education variables were selected to serve as indicators of neighborhood socioeconomic characteristics (see Methods Appendix).

Table 4.7 shows the results of the multivariate analysis with the race and socioeconomic variables separately grouped. All race variables (percentages of Hispanics, African Americans and Asians/Pacific Islanders) are highly significant independent predictors of the facility locations (at the 0.000 level). The positive coefficient (B) indicates that the higher the people of color percentages, the more likely a census tract is to be within 3 kilometers of a commercial hazardous waste facility. Among the indicators of socioeconomic status, mean income and percent employed in blue collar occupations are significant predictors (at the 0.000 level). These variables are therefore independently associated with hazardous waste facility locations. Mean housing value is statistically significant, but in an unexpected direction (i.e., it has a positive coefficient).

Some socioeconomic variables are not statistically significant. For example, the percentage employed in management and professional (i.e., white collar) occupations is not a significant predictor. Likewise, the percentage of persons with a college degree does not quite achieve the threshold needed to be considered statistically significant, though it is trending that way. It also has a positive coefficient, which is in the unexpected direction.

The results show that race continues to be a significant and robust predictor of commercial hazardous waste facility locations when socioeconomic and other non-racial factors are taken into account.

The results show that race continues to be a significant and robust predictor of commercial hazardous waste facility locations when socioeconomic and other non-racial factors are taken into account. A separate analysis of metropolitan areas alone produces similar results (see Appendix 4.10).

Table 4.7 – Multivariate Analysis Comparing Independent Effect of Race on Facility Location (Logistic Regression)

	Coefficient (B)	Est. Odds Ratio (Exp(B))	Significance Level
Race/Ethnicity			
% Hispanic or Latino	2.222	9.226	**0.000**
% African American	1.752	5.768	**0.000**
% Asian/Pacific Islander	3.583	35.964	**0.000**
Socioeconomic Status Indicators			
Mean Household Income ($1000s)	-0.011	0.989	**0.000**
Mean Housing Value ($1000s)	0.001	1.001	**0.002**
% with 4-Year College Degree	0.769	2.158	0.058
% Employed in Professional "White Collar" Occupations	-0.695	0.499	0.167
% Employed in "Blue Collar" Occupations	2.427	11.321	**0.000**
Constant	-4.453	0.012	**0.000**
-2 Log Likelihood	16977.135		
Model X^2 (df=8)	1683.086		**0.000**

NOTES: Analysis uses 2000 Census tract data and *50% areal containment method* with a 3-kilometer circular radius (see Ch. 3). See Methods Appendix for definitions of "white collar" and "blue collar" occupations.

Conclusions

Twenty years after the release of *Toxic Wastes and Race in the United States,* significant racial and socioeconomic disparities persist in the distribution of the nation's commercial hazardous waste facilities. Although the current assessment uses newer methods to ensure that only nearby populations are counted, the conclusions are very much the same as they were in 1987. People of color and persons of low socioeconomic status are still disproportionately impacted and are particularly concentrated in neighborhoods and communities with the greatest number of facilities. Indeed, a watershed moment has occurred in the last decade. People of color now comprise a majority in neighborhoods with commercial hazardous waste facilities, and much larger (over two-thirds) majorities can be found in neighborhoods with clustered facilities.

This current appraisal also reveals that racial disparities are also widespread throughout the country – whether one examines EPA regions, states or metropolitan areas, where the lion's share of facilities is located. Moreover, race continues to be a stronger predictor of facility locations than other factors often considered to be associated with race.

Significant racial and socioeconomic disparities exist today despite the considerable societal attention to the problem noted in previous chapters. These findings raise serious questions about the ability of current policies and institutions to adequately protect people of color and the poor from toxic threats.

Significant racial and socioeconomic disparities exist today despite the considerable societal attention to the problem noted in previous chapters These findings raise serious questions about the ability of current policies and institutions to adequately protect people of color and the poor from toxic threats.

In 1994, in their introduction to *Toxic Wastes and Race Revisited,* John Rosenthall of the NAACP and Charles Lee of the UCC Commission for Racial Justice remarked about "the continuing need for vigilance and action to ensure people of color are no longer disproportionately exposed to health and environmental risks" (Goldman and Fitton, 1994: 1). These words are still relevant over a decade later. It remains clear that much more concerted attention is needed to address these persistent disproportionate environmental burdens on this twentieth anniversary of *Toxic Wastes and Race in the United States*.

Endnotes

[1] The 1993 findings used estimates based on 1990 Census data.
[2] The explosion in Danvers destroyed or damaged 70 houses and businesses.
[3] Studies of the impacts of hazardous waste facilities are too numerous to list here. For examples, see Methods Appendix.
[4] For a description of the construction of these variables and Census data sources, see Methods Appendix.
[5] Note that 147 of the 413 host neighborhoods (36%) have a majority of people of color (see Appendix 4.3).
[6] To streamline the presentation, education and employment variables are omitted from subsequent tables, except for the table showing the results of the multivariate analysis, which examines the role of race and various indicators of socioeconomic status in accounting for the location of hazardous waste in the U.S. Poverty rates, mean household income and mean housing values are nevertheless shown in the following analyses of clustered facilities, states, EPA regions and metropolitan areas.
[7] A total of 49 clustered facility neighborhoods (42 with two facilities, five with three facilities, one with four facilities and one with six facilities) and 304 non-clustered facility neighborhoods were delineated. Thus, clustered facility neighborhoods and non-clustered facility neighborhoods contain 109 and 304 facilities, respectively. Most analyses reported, however, involve the combined clustered and non-cluster facility neighborhoods. See Figures 3.1E and 3.1F for an illustration of neighborhoods with clustered facilities.
[8] For accounts of the indigenous environmental movement, see Clark (2002), LaDuke (1995) and Weaver (1995). For studies of abandoned hazardous wastes and other toxic threats, such as nuclear, military and mining wastes impacting Native Americans, Alaskan Natives and Native Hawaiians, see, e.g., Blackford, 2004; Grinde and Johansen, 1995; and Hooks and Smith, 2004.
[9] Similar analyses also were conducted of 3 kilometer host neighborhoods of hazardous waste landfills and incinerators compared to host neighborhoods of all other commercial hazardous waste facilities. For this comparison, facilities were classified according to their Standard Industrial Codes (SIC) and North American Industry Classification System (NAIC), hierarchical coding systems that classify all economic activity in various industry sectors. These codes were obtained from Envirofacts. Thus, people of color percentages were examined for host neighborhoods of 120 commercial hazardous waste facilities with an SIC code of 4953 ("Refuse Systems") and NAIC code of 592211 ("Hazardous Waste Treatment and Disposal"). The results very closely parallel those presented and therefore are not reported, but may be requested from the author.
[10] In Region 5, 28 of 85 (33%) of host neighborhoods are majority people of color (i.e., people of color percentages are greater than 50%). The number of majority people of color host neighborhoods in Regions 1, 4, 6 and 9, respectively: 3 of 23 (13%), 28 of 65 (43%), 28 of 61 (46%) and 43 of 55 (73%).
[11] States without racial disparities include North Dakota, Nebraska, New Mexico and Idaho.
[12] Disparities in Hispanic percentages are statistically significant for 21 states. Disparities in African American and Asian/Pacific Islander percentages are statistically significant for 25 and 11 states, respectively.

References

Anderton, Douglas L., Anderson, Andy B., Oakes, John Michael, & Fraser, Michael R. (1994). Environmental equity: The demographics of dumping. *Demography, 31*(2), 229-248.

Baibergenova, Akerke, Kudyakov, Rustam, Zdeb, Michael, & Carpenter, David O. (2003). Low birth weight and residential proximity to PCB-contaminated waste sites. *Environmental Health Perspectives, 111*(10), 1352-1357.

Been, Vicki (1995). Analyzing evidence of environmental justice. *Journal of Land Use & Law, 11*(1), 1-36.

Been, Vicki, & Gupta, Francis (1997). Coming to the nuisance or going to the barrios? A longitudinal analysis of environmental justice claims. *Ecology Law Quarterly, 24*(1), 1-56.

Blackford, Mansel G. (2004). Environmental justice, native rights, tourism, and opposition to military control: The case of Kaho'olawe. *Journal of American History, 91*(2), 544-571.

Bullard, Robert D. (1983). Solid waste sites and the black Houston community. *Sociological Inquiry, 53*, 273-288.

Bullard, Robert D. (1990). *Dumping in Dixie: Race, class and environmental quality*. Boulder, CO: Westview Press.

Bullard, Robert D. (Ed.) (1993). *Confronting environmental racism: Voices from the grassroots*. Boston: South End Press.

Bullard, Robert D., & Wright, Beverly Hendrix (1987). Blacks and the environment. *Humboldt Journal of Social Relations, 14*(1/2), 165-184.

Clark, Brett (2002). The indigenous environmental movement in the United States. *Organization & Environment, 15*(4), 410-442.

Cole, Luke W., & Foster, Sheila R. (2001). *From the ground up: Environmental racism and the rise of the environmental justice movement*. New York: New York University Press.

Commission for Racial Justice (1987). *Toxic wastes and race in the United States: A national report on the racial and socioeconomic characteristics of communities with hazardous waste sites*. New York: United Church of Christ.

Corburn, Jason (2005). *Street science: Community knowledge and environmental health justice*. Cambridge, MA: MIT Press.

Daley, Beth (2006). Oversight gap cited on waste at Danvers site. *Boston Globe* (Nov. 29). Retrieved from http://www.boston.com/news/local/articles/2006/11/29/oversight_gap_cited_on_waste_at_danvers_site/.

Davidson, Pamela, & Anderton, Douglas L. (2000). The demographics of dumping II: Survey of the distribution of hazardous materials handlers. *Demography, 37*(4), 461-466.

Dolk, H., Vrijeid, M., Armstrong, B., Abramsky, L., Bianchi, F., Game, E., Nelen, V., Robert, E., Scott, J.E.S., Stone, D., & Tenconi, R. (1998). Risk of congenital anomalies near hazardous waste landfill sites in Europe: The EUROHAZCON study. *The Lancet, 352*, 423-427.

Edelstein, Michael R. (2004). *Contaminated communities: Coping with residential toxic exposure* (2d ed.). Cambridge, MA: Westview Press.

Elliot, S., Taylor, S.M., Walter, S., Stieb, D., Frank, J., & Eyles, J. (1993). Modeling psychological effects of exposure to solid waste facilities. *Social Science and Medicine, 37*(6), 805-812.

Environmental Information Ltd. (2001/2002). *Environmental services directory*. (Online paid subscription service and database). Edina, MN: Environmental Information Ltd. (Available at http://www.envirobiz.com/newSearch/EnvSerDir.asp).

Environmental Systems Research Institute (2000). *StreetMap USA*. Redlands, CA: ESRI Inc.

Fielder, H.M.P., Poon-King, C.M., Palmer, S.R., Moss, N., & Coleman, G. (2000). Assessment of impact on health of residents living near the Nant-y-Gwyddon landfill site: Retrospective analysis. *British Medical Journal, 320*, 19-22.

Gerschwind, Sandra A., Stolwijk, Jan, Bracken Michael, Fitzgerald, Edward, Stark, Alice, Olsen, Carolyn, & Melius, James (1992). Risk of congenital malformations associated with proximity to hazardous waste sites. *American Journal of Epidemiology, 135*, 1197-1207.

GeoLytics Inc. (1998). *Census CD+Maps Version 3.0*. New Brunswick, NJ: GeoLytics Inc.

GeoLytics Inc. (2000). *StreetCD 99*. New Brunswick, NJ: GeoLytics Inc.

GeoLytics Inc. (2002). *Census 2000*. New Brunswick, NJ: GeoLytics Inc.

Goldman, Benjamin A., & Fitton, Laura (1994). *Toxic wastes and race revisited: An update of the 1987 report on the racial and socioeconomic characteristics of communities with hazardous waste sites*. Washington, D.C.: Center for Policy Alternatives.

Grinde, Donald A., & Johansen, Bruce E. (1995). *Ecocide of Native America: Environmental destruction of Indian lands and peoples*. Santa Fe, NM: Clear Light.

Hooks, Gregory, & Smith, Chad (2004). The treadmill of destruction: National sacrifice areas and Native Americans. *American Sociological Review, 69*, 558-575.

Jacobson, Matthew Frye (1998). *Whiteness of different color: European immigrants and the alchemy of race*. Cambridge, MA: Harvard University Press.

Jayadev, Raj (2007). Silicon Valley's dirty secret. *Metro Silicon Valley* (Jan. 3-9). Retrieved from http://www.metroactive.com/metro/01.03.07/environmental-racism-0701.html.

LaDuke, Winona (1999). *All our relations: Native struggles for land and life*. Cambridge, MA: South End Press.

Mohai, Paul (1995). The demographics of dumping revisited: Examining the impact of alternate methodologies in environmental justice research. *Virginia Environmental Law Journal, 14*, 615-653.

Mohai, Paul, & Bryant, Bunyan (1992). Environmental racism: Reviewing the evidence. In Bunyan Bryant & Paul Mohai (Eds.), *Race and the incidence of environmental hazards: A time for discourse* (163-176). Boulder, CO: Westview Press.

Mohai, Paul, & Saha, Robin (2006). Reassessing racial and socioeconomic disparities on environmental justice research. *Demography, 43*(2), 383-389.

Mohai, Paul, & Saha, Robin (2007). Racial inequality in the distribution of hazardous waste: A national-level reassessment. *Social Problems*. Forthcoming.

Nelson, Arthur C., Genereux, Michelle, & Genereux, John (1992). Price effects and landfills on house values. *Land Economics, 68*(4), 359-365.

Oakes, John Michael, Anderton, Douglas L., & Anderson, Andy B. (1996). A longitudinal analysis of environmental equity in communities with hazardous waste facilities. *Social Science Research, 23*, 125-148.

Pastor, Manual, Sadd, Jim, & Morello-Frosch, Rachel (2004). Waiting to inhale: The demographics of toxic air releases in 21st century California. *Social Science Quarterly, 85*(2), 420-440.

Pulido, Laura, Sidawi, Steve, & Vos, Robert O. (1996). An archaeology of environmental racism in Los Angeles. *Urban Geography, 17*(5), 419-439.

Ringquist, Evan J. (2005). Assessing evidence of environmental inequalities: A meta-analysis. *Journal of Policy Analysis and Management, 24*(2), 223-247.

Rhodes, Edwardo L. (2002). The challenge of environmental justice measurement and assessment. *Policy and Management Review, 2*(1), 86-110.

Saha, Robin, & Mohai, Paul (2005). Historical context and hazardous waste facility siting: Understand temporal trends in Michigan. *Social Problems, 52*(4), 618-648.

Targ, Nicholas (2005). The states' comprehensive approach to environmental justice. In David Naguib Pellow and Robert J. Brulle (Eds.), *Power, justice and the environment: A critical appraisal of the environmental justice movement* (171-184). Cambridge, MA: The MIT Press.

Taylor, Dorceta E. (1998). Mobilizing for environmental justice in communities of color: An emerging profile of people of color environmental groups. In Jennifer Aley, William R. Burch, Beth Canover and Donald Field (Eds.), *Ecosystem management: Adaptive strategies for natural resource organizations in the 21st century* (32-67). Philadelphia: Taylor & Francis.

U.S. Bureau of the Census (1993). LandView III (RCRIS and other computer files on CD-ROM). Washington, D.C.: U.S. EPA and U.S. Department of Commerce, Bureau of the Census.

U.S. Bureau of the Census (2002). *2000 Census of population and housing, Technical documentation summary file 3*. Washington, D.C.: U.S. Department of Commerce, Economic Statistics Administration. Available at http://www.census.gov/prod/cen2000/doc/sf3.pdf.

U.S. Environmental Protection Agency (1992). *Hazard ranking system guidance manual*. Washington, D.C.: Office of Solid Waste and Emergency Response.

U.S. Environmental Protection Agency (2001a). *National biennial reporting system*. Washington, D.C.: Office of Solid Waste and Emergency Response. Available at ftp://ftp.epa.gov/rcrainfodata/brfiles/.

U.S. Environmental Protection Agency (2001b). *Biennial report module introduction*. Washington, D.C.: Office of Solid Waste and Emergency Response. Available at http://www.epa.gov/epaoswer/hazwaste/data/brs99/brshelp.pdf.

U.S. Environmental Protection Agency (2001c). *National analysis: The national biennial RCRA hazardous waste report (based on 1999 data)*. Washington, D.C.: Office of Solid Waste and Emergency Response, EPA-530-R-01-009. Available at http://www.epa.gov/epaoswer/hazwaste/data/brs99/99_n_a.pdf.

U.S. Environmental Protection Agency (2001d). *List of large quantity generators: The national biennial RCRA hazardous waste report (based on 1999 data)*. Washington, D.C.: Office of Solid Waste and Emergency Response, EPA-530-R-01-013. Available at http://www.epa.gov/epaoswer/hazwaste/data/brs99/99_lqg.pdf.

U.S. Environmental Protection Agency (2001/2002). *Envirofacts data warehouse*. (Data accessed online through technical user platform from approximately March 2001 to June 2002.) See http://www.epa.gov/enviro/html/technical.html.

U.S. Environmental Protection Agency (2003). *National biennial RCRA hazardous waste report: Based on 2001 data*. Washington, D.C.: Office of Solid Waste and Emergency Response, EPA 530-R-03-007. Available at http://www.epa.gov/epaoswer/hazwaste/data/biennialreport/index.htm.

Vrijheid, M., Dolk, H., Armstrong, B., Boschi, G., Busby, A., Jorgensen, T., & Pointer, P. (2002). Hazard potential ranking of hazardous waste landfill sites and risk of congenital anomalies. *Journal of Occupational and Environmental Medicine, 59*, 768-776.

Weaver, Jace (1995). *Defending mother Earth: American Indian perspectives on environmental justice*. Maryknoll, NJ: Orbis Books.

Wessex Inc. (1994). *1990 census of population and housing*. Summary Tape Files 1A and 3A. Washington, D.C.: U.S. Bureau of the Census (producer). Winnetka, IL: Wessex Inc. (distributor).

Methods Appendix

This appendix supplements the Data and Analysis section of this chapter by providing additional technical information regarding the data sources and analytic methods used in this chapter.

Procedures for Identifying Commercial Hazardous Waste Facilities

Data from the U.S. EPA's Biennial Reporting System (BRS) for the 1999 reporting year was used to develop an initial list of 517 commercial hazardous waste facilities, i.e., that accept off-site wastes for pay (U.S. EPA, 2001a, 2002b). The Environmental Service Directory (ESD) was used to identify facilities that might have been omitted from the BRS, due to poor reporting to EPA by state agencies or the companies themselves (Environmental Information Ltd. 2001/2002). This yielded an additional 38 facilities. Governmental facilities, such as those operated by the Departments of Defense and Energy, were removed. A total of 499 facilities resulted from these procedures.

Using contact information from the BRS, EPA's Resource Conservation and Recovery Information System (RCRIS) and EPA's Envirofacts Data Warehouse, attempts were made to contact each facility by phone to verify its current operating status and determine that it indeed accepted hazardous wastes as a commercial enterprise under Subtitle C of Resource Conservation and Recovery Act (RCRA) or associated state statute (U.S. Bureau of the Census, 1993; U.S. EPA, 2001a; U.S.EPA, 2001/2002).[1] Calls were made between October 2001 and August 2002. Contacts typically included the facility owner/operator and, in some cases, the parent company. If initial phone contact was not able to provide information needed, members of the research team requested to speak with other company personnel. Facility address information for precisely mapping facility locations also was obtained through these contacts, since address information in the environmental databases sometimes pertained to a business or corporate office rather the facility itself. For a small number of facilities that could not be contacted, for example, those that had gone out of business since 1999, regulatory agencies were contacted. On the basis of these contacts, facilities that were not operating or handling hazardous wastes in 1999 were excluded from the list. In the end, 413 commercial hazardous waste facilities were identified.[2]

Mapping Facility Locations

Facility locations were initially mapped digitally (geocoded), using facility address information and ArcView GIS Version 3.2 (GIS software), StreetMap USA (geoding software) and TIGER/Line® Files (street files) (ESRI, 2000; GeoLytics, 2000). Because not all facilities could be geocoded, due to having address information that did not match the digital street files, facility locations were obtained through phone calls with the facility owners/operators. Phone calls also were used to verify the location of facilities that did geocode. Facility contacts were asked to give driving directions to the facility from a given intersection. In some cases, where these contacts could not provide the information, locations were verified by EPA and state agencies. For a small number of facilities without contacts or with streets or other digitally mapped landmarks that did not provide adequate guidance for verifying locations, other procedures were used. In these instances, facility contacts provided site maps or areal photographs that also showed nearby streets or other landmarks. These site maps were used to "place" facilities at point locations using GIS. Thus, the location of all facilities was verified through the facility contacts. The final mapped locations are shown in the cover of this report.

One limitation of the digital mapping and verification process was that site visits were not made. Although the actual locations may differ slightly from those mapped, it is believed that any discrepancies are very minimal in relation to the size of the host neighborhoods examined. Chapter 3 illustrated the stability of the demographic data at various distances around the facility (also see Mohai and Saha, 2007). Thus, any slight locational inaccuracies that may exist are not believed to have appreciably affected the estimated racial and socioeconomic characteristics of the surrounding host neighborhoods within 3 kilometers of the facilities. The other limitation is that a point location was used for a given facility rather than the physical footprint. This could result in an underestimation of the potentially affected population living in close proximity to the site.

Variable Construction

Variables used in the study were constructed from 1990 and 2000 Census data (Wessex, 1996; GeoLytics, 2000). Table 4A below shows the data files (STF1 and STF3 for 1990, and SF3 for 2000),[3] Census tables and categories therein used to construct each variable.

Table 4A – 1990 and 2000 Census Tables and Categories Used to Construct Racial/Ethnic and Socioeconomic Variables

Variable	1990 Census (SF3 unless indicated)	2000 Census (SF3)
Total Pop. (1000s)	Table P1: Total Persons	Table P1: Total Persons
% People of Color	Table P12: Hispanic Origin by Race, Category 1 (not Hispanic origin – white); Table P1: Total Persons	Table P7: Hispanic or Latino by Race, Categories 1 (total population) and 3 (not Hispanic or Latino, white alone)
% African American	Table P8: Race, Category 2 (Black); Table P1: Total Persons	Table P6: Race, Categories 1 (Total persons) and 3 (Black or African American alone)
% Hispanic or Latino	Table P10: Persons of Hispanic Origin; Table P1: Total Persons	Table P7: Hispanic or Latino by Race, Categories 1 and 10
% Asian/Pacific Islander[4]	Table P8: Race, Category 4 (Asian or Pacific Islander); Table P1: Total Persons	Table P6: Race, Categories 1, 5 and 6 (Total persons; Asian alone; and Native Hawaiian and other Pacific Islander alone)
% Native American	Table P8: Race, Category 3 (American Indian, Eskimo, or Aleut); Table P1: Total Persons	Table P6: Race, Categories 1 and 4 (Total persons; and American Indian and Alaskan Native alone)
Poverty Rate[5]	Table P119: Poverty Status in 1989 by Race and Age, Categories 36-70 (and 1-70)	Table P87: Poverty Status in 1999 by Age, Categories 1 and 2
Mean Household. Income	Table P81: Aggregate Household Income in 1989, Categories 1 and 2; Table P5: Households	Table P54: Aggregate Household Income in 1999 (Dollars), Category 1; Table P52: Household Income in 1999, Category 1
Mean Owner Occupied Housing Value	Table H24: Aggregate Value (specified owner occupied housing units); Table H25: Race of Householder, Categories 1-5 (STF1)	Table H81: Aggregate Value (Dollars) for Specified Owner-Occupied Housing Units by Mortgage Status; Category 1; Table H80: Mortgage Status, Category 1
% with 4-Year College Degree	Table P57: Educational Attainment (Persons 25 years and over), Categories 6 and 7 (and 1-7)	Table P37: Sex by Educational Attainment for the Population 25 Years and Over, Categories 1, 15-18, and 32-35
% Professional "White Collar" Occupations[6]	Table P78: Occupation, Categories 1 and 2 (and 1-13)	Table P50: Sex by Occupation for the Employed Civilian Population 16 Years and Over, Categories 1, 3, and 50
% Employed in "Blue Collar" Occupations[7]	Table P78: Occupation, Categories 10-13 (and 1-13)	Table P50: Sex by Occupation for the Employed Civilian Population 16 Years and Over, Categories 1, 35, 41, 82, and 88

In 1990, the Census Bureau defined five racial categories (White; Black; American Indian, Eskimo or Aleut; Asian or Pacific Islander; and Other Race). In 2000, seven categories were defined (White alone; Black or African American alone; American Indian and Alaska Native alone; Asian alone; Native Hawaiian and Other Pacific Islander alone; Some other race alone; and Two or more races). Nevertheless, all variables used in this study, with the exception of percent employed in "white collar" and "blue collar"

occupations can be compared reliably between 1990 and 2000 (see below and notes 4, 6 and 7).

Because the Census Bureau defines Hispanic or Latino as an ethnic rather than as a racial category, Hispanics or Latinos may belong to any race (i.e., racial category) defined for 1990 and 2000. Thus, because some Hispanics and Latinos self-identify as "White" in responding to the race question on the Census questionnaire, one cannot simply count persons belonging to non-white race categories to count all people of color, since one would omit white Hispanics or Latinos who self-identified as White. Therefore, to compute the people of color population, the non-Hispanic White (i.e., non-Latino White) population was simply subtracted from the total population for both 1990 and 2000.[8]

Circular Buffer Radius

The application of distance-based methods to analyze racial and socioeconomic characteristics of hazardous waste facility neighborhoods involved the use of circular buffers of 3 kilometer radii (approximately 1.8 miles) centered at each facility. For clustered facility neighborhoods (see Chapter 3 and Figures 3.1E and 3.1F), the overlaps between the buffers were dissolved. A 3-kilometer radius was chosen because it falls within the radius that numerous studies have noted adverse health and property value impacts. See, e.g., Baibergenova et al. (2003); Dolk et al. (1998); Fielder et al. (2000); Gerschwind et al. (1992); Nelson, Genereux, and Genereux (1992); and Vrijheid et al. (2002). Perceptions of risk, and thus quality of life impacts, also vary with distance from waste sites (Edelstein, 2004; Elliot et al., 1993).

Similarly, the Superfund Hazard Ranking System defines affected populations to be those who live within a four-mile radius (6.4 km.) of sites having groundwater contamination and/or airborne contamination within a one-mile (1.6 km.) radius of sites having soil contamination only, and within 15 miles downstream of where contaminants enter surface water (U.S. EPA, 1992). It should be noted that for Superfund sites hazardous wastes already have been released into the environment. Though commercial hazardous waste facilities pose risks of environmental contamination, for example, through accidents and spills (Daley, 2006; Jayadev, 2007), they are designed to prevent dangerous environmental releases. They may nevertheless end up on the Superfund list of contaminated sites.

Procedures for Assessing Racial and Socioeconomic Disparities

The *areal apportionment method* (see Chapter 3) was used to estimate the racial and socioeconomic characteristics within 3 kilometers of the 413 commercial hazardous waste facilities, i.e., clustered and non-clustered host neighborhoods combined. Resulting values represent the total population (non-sample) characteristics of the combined host neighborhoods and are not averages of smaller units such as zip code areas or census tracts. The analysis of neighborhoods with clustered and non-clustered facilities (see above) was conducted for the nation as a whole and for EPA regions, again using the *areal apportionment method*. Separate tabulations of clustered and non-clustered facilities combined were prepared for EPA regions and states. Racial and socioeconomic disparities also were assessed for the metropolitan area facilities. In this national-level analysis, non-host areas were defined as all areas in any of the nation's 331 metropolitan areas that lie beyond 3 kilometers of a commercial hazardous waste facility.[9]

Statistical Tests

Bivariate statistical tests (independent samples T-tests) were conducted to determine if differences in racial and socioeconomic characteristics between host neighborhoods and non-host areas are statistically significant. Multivariate analyses (logistic regressions) were similarly used to determine if race continues to be a strong predictor of facility locations independent of neighborhood socioeconomic characteristics. Because individual units of analysis were required to make statistical comparisons, the *50% areal containment method* was used for these tests because it employs complete geographic units, 2000 Census tracts in this case (see Chapter 3 for a description of the *50% areal containment method*). For T-tests, tracts were coded as *1s* or *0s* depending on whether 50% of the tract area was within 3 kilometers of one or more commercial hazardous waste facility (see Figure 3.1C), and mean values for the two sets of tracts were compared. Separate tests were conducted for all census tracts in the entire U.S. and for all metropolitan area tracts.[10] Significance levels are reported for these comparisons, e.g., ($p<0.001$), but to

streamline the presentation, group statistics (e.g., differences in means) are not reported.

T-tests also were conducted for each of the 10 EPA regions and for each of the 44 states with a commercial hazardous waste facility. The number of regions and states with significant racial and socioeconomic disparities are reported. Although statistical significance is defined as $p<0.05$, 90% of the statistically significant differences in people of color percentages for EPA regions were significant at $p<0.001$, and 70% of the statistically significant differences for states were significant at $p<0.001$. The detailed results may be requested from the author (see Table 4.2–4.4. and Appendices 4.2–4.7 for the total population statistics of host neighborhoods and non-host areas for EPA Regions and states).

The same coding of tracts was used for the multivariate (logistic regression) analysis, whereby the dependent variable took a value of 1 for host neighborhood tracts (i.e., tracts within 3 kilometers of a facility) and a value of 0 for non-host area tracts. The analysis was repeated twice, once using all census tracts in the United States and again using metropolitan area tracts only (see Table 4.7 and Appendix 4.10. In selecting income, occupation, employment and education variables to serve as indicators of neighborhood socioeconomic characteristics, it was necessary to avoid including variables that are too highly correlated, a condition known as multicollinearity. For example, because people of color percentages are highly correlated with African American and Latino percentages, including these variables together could confound the statistical tests. To reduce problems of multicollinearity, the same variables were selected as were used in "Reassessing Racial and Socioeconomic Disparities in Environmental Justice Research," a recent paper published in *Demography* (Mohai and Saha, 2006).

Methods Appendix Notes

[1] The Envirofacts Data Warehouse contains environmental data from a variety of sources and includes databases we also consulted directly. EPA and state regulatory agencies regularly update information to Envirofacts. For example, Envirofacts contains Resource Conservation and Recovery Act Information (RCRAInfo), which is an updated version of RCRIS. Technical user permission was obtained from EPA to access the most current and complete Envirofacts data.

[2] The original 1987 UCC report (CRJ, 1987) and the 1994 update (Goldman and Fitton, 1994) used universes of 415 and 530 facilities, respectively. In their national studies, Been (1995) and Been and Gupta (1997) used a universe of 608 facilities, whereas Anderton et al. (1994) and Oakes, Anderton, and Anderson (1996) had universes of 454 and 476 facilities, respectively. Because Mohai and Saha replicated Been and Gupta's studies using the same universe of 608 facilities but applying distance-based methods (see Mohai and Saha, 2006, 2007), it was possible to determine that 298 facilities used in Professor Been's studies were among the 413 facilities used in this study. Four additional facilities included in a longer list of 623 facilities provided by Professor Been and not used in her studies, however, also were among our new universe of 413 facilities. See Saha and Mohai (2005) for a recent review of the prior studies of commercial hazardous waste facilities.

[3] The designations STF and SF refer to Summary Tape File (1990) and Summary File (2000), respectively, and the numerical designations (1 and 3) refer to different statistical sampling methods used.

[4] The percent Asian/Pacific Islander variable was constructed for 2000 using the Asian alone and Native Hawaiian and Other Pacific Islander alone categories (see Table 4A). The inclusion of the latter category, which was not in Table P8 in 1990, is not believed to affect the comparability of the variable from 1990 to 2000, because of the very small number of Native Hawaiians and other Pacific Islanders (0.13% for U.S.) and the likelihood that many were counted within the Asian or Pacific Islander category in 1990.

[5] The poverty level is set by the Office of Management and Budget (OMB) and is periodically adjusted for inflation and other factors.

[6] For 1990, the variable defined as "professional white collar" included employed persons 16 years old and over belonging to either of the following two categories (out of 13 occupational categories): (1) executive, administrative and managerial and (2) professional specialty occupation. For the 2000 Census, persons employed in professional white collar occupations included persons 16 years old and over belonging to the following single category: management, professional and related occupations. This category, however, includes two subcategories (management, business and financial operations; and professional and related occupations). The change in occupational categories from the 1990 to 2000 Census resulted from major revisions to the 2000 Standard Occupation Classification (SOC) Manual and hamper the comparability between 1990 and 2000 (see U.S. Bureau of Census 2002: B23-26).

[7] For the 1990 Census, we defined "blue collar" occupations as those that included the followed four occupational categories: (1) precision, production, craft and repair; (2) machine operators, assemblers, inspectors; (3)

transportation and material moving operators and (4) handlers, equipment cleaners, helpers and laborers. For 2000, "blue collar" was defined as belonging to either of following two occupational categories: (1) construction, extraction, and maintenance; and (2) production, transportation and material moving. These changes in categories hamper the comparability of 1990 and 2000 occupation data (see U.S. Bureau of Census, 2002: B23-26).

[8] Thus, for 2000, people of color included white Hispanics or Latinos, and persons belonging to all six non-white alone race categories, including persons of two or more races (i.e., multiracial persons). The 2000 Census reported 7.3 million multiracial persons in the United States, or 2.6% of the population. In 1990, the numbers of multiracial persons may have been smaller, but they were not tabulated; multiracial persons had to identify with one race. It is nevertheless likely that many self-identified in one of the four non-white race categories, such as "Other Race." Although some may have been counted among the white population in 1990, their relatively small numbers in 1990 and the likelihood that many identified as non-white, suggests that the percentage of people of color, though necessarily defined in a slightly different manner in 1990 and 2000, can nevertheless be reliably compared.

[9] The rationale for including all metropolitan areas in the comparison was that many metropolitan areas without facilities nevertheless generate hazardous wastes that are either handled on-site or shipped to other metropolitan areas or rural areas with commercial hazardous waste facilities. This was determined through a cursory examination of the 20,000 Large Quantity Generators listed in the BRS (U.S. EPA, 2001a, 2001d). If metropolitan areas that are generating hazardous waste and enjoying associated economic benefits of jobs and taxes are exporting their waste to other metropolitan areas, then it would be appropriate to include those other hazardous-waste generating areas in the comparison. Although this assumption was not conclusively verified, it was found to be reasonable. See, e.g., Davidson and Anderton (2000) for evidence of the wide geographic distribution of hazardous waste generators. Also see Mohai (1995) for a discussion of considerations in selecting an appropriate comparison population.

[10] T-tests were also conducted to compare tracts comprising clustered host neighborhoods to those comprising non-clustered host neighborhoods.

Appendix 4.1 – Racial and Socioeconomic Characteristics for Clustered and Non-Clustered Facility Host Neighborhoods

	Clustered	Non-Clustered	Difference	Ratio
Race/Ethnicity				
% People of Color	68.8%	50.6%	18.2%	1.36
% African American	29.1%	15.9%	13.2%	1.83
% Hispanic or Latino	33.4%	24.6%	8.8%	1.36
% Asian/Pacific Islander	4.3%	7.8%	-3.5%	0.55
% Native American	0.7%	0.7%	0.0%	0.94
Socioeconomics				
Poverty Rate	21.6%	16.8%	4.8%	1.29
Mean Household Income	$44,587	$49,614	-$5,027	0.90
Mean Housing Value	$121,203	$140,992	-$19,789	0.86

NOTES: Differences and ratios are between values for host neighborhood with clustered and non-clustered facilities. Differences may not precisely correspond to other values due to rounding off. Mean housing values pertain to owner-occupied housing units.

Appendix 4.2 – People of Color Percentages for Clustered and Non-Clustered Facility Host Neighborhoods by EPA Region

EPA Region	Clustered	Non-Clustered	Difference	Ratio
Region 1	39.6%	35.5%	4.2%	1.12
Region 2	52.6%	51.3%	1.3%	1.03
Region 3	32.0%	23.1%	8.9%	1.38
Region 4	63.3%	52.7%	10.7%	1.20
Region 5	62.3%	45.7%	16.6%	1.36
Region 6	61.8%	63.0%	-1.2%	0.98
Region 7	58.6%	25.4%	33.2%	2.31
Region 8	54.7%	26.0%	28.7%	2.10
Region 9	88.9%	74.8%	14.1%	1.19
Region 10	N/A	38.9%	N/A	N/A

NOTE: Differences may not precisely correspond to other values due to rounding off.

Appendix 4.3 – People of Color Percentages by EPA Region and State[1]

EPA Region/State	Sites[2]	Majority People of Color Sites[3]	Host Neighborhoods	Non-Host Areas	Difference[4]	Ratio
Region 1						
Connecticut	4	1	49.0%	21.3%	27.7%	2.30
Maine	2	0	7.8%	3.4%	4.4%	2.31
Massachusetts	12	1	33.5%	17.2%	16.3%	1.95
Rhode island	3	1	39.6%	14.6%	25.0%	2.71
Vermont	2	0	4.4%	3.9%	0.5%	1.13
Region 2						
New Jersey	14	3	54.8%	33.0%	21.9%	1.66
New York	18	2	50.3%	37.3%	13.0%	1.35
Region 3						
Maryland	3	1	44.8%	37.8%	7.0%	1.19
Pennsylvania	23	0	16.5%	15.9%	0.6%	1.04
Virginia	9	0	36.1%	29.8%	6.3%	1.21
West Virginia	2	0	10.2%	5.4%	4.8%	1.89
Region 4						
Alabama	8	3	66.3%	29.3%	36.9%	2.26
Florida	13	5	52.7%	34.3%	18.4%	1.54
Georgia	12	7	55.6%	37.0%	18.6%	1.50
Kentucky	9	1	51.5%	10.0%	41.5%	5.14
Mississippi	3	2	50.6%	39.1%	11.5%	1.29
North Carolina	10	4	55.9%	29.4%	26.5%	1.90
South Carolina	4	3	43.9%	33.8%	10.2%	1.30
Tennessee	6	3	53.8%	20.4%	33.4%	2.64
Region 5						
Illinois	16	10	67.9%	30.8%	37.1%	2.21
Indiana	16	4	41.2%	13.1%	28.1%	3.14
Michigan	19	8	65.7%	19.2%	46.5%	3.43
Minnesota	10	2	34.4%	10.3%	24.1%	3.33
Ohio	21	4	39.0%	15.3%	23.7%	2.55
Wisconsin	3	0	35.6%	12.4%	23.2%	2.87
Region 6						
Arkansas	5	2	51.6%	21.3%	30.4%	2.43
Louisiana	12	5	52.7%	37.3%	15.4%	1.41
New Mexico	3	1	52.5%	55.4%	-2.9%	0.95
Oklahoma	8	0	28.1%	25.9%	2.2%	1.09
Texas	33	20	66.4%	47.1%	19.4%	1.41
Region 7						
Iowa	3	0	21.0%	7.0%	13.9%	2.98
Kansas	9	3	47.2%	15.9%	31.3%	2.97
Missouri	15	2	28.3%	15.9%	12.4%	1.78
Nebraska	5	0	11.2%	12.7%	-1.4%	0.89
Region 8						
Colorado	5	1	41.0%	25.2%	15.8%	1.63
North Dakota	3	0	7.5%	8.2%	-0.7%	0.91
South Dakota	1	0	13.7%	11.9%	1.8%	1.15
Utah	6	4	36.5%	14.1%	22.4%	2.58
Region 9						
Arizona	7	4	64.3%	35.7%	28.6%	1.80
California	45	38	81.2%	51.5%	29.7%	1.58
Nevada	3	1	79.4%	33.1%	46.3%	2.40
Region 10						
Idaho	2	0	7.9%	12.0%	-4.1%	0.66
Oregon	3	0	25.7%	16.3%	9.4%	1.57
Washington	3	1	52.8%	20.7%	32.0%	2.54
U.S. Total	**413**	**147**	**55.9%**	**30.0%**	**25.9%**	**1.86**

[1] Alaska (Reg. 10), Hawaii (Reg. 9), Delaware & New Hampshire (Reg. 1), Montana & Wyoming (Reg. 8) have no commercial hazardous waste facilities.
[2] Number of commercial hazardous waste facilities.
[3] Number of host neighborhoods with majority people of color, i.e., greater than 50%.
[4] Differences may not precisely correspond to other values due to rounding off.

Appendix 4.4 – Hispanic/Latino Percentages by EPA Region and State

EPA Region/State	Host Neighborhoods	Non-Host Areas	Difference[1]	Ratio
Region 1	**19.5%**	**5.5%**	**13.9%**	**3.52**
Connecticut	25.8%	8.6%	17.2%	3.00
Maine	1.7%	0.7%	1.0%	2.42
Massachusetts	19.0%	5.9%	13.1%	3.21
Rhode island	19.6%	6.9%	12.8%	2.86
Vermont	1.2%	0.9%	0.3%	1.37
Region 2	**23.3%**	**14.0%**	**9.3%**	**1.66**
New Jersey	23.8%	12.8%	11.0%	1.87
New York	23.1%	14.6%	8.5%	1.58
Region 3	**4.7%**	**3.7%**	**1.0%**	**1.26**
Maryland	2.5%	4.3%	-1.9%	0.57
Pennsylvania	5.8%	3.1%	2.7%	1.88
Virginia	2.3%	4.6%	-2.3%	0.50
West Virginia	1.1%	0.6%	0.5%	1.74
Region 4	**13.7%**	**7.2%**	**6.5%**	**1.91**
Alabama	1.2%	1.6%	-0.4%	0.74
Florida	33.6%	16.5%	17.0%	2.03
Georgia	8.5%	5.2%	3.3%	1.64
Kentucky	0.9%	1.4%	-0.5%	0.61
Mississippi	1.7%	1.3%	0.4%	1.27
North Carolina	6.6%	4.6%	2.0%	1.43
South Carolina	1.4%	2.3%	-0.9%	0.60
Tennessee	6.2%	2.0%	4.1%	3.02
Region 5	**11.3%**	**5.0%**	**6.3%**	**2.27**
Illinois	25.8%	11.8%	14.0%	2.19
Indiana	15.4%	3.0%	12.4%	5.12
Michigan	3.5%	3.2%	0.3%	1.09
Minnesota	6.9%	2.6%	4.3%	2.64
Ohio	5.2%	1.8%	3.4%	2.90
Wisconsin	2.4%	3.6%	-1.2%	0.68
Region 6	**37.9%**	**23.1%**	**14.7%**	**1.64**
Arkansas	2.0%	3.2%	-1.2%	0.62
Louisiana	6.4%	2.4%	4.0%	2.71
New Mexico	42.3%	42.1%	0.2%	1.00
Oklahoma	5.0%	5.2%	-0.1%	0.98
Texas	43.1%	31.7%	11.4%	1.36
Region 7	**8.9%**	**3.6%**	**5.3%**	**2.50**
Iowa	4.1%	2.8%	1.4%	1.49
Kansas	19.8%	6.5%	13.4%	3.06
Missouri	4.4%	2.0%	2.4%	2.18
Nebraska	7.9%	5.4%	2.5%	1.47
Region 8	**22.9%**	**10.5%**	**12.4%**	**2.19**
Colorado	35.0%	16.7%	18.3%	2.10
North Dakota	1.2%	1.2%	0.1%	1.06
South Dakota	3.8%	1.3%	2.5%	2.85
Utah	23.2%	8.6%	14.6%	2.69
Region 9	**54.1%**	**28.7%**	**25.3%**	**1.88**
Arizona	50.9%	24.8%	26.1%	2.06
California	54.3%	30.8%	23.5%	1.76
Nevada	50.3%	18.5%	31.8%	2.72
Region 10	**10.1%**	**7.5%**	**2.6%**	**1.35**
Idaho	3.9%	7.9%	-3.9%	0.50
Oregon	12.7%	7.9%	4.7%	1.60
Washington	8.1%	7.5%	0.7%	1.09

[1] Differences may not precisely correspond to other values due to rounding off.

Appendix 4.5 – African American Percentages by EPA Region and State

EPA Region/State	Host Neighborhoods	Non-Host Areas	Difference[1]	Ratio
Region 1	**9.6%**	**4.8%**	**4.8%**	**2.00**
Connecticut	20.5%	8.4%	12.1%	2.44
Maine	1.9%	0.4%	1.4%	4.21
Massachusetts	5.7%	5.3%	0.4%	1.08
Rhode island	11.0%	3.2%	7.8%	3.41
Vermont	0.4%	0.5%	-0.1%	0.87
Region 2	**16.0%**	**15.0%**	**1.0%**	**1.07**
New Jersey	23.8%	12.9%	10.9%	1.85
New York	13.1%	15.9%	-2.8%	0.83
Region 3	**15.1%**	**16.6%**	**-1.5%**	**0.91**
Maryland	37.3%	27.5%	9.8%	1.35
Pennsylvania	7.8%	9.9%	-2.2%	0.78
Virginia	30.8%	19.5%	11.3%	1.58
West Virginia	6.3%	3.0%	3.2%	2.06
Region 4	**37.0%**	**20.4%**	**16.6%**	**1.82**
Alabama	64.0%	25.6%	38.4%	2.50
Florida	16.5%	14.4%	2.1%	1.14
Georgia	41.8%	28.3%	13.4%	1.47
Kentucky	48.7%	6.6%	42.1%	7.39
Mississippi	47.5%	36.2%	11.3%	1.31
North Carolina	44.2%	21.2%	23.0%	2.09
South Carolina	41.3%	29.4%	11.9%	1.40
Tennessee	43.6%	16.0%	27.6%	2.72
Region 5	**35.8%**	**10.1%**	**25.7%**	**3.55**
Illinois	38.0%	14.1%	23.9%	2.69
Indiana	23.2%	7.7%	15.5%	3.00
Michigan	57.5%	11.9%	45.6%	4.84
Minnesota	12.8%	2.8%	10.0%	4.57
Ohio	30.7%	10.7%	19.9%	2.86
Wisconsin	29.0%	5.4%	23.6%	5.39
Region 6	**20.4%**	**13.5%**	**6.9%**	**1.51**
Arkansas	47.7%	15.4%	32.2%	3.09
Louisiana	44.2%	32.2%	12.0%	1.37
New Mexico	2.3%	1.8%	0.5%	1.28
Oklahoma	10.6%	7.5%	3.1%	1.42
Texas	19.2%	11.2%	8.0%	1.71
Region 7	**16.1%**	**6.7%**	**9.4%**	**2.40**
Iowa	13.6%	1.8%	11.7%	7.39
Kansas	21.2%	5.1%	16.1%	4.17
Missouri	20.0%	10.9%	9.2%	1.84
Nebraska	0.8%	4.1%	-3.2%	0.21
Region 8	**1.9%**	**2.0%**	**-0.1%**	**0.95**
Colorado	1.5%	3.8%	-2.3%	0.40
North Dakota	1.2%	0.5%	0.7%	2.34
South Dakota	3.8%	0.5%	3.2%	6.98
Utah	2.8%	0.7%	2.1%	4.10
Region 9	**11.8%**	**5.6%**	**6.2%**	**2.10**
Arizona	7.9%	2.9%	5.0%	2.72
California	11.6%	6.2%	5.4%	1.87
Nevada	24.8%	5.9%	18.8%	4.18
Region 10	**6.6%**	**2.3%**	**4.2%**	**2.84**
Idaho	0.8%	0.4%	0.4%	2.04
Oregon	1.3%	1.6%	-0.2%	0.86
Washington	11.6%	3.0%	8.6%	3.82

[1] Differences may not precisely correspond to other values due to rounding off.

Appendix 4.6 – Asian/Pacific Islander Percentages by EPA Region and State

EPA Region/State	Host Neighborhoods	Non-Host Areas	Difference[1]	Ratio
Region 1	**4.9%**	**2.6%**	**2.4%**	**1.91**
Connecticut	1.3%	2.5%	-1.2%	0.51
Maine	1.9%	0.6%	1.2%	2.92
Massachusetts	6.6%	3.6%	3.0%	1.83
Rhode island	5.6%	1.8%	3.8%	3.14
Vermont	1.0%	0.8%	0.2%	1.28
Region 2	**9.7%**	**5.4%**	**4.3%**	**1.81**
New Jersey	2.2%	5.0%	-2.8%	0.44
New York	1.3%	1.1%	0.2%	1.19
Region 3	**2.0%**	**2.7%**	**-0.7%**	**0.75**
Maryland	3.1%	4.0%	-0.9%	0.76
Pennsylvania	1.8%	1.8%	0.0%	0.99
Virginia	1.4%	3.7%	-2.3%	0.38
West Virginia	1.1%	0.5%	0.6%	2.06
Region 4	**2.2%**	**1.4%**	**0.8%**	**1.59**
Alabama	0.2%	0.7%	-0.5%	0.31
Florida	1.8%	1.7%	0.1%	1.03
Georgia	4.0%	2.1%	1.9%	1.89
Kentucky	0.4%	0.8%	-0.4%	0.49
Mississippi	0.7%	0.6%	0.0%	1.03
North Carolina	11.4%	5.2%	6.2%	2.19
South Carolina	0.2%	0.9%	-0.7%	0.25
Tennessee	1.9%	1.0%	1.0%	1.99
Region 5	**3.2%**	**2.0%**	**1.2%**	**1.59**
Illinois	3.1%	3.5%	-0.4%	0.89
Indiana	0.8%	1.0%	-0.2%	0.79
Michigan	1.6%	1.8%	-0.2%	0.90
Minnesota	10.2%	2.4%	7.8%	4.27
Ohio	1.2%	1.2%	0.0%	1.00
Wisconsin	2.1%	1.6%	0.5%	1.32
Region 6	**2.5%**	**2.1%**	**0.4%**	**1.17**
Arkansas	0.2%	0.8%	-0.6%	0.21
Louisiana	1.1%	1.3%	-0.2%	0.88
New Mexico	5.1%	5.8%	-0.6%	0.89
Oklahoma	0.6%	1.4%	-0.8%	0.45
Texas	2.9%	2.7%	0.2%	1.06
Region 7	**1.7%**	**1.3%**	**0.4%**	**1.30**
Iowa	1.4%	1.2%	0.1%	1.11
Kansas	2.5%	1.7%	0.8%	1.46
Missouri	1.5%	1.1%	0.4%	1.33
Nebraska	3.0%	1.4%	1.6%	2.14
Region 8	**3.1%**	**1.7%**	**1.4%**	**1.80**
Colorado	2.1%	2.3%	-0.2%	0.92
North Dakota	1.3%	0.5%	0.8%	2.57
South Dakota	1.3%	0.6%	0.6%	2.00
Utah	6.8%	2.2%	4.6%	3.11
Region 9	**12.3%**	**10.8%**	**1.5%**	**1.14**
Arizona	2.6%	1.9%	0.7%	1.36
California	13.1%	11.1%	2.0%	1.18
Nevada	1.2%	1.3%	-0.1%	0.93
Region 10	**17.1%**	**4.2%**	**12.9%**	**4.07**
Idaho	1.3%	1.0%	0.3%	1.30
Oregon	8.1%	3.0%	5.0%	2.66
Washington	26.3%	5.6%	20.7%	4.72

[1] Differences may not precisely correspond to other values due to rounding off.

Appendix 4.7 – Poverty Rates by EPA Region and State

EPA Region/State	Host Neighborhoods	Non-Host Areas	Difference[1]	Ratio
Region 1	**15.7%**	**8.7%**	**7.0%**	**1.80**
Connecticut	16.0%	7.5%	8.6%	2.15
Maine	14.4%	10.8%	3.6%	1.33
Massachusetts	14.6%	9.0%	5.6%	1.63
Rhode island	19.7%	10.8%	8.9%	1.83
Vermont	8.5%	9.5%	-1.0%	0.90
Region 2	**19.4%**	**12.3%**	**7.1%**	**1.57**
New Jersey	15.6%	8.2%	7.5%	1.92
New York	20.8%	14.2%	6.5%	1.46
Region 3	**12.6%**	**10.7%**	**1.9%**	**1.18**
Maryland	15.6%	8.3%	7.2%	1.87
Pennsylvania	11.2%	11.0%	0.2%	1.02
Virginia	11.4%	9.6%	1.8%	1.19
West Virginia	23.3%	17.8%	5.5%	1.31
Region 4	**15.7%**	**13.7%**	**2.0%**	**1.15**
Alabama	22.9%	16.0%	6.8%	1.43
Florida	13.9%	12.5%	1.4%	1.11
Georgia	12.5%	13.0%	-0.5%	0.96
Kentucky	23.3%	15.7%	7.6%	1.48
Mississippi	17.5%	20.0%	-2.5%	0.88
North Carolina	17.2%	12.2%	5.1%	1.41
South Carolina	14.0%	14.1%	-0.2%	0.99
Tennessee	14.8%	13.5%	1.3%	1.10
Region 5	**19.4%**	**9.6%**	**9.7%**	**2.01**
Illinois	18.6%	10.4%	8.2%	1.79
Indiana	16.3%	9.2%	7.0%	1.76
Michigan	22.8%	9.9%	12.9%	2.30
Minnesota	16.1%	7.4%	8.7%	2.17
Ohio	21.6%	10.2%	11.4%	2.11
Wisconsin	10.0%	8.7%	1.3%	1.15
Region 6	**18.8%**	**16.0%**	**2.8%**	**1.18**
Arkansas	25.2%	15.8%	9.4%	1.60
Louisiana	21.3%	19.6%	1.7%	1.09
New Mexico	14.8%	18.5%	-3.7%	0.80
Oklahoma	19.8%	14.7%	5.1%	1.35
Texas	18.7%	15.3%	3.5%	1.23
Region 7	**15.0%**	**10.4%**	**4.7%**	**1.45**
Iowa	14.1%	9.0%	5.0%	1.56
Kansas	18.5%	9.6%	8.9%	1.93
Missouri	16.3%	11.6%	4.7%	1.40
Nebraska	7.6%	9.8%	-2.2%	0.77
Region 8	**14.8%**	**10.3%**	**4.4%**	**1.43**
Colorado	15.1%	9.1%	6.0%	1.66
North Dakota	13.2%	11.8%	1.4%	1.12
South Dakota	13.0%	13.2%	-0.1%	0.99
Utah	15.7%	9.2%	6.5%	1.70
Region 9	**20.7%**	**13.5%**	**7.2%**	**1.54**
Arizona	28.3%	13.7%	14.7%	2.07
California	20.2%	13.8%	6.4%	1.46
Nevada	28.1%	9.8%	18.3%	2.87
Region 10	**10.9%**	**11.0%**	**-0.1%**	**0.99**
Idaho	5.7%	11.8%	-6.0%	0.49
Oregon	9.6%	11.6%	-2.1%	0.82
Washington	12.4%	10.6%	1.8%	1.17

[1] Differences may not precisely correspond to other values due to rounding off.

Appendix 4.8 – People of Color Percentages in Host Neighborhoods ("Host") and Non-Host Areas for 80 Selected Metropolitan Areas[1]

Metropolitan Area	Sites[2]	Percent People of Color			Percent African American			Percent Hispanic or Latino		
		Host	Non-Host	Diff.[3]	Host	Non-Host	Diff.[3]	Host	Non-Host	Diff.[3]
Albuquerque, NM	2	53.0	52.2	0.8	2.4	2.4	0.0	43.7	41.4	2.3
Atlanta, GA	4	64.6	39.6	24.9	49.4	28.4	21.1	7.4	6.5	0.9
Augusta--Aiken, GA--SC	1	58.2	38.5	19.6	54.6	33.0	21.7	1.9	2.4	-0.6
Baltimore, MD	3	44.2	33.2	11.0	37.1	26.8	10.3	2.2	2.0	0.2
Baton Rouge, LA	3	89.6	34.7	54.9	87.8	30.2	57.6	0.8	1.8	-1.0
Beaumont--Port Arthur, TX	3	57.5	34.9	22.5	48.1	23.6	24.5	6.5	8.1	-1.6
Binghamton, NY	1	17.9	7.3	10.6	9.3	2.1	7.2	3.9	1.6	2.3
Birmingham, AL	2	74.4	31.9	42.4	72.0	28.3	43.7	1.3	1.8	-0.5
Bridgeport, CT	1	64.4	22.1	42.3	30.9	8.3	22.6	30.5	9.4	21.1
Canton--Massillon, OH	1	38.1	8.5	29.6	33.1	5.6	27.5	1.5	0.8	0.7
Champaign--Urbana, IL	1	48.3	19.6	28.8	29.8	9.2	20.6	4.4	2.6	1.9
Charleston--North Charleston, SC	1	48.2	35.9	12.3	45.9	30.5	15.5	0.5	2.4	-1.9
Charlotte--Gastonia--Rock Hill, NC--SC	4	74.9	26.5	48.4	65.0	18.3	46.8	5.9	5.0	0.9
Chicago, IL	9	71.6	40.5	31.1	38.6	17.7	20.9	29.1	16.5	12.6
Cincinnati, OH--KY--IN	3	54.9	14.2	40.7	48.5	10.8	37.6	1.5	1.0	0.5
Cleveland--Lorain--Elyria, OH	6	34.4	24.0	10.4	22.8	18.1	4.7	9.1	3.0	6.1
Columbia, MO	1	30.7	13.2	17.4	22.3	6.5	15.8	2.3	1.8	0.5
Corpus Christi, TX	4	64.3	60.4	3.9	5.5	3.8	1.8	55.9	54.4	1.5
Dallas, TX	8	55.1	43.2	11.9	13.4	15.0	-1.6	35.8	22.4	13.4
Dayton--Springfield, OH	3	37.8	17.6	20.1	34.2	13.4	20.7	1.0	1.1	-0.2
Denver, CO	3	43.4	29.3	14.1	1.7	5.5	-3.8	36.0	18.4	17.7
Detroit, MI	12	69.3	25.8	43.5	60.8	18.5	42.4	3.6	2.8	0.8
Fort Wayne, IN	1	30.3	12.9	17.4	23.3	7.1	16.1	4.3	3.3	1.1
Fort Worth--Arlington, TX	2	49.6	33.8	15.8	10.8	11.0	-0.2	31.5	17.7	13.8
Fresno, CA	2	78.4	58.9	19.6	2.4	5.1	-2.6	69.5	43.3	26.2
Gary, IN	3	68.0	28.1	39.9	28.0	18.7	9.3	38.7	7.3	31.4
Greensboro--Winston-Salem--High Point, NC	2	41.6	27.2	14.4	25.8	19.9	5.9	8.0	4.9	3.1
Houston, TX	10	78.6	52.7	25.9	25.8	17.0	8.8	49.9	28.8	21.0
Jackson, MS	1	93.1	46.3	46.8	91.8	44.0	47.8	0.8	0.9	-0.2
Jersey City, NJ	1	66.4	64.7	1.7	19.2	13.1	6.1	25.1	40.4	-15.3
Kansas City, MO--KS	6	45.0	20.5	24.5	29.3	11.7	17.5	11.2	4.9	6.3
Las Vegas, NV--AZ	2	80.2	34.8	45.4	25.1	7.1	18.0	50.8	19.0	31.8

Appendix 4.8 (cont.)

Metropolitan Area	Sites[2]	Percent People of Color			Percent African American			Percent Hispanic or Latino		
		Host	Non-Host	Diff.[3]	Host	Non-Host	Diff.[3]	Host	Non-Host	Diff.[3]
Lawrence, MA--NH	1	57.9	7.4	50.5	3.8	0.8	3.0	52.1	3.4	48.7
Little Rock--North Little Rock, AR	2	43.8	26.3	17.5	37.8	21.7	16.2	3.2	2.1	1.1
Longview--Marshall, TX	1	70.9	26.6	44.3	49.5	18.4	31.1	20.0	6.5	13.5
Los Angeles--Long Beach, CA	17	90.9	65.8	25.0	13.2	9.1	4.1	66.8	41.3	25.6
Louisville, KY--IN	3	51.6	15.7	35.9	48.9	11.4	37.5	0.7	1.6	-0.9
Lowell, MA--NH	1	40.8	7.8	33.0	4.3	0.9	3.3	15.2	2.1	13.0
Memphis, TN--AR--MS	4	57.2	47.8	9.4	54.3	42.8	11.5	1.6	2.3	-0.7
Miami, FL	1	91.9	79.0	12.9	2.3	20.6	-18.2	90.2	56.4	33.8
Middlesex--Somerset--Hunterdon, NJ	3	41.8	30.9	10.9	10.3	7.6	2.7	18.8	10.5	8.3
Milwaukee--Waukesha, WI	2	38.8	25.1	13.7	31.9	15.0	16.9	2.5	6.4	-3.9
Minneapolis--St. Paul, MN--WI	9	35.3	13.1	22.2	13.2	4.3	8.9	7.1	2.9	4.1
Nashville, TN	2	41.8	21.3	20.5	25.5	15.3	10.2	10.4	3.0	7.4
Nassau--Suffolk, NY	3	49.1	22.5	26.6	27.1	7.6	19.5	18.6	9.9	8.7
New Haven--Meriden, CT	1	43.2	26.1	17.1	9.6	13.2	-3.6	31.6	8.5	23.1
New Orleans, LA	2	53.5	45.1	8.4	38.2	37.4	0.9	13.0	4.2	8.8
New York, NY	3	61.0	60.4	0.6	12.9	25.4	-12.5	29.6	24.7	4.9
Newark, NJ	4	66.8	38.1	28.7	33.1	20.8	12.3	30.1	11.3	18.8
Oakland, CA	6	76.0	49.2	26.7	20.9	11.4	9.5	28.4	17.1	11.3
Orange County, CA	3	69.8	46.8	23.0	1.6	1.6	0.0	53.7	28.6	25.2
Orlando, FL	2	49.0	34.7	14.3	17.9	13.7	4.3	24.9	16.4	8.5
Phoenix--Mesa, AZ	5	63.7	33.5	30.2	8.3	3.5	4.8	50.3	24.5	25.8
Pittsfield, MA	1	11.1	4.0	7.1	4.8	1.4	3.4	2.5	1.3	1.2
Providence--Fall River--Warwick, RI--MA	3	39.6	13.5	26.1	11.0	2.8	8.2	19.6	6.3	13.4
Pueblo, CO	1	63.1	39.7	23.4	1.6	1.7	-0.1	59.0	35.2	23.7
Riverside--San Bernardino, CA	4	70.5	52.4	18.2	12.9	7.5	5.4	49.0	37.5	11.5
Sacramento, CA	1	41.9	35.7	6.1	7.0	7.5	-0.5	15.3	14.4	0.9
Saginaw--Bay City--Midland, MI	1	68.7	17.0	51.7	61.1	9.6	51.4	6.8	4.8	2.0
Salt Lake City--Ogden, UT	3	36.6	16.4	20.2	2.8	0.9	1.8	23.2	10.3	12.9
San Antonio, TX	2	72.7	60.4	12.2	33.4	5.9	27.5	35.8	51.6	-15.8
San Francisco, CA	2	55.6	48.6	7.0	10.6	5.0	5.6	29.5	16.2	13.2
San Jose, CA	2	77.1	53.6	23.5	3.1	2.6	0.5	42.6	21.9	20.7
Savannah, GA	1	50.1	39.6	10.5	42.2	34.7	7.4	6.5	1.9	4.6

Appendix 4.8 (cont.)

Metropolitan Area	Sites[2]	Percent People of Color			Percent African American			Percent Hispanic or Latino		
		Host	Non-Host	Diff.[3]	Host	Non-Host	Diff.[3]	Host	Non-Host	Diff.[3]
Seattle--Bellevue--Everett, WA	2	58.1	23.0	35.2	12.7	4.1	8.6	8.8	5.1	3.7
South Bend, IN	3	48.5	12.5	35.9	31.5	6.5	25.0	13.6	2.6	11.0
Springfield, MA	1	44.9	21.3	23.7	24.4	5.6	18.8	17.6	12.4	5.2
St. Louis, MO--IL	4	32.5	22.4	10.1	28.9	18.0	10.9	1.5	1.5	0.0
Stockton--Lodi, CA	1	58.3	52.4	6.0	6.9	6.5	0.4	35.1	30.1	5.0
Sumter, SC	1	80.3	47.4	32.9	78.9	43.5	35.5	0.7	1.7	-0.9
Tallahassee, FL	1	76.9	39.2	37.7	68.6	32.4	36.2	2.3	3.9	-1.6
Tampa--St. Petersburg--Clearwater, FL	2	52.6	23.7	28.9	32.3	9.9	22.4	18.1	10.3	7.9
Toledo, OH	2	42.1	18.2	23.9	29.9	11.4	18.5	9.8	4.0	5.9
Tucson, AZ	1	70.0	38.1	31.8	6.7	2.8	3.9	58.8	28.9	29.8
Vallejo--Fairfield--Napa, CA	2	59.1	45.4	13.7	15.2	11.1	4.1	10.3	19.6	-9.3
Waterbury, CT	1	47.8	17.3	30.4	20.7	5.3	15.4	24.2	8.6	15.6
Waterloo--Cedar Falls, IA	1	25.8	8.3	17.5	19.0	4.4	14.7	4.0	1.2	2.8
Wichita Falls, TX	1	35.5	24.7	10.8	18.7	8.5	10.2	9.7	11.8	-2.1
Wichita, KS	3	50.7	17.5	33.1	24.0	5.8	18.2	20.0	5.8	14.2
York, PA	2	19.3	7.5	11.8	7.7	3.2	4.5	7.5	2.6	4.9

[1] Includes metropolitan areas with predominantly people of color host neighborhoods (i.e., greater than 50%) or with greater than 5% difference in the percentage people of color between host neighborhoods and non-host areas.

[2] Number of commercial hazardous waste facilities.

[3] Difference between host neighborhood and non-host area percentages. Differences may not precisely correspond to other values due to rounding off.

Appendix 4.9 – Asian/Pacific Islander Percentages for 25 Selected Metropolitan Areas[1]

Metropolitan Area	Sites[2]	Host	Non-Host	Diff.[3]	Ratio
Atlanta, GA	4	6.2%	3.2%	3.0%	1.92
Boston, MA--NH	5	5.1%	4.9%	0.1%	1.03
Champaign--Urbana, IL	1	11.3%	6.0%	5.4%	1.90
Fort Worth--Arlington, TX	2	4.7%	3.1%	1.6%	1.51
Greensboro--Winston-Salem--High Point, NC	2	4.6%	1.2%	3.4%	3.82
Jersey City, NJ	1	18.0%	9.1%	8.9%	1.98
Los Angeles--Long Beach, CA	17	9.6%	12.6%	-2.9%	0.77
Lowell, MA--NH	1	17.6%	3.6%	14.1%	4.93
Middlesex--Somerset--Hunterdon, NJ	3	11.3%	11.3%	-0.03%	1.00
Minneapolis--St. Paul, MN--WI	9	10.53%	3.4%	7.1%	3.11
New York, NY	3	15.6%	8.6%	7.0%	1.81
Oakland, CA	6	22.1%	16.4%	5.7%	1.34
Orange County, CA	3	12.4%	14.0%	-1.6%	0.89
Portland--Vancouver, OR--WA	2	8.1%	4.7%	3.3%	1.70
Providence--Fall River--Warwick, RI--MA	3	5.6%	1.8%	3.8%	3.07
Riverside--San Bernardino, CA	4	5.4%	4.4%	1.1%	1.25
Sacramento, CA	1	13.3%	9.3%	4.0%	1.43
Salt Lake City--Ogden, UT	3	6.8%	2.9%	3.9%	2.36
San Francisco, CA	2	12.4%	23.9%	-11.5%	0.52
San Jose, CA	2	28.2%	25.6%	2.6%	1.10
Seattle--Bellevue--Everett, WA	2	29.8%	9.3%	20.5%	3.21
Stockton--Lodi, CA	1	11.5%	11.9%	-0.4%	0.97
Tacoma, WA	1	9.1%	5.6%	3.5%	1.63
Tallahassee, FL	1	4.4%	1.7%	2.7%	2.61
Vallejo--Fairfield--Napa, CA	2	28.8%	10.0%	18.8%	2.88

[1] Includes metropolitan areas with host neighborhoods with Asian/Pacific Islander percentages greater than 5% or differences of greater than 3% between Asian/Pacific Islander percentages in host neighborhoods and non-host areas.

[2] Number of commercial hazardous waste facilities.

[3] Difference between host neighborhood and non-host area percentages. Differences may not precisely correspond to other values due to rounding off.

Appendix 4.10 – Multivariate Analysis Comparing Independent Effect of Race on Location of Facilities in Metropolitan Areas (Logistic Regression)

	Coefficient (B)	Est. Odds Ratio (Exp(B))	Significance Level
Race/Ethnicity			
% Hispanic or Latino	1.303	3.681	**0.000**
% African American	1.560	4.760	**0.000**
% Asian/Pacific Islander	3.200	24.528	**0.000**
Socioeconomic Status Indicators			
Mean Household Income ($1000s)	-0.017	0.983	**0.000**
Mean Housing Value ($1000s)	0.001	1.001	**0.003**
% with 4-Year College Degree	-0.263	0.769	0.529
% Employed in Professional "White Collar" Occupations	1.215	3.372	**0.019**
% Employed in "Blue Collar" Occupations	3.973	53.153	**0.000**
Constant	-4.431	0.012	**0.000**
-2 Log Likelihood	15886.571		
Model X^2 (df=8)	1513.317		**0.000**

NOTES: Analysis uses 2000 Census tract data and *50% areal containment method* with a 3 kilometer circular radius (see Ch. 3). Professional "White Collar" includes management, professional and related occupations. "Blue Collar" includes construction, extraction, maintenance, production, transportation and material moving occupations.

Chapter 5
Impact of *Toxic Wastes and Race* on the EJ Movement: Speaking for Ourselves

In the real world, all communities are not created equal. Government and industry are major perpetrators of environmental injustice. Today, millions of Americans are concerned about the threat of exposure to chemical and biological agents. The tragic events of September 11, 2001 (terrorist attacks on the World Trade Center in New York, the Pentagon in Washington and the plane crash in Pennsylvania) and the Anthrax scare heightened concern and worry. However, toxic chemical assaults are not new for many people of color who are forced to live next to and often on the fence line with chemical industries that spew their poisons into the air, water and ground. These residents experience a form of "toxic terror" twenty-four hours a day and seven days a week. When chemical accidents occur, government and industry officials tell residents to "shelter in place." In reality, locked doors and closed windows do not block the chemical assault by polluting industries on the nearby communities.

Approximately 80,000 different chemicals are now in commercial use with nearly six trillion pounds produced annually in the United States. More than 80 percent of these chemicals have never been screened to learn whether they cause cancer, much less tested to see if they harm the nervous system, the immune system, the endocrine system or the reproductive system. The current U.S. approach also is not based on real-life exposures since people and animals are not exposed to one chemical in isolation, but rather are exposed to an array of toxic chemicals.

This chapter includes short quotes, statements and essays written by an interdisciplinary group of civil rights activists, academics, policy analysts, scientists, elected officials, lawyers, educators and health professionals who share their views on the "impact" of the 1987 *Toxic Wastes and Race* report on environmental justice in the United States and abroad. The authors include "first-generation" (individuals whose environmentalism work and activism predate the report) and "second-generation" (individuals who became active after the report was published) environmental justice leaders from around the country. In the true spirit of the late Dana Alston's *We Speak for Ourselves,* written three years after *Toxic Wastes and Race*, the "people's voices must be heard and their views must be respected."

WHAT PEOPLE ARE SAYING

Quotes from Activists, Academics, Political Leaders and Practitioners

"On the 20th anniversary of its groundbreaking report *Toxic Wastes and Race*, I commend the United Church of Christ for its continued dedication to peace, justice, and equality. Through its work, communities without a voice have been empowered to join in the fight to protect their communities, their health and their future. Unfortunately, Latinos and other communities of color continue to struggle. As our communities continue to grow in number so should the sound of our voice and power of our vote. It is time to renew the call for real and lasting justice, a goal which we must achieve and can achieve by working together." -- *Congresswoman Hilda L. Solis, D-CA*

"As the first comprehensive national report to truly document the link between race and the location of hazardous waste sites, *Toxic Wastes and Race* catapulted the concern of environmental racism to national prominence. This keystone document established the foundation for the development of the environmental justice movement. Twenty years after the original release of this report, we are at a critical juncture in which we must assess whether state and federal agencies have heeded the call to action presented in this report and the obligation implicit in that call to protect the health of our nation's most vulnerable communities." -- *Congressman Alcee L. Hastings, D-FL*

“The report made Native Action feel part of a community of folks fighting for environmental justice....we were not all alone on this isolated Indian Reservation that is being surrounded by the largest coal strip mine in this country. The report helps to document the contemporary reality of our people's struggle. Our data never gets told--unless we tell it ourselves. It gives us strength when people stand in solidarity with us. Together, we have stood our ground and confronted powerful corporate and political interests who would have made our communities an industrial wasteland." -- *Gail Small, Executive Director, Native Action, Northern Cheyenne Indian Reservation, Lame Deer, Montana*

“The *Toxic Wastes and Race* report laid the factual scientific foundation to illustrate Environmental Racism as a fact of daily life for people of color, and not a figment of our imagination.” -- *Dr. Henry Clark, West County Toxics Coalition, Richmond, CA*

“I find that using the 1987 UCC report on *Toxic Wastes and Race* to establish a clear and factual history with organizations and people that want to organize around an environmental injustice they are faced with is essential. I also have used the UCC report with government officials and other non–believers; after hearing about this report or reading it they have been quickly put in check with the evidence of Environmental Racism in this landmark report.” -- *Jose T. Bravo, Executive Director, Just Transition Alliance*

"The 1987 report was truly a clarion call to Communities for a Better Environment and to all our movement to step forward and provide our best leadership -- in the realm of the environment -- to the struggle of oppressed people of color in the U.S. for equality, freedom, self-determination and justice." -- *Bill Gallegos, Executive Director, Communities for a Better Environment*

“The report was groundbreaking because it documented and validated the experiences that low-income communities of color were facing all over the country. Twenty years later race continues to be a determining factor in the siting of pollutants, the allocation of resources and investment, and the responsiveness of decision makers.” -- *Juliet Ellis, Executive Director, Urban Habitat*

“The UCC report was a perfect description of my community. I live in Altgeld Gardens, a mostly black Southside Chicago neighborhood. My community is a ‘toxic doughnut’ because it is surrounded by hazardous waste sites and polluting industries. We live waste and race 24/7.” -- *Hazel Johnson, founder of People for Community Recovery (PCR), a grassroots environmental justice group located on the Southside of Chicago*

“The 1987 report is as relevant today as it was twenty years ago. My city and county placed a toxic waste dump just 54 feet from my family’s 150-acre homestead. And for four decades, we drank well water poisoned by the Dickson County (Tennessee) Landfill. We are all sick and the government seems to be waiting for us to die.” -- *Sheila Holt-Orsted grew up in the Eno Road community in Dickson County, Tennessee*

“Many of my residents and I lived *Toxic Wastes and Race* in our New Orleans Agricultural Street community. My neighborhood was built on a toxic waste dump in the early 1980s. The EPA refused to declare the site eligible for the Superfund program in 1986, but later added it to the National Priorities List as a Superfund site in 1994. In 2001, EPA did a cleanup of the landfill site that was more akin to a cover-up. We were fighting an environmental justice struggle to get relocated before Katrina floodwaters drowned my city. None of us knew when we bought our homes that they were built on a toxic dump. We sued the city. We won our court case in January 2006. It was a long and hard struggle, but we won. It’s a bitter-sweet victory because we lost our community to environmental racism before Katrina.” -- *Elodia Blanco is a Hurricane Katrina survivor and member of New Orleans Concerned Citizen of Agricultural Street Landfill community*

“The report had a profound impact on the fledgling Environmental Justice Movement. It showed in vivid detail what we had already understood experientially and empirically--that a polluting capitalism would not reduce its emissions or toxic waste, but instead would site the most deadly waste on low-income Black, Latino, Indigenous and Asian/Pacific Islander communities. More than a document, it was a collective

organizer, giving a visual picture of a U.S. in which the Black Belt and the Chicano Southwest in particular were targets of chemical abuse from multi-national corporations. Wilmington, California, in the harbor area of LA where we have organized, is a low-income Latino immigrant community surrounded by oil refineries. The residents suffer profound incidents of asthma, respiratory disease and cancer. *Toxic Wastes and Race* was a document that lived, and lives, a critical intervention that helped spark an entire new social movement." -- *Eric Mann, author of LA's Lethal Air, and Director, Labor/Community Strategy Center*

"At the age of 19 when the UCC published *Toxic Wastes and Race*, I was completely unaware of this study and the significant role it would have in my advocacy work nearly 10 years later. Without the report, the voices of each polluted community of color, where I provide legal advocacy assistance, would be muted. The extensive documentation of environmental racism in *Toxic Wastes & Race* speaks truth to power -- governmental and corporate institutions that subject communities of color to massive amounts of toxic pollution -- and continues to vindicate the growing demand for environmental justice." -- *Monique Harden, Co-Director & Attorney, Advocates for Environmental Human Rights, New Orleans, LA*

"In the twenty years since this landmark study made clear to everyone what many already realized – that communities of color were targeted as dumping grounds for hazardous waste – we have seen much greater awareness and even acknowledgement of environmental racism. But while various experts have discussed and debated the basis for this discrimination and how best to address it, very little has changed on the ground during this time in places like Camden, NJ, an impoverished African-American and Latino community that contains a disproportionate share of waste disposal facilities, polluting industries, Superfund sites and brownfields. Even though regulatory agencies may pay more attention to Camden and improve some of their practices, the lack of clear and enforceable laws and regulations that prohibit environmental discrimination, and the unwillingness to change the economic and political dynamics that make "dumping' in places like Camden City easy and profitable, means that Camden residents continue to live in unsafe conditions amid smokestacks and diesel traffic, and experience high rates of cancer and asthma. Much more needs to be done to translate awareness of environmental injustice into action." -- *Olga Pomar, Attorney, South Jersey Legal Services, and Counsel for South Camden Citizens in Action and South Jersey Environmental Justice Alliance*

"*Toxic Wastes and Race* was undoubtedly the seminal scientific validation of environmental injustice in America. It ultimately forced the world to realize that EJ is a global race and class issue." -- *Grover G. Hankins, Attorney at Law, Houston, Texas*

"It is THE seminal report on the issue of inequities associated with the siting of regulated and unregulated land uses in this country. It revealed, with hard numbers and thorough analysis, that despite the rhetoric of equal protection, there is truly a racial and economic divide in America as it pertains to the most basic of rights--a healthy, clean environment." -- *Martina E. Cartwright, Executive Director, Texas Southern University Thurgood Marshall Law School EJ Clinic*

"The landmark *Toxic Wastes and Race* changed the face of ethics forever. The only question is why everyone is not following it." -- *Kristin Shrader-Frechette, O'Neill Family Professor, Department of Biological Sciences and Department of Philosophy, University of Notre Dame; Director, Center for Environmental Justice and Children's Health*

"The scope and scale of the study pioneered an entirely new area of investigation. All subsequent research about equity in the distribution of environmental risk was a response to the UCC's methodology or conclusion. Its contribution to the movement's identity and strategy was unprecedented." -- *Eileen McGurty, Ph.D., Associate Chair, Environmental Sciences and Policy, Johns Hopkins University*

"A basic tenet of *doing* public policy is acknowledging that a problem exists. The 1987 *Toxic Wastes and Race* report made clear the problems of environmental injustice, gave legitimacy, validity and credibility to a movement and, most important, did not allow decision makers to hide behind a curtain of ignorance and deniability. There is no other document as important as the 1987 report to *doing* environmental policy. No other document has promoted human rights and justice in environmental policy as the 1987 *Toxic Wastes*

and Race report." -- *David E. Camacho, Ph.D., Special Assistant to the President, Northern Arizona University*

“Building on momentum accelerated by the 1987 *Toxic Wastes and Race* report, California first addressed environmental justice in its 1994 comparative risk project. The project’s environmental justice committee reported widespread disproportionate impacts by race and class and suggested new tools for mitigating these impacts. In 1999, California adopted legislation making the achievement of environmental justice state policy. While embracing the term environmental justice, the legislation emphasizes fairness rather than the elimination of disproportionate burdens.” -- *Alan Ramo, professor and co-founder of the Environmental Law & Justice Clinic at Golden Gate University in San Francisco*

“The landmark study had significant implications for environmental research and policy and created an opportunity for local community-based organizations to use the framework to shine light on issues beyond locally unwanted land uses (LULUs). The West End Revitalization Association is a prime example of a local organization using the framework to address inequities in planning, zoning and development in neighborhoods of color in Mebane, North Carolina.” -- *Sacoby Wilson is a Robert Wood Johnson Health & Society Scholar in the Center for Social Epidemiology and Population Health at the University of Michigan*

"The 1987 report takes its rightful place in history as a key moment in the environmental justice movement. It confirmed what so many community residents knew, if only anecdotally. The UCC report also should be remembered as an enterprising union between community, science and faith. Concomitant to Ida B Wells' anti-lynching editorials that influenced Congressional action and Rachel Carson's *Silent Spring* that catalyzed the anti-toxics movement - the *Toxic Wastes and Race* report takes its place among illustrious examples of works that spurred social action." -- *K. Animashaun Ducre, Ph.D., Assistant Professor, Department of African American Studies, Syracuse University*

“The watershed report opened a floodgate of scholarship that has sought to elucidate how the dynamics of institutional discrimination, racism and environmental inequality leads to the persistence of environmental health disparities in the United States.” – *Rachel Morello-Frosch, Assistant Professor, Center for Environmental Studies & Department of Community Health, School of Medicine, Brown University*

“By validating the occurrence of environmental racism, the Commission for Racial Justice introduced Environmental Justice as a new human right that inspired a second-generation Civil Rights movement. EJ helped both describe and explain patterns of modern victimization. With the help of President Clinton's Executive Order and some successful case law, EJ gained traction as a codified and protected right, for which adverse impacts are to be anticipated and avoided. While EJ initially competed with and then subsumed the grassroots environmental movement that had long advocated for toxic victims, it then broadened its focus further to advocate for a new sustainability paradigm that promotes health and decries victimization associated with the entire underside of globalization. The long-term impact is a diverse global movement of victims and those who refuse to be victimized who demand environmental justice for all, including unborn generations to come, whose rights are being compromised before they are even conceived.” -- *Michael R. Edelstein, psychology professor at Ramapo College of New Jersey and author of* Contaminated Communities, Coping with Residential Toxic Exposure (Westview, 2004).

IMPACT ON ENVIRONMENTALISM IN THE UNITED STATES

Twenty Years Old and Counting

Vernice D. Miller-Travis

Simply put, the publication of *Toxics Wastes and Race* report changed my life. I’m not sure there are many who could say that the report had as major an impact on their life as it did on mine. In September 1986, I went to work at the United Church of Christ Commission for Racial Justice, as a Research

Assistant for the Special Project on Toxic Injustice. I went to work for Charles Lee, then the Director of Research at the Commission, after years of begging Rev. Ben Chavis to hire me in any capacity at the Commission.

I went in to meet Charles (at Ben's suggestion) in July 1986, and by September he had found the money to hire me. My salary was $1,000 per month. But looking back on what this position did for me I now know I would have worked on this project for free. Charles at the time was receiving reams of data from Public Data Access, the company he had hired to begin the process of aggregating the many data sets that formed the basis of *Toxic Wastes and Race's* findings.

Some of my duties included combing through the data sets and mapping the number of hazardous wastes sites that existed in communities of color across the country, figuring out how to draw and present the maps that appeared in the report and creating the map that appears on the cover of the report, to name a few. The cover map was hand-colored by me and reproduced by a graphic artist, because this was long before the advent of GIS. That alone took me six months to complete.

My fondest memory though of helping to write and produce *Toxic Wastes* and Race was sitting in Charles Lee's office one day as we were doing our usual back-and-forth about every word and sentence that was being written. I said to Charles that the one overriding thing we could say about the significant statistical correlation we were finding between race and the location of hazardous wastes sites was that the location of these sites was not a random act.

The day the reports were delivered to us from the printer in April 1987, prior to the national publication on April 17th at the National Press Club in Washington, D.C., I remember I couldn't get home to Harlem soon enough that evening to share the report with Peggy Shepard and Chuck Sutton. Peggy and Chuck were building and leading an effort in the West Harlem community to fight the disproportionate siting of municipal waste facilities in our community. A year after the publication of *Toxic Wastes and Race*, Peggy, Chuck and I would launch West Harlem Environmental Action. For me the publication of *Toxic Wastes and Race* was the seminal thing that set me on the path of what would be my life's work, the struggle to bring about environmental justice.

_____

Vernice Miller-Travis is the Executive Director of GroundWorks USA and founding member of West Harlem Environmental Action Inc. (WE ACT).

WE ACT's Work in Harlem

Peggy M. Shepard

In New York City, the first cry of environmental racism was heard in 1985 in Harlem, an urban community of color -- one with a storied past and an uncertain future. The eight-year Harlem struggle began as a "typical" siting case. Injustice catalyzed neighborhood activists, and the newly published 1987 *Toxic Wastes and Race* report mobilized our political will.

The UCC report presented data and an analysis that allowed my community to understand that it was not alone or unique in its challenge to the disproportionate burden of pollution borne by low-income and communities of color, a burden that, 20 years later, continues to contribute to egregious disparities in health by race, ethnicity and social class. At that time, the history of disinvestment in Northern Manhattan was legendary, and it was clear to me that my new neighborhood had become elite Manhattan's dumping ground, where 25 percent of Harlem's children have an asthma diagnosis, and 620,000 mostly low-income African-American and Latino residents live among six depots housing one-third of the city's 4,200 dirty diesel buses.

Through fate or perhaps an interesting convergence of events, I was introduced to Vernice D. Miller, a research assistant on the *Toxic Wastes and Race* report, a Harlem native who lived in the neighborhood, joined the North River campaign and infused our work with passion and a racial analysis of environmental decision making that formed the basis of the report. Armed with the report and with the help of many volunteers, we achieved the objectives we set in the '80s by developing strategies that relied on data collection and analysis, the use of community-based participatory research to link community-level environmental exposures with outcomes, and evidence-based organizing campaigns that move policymakers and empower residents.

WE ACT believes that science, technology and research are indispensable tools for uplifting community struggles and creating a safe and sustainable environment. We realized that the lack of scientific literacy, information, data and context was a serious void that contributed to the systemic exclusion of communities of color from decision making. By engaging in Community-based Participatory Research (CBPR), WE ACT has made environmental data and research accessible and relevant to community residents through campaigns that translate relevant findings into practice and policy, and an Environmental Health and Justice Leadership Training that provides the scientific and regulatory foundation of environmental issues for community residents.

Toxic Wastes and Race taught me that communities must "take back" science and document our model case studies of community action. To communicate innovative community research in action, WE ACT and Urban Habitat co-published *Race, Poverty and the Environment*, *Burden of Proof: Using Research for EJ*, in winter 2004-5. As Azibuike Akaba comments in his essay from that issue, our organizations "have taken the tools of research and technology and turned these into weapons and strategies that serve to defend our communities." *Toxic Wastes and Race* has left a legacy that continues to be an important model and tool for the national Environmental Justice Movement.

_____

Peggy M. Shepard is Executive Director and co-founder of We Act for Environmental Justice based in West Harlem, New York, and the 2003 recipient of the Heinz Award in Environment.

How Toxic Wastes and Race Saved Our Souls

Michel Gelobter

We were in the waning years of Ronald Reagan and a decade into the second Reconstruction that people of color in the United States have had to endure -- the second bright lie of justice turned false and sour. By 1976, the legal trappings of civil rights had already started to fall. By 1987, we were too busy dodging bullets, crack vials, and the police to claim our newfound freedom.

But somewhere near Harlem, there was the United Church of Christ Commission for Racial Justice, and there Reverend Ben Chavis and Charles Lee, intern Vernice Miller, and a few others struck a spark for justice that may one day burn for all humankind.

Until 1987, the fight for racial and economic justice had been a story of oppressive institutions and personal prejudice. Civil rights had become a narrow competition for resources among groups – the right to take a fair firefighter's exam, to get into medical school, to be charged the same rent as everyone else. We had moved from Martin Luther King's sublime dream of brotherhood on the Red Hills of Georgia to sibling rivalry over scraps on a table in a courtroom.

At a time when the crowds were silenced, *Toxic Wastes and Race* said that the rocks and stones themselves could sing of justice and of injustice. That even when "the man" wasn't troubling our doorstep, the rough tumble of racism could as soon come at us on the air we breathe, the water we drink, and the land we stand on.

When we can hear the earth's cry for justice, how much more carefully do we hear our own! The deep and clear teaching of environmental justice in 1987 as today is that these cries are one and the same. When you see a river that is polluted, you see a community that is oppressed. When you see young people incarcerated, you find their parks and yards contaminated. When the people are brown, all too often, so is the air. In short, environmental justice reminds us, in language for our times, that an injustice anywhere is an injustice everywhere, an injustice to anything is an injustice to every thing, and every being.

The UCC report helped prepare us for the times of war and economic hardship that we face today. Environmental justice made it clear that from the oil beneath the Middle East to the grape orchards of Northern California, mastery over nature is inextricably tied to mastery over people. The environmental justice movement showed once and for all that justice means not fragmentation but connection, not individualism but community, not smokestacks but ecosystems.

These insights are the foundation for a road to peace, justice, and planetary prosperity. Two words, together, tell the story of our survival and of our deepest contentment: environmental justice. If we can achieve environmental justice, if we can live right with the earth and with each other, then we will have achieved the dreams of so many before us and made possible those of so many who come after.

Toxic Wastes and Race and the movement it has sparked make the solution so plain: justice will not be reduced to a courtroom and a written proof. Rather, it will be prosecuted in the air and on the ground, for people and for the earth, and, as has been true since long before 1987, environmental justice will set us free.

_____

Michel Gelobter is the President of Redefining Progress, the country's leading policy institute for smart economics—policies that help people protect the environment.

Inspired by History

Bunyan I. Bryant

To speak of the personal impact of *Toxic Wastes and Race in United States* requires me to construct the historical context that brought me to this area of teaching and scientific inquiry. In 1972, I was hired as a faculty member in the School of Natural Resources and Environment (SNRE) to help build an Environmental Advocacy Program that was started by a group of progressive students and faculty. These students and faculty were motivated by three events that took place in 1970: 1) the Black Action Movement, which closed down the University of Michigan for eighteen days after which the University administration agreed to increase the enrollment of black students, 2) the Ecology Teach-in, which raised the environmental consciousness of students and thus tripled the enrollment in SNRE and 3) the Spurr Committee Report that called for strategic planning for SNRE.

As students enrolled in SNRE they demanded new courses and programs. From the time I entered the School, I, along with my colleague James Crowfoot, taught courses in the Environmental Advocacy Program that made the connection between social and environmental problems and those least served by the geo-political system. In our courses we taught students to view race and class as social constructions that undergird an accumulation system that left communities in detestable social and environmental conditions. We also focused our teaching on student empowerment, student liberation and using knowledge for purposes of advocacy and intentional social change.

In 1976 two of our Advocacy students worked for UAW and a coalition of organizations to plan a national conference titled: *Working for Environmental and Economic Justice and Jobs*. More than 350 people--black, white, environmentalists, workers, farmers, men and women--spent five days together at the Walter and May Reuther Family Educational Center near Onaway, Michigan, to talk about jobs, the environment,

civil rights, racism and environmental blackmail. Then eleven years later I became a board member of an organization called Prairie Fire that dedicated itself to saving family farms from foreclosure.

I, along with its Executive Director Dave Ostendorf, attended a meeting at the Federation of Southern Cooperatives in Emelle, Alabama, to forge a working coalition of white family farmers of the Midwest with black farmers of the Federation in order to enhance family farm survival. It was on this trip that we were able to visit the largest landfill in the nation, located not too far from the Federation, and I was given a copy of the United Church of Christ Report by community activist Wendell Paris. For me the report was timely and refreshing because it affirmed the work that I had being doing over the last fifteen years. It was on this trip that I took myself back in history as Dave and I retraced the steps of the March 21, 1965 civil rights march from Selma to Montgomery. In Selma when we stopped to pause at the beginning of the Edmund Pettus Bridge, I thought about the violence of the earlier march.

On March 7, 1965 the march from Selma to Montgomery was disrupted as civil rights activists were beaten, clubbed, tear gassed and driven back to Selma. This came to be known as *Bloody Sunday*. As I stood there at the bridge it was as if I could hear the cry of pain from the distant past. I tried to imagine what it was like as chaos erupted and people were impaired by the tear gas and beaten with billy clubs. Images of violence haunted me throughout this trip. Our journey ended at Dexter Avenue Church in Montgomery, where Martin Luther King was once the pastor. This was a powerful experience that took me back to the time when I was the chairman of the local Ann Arbor chapter of the Congress of Racial Equality (CORE), a direct-action non-violent civil rights organization.

Although my experiences in CORE could not be compared to the Selma-Montgomery march, I felt the bond of nonviolence connected me to that moment in time. When I returned to the School, I was inspired because I felt I had been connected to a brief moment in history. I was inspired by all the years of work I had done to date. And I was inspired by the United Church of Christ *Toxic Wastes and Race* report because there were others working on the issues I deeply cared about. I shared the report with my colleague Paul Mohai. This report played a major role in motivating us to organize the 1990 conference on *Race and the Incidence of Environmental Hazards* held at the University of Michigan School of Natural Resources and Environment. The results of this conference and the report played a major role in putting environmental justice on the agenda of the United States Environmental Protection Agency.

Bunyan Bryant is a professor in the School of Natural Resources and Environment at the University of Michigan and co-editor with Paul Mohai of *Race and the Incidence of Environmental Hazards* (Westview Press, 1992).

Toxic Wastes and Race and Me

Luke Cole

Toxic Wastes and Race was transformative for me, for the communities I work with and for the Environmental Justice Movement nationally. The United Church of Christ Commission for Racial Justice's work has had a long-lasting effect, goading and inspiring us even today.

Personally, *Toxic Wastes and Race* was the first national study of the disproportionate impact of environmental hazards on people of color I found when I began my research in this field in 1988. Robert Bullard had written path-breaking studies of such impact in Houston's siting of garbage dumps, Melia Franklin had done inspiring but anecdotal work for the Center on Third World Organizing, the General Accounting Office had published its four-site survey of toxic waste dumps in the southeast. But *Toxic Wastes and Race* was national, and as such it documented in a compelling way the disparate impact of toxic waste dumps on people of color.

Toxic Wastes and Race confirmed what many already knew intuitively – that in environmental policy, as in housing, education, the workplace, healthcare and other social arenas, racial discrimination was unfortunately both present and leading to predictable, racist outcomes. *Toxic Wastes and Race* helped set me on the path in my nascent career as a lawyer for the Environmental Justice Movement. (Incidentally, *Toxic Wastes and Race* also documented the failure of our nation's regulatory system for toxics: Although people of color bore a disparate impact of such sites, the report showed that more than half of *whites* also were exposed to uncontrolled hazardous waste sites.)

Toxic Wastes and Race also led me to civil rights law, where Title VI of the Civil Rights Act and the regulations enacted to implement it guaranteed the right to be free from discrimination on the basis of race, color and national origin. The regulations explicitly barred the disparate impact *Toxic Wastes and Race* documented, and so we at the Center on Race, Poverty and the Environment began using Title VI and the Title VI regulations beginning in the early 1990s.

Toxic Wastes and Race transformed the client communities with which I worked in early environmental justice struggles, as well. In Kettleman City, California, where local Latino farm workers successfully fought a proposal by the world's largest toxic waste dumper, Chemical Waste Management, to build California's first toxic waste incinerator, it led to a critical conceptual break-through. "I thought it was just us until I began to hear about the United Church of Christ study," says Mary Lou Mares, one of the sparks that lit and sustained the Kettleman struggle. "Then I realized we were part of a national pattern." *Toxic Wastes and Race* deepened Ms. Mares' personal understanding of the impact she was facing, and provoked her into becoming a leader in the Environmental Justice Movement.

Activists block a planned hazardous waste incinerator in Kettleman City, CA, 1993 (Photo by EJRC)

Toxic Wastes and Race affected the debate in other communities, as well, transforming the national movement. In Warren County, North Carolina – the iconic struggle that many consider the birth of the Environmental Justice Movement. When the PCB dump for the county was first proposed, many residents learned of another potential disposal site, Chemical Waste Management's Emelle, Alabama, dump. As Warren County residents sought to prevent the PCB dump in the poorest, most African American county of North Carolina, their demand was that the waste be taken to Emelle. Years later, after the dump was sited in North Carolina, local residents in Warren County learned of Emelle's demographics from the GAO study and from *Toxic Wastes and Race*. They understood that they, too, were part of the same pattern that put such dumps in poor, African American communities like Emelle. When it came time to clean up the Warren County dump, in 1994, and state officials proposed removing the PCB waste for off-site disposal, community residents demanded that it be remediated in place, and *not* taken to Emelle. Warren County activist Dollie Burwell reports that this radical conceptual shift was directly influenced by *Toxic Wastes and Race*.

Despite the bright light shone on the problem by *Toxic Wastes and Race*, the disparate siting of toxic waste facilities has not abated. Indeed, the follow-up study a decade later – *Toxic Wastes and Race Revisited* – found the problem had become worse in the intervening years.

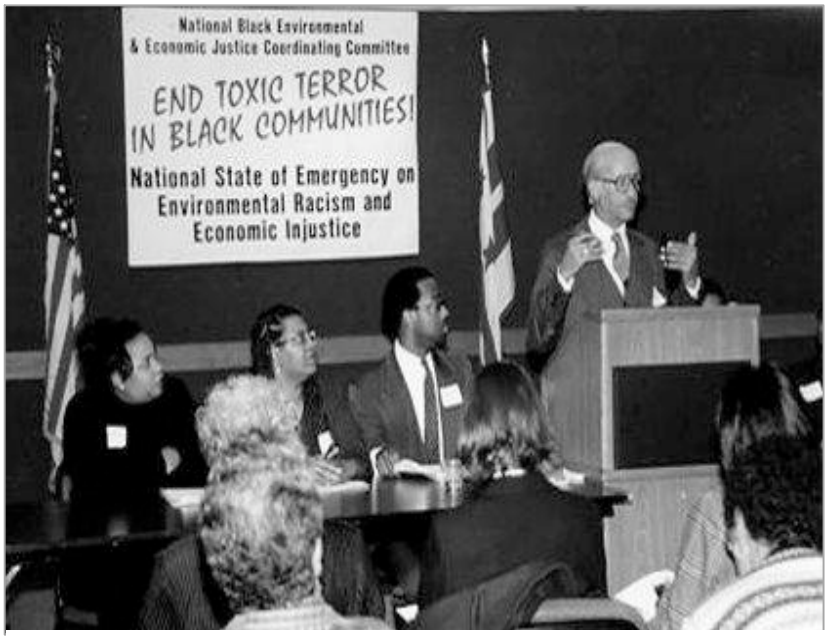
Not only has the problem gotten worse, but the range of tools available to affected communities also has been dramatically shrunk by a Supreme Court hostile to civil rights. In 2001, Justice Scalia completed the evisceration of Title VI of the Civil Rights Act of 1964 – an evisceration and slow demise begun back in the 1970s with a series of decisions limiting civil rights – when in *Alexander v. Sandoval* he wrote that the public does not have the right to sue to enforce the disparate impact regulations enacted by every federal agency under Title VI. As the Court had previously held that (contrary to Congressional intent in 1964) civil rights plaintiffs must prove intentional discrimination to sue under Title VI, such plaintiffs had relied on the agencies' Title VI regulations, which uniformly codify the disparate impact standard. With the ability to sue under such a standard taken away, enforcement of the civil rights regulations is left up to the federal agencies themselves, which means there is no enforcement, period. This lack of protection has sparked a national call for a Civil Rights Restoration Act to re-enshrine the disparate impact standard within Title VI itself. The passage of such a law in the coming Congress would be a fitting tribute to *Toxic Wastes and Race*, which opened our eyes to the disparate impact in the first place.

Luke Cole is the Executive Director of the Center on Race, Poverty & the Environment, which he and Ralph Abascal founded in 1989.

Mobilizing to Fight "Toxic Terror" in Black Communities

Donele Wilkins

I became aware of *Toxic Wastes and Race* at the famed 1991 People of Color Environmental Leadership Summit where copies were distributed. Delegates representing Detroit returned home with new passion for reform and a heightened commitment address toxic dumping in our neighborhoods. For us, *Toxic Wastes and Race* set in motion a new course for community revitalization and health. For many of us, we took serious the mandate to start a movement for environmental justice. Thus, Detroiters Working for Environmental Justice (DWEJ) was born by 1994 with a mandate to provoke change on multiple levels, and the Michigan Environmental Justice Coalition was organized to be a voice in shaping public policy in the state in 1995.



The National Black Environmental Justice Network convenes emergency meeting against "toxic terror," New Orleans, La., 1999 (Photo by EJRC)

Since its inception, DWEJ has made environmental justice a household phrase, not only in the city but also throughout the state of Michigan. We have shut down incinerators, added a grassroots voice to transportation decisions, engaged in decisions for the revitalization of brownfields sites, instigated challenges for policy reform at the state and local level, participated in community-based participatory research to address air quality and public health impacts and much more. Today, citizens across many spectrums of age and ethnicity recognize the importance of being engaged in decisions that affect them

environmentally. As we look toward the future, DWEJ is leading the pack in redefining development practices that incorporate the tenants of sustainability. People of color and the poor have joined the ranks to stand for a quality of life that embodies a vision for health and quality of life.

Our motto “Take a Stand for the Land in the Hood” continues to motivate us. We are committed to fighting until everyone in our community is able to breathe clean air, live in healthy homes, play on pollution-free playgrounds, learn in healthy buildings and experience creation in its fullest grandeur.

The 1987 report was also a major impetus in the formation of the National Black Environmental Justice Network (NBEJN), a national preventive health and environmental/economic justice network with affiliates in 33 states and the District of Columbia. In December 1999, because so many African American communities continued to be toxic “wastelands,” the late Damu Smith and a core group of black EJ leaders organized an emergency gathering of nearly 300 grassroots, environmental and economic justice activists.

The gathering included youth, labor, health, religious organizations, attorneys, academicians and a host of other professional groups. Our theme, “End Toxic Terror in Black Communities,” was adopted several years before the infamous September 11, 2001 terrorist attack.

We came together in New Orleans, Louisiana, to map out strategies to address environmental and health disparities in the African American community. Since its inception, NBEJN has pursued a proactive strategy for organizing a broad-based Black community to meet the environmental and health threats that disproportionately affect African Americans and other people of color. When Hurricane Katrina and the subsequent levee breach flooded New Orleans, NBEJN again reaffirmed its commitment to "fight" for a fair, just and equitable cleanup and restoration of New Orleans’ vulnerable people of color and poor communities devastated by the “worst environmental disaster in U.S. history.” We also recommitted ourselves to work with our local NBEJN partners to end racially discriminatory environmental decision making by raising broader awareness within the Black community of the connection between pollution and poor health, and promoting sustainable communities by advancing clean production technologies, pollution strategies and economic alternatives.

NBEJN’s organizing strategy encourages active participation by individuals and organizations across spatial location (urban, suburban and rural), disciplines, economic strata and generations with the goal of promoting a healthy, just and sustainable future. We seek to raise awareness of environmental issues among African Americans and African Descent populations around the world that are impacted by environmental racism. NBEJN has undertaken a four-point strategy to combat environmental racism that focuses on (1) safe and healthy communities; (2) sustainable development, climate justice and clean production; (3) civil rights and equal protection laws and policies; and (4) international human rights protection.

NBEJN members include some of the nation's leading African American grassroots environmental justice activists, community organizers, researchers, lawyers, public health specialists, technical experts and authors addressing the intersection of public health, environmental hazards and economic development within Black communities.

DWEJ and NBEJN affiliate organizations continue to grow, mature and build their network of organizations and individuals to address critical environmental and economic justice and health issues affecting African Americans and persons of African descent around the world.

Donele Wilkins is the Executive Director, Detroiters Working for Environmental Justice and founding Board Member of the National Black Environmental Justice Network (NBEJN) based in Detroit, Michigan.

Environmental Injustice in "Indian Country"

Tom B.K. Goldtooth

The environmental injustice in "Indian Country" includes the accumulative social, economic and cultural impacts and historical trauma of colonialism, imperialism, and militarization, violation of treaties and taking of indigenous peoples land by the European-white immigrants that settled this country. Untold millions of indigenous peoples that once lived in what is now called the U.S. were killed and enslaved, cultures violently attacked by church and State and ways of life changed forever.

Toxic Wastes and Race described the extent of environmental racism and the consequences of people of color and indigenous communities disproportionately affected by polluted environments. For American Indians and Alaska Natives, the report was timely. Prior to 1987, American Indians and Alaska Natives were already experiencing disproportionate toxic exposures and emission releases from United States industrial facilities, the mineral extractive industry, coal plants, oil and gas industry, and toxic and radioactive wastes sites. From the St. Lawrence River corridor within the Mohawk tribal nation in New York to the Inupiat people in Point Hope, Alaska, indigenous peoples were experiencing the affects of environmental racism.

During the 1960s, the U.S. government allowed radioactive contaminated soil from nuclear waste fallout in Nevada to be buried near the subsistence hunting grounds of the Point Hope Inupiat village. It went unmarked for 30 years. In 1992, declassified documents revealed the presence of these wastes. The people wondered why they had such a high cancer rate.

In the Southwest and West, indigenous and non-indigenous peoples living downwind and downstream from nuclear weapons testing and uranium mining suffered immensely during the Nuclear Age. From Navajo uranium miners to the Jackpile uranium mine on Laguna Pueblo tribal lands, indigenous tribal communities have borne the brunt of both the front and back ends of the nuclear fuel cycle.

The Mohawk nation lies adjacent to the St. Lawrence River within the Great Lakes water basin. The waters that drain from Lake Ontario to the St. Lawrence River carry a myriad of wastes discharged from U.S. and Canadian industries and municipalities located within the Great Lakes including airborne contaminants from throughout the world transported and deposited into the basin. These waste materials have contaminated the waters and aquatic organisms traditionally used by indigenous peoples for food and ceremonial purposes forcing changes in life styles and traditions. These changes have occurred within a relatively short period and can be directly linked to the rapid industrialization that occurred during the post-war period of the 1940s.

The environment around a particular section of the St. Lawrence River has been contaminated with polychlorinated biphenyls (PCBs) from a General Motors aluminum transmission casing operation on the river. PCB contamination has affected the health and well being of the Mohawk. A study determined that young Mohawk mother's breast milk contained elevated concentrations of PCBs and these compounds were being transferred to their nursing infants. It wasn't until recent years that progress on the cleanup goals have been made on soils, groundwater and river sediments.

From the late 1980's to the mid-1990's, hundreds of American Indian and Alaska Native tribal governments had been approached by the toxic and nuclear waste industry and the U.S. government searching for new dumping grounds for unwanted toxic, nuclear and other wastes. Taking advantage of poverty, high unemployment rates and the sovereignty status of indigenous lands, the private waste industry aggressively pursued tribal lands to site incinerators, landfills and the siting of other polluting industries. The majority of these efforts were framed as economic development projects with developers telling concerned tribal citizens to trust the landfill and incinerator technology as state-of-the-art, and that it would be safe and environmentally friendly.

The U.S. government with its commercial nuclear power industry partners, targeted indigenous lands for high-level radioactive waste dumps for many years. In 1987, the U.S. Congress created the Office of the Nuclear Waste Negotiator in an effort to open a federal "monitored retrievable storage site" for high-level

nuclear waste. In the early 1990's the Negotiator sent letters to every federally recognized tribe in the country, offering up to millions of dollars to American Indian and Alaska Native tribal governments for first considering and then ultimately hosting the construction of a nuclear dump on their lands. Out of the hundreds of tribes approached, the Negotiator eventually courted about two dozen tribal councils in particular.

One by one, these proposed toxic and nuclear waste dump proposals failed. They failed by a groundswell of grassroots resistance of tribal members organizing, training themselves and forming local, regional and national coalitions and networks to provide a voice of solidarity demanding environmental justice in Indian Country. The Indigenous Environmental Network was formed as a mechanism to provide a tribal community-based and grassroots voice to national policy-making on environmental, public health, natural resource conservation and the protection of sacred sites. It has been said that without the activism of these tribal grassroots organizations, there would be commercial toxic waste landfills, sewage sludge facilities and incinerators operating on indigenous lands. The UCC report and the 1991 First National People of Color Environmental Leadership Summit helped launch the environmental justice movement, of which American Indians and Alaska Natives continue to be an integral part.

_____

Tom B.K. Goldtooth is Executive Director, Indigenous Environmental Network based in Bemidji, Minnesota.

Impact on a Young Scholar's Career

Glenn S. Johnson

In 1987, I was a 21-year-old graduate student in the in the department of sociology at the University of Tennessee-Knoxville. The first time I heard of *Toxic Wastes and Race* was when I was taking a sociology class with Professor Robert Bullard. He stressed to the class that reducing and eliminating hazardous waste in Black, Latino and poor white communities should be a priority for local, state and federal governments. As his research assistant for Bullard's 1990 *Dumping in Dixie: Race, Class and Environmental Quality* book, the UCC report complemented this first environmental justice book while assisting me in fully understanding the nexus between equity, fairness and struggle for justice by black, poor and politically disenfranchised communities.

The report crystallized my theoretical thinking for my master's thesis which provided an analysis of how issues of compensations/incentives and perceived risks affect the mobilization of protest groups and the mobilization of community elites. The report challenged me to conduct an in-depth community study for my Ph.D. dissertation which was to document and describe the "voices" of the Hollywood residents in Memphis, Tennessee, who were impacted by a toxic landfill in their backyard. The residents were not allowed to be equal political participants in the Hollywood Dump issue. The residents lacked a strong collective resistance to influence local, state and federal officials to respond to this community problem. The report expanded my foundation of the environmental justice framework such that it allowed me to merge my theoretical, practical and policy interests in race and ethnicity, political economy, poverty and inequality, race and the environment, class analysis, stratification, social movements, urban studies and environmental policy.

The report has had a profound impact on my research, writing and teaching pedagogy as a professional. Upon being recruited and hired as a research associate at the Environmental Justice Resource Center (EJRC) at Clark Atlanta University I have been afforded the opportunity to contribute to the analytical studies on the relationship between race and the location of hazardous wastes sites in politically powerless communities. The conclusions and recommendations from the report were used in my culturally sensitive and user-friendly curriculum development through the EJRC and Department of Sociology as well as in my research activities over the last ten years, which include transportation equity, urban sprawl, smart growth, public involvement, facility siting, toxics, superfund, brownfields

redevelopment, sustainable communities and regional equity. Even in the environmental justice workshops that I have conducted over the last decade, the report was used in some capacity to explain the magnitude of the problem of hazardous wastes in communities of color in the United States.

The report energized me to compile and retrieve environmental justice literature to disseminate via the EJRC Web site to community stakeholders across the United States to keep them updated on current environmental justice issues. It sharpened my community-driven policy research (i.e., pollution prevention, health disparities, children environmental health, youth leadership development, gentrification and community impact assessment) by assisting me in developing "action policies" that can be undertaken by government agencies to protect all Americans from environmental hazards.

Finally, the report has encouraged me to strengthen my commitment to mentor, recruit, offer internships and train African American undergraduate and graduate students in the Atlanta University Center (AUC) to pursue environmental and environmental justice careers to assist the veteran environmental justice advocates in providing equal protection for communities of color in the United States and abroad. The environmental justice movement (EJM) is an extension of the civil rights and human rights movements, which is a daily struggle for justice.

_____

Glenn S. Johnson is Research Associate in the Environmental Justice Resource Center at Clark Atlanta University and an Associate Professor in the Department of Sociology and Criminal Justice. He is co-editor of *Highway Robbery: Transportation Racism and New Routes to Equity* (South End Press, 2004).

Learning About Toxic Wastes and Race

Carl Anthony

I had recently closed my privately owned professional architecture and planning office, Anthony/ Fleming and Associates, when, in 1988, I first heard of the publication *Toxic Wastes and Race.* Our office had been working on several large-scale urban development projects in California. We had been trying to find ways to shape and evaluate the impacts of such projects on communities of color.

Among the projects were a 170-acre waterfront plan for the City of Berkeley, and a 300-acre plan for San Francisco's new Mission Bay development, involving construction of 8,500 new residences and 4 million square feet of office space. Both projects represented potential threats, but also potential opportunities for the African American community. At the time, the City of Berkeley was 20% black, had an African American Mayor and City Manager, and the San Francisco Mission Bay project was right next door to the African American community of Mission Bay. In spite of extensive citizen participation, there was no significant involvement by African Americans or other people of color in either project.

I was searching for a way to build multicultural participation in shaping such projects and we established the Urban Habitat Program in the San Francisco Bay Area for this purpose. *Toxic Waste and Race* came like a bolt of lightning to our group. It provided a whole new way of researching and organizing around environmental issues. New development projects had almost never benefited communities of color and, more often than not, created new burdens. No wonder our communities were skeptical of new development schemes and were suspicious of participating in planning processes for them. *Toxic Wastes and Race* provided a way to explain this to our communities.

In October 1989, the Loma Prieta Earthquake hit the San Francisco Bay Area, with huge negative impacts on the predominantly African American Community of West Oakland. Hundreds of commuters were trapped on the Cypress Freeway and rescued. Chapelle Hayes, a close friend, subsequently deceased, proposed a clean air alternative to rebuilding the freeway, and organizing for his initiative strengthened awareness of environmental justice issues in the area.

In March 1990 I met Luke Cole at the Public Law Conference on Land, Air and Water in Eugene, Oregon. A thousand environmental lawyers participated in this event, but beside myself, there were no people of color. As a follow-up of the conference, Luke and I began publishing the *Race, Poverty and the Environment Journal* (RPE), spreading the word about *Toxic Wastes and Race*, and adapting its insights to many different environmental policy areas. RPE is still being published today.

_____

Carl Anthony is Ford Foundation Senior Fellow at U.C. Berkeley Department of Geography, writing a book about regional equity and environmental justice. Prior to serving in this role, he was Acting Director of the Ford Foundation's Community and Resource Unit.

Setting the Standard for a New Generation

Manual Pastor

Toxic Wastes and Race set the standard for a generation of work on documenting environmental disparities. What is perhaps most remarkable is how well the research has stood up over time – while it was criticized by some academics on methodological grounds shortly after its release, subsequent research has verified many of its central hypotheses and a recent reworking of the research by Bob Bullard, Paul Mohai, Robin Saha, and Beverly Wright has demonstrated that many of the choices made by the original researchers were, in fact, consistent with the most sophisticated methods now available.

The research debate that its release triggered had a profound impact on my own career and political trajectory. In the late 1980s, I was working actively in Los Angeles with communities of color who were generally seeking new economic development. Environmental issues were clearly important in this regard but were not at the top of my research agenda. Yet building community concern about the location of incinerators and prisons, and a few students who were deeply engaged and motivated to research the issue led a colleague, Jim Sadd, and I to launch a study of environmental disparities in Los Angeles County.

It wasn't clear what we would find. On the one hand, our gut told us that low-income communities of color were saturated with facilities, mobile sources, and other emitters. On the other hand, some in the research world were attacking the very notion of environmental inequity, using fancy statistical methods as part of their arsenal. What we discovered was that fancy could sometime mean overwrought – with careful documentation, better data, and more transparent statistical methods, we discovered a pattern of disparity by race and income that was troubling.

While we were completing the study, a reporter from the Los Angeles Times called, and then wrote up a story. It is the story that launched a thousand collaborations. Carlos Porras, who was organizing for Communities for a Better Environment (CBE) in South L.A., called and suggested that we might put together a collaboration. That grew into deeper relationships with CBE and other environmental justice groups as well as the addition to our research team of Rachel Morello-Frosch, a public health scientist with a Ph.D. from UC Berkeley. We have since produced a slew of studies of both Southern and Northern California, and collaborated with groups across the state.

It is among the most meaningful and high-quality work I have done. Meaningful because we know that the issues are important and that groups will be able to put them to use; high-quality because we know that since our results will be used for organizing and policy change, accuracy, as with the original 1987 study, is of paramount importance. And it is in this too that *Toxic Wastes and Race* set an example: the idea that one could root scientific work in relationship with concerned communities and meet the highest standards of scientific rigor and policy relevance along the way.

The authors of *Toxic Wastes and Race* did that twenty years ago, and many of us are still trying to catch up. Let's hope that our efforts continue to expand both the research and the momentum for a more sustainable and fairer society.

———————

Manuel Pastor is Professor of Latin American and Latino Studies and Director of the Center for Justice, Tolerance and Community, University of California, Santa Cruz.

Protecting Our Children

Nsedu Obot Witherspoon

Work hard, get good grades and follow your dreams toward success. This is the prospective relayed to our children every day in this country. Yet, the hard reality is that while some progress has been made in the protection of our children's health, twenty years after the release of *Toxic Wastes and Race* we still have a great amount of work to do within the field of children's environmental health. This monumental report provided the basis for the health disparities related to environmental hazard exposures that were evident decades ago.

However, now fast-forwarding to 2007, what can we say looking into the eyes of our beautiful children today? Can we tell them that we have paved a way for their futures to be as bright as expected and deserved? Can we say that among the many other challenges they face each and every day that they will no longer have to place as much worry upon the unknown hazards causing them short- and long-term harm within their homes, schools and daycares? Unfortunately, while many of us would hope our message to our future leaders and caregivers would be more positive, the reality of the unfortunate positions we have our children in remain quite disturbing.

The current and future health status of African American, Hispanic and Native American children in particular continues to fare poorly compared to the rest of the population. Due to the fact that children are so vulnerable to harm, without a political voice and not large players within the world economy, they have historically been swept under the rug and almost forgotten about when it comes to true public health protection.

Children's environmental health has witnessed notable successes. The historical recognition that paint was a large source of lead poisoning in children first occurred in Australia during1904. Much later in 1978, the U.S. Environmental Protection Agency banned lead from interior house paint and the phase-out of lead content within all gasoline was to be completed by January 1, 1996. Due in large part to these reduction strategies, children's blood lead levels had dropped by 94% by 1997. Yet, older housing stock in cities all over the country, containing lead paint, is allowing children to still become lead poisoned today. With all the research behind the very preventive exposure to lead poisoning, this area is considered the cornerstone example for how to learn from our past mistakes and act in a preventive manner.

Beyond home, K-12 aged children generally spend 80% of their time in school. Yet, there is still no entity responsible for children's health in the school environment. Asthma severity remains higher among African American and Hispanic children, resulting in significant reduced quality of life and potentially early death. Another unfortunate epidemic on the rise is childhood overweight/obesity and all the negative health implications that come along with it. Built environment discussions and related research are increasingly making the logical connections to this epidemic, especially among our children.

Where are the protective measures in place for children at the federal level? In 1997, President Clinton issued the Executive Order on Children's Environmental Health and Safety. Under this order all federal agencies are directed to take into account the special risks and disproportionate impact that standards and safeguards have on children. Through this order, the Office of Child Health Protection was

established at the U.S. Environmental Protection Agency. Yet, in 2007 there is still no form of national legislation in the United States that comprehensively considers the vulnerabilities and susceptibilities that children have to environmental hazards. The Food Quality Protection Act (FQPA), signed into law in 1996, is the first and only form of federal legislation (with the exception of legislation on lead) that specifically requires that children's vulnerabilities be explicitly incorporated into setting pesticide standards.

Within the school environment, Congress unanimously passed the Healthy and High Performance Schools Act of 2001, but six years later, lack of appropriated funds and the fact that this bill never became a law, halted the baseline environmental assessment of targeted public school buildings this legislation requires.

All children, regardless of race and social economic status, deserve the basic right to clean air, water, food supply and safe environments to thrive in. *Toxic Wastes and Race in the United States* unveiled an ugly reality of the disproportionate burden that communities of color have been faced with for decades.

What we now see is that our children have been and continue to carry the heaviest of loads when it comes to environmental injustice. Let's utilize this time of reflection to acknowledge and appreciate the many positive steps that have been made in the right direction but also recommit ourselves to fighting for the health, safety and overall well being of our children for years to come.

_____

Nsedu Obot Witherspoon is the executive director of the Children Environmental Health Network (NCEH) based in Washington, D.C.

Environmental Justice and Pollution Prevention (EJ-P2)

Bailus Walker Jr.

The UCC *Toxic Wastes and Race* analysis spawned the development of academic centers with primary focus on environmental justices. And new textbooks in environmental and occupational health devoted significant sections to the topic, generating classroom discussions and research agendas. In the aftermath of the report, there were other developments. The issue of pollution prevention was one of the more prominent, the primary focus of the remaining sections of this paper. In 1994 President Clinton issued Executive Order 12898, *Federal Action to Address Environmental Justice in Minority Populations and Low-income Populations.* It required federal agencies to make environmental justice part of their daily operations. The next year, the President established Green Chemistry Challenge (PGCC) to promote prevention of pollution. This executive action illuminated the importance of the Pollution Prevention Act of 1990 in reducing exposure of minority and low-income populations to environmental pollutants.

The Pollution Prevention Act was the first piece of legislation to focus on preventing the formation of pollutants, with an eye toward eventual elimination of the need for abatement. Indeed, the Act clearly recognized, as did the President, that laws and regulations are not enough to solve environmental justice problems. Significantly, as the environmental justice issue evolved, pollution prevention became an important component of a new paradigm along with other elements such as a more interactive approach with stakeholders and the community at large, more flexible problem-solving strategies and a holistic approach to environmental problems.

This paradigm shift brought attention to the fact that pollution prevention, if effectively implemented, represents an important opportunity to get more economic growth, which should benefit racial and ethnic minorities, with less pollution and in the process: 1) prevent the disproportionate pollutant burden on racial and ethnic minorities in their residential and occupational locations and 2) reduce environmental risks factors for disease and premature deaths. Although the application and enforcement are not homogeneous, many states have passed pollution prevention laws since the 1987 report findings.

This U.S emphasis on pollution prevention and the world demand for more benign materials also inspired the chemical industry to do a number of promising things to reduce human exposure to disease-producing chemicals. They include: a) devise technologies and manufacturing processes that avoid the formation and use of hazardous substances; b) develop reaction conditions for chemical synthesis that eliminate risk to human health. That is, use agricultural and biological feedstock or starting material rather than petrochemicals; and c) design new compounds that are less toxic but have the same desirable properties as an existing compound (e.g. a new pesticide that is toxic only to target pests and biodegrades to harmless substances). These developments are within the so-called green chemistry matrix. Green chemistry is the use of chemical principles and concepts for source reduction, the most desirable approach to pollution prevention. Green chemistry incorporates pollution prevention practices in the manufacturing of chemicals and seeks to minimize negative environmental and human health effects.

A review of developments since 1987 indicate that the principles that guide pollution prevention now seem to be more ingrained in day-to-day industrial/business operations and are being incorporated into empiric research carried out at universities and national laboratories. Many of these developments have been described or exhibited at the Presidential Green Chemistry Challenge Awards conference held annually, since 1996, at the National Academy of Sciences in Washington, D.C. An elaborate discussion of these events is beyond the boundary of this paper. But these initiatives can be grouped into three categories: 1) *In-process recycling*. By in-process recycling of waste products back into the production processes companies can reduce pollution. Millions of pounds of solvents are being recycled, reducing the amount of waste requiring disposal; 2) *Process modification*. An array of activities is under way, or proposed, to modify production processes to use fewer chemicals, and less solvents, many of which are neurotoxins; and 3) *Input substitution.* Using less hazardous input or starting materials in manufacturing can reduce disease-producing environmental exposures; the development of crop-based natural plastics will provide a range of agriculturally derived products as alternatives to petrochemical plastics. For instance, cellulose, an abundant and inexpensive renewable material, is being studied as a replacement for synthetic polymers in select applications. To reduce exposure to cancer causing-chemicals, chemists have developed a biosynthetic method that eliminates the use of benzene–a petrochemical that causes leukemia--from the manufacture of plasticizers and other products.

So far the results of pollution prevention and the application of green chemistry principles and methods have been noteworthy: Together they have prevented an average 140 million pounds of hazardous substances from being produced each year and prevented more than 50 million pounds of carbon monoxide annually. On the energy-auto-emissions front, pollution prevention efforts through the use of alternative fuels such as biodiesel holds enormous potential for the future. Their use can reduce pollutants, such as volatile organic compounds and other toxic pollutants.

Since 1987, when the Church of Christ released its report on toxic waste and race, a great deal has been learned about the scientific, social and economic issues that contribute to the disproportionate pollution burden borne by racial and ethnic minorities. At the same time giant steps have been taken toward raising the awareness of environmental justice issues. In this setting, there are grounds for optimism because out of this has come a new paradigm that can enhance efforts to protect human health from environmental stressors. On the technical side, pollution prevention, which can reduce the pollution burden on minority communities, has been given far more attention in industrial planning and community development than in the past, as corporate leaders, investors and policymakers have come to realize that pollution is waste and waste means costs. Moreover, globalization has elevated into stark relief the recognition that prevention of pollution and global economic competitiveness go hand in hand. This has spurred significant progress in developing manufacturing processes that produce less hazardous waste and emit fewer pollutants. But despite this progress other residual environmental justice issues remain and must be high on the domestic agenda in this decade.

_____

Bailus Walker is Professor of Environmental and Occupational Medicine at Howard University College of Medicine, Washington, D.C., and former chairman of the Committee on Toxicology, National Academy of Sciences.

Living on the Fence Line

Steve Lerner

I revisit the path by which I came to write about environmental justice issues and fence line stories because every journalist has moments in his or her work when the door opens to a new field of investigation. For decades I had been writing about chemical contamination, international sustainability efforts, cutting-edge efforts to solve environmental problems, prison reform and a host of other subjects that touched on social justice issues. During these journalistic expeditions it became clear to me that many of the most intense contamination problems were located in poor and largely minority neighborhoods. But, at the time, I had no hard statistical evidence to back up my impression that the distribution of environmental hazards fell most heavily on poor African American, Latino and Native American communities.

With the publication of *Toxic Wastes and Race* in 1987, the news about the disproportionate exposure of poor and heavily minority community residents to contamination from adjacent hazardous waste facilities became an established fact, which journalists could use as a hook on which to hang other stories of environmental injustice. Much quoted was CRJ's finding that there was a strong association between race and the location of hazardous waste landfills. Race was by far the most prominent factor in the location of the commercial hazardous waste landfills, more prominent than household income or home values. Here was the smoking gun that permitted the environmental justice movement to point a finger at the clearly unfair (racist) siting of hazardous waste facilities. It was this fact that launched me on a series of investigations of fence line communities where poor, minority populations lived adjacent to hazardous waste sites and heavily polluting industries.

My first major journalistic foray into documenting what life is like in these "sacrifice zones" came when I wrote *Diamond: A Struggle for Environmental Justice in Louisiana's Chemical Corridor*. To do the research for the book I went down to Norco, Louisiana, a small town 25 miles west of New Orleans located on the banks of the Mississippi River. Norco is an all-white refinery town that grew up around a huge Shell Oil refinery and chemical plant. Across a ditch from Norco is the all-black subdivision of Diamond, Louisiana, which predates the company town.

The African American residents of Diamond have roots that go back to slave days, and many Diamond residents have ancestors who worked as slaves on the Diamond (formerly Trepagnier) plantation. It is also the epicenter of one of the largest slave revolts in the history of the United States. After the Civil War, the slaves took over the plantation and their descendants lived on and farmed the land. Then Shell Oil came ashore and built a tank oil storage facility in the early 1900s, which subsequently was expanded into a vast refinery. In the early 1950s, the refinery spawned an adjacent chemical plant that was used to transform petroleum waste into saleable by-products such as chemical fertilizers and feedstocks for plastics. In 1954 residents of Diamond were pushed off their land, to which few of them had any written title, and relocated on the fence line with the expanded Shell facilities, wedged between the refinery and the chemical plant.

Industrial accidents in 1973 and 1988 killed two residents of Diamond and eight Shell workers and caused widespread property damage. Pollution from the plants became so intense that residents began to organize to demand that Shell relocate them to safer ground. After a twenty-year struggle, the Concerned Citizens of Norco, led by a local schoolteacher named Margie Richard, won their relocation struggle and all the residents of Diamond moved out. Help from the growing national and New Orleans-based environmental justice community of activists made the victory possible. But it was a bittersweet victory in that the centuries-old, African American community of Diamond was torn apart so the residents could move to safety.

Recently, I began a new book on “fence line communities” around the United States that face pollution problems similar to those endured by Diamond residents. I am writing this follow-up book, which will tell some 20 stories about sacrifice zones around the nation, because I believe this widespread pattern of environmental injustice has been ignored too long. The relocation of Diamond residents was a seminal victory for the environmental justice movement but it remains the case that there are thousands of other communities where residents face a disproportionate exposure to contamination because of their proximity to sources of pollution. Residents in these pollution hotspots are often (but not always) poor people of color.

The pioneering work of the environmental justice activists who documented the disproportionate pattern by which poor and minority residents were exposed to toxics, opened the door for journalists to write about the numerous injustices being committed in fence line communities around the nation.

_____

Steve Lerner is the research director for Commonweal and the author of *Diamond: A Struggle for Environmental Justice in Louisiana’s Chemical Corridor*. Fence line articles can be located on the Collaborative on Health and the Environment Web site at www.commonweal.org.

Understanding Urban Environments

Robert Collin and Robin Morris Collin

Without the groundwork laid out by the United Church of Christ *Toxic Wastes and Race* report it is unlikely U.S. urban environmentalism would exist. Without Urban Environmentalism the U.S. environmental movement stagnates and U.S. environmental policy remains ineffective in the face of accumulating chemical emissions and broadening exposure vectors to all parts of the U.S. population. The large difference by race in waste facilities was, and is, indisputable despite scores of attempts to prove otherwise. By focusing on the actual place of the waste, and by letting those communities around the waste “speak for themselves,” a whole new dynamic of urban environmental policy began. Prior to the report it was difficult to assess any demographic characteristic with any type of environmental impacts. U.S. environmentalism is distinctly anti-urban. However, cities are where most of the pollution is and where most people of color live, work and play.

The report laid the basis for countless syllabuses, state and federal legislation and rules, and many other reports. One big implication for the UCC report and the need to speak for ourselves was an explosion of different methodologies. Every time Geographic Information Systems (GIS) evolve in technological refinement and are applied to environmental decisions there is only greater evidence of disproportionate impacts, usually by race. When the Toxics Release Inventory (TRI) was made public not only data about amount and kind of chemicals was made available, data on which communities were getting it also was available. Data, information and truth are EJ’s friend. Old ways of making public policy relying on slow, inaccurate and incomplete case study methodologies are directly challenged by technology, better environmental data and the need to know the environmental truth of any one place. As environmental impacts accumulate and public concern for sustainability rises, place-study methodologies develop for application in urban areas.

The traditional methodology of “case study” as applied to environmental problems stumbles because it relies on generalization made from one case, or place, to another case or place. The term “place study” should be used instead of case study to recognize the individual uniqueness of the ecology of place and of the culture and history of the people in that place. Unlike case studies, these results may not be generalized from one place to another. U.S. environmental policy intervention is so new in many EJ communities that any generalization about a place may not be accurate enough to compare to another place. The pioneering nature of U.S. urban environmentalism, the unknown dimensions of resource needs for clean-up and public health, and respect for communities speaking for themselves all make “place study” a more accurate term.

This term was used in the Unintended Impacts Workgroup Report - *Unintended Impacts of Redevelopment and Revitalization Efforts in Five Environmental Justice Communities* and reported to the EPA's National Environmental Justice Advisory Committee (NEJAC) Subcommittee on Waste and Facility Siting. They reported it out to the NEJAC Executive Committee in June 2006 and recommended EPA publish it, which it has done. It includes a template for communities to begin capacity building around self-determination of cultural and environmental impacts.

The UCC report has been a staple in every EJ class for the last 14 years. The fury unleashed by the report by those against EJ only underscored the strength and depth of the institutional racism that permeates U.S. environmental decision making. Over and over again, *Toxic Wastes and Race* was challenged and revisited. Environmental Justice, like any other kind of justice, relies on truth. Unlike abstract forms of justice, the environment provides solemn testimony to past and present injustices. By analyzing the depth of environmental degradation in every community the environmental reparations necessary for a sustainable community can be decided.

Robert Collin is a Senior Research Scholar at the Center for Public Policy Research, Adjunct Professor of Law at Willamette University, and adjunct Professor of Law at Lewis Clarke Law School.

Robin Morris Collin is a Law Professor at Willamette University Law School and founding board member of the Environmental Justice Advisory Group in Portland, Coalition Against Environmental Racism.

Brownfields and Sustainable Community Development

Deeohn Ferris

There are an estimated 450,000 brownfields scattered throughout the United States. Generally, brownfields are defined as abandoned or underused industrial or commercial properties where redevelopment is complicated by actual or perceived environmental contamination. Many of these sites are located in or near low-income, working class and people of color communities. Revitalizing and redeveloping abandoned, often contaminated properties demonstrates the convergence of complex environmental, social and economic issues. For example, compared to their numbers in the general population, many of these properties are in minority and low-income neighborhoods. Thus, equity, race and class discrimination, the diminished tax base in municipalities and suburban sprawl are inseparable from the blight and marginalized communities that accompany brownfields.

In the past decade, a coherent holistic vision has emerged, which addresses the relationship of these issues to the health and vitality of a community. Commonly referred to as sustainable communities, this vision recognizes the significance of meeting community needs and aspirations, and positions those who live within it as integral partners in decision making. The sustainable communities approach is the junction of equity, economics and the environment. It's focused on building the capacity of communities to participate in decisions, creating partnerships with other stakeholders, mobilizing resources and producing sustainable results.

The following *10 Principles of Community Engagement in Brownfields and Vacant Properties Redevelopment* provide a philosophy or framework that, if carried forward into the redevelopment process, will establish a threshold which prepares public and private sector stakeholders to advance collaborative decision making. A collaborative process will help position communities as full partners in revitalizing abandoned, idled or under-used commercial and industrial sites and vacant properties.

Principal #1: Adopt a policy of inclusion.

People living in communities and small businesses already located in areas where brownfields and vacant properties are prevalent have been most affected by conditions in their neighborhoods and will be most affected by changes in those conditions. It's democratic, they have the most at stake and their inclusion in decisions should be fundamental.

Principal #2: Recognize that community engagement involves multi-stakeholder readiness. Engagement necessarily means helping communities become prepared to engage in the brownfields and economic development dialogue.

Capacity building that educates, trains, helps create a common language among stakeholders and leaves no one at a communications or understanding disadvantage is imperative.

Principal #3: Honor communities and neighborhoods as whole places not solely as environmentally degraded or socially and economically disadvantaged.

Honor communities as places where people want to live, learn, worship, work and play.

Principal #4: Honor diversity.

Respect diversity of races and cultures, viewpoints and perspectives. Be responsive to viewpoints that just might challenge the mainstream. A community's contributions can test and improve redevelopment plans and make for a more thorough, informed process.

Principal #5: The foundation of community redevelopment and revitalization is equitable beneficial land use.

Land reuse can either replicate the economic and environmental consequences resulting in brownfields and vacant properties or lead to changes in these circumstances that benefit all stakeholders. Further, race, class and concentrated poverty issues are intricately intertwined with the history of land use and under-investments in certain communities. The impacts of this history must be factored into decision making intended to benefit affected neighborhoods.

Principal #6: There shall be no forced displacement as a result of gentrification.

Neither tax increases, nor elevating property values nor rising rents shall force long-term residents, workers and small businesses to unwillingly flee their neighborhoods.

Principal #7: Economic and environmental advantages that are the consequence of community redevelopment must directly benefit the communities, which have suffered and survived through the years of blight, degradation and under-investment by the public and private sectors.

Principal #8: Environmental Justice communities believe that the Equal Protection Clause of the U.S. Constitution entitles everyone to equal protection under law, including equal environmental protection.

Overwhelmingly, the states have passed laws on liability releases and investment tax incentives which should not obscure a cardinal point: Health and environment must be considered on par with the importance of the real estate development deal.

Principal #9: Recognize the intersection of the 3 E's: Equity, Economics and Environment; it's the pathway to sustainable redevelopment.

Principal #10: Invest resources at levels sufficient to accomplish the community engagement objective.

Typically, this is an area where the public and private sectors expend the fewest resources and expect to get the most bang for the buck. Community engagement is not public relations and it's more than public participation. At its most productive, it's resource intensive relationship building that is sensitive, pursued

over the long term and concentrated on parity in preparing communities to engage in the redevelopment process.

_____

Deeohn Ferris is a founding member of the Sustainable Community Development Group Inc., a not-for-profit corporation working with the public, private and community sectors to advance environmental sustainability, equitable development and global smart growth.

Biodiversity Meets Environmental Justice

Ivette Perfecto

In 1990, I was just starting as a young Assistant Professor at the University of Michigan's School of Natural Resources and Environment. That same year, inspired by the publication of *Toxic Wastes and Race* three years earlier, Dr. Bunyan Bryant and Dr. Paul Mohai organized the "Michigan Conference on Race and the Incidence of Environmental Hazards." Bunyan and Paul invited me to participate in the conference and write a chapter on the impacts of pesticides on farm workers and their international dimensions. Being an agroecologist and a conservation biologist trained as an ecologist, the topic of the chapter fell somewhat outside my area of expertise. However, I took on the challenge and for the next six months immersed myself in the topic of pesticides and environmental justice. *Toxic Wastes and Race* and the Michigan Conference had an immense impact on my future career as a scholar. From the conference I emerged energized and decided to examine the connections between the discipline of ecology and environmental justice. Almost twenty years have passed, and this year I participated with my partner John Vandermeer in the first Environmental Justice Symposium at the Annual Meeting of the Ecological Society of America (ESA).

Among the myriad political issues that are of concern to ESA three stand out as not only important in their own right, but together take on a particular urgency: environmental justice, globalization and tropical conservation. The environmental justice movement has focused on the urgent contemporary task of documenting and struggling against political and economic decisions that place underprivileged groups at environmental risk. For example, Memphis, site of the 2007 ESA meetings, has communities of mainly African Americans who remain subject to the environmental hazards that originally stemmed from the production of chlordane by the Velsicol Company (the same chemical and same company, by the way, that was so active in attempting to block the publication of *Silent Spring*). Even though the use of chlordane was banned in the U.S. in 1988, residues remain in soil and sediments throughout the Memphis area, especially in areas populated by low-income families and people of color. This was one of the topics of my paper at the Michigan Conference.

Chlordane itself provides a bridge to the next political issue we identify as critical, the political debate associated with recent trends of globalization. When chlordane was banned for use in the U.S., as so frequently happens, Velsicol simply changed marketing strategies and began shipping its now acknowledged dangerous chemical to unwitting Third World farmers. The globalized economy certainly aided Velsicol at a time when it faced a clear under-consumption crisis (no market for a product it was geared up to produce in large quantities). The small farmers and farm workers in Latin America, Africa and Asia thus became victims of an environmental injustice that had a clear ecological connection to the African American community in Memphis. In most recent times those small farmers and farm workers of the Global South have not been sitting idly by as the contemporary globalization trend sends a tide that threatens them, but they have been major participants in one of the largest grassroots movements in the history of the world, the movement commonly referred to as the "anti-globalization" movement.

Those small farmers sit in the midst of what is, for non-human nature, one of the most important places in the world – the agroecosystems that surround the remaining patches of natural habitat in the vast majority of the world's tropical terrestrial ecosystems. What we now know about the functioning of tropical ecosystems convinces us that the environmental injustice faced by these small farmers and farm workers,

so similar in its political overtones to that faced by minority communities throughout the Developed World, has an inevitable connection to the political issue that probably inspires members of the ESA more than any other, that of the conservation of tropical biodiversity.

These three political movements are intrinsically interconnected and should not be viewed in isolation. Our argument is founded not on a bed of political thought, but rather emerges from what contemporary ecology tells us about the organization of biodiversity.

Conservationists in the past have focused on the purchase and protection of large tracts of land. From what we now know about how biodiversity is structured ecologically, this is a doomed strategy. While there is no rational need to convert any more forests to agriculture, and we join in with others who seek to preserve whatever remaining natural habitat exists in the world, they are in fact being converted and the future almost certainly will present us with mainly fragmented landscapes. It is in those fragmented landscapes that the world's biodiversity will be located. A long-term plan for biodiversity conservation needs to acknowledge that fact and work at the landscape level to not only preserve the patches of native vegetation that remain, but also to construct a landscape that is "migration friendly." That landscape is most likely to emerge from the application of agroecological principles. Those principles are most likely to be enacted by small farmers with land titles, who are a consequence of grassroots social movements. Indeed, it would be only slight exaggeration to suggest that these social movements in fact hold the key to real biodiversity conservation.

If we allow ourselves to be constrained to the ever shrinking area of formally protected areas, we accede to the enemies of biodiversity conservation the millions of fragments of natural habitat that today probably contain most of the world's biodiversity. Joining the struggle of the millions of small farmers all over the world is as much part of the environmental justice movement as joining the struggle of African Americans in Memphis for a cleaner environment. Seeing the connections between these struggles is a sign of the maturity of the Environmental Justice Movement.

_____

Ivette Perfecto is Professor of Tropical Conservation and Agroecology at the University of Michigan's School of Natural Resources and Environment in Ann Arbor.

Toxic Prisons

Gopal Dayaneni, Michael Starkey and Aaron Shuman

In 1987, few organizations had made connections between environmental issues, racism and class disparities. Although a handful of people had written or spoken about the topic, it had failed to attract widespread attention. With the publication of the groundbreaking *Toxic Wastes and Race* report, the United Church of Christ made the connections visible and provided a framework for understanding and fighting against the disproportionate burden of polluting activities on poor communities and communities of color. Among the impacts of the study are lessons about the importance of empirical data, linking research to activism and articulating the inherent interrelatedness of social concerns that, until then, had been seen as distant and distinct issues, specifically race, class, labor and the environment.

The *framework* of Environmental Justice, when applied to toxic prison work programs, allows us to examine the mutually reinforcing *structural inequalities* of racism, environmental devastation, mass incarceration and the capital-driven global economic race to the bottom and to premature death. Our work to end the poisoning and exploitation of poor people and people of color in prison builds upon *Toxic Wastes and Race* and the work of grassroots Environmental Justice organizations over the past two decades.

The fight to stop the poisoning of people in prison who labor in toxic industries such as recycling electronic waste (e-waste) builds upon these lessons and identifies people in prison as an environmental

justice community of concern. E-waste recycling also has emerged as a growing industry inside U.S. federal prisons, in programs run by U.S. Federal Prison Industries (FPI, also known as UNICOR). These government sweatshops are the only domestic form of "recycling" that can compete with the dismal wages and dire working conditions in poor communities around the world. The extreme exploitation of people in prison, overwhelmingly poor people of color, combined with inadequate health and safety protections, mark UNICOR's prison recycling program as a clear case of environmental injustice.

In 2002, Silicon Valley Toxics Coalition launched a campaign against UNICOR Recycling. In an unpublished paper, Equal Justice Works Fellow Virginia Hamner chose this campaign as the case study in her effort to define prisoners as a unique environmental justice community of concern who "exist in an essential void of regulations, are subject to compulsory labor and subject to live in the environments the prison system provides."

This collaboration produced the October 2006 report *Toxic Sweatshops: How UNICOR Prison Recycling Harms Workers, Communities, the Environment and the Recycling Industry*. The report documents the concerns raised by prisoners, and cites the Principles of Environmental Justice which state that impacted people have the right "to receive full compensation and reparations for damages as well as quality healthcare" and considers "governmental acts of environmental injustice a violation of international law, the Universal Declaration on Human Rights and the United Nations Convention on Genocide."

Gopal Dayaneni has been fighting for economic, environmental and racial justice since the late 1980s, previously working as a campaigner for Silicon Valley Toxics Coalition and Project Underground, and now stays at home with his two children and cramming political projects in on the side.

Aaron Shuman coordinates the Prisoner Solidarity Project at the Prison Activist Resource Center, is a member of the organization of formerly incarcerated people All of Us or None and a former prisoner of conscience for School of the Americas Watch.

Michael Starkey is a projects coordinator for Silicon Valley Toxics Coalition, manager of the West Oakland Food Pantry at the Prescott-Joseph Center in Oakland, California, and was previously a Senior Research Associate at Redefining Progress.

Funding Environmental Justice Work

Michelle DePass

When the seminal *Toxic Wastes and Race* was released in 1987, I was a senior in college. I would not read the publication until four years later, when I was attending law school and awarded a clinical position at the Environmental Protection Agency, Region II (EPA). The reverberations of the report were lasting and deep at the EPA. The lawyers in the Superfund unit were holding brown bag lunches to discuss what this report meant to their work and to the environmental community at large. It was new news to most of the staff. It had been well documented that the United States corporations were exporting their waste products to other countries, creating a two-tiered system of waste disposal; but here in our country, where equal protection was supposed to be a bedrock of our nation, we were actively making decisions and preferably locating facilities that were toxic and harmful in communities of color. I made my decision then and there to focus my environmental legal career on these civil rights issues in order to help my community.

I accepted a position with the New York City Environmental Justice Alliance soon after graduation from law school. Immediately, *Toxic Wastes and Race* became the most important piece of literature for the work. The facts, statistics and figures were critical to the advocacy and community organizing for the work locally, regionally and nationally. The report presented a basis from which to begin with work with constituents, partners and the funding world.

As Executive Director, I saw what impact the UCC report had on the funding world as well. Foundations with program officers such as Dana Allston at the Public Welfare Foundation, Vic De Luca at the Jessie Smith Noyes Foundation, Stacey Cummberbatch at the Joyce Mertz Gilmore Foundation and Anita Nager at the New York Community Trust were compensating for the dearth of funding for issues of environment and race and class. They funded the Environmental Justice Movement and provided support above and beyond financial resources.

Today, these foundations are still funding environmental justice as are several others, including the Ford Foundation—which established its Environmental Justice and Healthy Communities portfolio in 2000. However, the amount of foundation support for environmental justice research, advocacy and organizing is shrinking. Fewer and fewer organizations are able to find the type of sustainable funding to support their being a catalyst for systemic change in the environmental world. If we are ever to reverse the statistics of *Toxic Wastes and Race*, communities, environmentalists and workers must join forces to combat the root causes of pollution and environmental degradation in our communities. We also must provide financial resources and support for the innovative and creative initiatives that enhance the building of healthy, sustainable and just communities. Continued philanthropic support for community-based organizations and academic research and training centers working in the organizing and policy arena also is critical to this equation.

———————

Michelle DePass is currently a Program Officer in the Community and Resource Development Unit of the Ford Foundation where she leads the Foundation's work in the area of Environmental Justice and Healthy Communities.

IMPACT ON ENVIRONMENTAL JUSTICE ABROAD
GLOBAL IMPACTS

Environmental Justice in Great Britain
Julian Agyeman

In 1987, I was working as an environmental policy advisor in the environmental health department in an inner London borough. While there was no discourse of environmental justice in Britain at the time, it was obvious to me and a growing number of other activists of color that the poorest residents of urban Britain, many of whom were minorities, lived in the poorest areas in terms of large roads, poor/unaffordable housing, disinvestment, lack of green and play spaces, and pollution. Although our evidence was anecdotal (and remained so until Friends of the Earth's *Pollution Injustice* report in 2000), it gave me my mantra, which I still believe to this day: *There will never be environmental quality until there is human equality*.

But this was Thatcher's Britain. Mainstream environmentalism was marginalized, and minority environmentalism wasn't even a blip on the public policy radar. I'd read about the growing environmental justice movement in the U.S. and had been in touch with folks about such issues. One of my first contacts was Mencer Donahue Edwards, then with The Panos Institute in D.C. He was very interested in developments in Britain regarding minority environmental activism. He sent me a whole pack of reports, including *Toxic Wastes and Race*. Bob Bullard, then at UC Riverside, passed on my letter to (then) postdoctoral researcher Dorceta Taylor who would later research minority environmental activism while at University College, London. I was beginning to network both inside and outside Britain.

In 1987, minority activism took a large leap forward. The National Council for Voluntary Organizations in Britain, through their Policy and Promotions Department, asked me to chair a committee that would fund minority environmental projects. It was European Year of the Environment, and the scheme was to be

called *EMAS, the Ethnic Minorities Award Scheme*. Allocated five thousand pounds ($9,000) to distribute, the committee began inviting applications. We funded 25 applications that fell into one of two types. One type was for trips to the British countryside, a typically ”white” space which ”invokes a sense of fear, of dread’’ for black and minority ethnic populations. This fear and dread had a cause. In 1992 it was given the name ”rural racism.”

To us in Britain, rural racism became our environmental justice-rallying cry, as ”environmental racism” did in the U.S. We had coverage in the mainstream media: *The BBC, The Guardian, The Daily Telegraph and The Independent.* By 1992 the Commission for Racial Equality, Britain’s race watchdog, and local race equality councils were beginning to engage with the concept of rural racism as evidenced by two key reports *Keep Them in Birmingham* and *Not in Norfolk: Tackling the Invisibility of Racism*. The National Alliance of Women’s Organizations (NAWO) took a gendered perspective in *Staring at Invisible Women: Black and Minority Ethnic Women in Rural Areas*. I argued that these reports “represented a new challenge to policy makers in the UK, because developing anti-racist messages and policies in multiracial cities where there was at least some support was one thing, but to develop them in white rural areas was quite another.” These reports were to become influential in securing racism as an issue on rural service delivery agendas

The second type of application related to innovative urban gardening and nature-based projects. The creative nature of these projects was that minority communities wanted to use nature to reflect their cultural origins; they wanted to grow plants from home. In urban Britain, the heat island effect often facilitated the growth of some plants from the tropics. These projects gave birth to the idea of cultural gardening or cultural ecology: creating a little bit of home over here.

EMAS and the types of projects it spawned sowed the seed in our minds, which germinated into Britain’s first environmental justice-type organization. That happened on September 30, 1988 when *Ethnic Minorities and the Environment: A One Day Conference to Discuss Positive Action* was held at the University of London Union. It was organized by Friends of the Earth and the London Wildlife Trust at my request and I chaired the planning group. An outcome of the conference was the Black Environment Network (BEN), which still exists today. Out of more than 100 delegates, a group of minority delegates including myself, Ingrid Pollard, Vijay Krishnarayan, Swantee Toocaram, Roland de la Mothe and Judy Ling Wong decided to establish BEN to take forward the minority environmental agenda. As the conference evaluation quaintly reads, “The black participants expressed great enthusiasm for the unique opportunity to meet in an all-black workshop, and were extremely positive about the setting up of the Black Environment Network.”

In many ways, my contacts with U.S. environmental justice activists and scholars, and reading *Toxic Wastes and Race* played a pivotal role in *inspiring me, thereby galvanizing an environmental justice agenda in Britain*. While we didn’t have the same issues as those so starkly revealed in *Toxic Wastes and Race*, we clearly had environmental justice issues! Over the past 20 years, but especially in the last five, *environmental injustice* has been shown to be happening in many different ways in Britain, from disproportionate pollution loadings in low-income communities to fuel poverty, from transportation inequities to lack of countryside access because of rural racism. The response calls for greater *environmental justice* have become louder such that they are now a growing concern for many academics, NGOs and some politicians, such as Michael Meacher MP, former Minister for the Environment. There is now a discourse around environmental justice or *just sustainability* in Britain. Friends of the Earth Scotland use as their strapline: *The Campaign for Environmental Justice*. However, a U.S. style environmental justice movement is as yet elusive.

Julian Agyeman is Associate Professor of Urban and Environmental Policy and Planning at Tufts University, Boston-Medford. He co-edited *Just Sustainabilities: Development in an Unequal World* (The MIT Press 2003). See Black Environmental Network Web site at http://www.ben-network.org.uk/.

Toxic Waste Trade Around the World

David Naguib Pellow

Clearly, 1987 was a watershed year. The United Church of Christ report was the punctuation needed to elevate the voices and struggles of ordinary people confronting environmental racism in their own backyards in the U.S. and globally. As a result of this report, people had a new language and context they could draw from in order to organize opposition to environmental injustices.

The year 1987 was a critical point in environmental justice history because it marked the beginning of the global waste trade—the practice of exporting tons of the most hazardous waste generated within global North communities to the global South. One of the first such incidents that put this issue on the public agenda occurred when, in December 1987, a ship carrying incinerator ash from the city of Philadelphia dumped several tons of that toxic cargo on a beach at Gonaives, Haiti. Since Haiti was the poorest nation in the western hemisphere with a majority population of African descended peoples, and the U.S. being the wealthiest nation in the world, this was a clear case of environmental racism. Soon afterward, Haitian and Haitian American organizations such as the Haiti Communications Project and the Collective for the Protection of the Environment and an Alternative Development (COHPEDA) teamed up with groups in the global North, including Greenpeace, Global Response and Witness for Peace to create an international coalition called Project Return to Sender. The coalition's name signaled its goal and a new movement tactic that centered on the logic of accountability: Those nations that produced the waste should have to take it back and manage it responsibly.

In 2002, after a decade and a half of international activist campaign work, the waste was finally returned to the U.S. Over the years, activists involved in this effort were able to draw on the discourse of environmental justice and use the growing body of research on environmental racism as a critical resource, repeatedly referencing the work of the UCC. The campaign itself was framed around the language and goals of the environmental justice movement, which would have been impossible without the *Toxic Wastes and Race* study. The Philadelphia/Haiti case was arguably the first major conflict that announced the presence of a burgeoning global movement for environmental justice—a series of interconnected transnational activist networks that today provide support and solidarity when communities are threatened with trans-boundary waste dumping. Since the Project Return to Sender coalition formed around the Philadelphia waste case, sophisticated protest campaigns by global environmental justice networks have persuaded Italy to retrieve toxic waste from Lebanon and Nigeria; Germany from Albania and Romania; South Korea from China; the U.S. from Bangladesh and India; and Japan from the Philippines, to name only a few other examples.

Today, numerous groups count themselves as inheritors of the legacy of the work began by Project Return to Sender activists. For example, the International Campaign for Responsible Technology, the Global Alliance for Incinerator Alternatives and the Basel Action Network now operate on the models and examples set by Project Return to Sender.

The global movement for environmental justice articulates a vision of worldwide social change that entails building and supporting sustainable and equitable communities and challenging industry and government to work for the good of the disenfranchised majority. These trans-national environmental justice activists view the global political economy as shifting risks and hazards from North to South, from rich nations to poor communities between and within nations, and from racially privileged communities to racially despised communities. They challenge the sources of power in the global political economy—governments, trans-national corporations, international financial institutions, environmental groups and the ideologies of racism and classism. Activists challenge these targets with the aim of creating a more just trans-national political space, and this movement builds directly on the work and findings of the United Church of Christ Commission for Racial Justice.

The world also has changed since 1987 as a result of the rise of international terrorist activities directed at global North nations like the U.S. Of course, many communities of color in the U.S. and globally experienced what activists have called 'toxic terrorism' long before September 11, 2001. One can hope

that the recent increase in the sense of vulnerability to terrorism among privileged communities might lead to a deeper sense of interdependence and accountability for political and economic policies abroad. As many scholars have noted, terrorism is often the result of "blowback"—unintended consequences of foreign policy decisions.

In the U.S. and other global North nations, we also are experiencing an *ecological* blowback—or what has been called the "boomerang effect" of pollution, a circle of poison that returns to haunt those who produced and benefited from their manufacture and sale. The toxicity of everyday life reveals this problem, as food, water, air, land, and human bodies in the North suffer from rising levels of chemical burdens. A twenty-first century foreign policy and environmental justice framework should recognize that government and corporate actions have long-term consequences for us all. In other words, environmental racism may have immediate impacts on communities of color, but the broader effects reveal that no one is immune to the spread of chemical poisons and the toxicity of racism itself. That is perhaps the most important lesson we can learn from the *Toxic Wastes and Race* report.

_____

David Nagub Pellow is a professor in the Ethnic Studies Department and Director of the California Cultures in Comparative Perspective initiative at the University of California, San Diego. He is the author of *Garbage Wars: The Struggle for Environmental Justice in Chicago* (MIT Press, 2004).

Toxics and Indigenous Peoples

Al Gedicks

Native peoples are under assault on every continent because their lands contain a wide variety of valuable resources. It is estimated that in the next 20 years, about half of all gold and copper mined will come from territories used or claimed by indigenous people. Dramatic increases in the price of gold and copper provided major incentives for new mining investments. In 1980, gold hit an all-time high of $850 an ounce. Over $90 billion was invested in the mining sector from 1990-2001, mostly in gold and copper. Most gold is not used for essential needs. In 1995, 85 percent of newly mined gold was used to make jewelry.

In 1995 Philippine president Fidel Ramos signed into law a new mining code, drafted by multinational mining companies, that effectively gave away a quarter of the country to multinational corporations. The new code also lowers environmental standards by permitting increased open pit mining, for example, and gives companies the right to evict villagers from houses, farms, or other "obstacles" to their operations. All these measures have been promoted as part of the Structural Adjustments Program imposed by the International Monetary Fund and the World Bank to stabilize the Philippine economy by encouraging mineral exports and reducing the country's $39 billion debt.

Since its passage, 70 mining applications have been filed covering 16.5 million acres or 23 percent of the country's total land area. The 1991 International Mining Annual Review reports that in terms of mineable minerals per acre the Philippines ranks second in the world for gold and third for copper. Unsurprisingly, despite the fact that most of the land proposed for mining forms part of their ancestral territories, the country's 8 million tribal peoples were never consulted when the law was being drafted. Tribal peoples, who make up about 12 percent of the population and occupy 20 percent of the country's land area, were especially offended at the swift passage of the law while they have been lobbying for almost ten years for an Ancestral Domain Law that would recognize ownership and management rights to their land, as promised in the 1987 Constitution. The same congress that passed the Mining Act shelved the Ancestral Domain Law.

The London-based international native rights organization Survival International has called the new code "the greatest of all threats to the future of tribal communities in the Philippines." Most of the new mining claims are focused on gold, which is found in extensive low grade deposits. Because the grade of ore is

lower than those mined in the past, more ore must be mined at a faster rate, and more waste is generated for every ton of ore that is mined. The most profitable method to extract the gold is through open pit mining where large quantities of rock are basted, bulldozed, and pulverized so that the gold can be extracted by using cyanide and other toxic chemicals to separate the minerals. Using this method, gold production can be profitable, even if it produces as little as 1 gram of gold per ton of rock.

A lone wind mill stands idle on the Navajo reservation after ground water is contaminated by uranium mining, Church Rock, NM, 1999 (Photo by EJRC)

This may be cost effective for the mining companies but devastating to the local people who find their lands and waters ruined by silt and toxic discharges from the millions of tons of tailings (mine wastes) left over from this type of mining. According to the Center for Environmental Concerns in Manila, around 160,000 tons of chemical-laced tailings are dumped into Philippine rivers and lakes every day.

In Benguet province, which has been the Philippines' most important gold and copper mining region, runoff from the tailings has contaminated rice fields, killed biological life in the Itogon River and led to severe health problems among the Igorot native people. While the government protects the large mining companies, no such concern is shown for the mining rights of the small-scale miners, which include up to 100,000 of the Igorot in Benguet province. Igorot means "people of the mountains." It is the collective term for all the native peoples of the Cordillera region, comprising seven major ethnolinguistic groups.

The Igorot have their own long-established mining practices which are communally controlled and do not use dangerous chemicals, such as mercury, in the processing of the minerals. Proceeds from the mining are shared in the community. However, under the provisions of the 1991 Small-Scale Mining Act, small-scale miners need prior approval through procedures controlled by the large mining companies.
As the Benguet Corporation expanded its open pit operations, it encroached upon the diggings of the Igorot small-scale miners. When the Igorot barricaded the roads around the mine and demanded an environmental study, the government sent troops to clear the roads. The troops have remained to protect the assets of the Benguet Corporation, Asia's largest gold producer.

Al Gedicks is a mining activist, author, film maker and professor of sociology at the University of Wisconsin-LaCrosse.

Challenging Global Environmental Racism

Edith Rasell

In the 20 years since the historic report *Toxic Wastes and Race* was published, enormous changes have occurred in the economy. Most important is globalization, the growing economic integration and interdependence of countries around the world due to increased trade and investment flows across national borders. But with the expanded flow of goods, services and money has also come an expanded flow of dirty industries, environmental toxins and waste. Today it appears that toxic wastes and

environmentally hazardous facilities are disproportionately located in the global South where, predominantly, poor people of color reside. Environmental racism is a global phenomenon.

International Agreements on Trade and Investment

The global assembly line is a reality. But the international treaties and organizations that so precisely govern investments and trade to make the world safe for international capital fail to provide similarly detailed and enforceable policies to protect the environment or people who are exposed to hazards in their workplaces and homes.

Consider the World Trade Organization. According to Public Citizen's Global Trade Watch, "Over its almost nine years of operation, the WTO … has systematically ruled against every domestic environmental policy that has been challenged and eviscerated exceptions that might have been used to safeguard such laws."

Southwest Network for Environmental and Economic Justice (SNEEJ) activists demand justice on both sides of the U.S.-Mexico border, Phoenix, Ariz., 1995 (Photo by EJRC)

The 1993 North American Free Trade Agreement has been a model for subsequent treaties including the 2005 Central American (and Dominican Republic) Free Trade Agreement and the upcoming Free Trade Area of the Americas. But in these treaties, environmental concerns are relegated to side agreements, outside the main body of the treaty, and only weak enforcement mechanisms are provided. At the same time, strict provisions ensure that corporations are compensated for "expected" profits that may be "lost" due to public policies such as environmental regulations. The government and corporate elites who write these treaties, bringing with them their race and class biases, favor profits over protections for the environment, workers and communities.

Dirty Industries

Lax and poorly enforced environmental regulations can be found, to some extent, in nearly every country. But they are much more common in poorer, less industrialized ones. Weak regulations reduce the cost of environmental abatement and clean-up, raise corporate profits and benefit shareholders, corporate elites and also consumers with access to cheaper products. Weak environmental regulations harm the environment, workers in dirty plants and people who live within the area impacted by a polluting firm or waste disposal site.

The media are filled with horrific stories of firms' egregious abuses of the environment. Massively oil-polluted land and water in Ecuador, Angola and Nigeria show the impact of oil extraction in the presence of lax national and international standards. Hard rock mining is especially destructive. The U.S. firm Freeport-McMoRan operates a giant open-pit copper and gold mine in Papua, Indonesia, where one billion tons of waste have been dumped onto the land and into streams. Some 90 square miles of wetlands, once one of the richest freshwater habitats in the world, are virtually buried in toxic wastes. Gold mining is notoriously bad. To produce an ounce of gold requires cyanide to be sprinkled on 30 tons of rock, leaving behind contaminated waste and acidic water poisoned with cyanide and heavy metals that leached from the rock along with the gold. Today, 70% of gold is mined in developing countries.

The policy choice is not between an unregulated, environmentally destructive economic boom and a regulated, environmentally friendly but jobless economic bust. The choice is not between no jobs and dirty, harmful ones. The costs of environmentally sound production methods are a small share of a firm's total cost of production. Firms can produce their products *and* do so in an environmentally friendly way, protecting the environment, workers and communities.

E-Waste and Other Toxins

To keep computers and their toxic metals out of U.S. landfills, communities in the global North encourage recycling. But typically, "recycling" a computer or other electronic gadget means nothing more than shipping it out of the U.S. to contaminate another country, often in the global South. The color monitors of many computers are classified as hazardous waste by the U.S. Environmental Protection Agency. Circuit boards and batteries are full of lead in addition to smaller amounts of mercury and chromium. Plastics used in electronic equipment may produce dioxins when burned. The United Nations Environment Program estimates that worldwide, 20 to 50 million tons of electronics are discarded each year. Less than 10 percent is adequately recycled, and half or more ends up overseas.

West Africa is one such dumping ground. Just one city, Lagos, Nigeria, receives e-waste equal to more than 100,000 computers or 44,000 TVs each month. Some of these machines will be repaired and re-used, but most will be discarded. In towns along China's coast as well as in India and Pakistan, adults and children work in unregulated and unsafe conditions dismantling e-waste with their hands without protective gear, contaminating themselves and releasing carcinogens and other toxins into the rivers, air and soils.

Shiploads of toxins and waste also are sent from the global North to the South. India is becoming the world's dumping ground for mercury. In October 2006, a Greek-owned tanker, flying a Panamanian flag, leased by the London branch of a Swiss oil and metals trading corporation with fiscal headquarters in the Netherlands, off-loaded petrochemical waste and caustic soda in Ivory Coast. Ten people died, dozens were hospitalized and more than 75,000 sought medical treatment due to their exposures.

The 1995 Basel Ban Amendment prohibits shipping toxic waste from the 26 most industrialized countries to the rest of the world. The U.S. refuses to sign this agreement. Instead we continue to purchase potentially harmful products but fail to take responsibility for properly disposing of them. According to Greenpeace, inspections of 18 European seaports in 2005 found that as much as 47 percent of waste destined for export, including e-waste, was illegal.

Climate Change

The U.S., with five percent of the world's people, produces 25% of the greenhouse gases. Climate change is another problem caused primarily in the global North but which will have its greatest impact on the South. The least industrialized countries are least capable of responding to the consequences of climate change: the inundation of coastal areas by storms and rising ocean levels; damage to forests, wetlands and rangelands which provide poor people with food, shelter and fuel; creeping desertification and shifting agricultural lands; and the spread of infectious diseases to new locations. According to the British NGO Christian Aid, by the end of the century some 182 million people in sub-Saharan Africa alone could die of diseases directly attributable to climate change. Many millions more throughout the world face death and devastation due to climate-induced floods, famine, drought and conflict.

The U.S. has not signed the Kyoto Protocol, an international effort to slow the pace of climate change. Nor has the federal government pursued other steps to control greenhouse gases such as raising the Corporate Average Fuel Economy (CAFE) Standards, developing and promoting energy-efficient biofuels and other renewable sources of energy or providing incentives for improving the fuel efficiency of buildings and appliances.

Conclusion

Many people in the U.S. are very concerned with protecting the environment. But people in the U.S. are also profligate users of energy. We participate in an acquisitive and materialist culture that creates huge amounts of waste including e-waste which is disproportionately burdening people in the global South. The corporate bias that the U.S. inserts into international trade agreements harms the environment and workers, especially in the global South. To people familiar with environmental racism in the U.S., it is no surprise to learn that this pattern is also a global phenomenon, disadvantaging people of color in the global South.

_____

Edith Rasell is an economist who serves the United Church of Christ minister for labor relations and community economic development, Cleveland, Ohio.

Understanding Global Environmental and Economic Justice

Wallace Ryan Kuroiwa

In 1987, when *Toxic Wastes and Race* was first published, the global community found itself on the leading edge of the new global economy. Economic globalization is used in a variety of ways and must be taken in the context of its usage. In this present context, I am using the term within the context of how we understand it in our contemporary context. That is, I am referring to the economic system that has been built upon the principles of neo-liberal economic theory. Among its tenets are free market economy, trade unfettered by regulation as much as possible, privatization and market determinism.

The Asian tigers had yet to rise to the prominence it held in the 1990s. Crippling debt in developing nations had yet to reach its apex of paralyzing effect. Corporate farming had just grabbed hold of the global agricultural economy. Today, we witness all those realities and other manifestations of globalization in their dramatic fullness.

Even as the dynamics analyzed in the report have come to full clarity some twenty years later, the realities remain alarmingly the same: People of color still suffer the full effects of environmental degradation more devastatingly than their white sisters and brothers. But there are different nuances to the realities. It is to those nuances that we turn our attention, for those nuances portend ugly storm clouds on the horizon.

Same Drama, Different Cast

The seminal 1987 report broke new ground, and yet pointed to realities that many people instinctively knew to be true: that people and communities of color, by intention, suffered the effects of environmental degradation to an inordinate degree. It was just that the report gave indisputable evidence and data that substantiated those instincts. But while the report cast a wide net, the evidence primarily reflected the reality of the day. That is, it looked at the reality primarily in terms of African Americans and Euro Americans. While African Americans still suffer the full force of environmental racism, other demographic factors must be taken into consideration. Twenty years ago, that approach matched the population of the day. Today, we cannot make the same claim. The fastest-growing segment of the population in the 2000 census was Hispanics. Asians also continue to increase dramatically in population percentages.

In the aftermath of Hurricane Katrina, injustice protruded in a variety of ways. It was clear that race played a vital role in the way people were treated. Who received services most quickly? Which wards received attention? These and similar questions pointed to the conclusion that people of color remained at the "back of the bus." African Americans were the most victimized, but the significant number of Hispanics, mainly Mexicans, and Southeast Asians also got short shrift as relief services and dollars from government agencies trickled in.

What does globalization have to do with this? At a minimum, one can trace the migration patterns from the South directly back to the effects of globalization. During an immersion experience at Altar, Mexico, the final place of respite before undocumented persons cross the border into the Sonora Desert, I encountered a group of men who had journeyed from Chiapas, one of the southern-most states of Mexico. These men were farmers who had come over a thousand miles to make the life-threatening crossing, leaving family and friends, out of economic desperation. As the North American Free Trade Agreement had taken effect, agricultural trade between the United States and Mexico had led to dumping of U.S. subsidized corn into Mexico. Mexican farmers, unable to compete with the lower prices, had been squeezed off their farms. As the UCC documentary *Strong Roots, Fragile Farms* points out, as farmers lose their farms in the process, they are forced northward to the U.S. to find work. Hence, we see a dramatic increase in the number of emigrants from Mexico, documented and undocumented, crossing the border. Most find themselves as farm workers, wherein they are exposed to the worst environmental conditions.

The High Cost of Cheap Labor

The U.S.-Mexico border is a microcosm of environmental racism. In Neo-liberal economic theory, a free trade global economy runs on competition. Nations as well as corporations and individuals compete with one another for economic advantage. Nowhere is this most starkly demonstrated than in these border regions. Mexico competed with other countries to attract foreign corporations to relocate in their country. Tax savings, cheap labor and looser regulations provide incentives for attracting businesses. Maquiladoras, mostly U.S.-owned, sprung up all along the border. With the above-mentioned perquisites, companies were primarily concerned with an improved bottom line. They also pushed the limits on environmental regulations, even though they were already much less stringent than in the U.S. Deplorable working conditions and the employment of child labor abounded. Toxic wastes were indiscriminately dumped into rivers and onto the ground, from where it leached into drinking water sources. If they were challenged, they simply left, because there are other desperate nations willing to lay out the welcome mat for U.S. dollars. In one dramatic case, a major American paint manufacturer relocated in the Juarez region. They dumped lethal chemicals into the Rio Grande with impunity. When the Mexican authorities ordered them to cease, they simply left, leaving in their wake major environmental damage. In the global economy, such cases abound.

Water, Water Everywhere, and Not a Drop to Drink (almost)

The lack of safe, clean drinking water will be one of the most critical issues facing the world in the twenty-first century, or so insist many experts. In one of the most oft-quoted statements, a World Bank official observed that as wars have been fought over oil in the twentieth century, similarly wars will be fought over water in the twenty-first. The demographic trends reflect a migration to warmer climate regions in the United States. Because these regions, mostly in the southeast and southwest, had more sparse populations, water was never an urgent issue. But with the migration southward, the water resources have been taxed, sometimes beyond their limits. For example, Maude Barlow and Tony Clarke, *Blue Gold: The Fight to Stop the Corporate Theft of the World's Water,* report that the Ogallala Aquifer, the single largest water-bearing unit in North America, which stretches from the Texas panhandle to South Dakota, has a withdrawal rate of 13 million gallons per minute, 14 times faster than nature can restore it. Dams have been built on rivers to divert water to serve these more densely populated areas. As this occurs, other regions that have depended on these water sources for generations find their water needs unmet. One example is in the greater San Diego region in southern California. As the population of the region has mushroomed, one of the groups left without adequate water resources is the Pala nation, a Native American tribe to the south of San Diego. The river that had served as their principal source of water, a once abundant stream, is now a dry river bed.

The U.S.-Mexico border region again provides examples of environmental racism as we consider water issues. When foreign-owned factories and *maquilas* poured untreated chemical wastes into the environment, the U.S. government did nothing, and the Mexican government, too afraid of losing economic input, tolerated it. It was only when the chemicals poured into rivers leached into groundwater on the U.S. side of the border, did the U.S. government intervene.

Corporate Farming and Race

The production and distribution of food have been dramatically affected by economic globalization. Pineapple grown in Mexico ends up on a table in New York. Sugar produced in the Philippines sweetens coffee served in Germany. Australian beef is featured on a menu in a Toronto steakhouse. It is second nature; we rarely think about it.

But agriculture has been affected in more profound ways than the transporting of food over thousands of miles. One of the more significant is the rise of corporate farming and the concomitant decline of family farmers.

Many of these corporate farms are located in or near communities of color. Corporate hog farms are some of the most egregious perpetrators of environmental racism. These hog farms create tremendous amounts of animal wastes. Factory-farm operations throughout North America have millions of gallons of liquefied animal feces stored in open lagoons that emit more than 400 different volatile, dangerous compounds into the atmosphere. These ”sewerless cities” generate so much surplus manure that it cannot be stored or disposed of safely. Some large hog farms produce volumes of untreated hog manure equivalent to the human waste of a city of 360,000 people. One hog farming operation in North Carolina carelessly allowed tons of untreated wastes to leach into groundwater sources. During a severe storm, the wastes ran off into rivers and killed wildlife and contaminated drinking water sources. The community affected was predominantly African American.

Corporate farming is predominantly mono-cultural. That is, they produce the same crops on the same acreage year after year. They employ inefficient irrigation techniques that deplete drinking water sources from the communities in which they are located. As stated above, those affected are, more often than not, communities of color.

Conclusion

It is frequently said that the more things change, the more they stay the same. That observation certainly holds true in the twenty years since the report came out. Economic globalization has certainly rendered

the issue more complex and has added to the situation variables that were not anticipated in 1987. Unless we work toward a more humane and sustainable alternative to the way the global economy operates today, the *Toxic Wastes and Race* report will still describe who we are into the foreseeable future.

_____

Reverend Dr. Wallace Ryan Kuroiwa is Minister and Team Leader of the Economic Justice Ministry Team and Racial Justice Ministry Team of the United Church of Christ based in Cleveland, Ohio.

No Climate (for) Justice – Oil, Toxics and Waste in West Africa

Leslie G. Fields

According to the Bush energy plan, West Africa is emerging as one of the fastest-growing regions for gas and oil production for the American market. The Bush Administration, seeking to diversify sources from the volatile Middle East region, has looked to African oil which is of high quality and low in sulfur making it suitable for stringent American refinery standards. West and Central Africa (the countries of Nigeria, Angola, Equatorial Guinea, Chad, Sao Tome and Principe, Cameroon and Gabon—only Nigeria is a member of OPEC) are experiencing the beginnings of an oil boom with all the costs and none of the benefits due of weak governments, exploitation and corruption. This region has proven reserves of 60 million barrels of oil and now provides one in four new barrels of oil coming on the world market. This region had historically been the province of the European oil companies; but in ten years, if this region can remain attractive for investment, Central/West Africa could supply up to 20% of the U.S. imported oil.

U.S. investment also must include investment in this region's fragile civil society, and governments who are trying advance: the rule of law, improve governance and the natural and human environments. Alternatively, if the next administration only promotes the interests of the U.S. oil and gas corporations, this region's 200 million souls will continue to languish under increased corruption, cross-border violence and deteriorating environmental and human environments. Many of these companies still adversely affect environmental justice communities in TX, LA, NJ and CA. Indeed the gulfs between the respective Gulfs of Mexico and Guinea are not wide in this regard. The next Administration must not continue to practice a one-sided foreign policy regarding African natural resource development, in which the wheels of diplomacy are kept greased only for American oil and gas corporations at the expense of local communities.

ECOWAS and the West African Gas Pipeline

The Economic Community of West African States (ECOWAS) is a regional group of 15 countries also headquartered in Abuja, Nigeria. A major project of the ECOWAS secretariat is the West African Gas Pipeline (WAGP) that will traverse onshore and offshore from Nigeria's Niger Delta, Benin, Togo to Ghana. The other unmentioned stakeholders, such as the communities within the path of the pipeline, were not involved in these negotiations. A political space needed to be cleared for their participation. The ECOWAS community will only be strengthened by greater involvement by civil society. This also would create a great opportunity and serve as a precedent for a more democratic decision-making process for oil and gas exploration and development in West Africa. WAGP had its genesis 21 years ago when the ECOWAS proposed a natural gas pipeline through West Africa as one its key economic policies.

The World Bank proposed a feasibility study report 11 years ago and determined that a 620-mile natural gas pipeline originating from Nigeria to Benin, Togo to Ghana would be commercially feasible. The cost of the WAGP is estimated to cost US$500 million and will be implemented by the West African Gas Pipeline Company Limited (WAPCo), an entity owned by Chevron Nigeria Ltd., Nigerian National Petroleum Company, Shell Petroleum Development of Nigeria, Volta River Authority of Ghana, Societe Beninoise de Gaz S.A. and Societe Togolaise de Gaz S.A.

The Curse of Gas Flaring

In 1995, the World Bank declared that Nigeria flared more gas than any other country in the world. Locally excessive gas flaring contributes to greenhouse gas emissions, air pollution, respiratory and other health problems, associated noise and corrosion of natural and man-made structures. About 2.5 billion cubic feet of gas associated with crude oil is wasted every day. This is equal to 40% of all Africa's natural gas consumption, while the annual financial loss to Nigeria is about US $2.5 billion. The flares have contributed to more greenhouse gases than all of sub-Sahara combined. Flaring is generally illegal but permissible since 1984, pursuant to Section 3 of the Associated Gas Reinjection Act of 1979. In addition, the Nigerian Constitution stipulates the right to live in dignity, and to enjoy health and a satisfactory environment. Variances from the environmental ministers allow companies to flare gas, under field-specific conditions. These certificates are not made available to the public.

Gas flaring continues despite the seeming general agreement that it should stop. President Olusegun Obasanjo and the major transnational oil companies appear to have agreed on a non-binding commitment to a flare-out date of 2008. In November 2005 the community of Iwherekan, Delta State and Environmental Rights Action/Friends of the Earth-Nigeria filed an injunction to stop gas flaring in Iwherekan. In April 2006, the judge ordered the Shell Nigeria Managing Director and the Petroleum Minister to appear in Federal High Court in Benin City to present a quarterly program for stopping gas flaring in the Iwherekan community in one year. Once the program was presented to the judge, he granted a partial stay to allow Shell Nigeria and the Nigerian National Petroleum Corporation to keep flaring gas until April 2007.

The World Bank claims that the WAGP will contribute to the region in two ways: 1) through the reduction of gas flaring in Nigeria and 2) through burning cleaner fuel in the thermal power stations in Ghana, Togo and Benin. The project has become the subject of a claim to the World Bank Inspection Panel by affected communities in Nigeria, who have cited the inadequacy of the project's environmental impact assessment and public consultations, and the failure to demonstrate how the project will reduce gas flaring in Nigeria or bring benefits to local communities. In September 2006 the European Investment Bank began considering investing up to $87 million in the WAGP.

Governments and project sponsors are now moving forward without addressing community concerns to ensure that development aspirations are met and negative project impacts are avoided. This undemocratic process repeats a problematic pattern in West Africa generally and the Niger Delta specifically that has led to increased impoverishment and human rights abuses. In Nigeria, for example, contrary to basic principles of democracy, laws do not encourage oil companies to consult adequately with the local communities affected by oil and gas exploitation activities. The central government holds legal control of all land, and this situation leads to the signing away of community farms, forests and streams for oil and gas fields. Therefore the WAGP is a key strategic target to assert democratic principles since it can have a multiplier effect on broader regional development.

The U.S. must encourage the World Bank Group to establish a goal of at least 20% energy portfolio target for clean, renewable energy and a specific renewables unit within the Bank to achieve that target. This recommendation is an achievable and realistic target, and if implemented, will make a significant difference in the lives of the poor around the world. Other recommendations for sustainable development in the region could include the establishment of a Commission on Sustainable Development in West Africa, publishing all oil revenue and audits from the countries and companies, and the enhancement of current monitoring programs that track transparency, governance, public participation between African governments, the U.S. and the oil companies.

The Niger Delta region has been home to massive environmental devastation due to decades of pollution from multinational oil and gas companies. The communities in the Niger Delta and the Gulf of Guinea are suffering from exploitation from oil production, armed conflict from factions vying for power, horrific pollution and world indifference. The climate change and instability directly affecting this region is a precursor of things to come elsewhere. The extraction of the natural resources of West Africa has the potential of turning that region into either the engine or the exhaust pipe of the continent.

Leslie Fields is an environmental lawyer, activist and adjunct law professor at Howard University Law School based in Washington, D.C.

Energy and Climate Change Impacts on Indigenous Peoples

Jihan Gearon

Since the colonization of North America, the costs of our fossil fuel economy have fallen disproportionately on the backs of Indigenous people. After the tribes were forcefully removed to seemingly useless pieces of land, it was discovered the reservations held enormous quantities of coal, oil, gas, and uranium. The U.S. Department of the Interior estimates Native American reservations contain as much as 30% of all coal in the western U.S., 4.2 billion barrels of oil, 17.5 trillion cubic feet of gas, and as much as 37% of all uranium. This discovery was soon followed by a series of U.S. policies aimed at removing Indigenous people from and developing these valuable pieces of land.

The Indian Reorganization Act of 1934 claimed to finally give tribes the ability to govern themselves. In reality, the policy either limited or ended traditional forms of self government and enabled energy corporations to broker deals with only a few decision makers, who now spoke for the entire tribe. Apparently, the acquisition of Indigenous land and resources still wasn't happening quickly enough. In 1971, the Alaska Native Claims Settlement Act extinguished all aboriginal land claims and turned tribal members into shareholders of for-profit corporations, who now owned the land. These corporations sole mandate was to make a profit and if they didn't, the federal government had the authority to dismantle the corporation and take possession of the land. With this fear ever looming, the corporations all too quickly entered into contracts to develop their oil and timber resources.

From extraction to distribution to consumption, Indigenous peoples in the U.S. are disproportionately impacted all along the road of destruction. The mining of coal, oil, and uranium on the Navajo reservation has left communities with a legacy of contaminated and diminished water resources, forced removals, and gridlocked economies. Pipeline and oil tankers spills such as the Exxon Valdez spill in Port Williams Sound, Alaska, home to the Eyak people, have discharged billions of barrels of oil on Indigenous lands. Refineries, like those in the home of the Ponca nation, in addition to contaminating the local environment, have increased the incidences of lung cancer and respiratory illnesses in Native communities.

Global warming and climate change pose yet another serious threat. The land of the Indigenous people in the arctic region is literally melting under their feet, disrupting the lifecycles of the plants and animals they depend on, and forcing coastal and island communities to abandon their homes and traditional lands. What happens to a culture when the land and environment it stems from no longer exists? Even more frightening is that the proposed solutions to climate change, such as carbon trading, nuclear power, and "clean" coal technologies, will only exacerbate the problems faced by Indigenous communities.

In addition, Native Americans pay the highest rates for fuel and electricity, have the highest percentage of unelectrified and unweatherized homes, and have the least control over energy services. No group of people in the U.S. should be more motivated to pursue sustainable energy development than Native Americans. In addition to vast fossil fuel resources, Native Americans also have vast and untapped renewable energy resources such as wind power in the plains, and solar power in the southwest. Many tribes have been exploring this efficient, innovative, and sustainable option. For example, the Just Transition Campaign, spearheaded by Navajo and Hopi grassroots community groups in the southwest, will use the profits associated with selling pollution credits of the recently shut down Mohave Generating Station to train local mine workers to develop and maintain renewable energy locally.

Jihan Gearon is a Dine Native Energy Organizer with the Indigenous Environmental Network based in Bemidji, Minnesota.

Solidarity Statement on Environmental Justice and Climate Change

Environmental Justice Leaders from the United States*

We, the undersigned, have met in a gathering on climate change and environmental justice. We have heard from scientists and policy analysts, from Arctic communities and residents of ecosystems already impacted by the effects of climate change, and from community activists from areas such as Cancer Alley in Louisiana already breathing the toxins of the fossil fuel industry. We have shared testimonies of struggle and strategies for reducing the human impact on climate change and for achieving environmental and economic justice. The urgency of responding to climate change is undeniable; to ignore the issue means environmental and social disaster for all. The sins we commit against Mother Earth today will haunt our children and children's children tomorrow.

Statement of Solidarity

People of color, Indigenous peoples and workers bear a disproportionate health, social and economic burden of a society addicted to a fossil fuel economy. As such, they are the first victims of government inaction, corporate abuse and negligent public policy.

In solidarity, we stand together with people who are being affected now by climate change and those who will be affected in the future. We acknowledge that the people most vulnerable are disproportionately people in the global South and poor people, people of color and Indigenous peoples of the global North, including in the United States.

We are in solidarity with workers, whose health and safety are compromised by polluting industries, workers whose lives and well-being depend on their employment in polluting industries and workers who will seek new forms of employment as the world transitions from a fossil fuel economy. All workers must be made whole.

We are in solidarity with Indigenous peoples who experience the destruction of the global environment as an attack on their spiritual foundations, and with communities everywhere whose lives, homes and environment have been compromised by climate change and the industries that cause it. We acknowledge that climate change is impacting these communities. Moreover, the mechanisms that create climate change are the same ones that have advanced environmental racism in other areas. The struggles of these people, workers and communities for the environment and for justice must lead the resistance to climate change.

Call to Action

Environmental Justice organizations assert leadership on this issue. We are ready to work collectively with others to demand corporate and government accountability and justice for frontline communities and workers, the nations of the global South, and the communities of "the South within the North."

Though most affected, the voices of Indigenous peoples, people of color, low-income people and workers have been ignored to date on this issue. These communities have their own unique concerns and voices that must be included in any policy discussions about climate change.

We issue this call to action, to organize, link and advance this multigenerational struggle for a just transition to a clean and sustainable economy.

We seek to ensure an equitable climate policy that generates ample revenue to fund transitional programs and initiatives that assist people most vulnerable.

We acknowledge that the U.S. is a major contributor to the problem of human-contributed climate change and maintains a unique position as a world leader. The science is clear; negative impacts of global

warming will accelerate under present policies. The U.S. has thus far abdicated a leadership role to the long-term detriment of the entire world.

We believe that steps to reduce global warming can and should protect workers, low-income households, communities and the economy. No policy should be implemented at the expense of countries of the global South or otherwise promote environmental racism. The choice of technologies able to protect the workplace and environment should be available to all.

In fact, sensible choices do exist. We support energy-efficiency, conservation and renewable energy policies and practices. Global warming policies should not give away the right to pollute. We oppose any "grandfathering" of polluting industries. We support the precautionary principle—caution in the face of scientific uncertainty. In addition, we advocate for a transition to an economy devoted to sustaining quality of life and community health. We pledge to work to eliminate dependence on fossil fuels.

We seek responsible action now. The United States' responsibility in creating the problem requires significant reductions within the U.S. We urge the readers of this document to support our collective effort for an environmentally clean, safe, productive and just society free of the effects of global climate change. Policymakers must include the voices of those most vulnerable to climate change in the development of just and effective climate change policy now.

———————

*Signatories present at the World Conference Against Racism included: Dr. Robert Bullard, Environmental Justice Resource Center at Clark Atlanta University/National Black Environmental Justice Network); Pamela Chiang (Asian Pacific Environmental Network); Felicia Davis (Ben E. Mays Center, National Education Resource Center); Tom Goldtooth (Indigenous Environmental Network); Ansje Miller (Redefining Progress); Dr. Yvonne Scruggs-Leftwich (Black Leadership Forum); Ruben Solis (Southwest Workers Union); Amit Srivastava (Corpwatch); Jenice View (Just Transition Alliance); Dr. Beverly Wright (Deep South Center for Environmental Justice, Xavier University/National Black Environmental Justice Network). Issued on September 4, 2001 in Durban, South Africa, at the World Summit Against Racism.

Chapter 6

Wrong Complexion for Protection: Will the "Mother of All Toxic Cleanups" in Post-Katrina New Orleans Be Fair?*

In the real world, all communities are not created equal. Some are more equal than others. If a community happens to be poor, black or located on the "wrong side of the tracks," it receives less protection than communities inhabited largely by affluent whites in the suburbs. Generally, rich people tend to take the higher land, leaving the poor and working class more vulnerable to flooding and environmental pestilence.

Race maps closely with social vulnerability and the geography of environmental risks. We all saw this pattern unfold in real time during Hurricane Katrina and the levee breach that flooded New Orleans. The disaster in New Orleans after Katrina was unnatural and man-made.

Unnatural Man-Made Disasters

At the same time, much of the death and destruction attributed to "natural" disasters is in fact unnatural and man-made. In his book, *Acts of God: The Unnatural History of Natural Disasters in America*, Case Western University history professor Ted Steinberg says humans prefer to make "Mother Nature" or "God" the villain in catastrophic losses from tsunamis, earthquakes, droughts, floods and hurricanes, rather than placing responsibility squarely on social and political forces.[1] "There is no such thing as a 'natural' disaster," according to Steinberg.[2] What many people often call "natural" disasters are in fact acts of social injustice perpetuated by government and business on the poor, people of color, disabled, elderly, homeless, transit dependent and non-drivers—groups least able to withstand such disasters.

Flooding in the New Orleans metropolitan area largely resulted from breached levees and flood walls.[3] A May 2006 report from the Russell Sage Foundation, *In the Wake of the Storm: Environment, Disaster, and Race after Katrina*, found these same groups often experience a "second disaster" after the initial storm.[4] Pre-storm vulnerabilities limit thousands of Gulf Coast low-income communities of color participation in the storm reconstruction,
rebuilding and recovery. In these communities, days of hurt and loss are likely to become years of grief, dislocation and displacement.

Quite often the scale of a disaster's impact, as in the case of Hurricane Katrina, has more to do with the political economy of the country, region and state than with the hurricane's category strength.[5] Similarly, measures to prevent or contain the effects of disaster vulnerability are not equally provided to all. Typically, flood-control investments provide location-specific benefits— with the greatest benefits going to populations who live or own assets in the protected area.

Thus, by virtue of where people live, work or own property, they may be excluded from the benefits of government-funded flood-control investments.[6] New Orleans' new post-Katrina levee system will not provide the same level of protection for all that city's residents. One need not be a rocket scientist to predict who is most likely to receive the least amount of protection or which communities are likely to be left behind and left vulnerable after the flood-proofing is completed—namely, the same groups who were deserted environmentally and economically before the devastating storm.

Cleaning Up the Mess

* The principle authors of this chapter are Dr. Beverly Wright, Director of the Deep South Center for Environmental Justice (DSCEJ) at Dillard University in New Orleans and Dr. Robert D. Bullard, Ware Distinguished Professor of Sociology and Director of the Environmental Justice Resource Center at Clark Atlanta University.

Hurricane Katrina laid waste to New Orleans, an American city built below sea level and whose coastal wetlands, which normally serve as a natural buffer against storm surge, had been destroyed by developers. Katrina has been described as one of the worst environmental disasters in U.S. history. A September 2005 *Business Week* commentary described the handling of the untold tons of "lethal goop" as the "mother of all toxic cleanups."[7] However, the billion-dollar question facing New Orleans is which neighborhoods will get cleaned up, which ones will be left contaminated and which ones will be targeted as new sites to dump storm debris and waste from flooded homes.

Hurricane Katrina left debris across a 90,000-square-foot disaster area in Louisiana, Mississippi and Alabama, compared to a 16-acre tract in New York on September 11, 2001.[8] According to the Congressional Research Service, debris from Katrina could well top 100 million cubic yards compared to the 8.8 million cubic yards of disaster debris generated after the 9/11 terrorist attacks on New York City.

Hurricane Katrina and floodwaters leave death and destruction in New Orleans and the Gulf Coast region, 2005 (Photo by EJRC)

Ten months after the storm, FEMA had spent $3.6 billion to remove 98.6 million cubic yards of debris from Katrina.[9] This is enough trash to pile two miles high across five football fields. Still, an estimated 20 million cubic yards littered New Orleans and Mississippi waterways—with about 96 percent or 17.8 million cubic yards of remaining wreckage in Orleans, St. Bernard, St. Tammany, Washington and Plaquemine parishes. A federal program that reimburses states and cities for all their bills for hurricane debris removal—slated to expire at the end of June 2006—was extended through the end of the year. Louisiana parishes had already hauled away 25 times more debris than was collected after the 9/11 terrorist attack in 2001.[10] The Army Corps of Engineers estimated it would complete its debris mission, including demolitions, by the end of September 2006.[11]

In addition to wood debris, EPA and LDEQ officials estimate that 140,000 to 160,000 homes in Louisiana may need to be demolished and disposed of.[12] More than 110,000 of New Orleans' 180,000 homes were flooded, and half sat for days or weeks in more than six feet of water.[13] Government officials estimate that as many as 30,000 to 50,000 homes citywide may have to be demolished, while many others could be saved with extensive repairs.

As many as 15,000 buildings are set for demolition once local authorities get permission from property owners. Getting permission has been drawn out because people are coming back slowly and spottingly to damaged areas. Demolishing damaged homes in the hard-hit Lower Ninth Ward proved to be a hot political issue. In May 2006, the city had demolished only 119 of 2,100 properties on its demolition short list, many of them houses that had toppled into streets and were blocking traffic. All the demolished units were in the Lower 9th Ward. The 119 properties were basically shattered piles of rubble, the worst of the short list for demolition. Another 1,500 sites there remain to be cleared.[14]

An additional 350,000 automobiles must be drained of oil and gasoline and then recycled; 60,000 boats may need to be destroyed; and 300,000 underground fuel tanks and 42,000 tons of hazardous waste must be cleaned up and properly disposed at licensed facilities.[15] Government officials peg the numbers of cars lost in New Orleans alone at 145,000. Ten months after Katrina flooded New Orleans, 100,000 abandoned vehicles and thousands of boats litter the streets. In July 2006, FEMA awarded a $33 million contract to a Mobile, Alabama, disaster service company to rid the city of the abandoned vehicles and boats. The company was scheduled to complete its work by August 30—a year and a day after Katrina struck.[16]

The Politics of Waste Disposal

What has been cleaned up, what gets left behind and where the waste is disposed appear to be linked more to political science and sociology than to toxicology, epidemiology and hydrology. Weeks after Katrina struck, the Louisiana Department of Environmental Quality (LDEQ) allowed New Orleans to open the 200-acre Old Gentilly Landfill to dump construction and demolition waste from the storm.[17] Federal regulators ordered the unlined landfill closed in the 1980s. But in December last year, more than 2,000 truckloads of debris were entering the landfill in east New Orleans every day.[18]

Just four months after the storm, the Old Gentilly Landfill grew about 100 feet high.[19] LDEQ officials insist that the old landfill, which is still operating, meets all standards. But residents and environmentalists disagree. Even some high-ranking elected officials expressed fear that reopening the Old Gentilly Landfill could create an ecological nightmare.[20] In November 2005, four days after environmentalists filed a lawsuit to block the dumping, the landfill caught fire.

In April 2006, the U.S. Army Corps of Engineers and the Louisiana Department of Environmental Quality issued permits that would allow Waste Management Inc. to open and operate a construction and demolition-related material (C&D) landfill in New Orleans East. The new landfill is located on Chef Menteur Highway, which runs through much of New Orleans East, where the majority of the population is African American. Waste Management pledged to give the city 22 percent of all revenue derived from the site. Every week, Waste Management picks up an average of 45 pounds of trash from each home, 20 more pounds per home than pre-Katrina. The new landfill could accept as much as 6.5 million cubic yards of vegetation and other debris generated by Katrina—including roofing materials, sheetrock and demolition debris, which are considered less harmful than other types of waste.

But after Katrina, the state LDEQ expanded its definition of what is considered “construction debris” to include potentially contaminated material.[21] Yet, regulators acknowledge the potential toxic contamination threat from storm-related wastes. Much of the disaster debris from flooded neighborhoods in New Orleans has been mixed to the point that separation is either very difficult or essentially impossible.[22] David Romero of the U.S. EPA says it would be “lucky” if even 30 percent of the hazardous waste was removed from the waste stream. In an October interview on CNN, LDEQ Assistant Secretary Chuck Carr Brown said hazardous materials were hidden “like toxic needles in a haystack” in the hurricane debris.[23]

Nevertheless, government officials assert that the risk of hazardous materials being dumped at the Chef Menteur site is insignificant and that current sorting practices are adequate to keep hazardous waste out of the landfill. They also insist protective liners are not needed for C&D landfills because demolition debris is cleaner than other rubbish.[24] C&D landfills are not required under federal law to have protective liners as required for a municipal landfill, which is expected to receive a certain amount of hazardous household waste. “There's nothing toxic, nothing hazardous," Chuck Carr Brown told *The New York Times* in May. LDEQ had provided a permit for the landfill. "There will be no impact" on the community, Brown said.[25]

Landfill opponents think otherwise. Many fear the government’s willingness to waive regulations will mean motor oil, batteries, electronics, ink toner, chlorine bleach, drain cleaners and other noxious material will almost certainly wind up at the unlined landfills.[26] “Government has done a lousy job policing what goes in landfills. When you look at the contents from gutted homes, you see all kinds of wastes mixed together that will likely end up at unlined landfills like Old Gentilly and Chef Menteur,” says Sierra Club organizer Darryl Malek-Wiley.[27]

Community leaders beat back two other efforts, in 1990 and 1997, to locate dumps along U.S. 90 near their homes in New Orleans East. Malek-Wiley says Mayor Nagin's rezoning and the quick permits by the Louisiana Department of Environmental Quality and U.S. Army Corps of Engineers excluded public opinion from the decision-making process this time.[28] The Chef Highway Landfill is about four miles west of the Old Gentilly Landfill. "We have grave concern that there is no comprehensive plan for disposal of waste and storm debris," says Malek-Wiley.

Father Vien Nguyen, pastor of Mary Queen of Vietnam Catholic Church and the de facto leader of the Village de l'Est, says the Chef Menteur Highway Landfill is just 0.8 miles from the nearest apartments in a mostly Vietnamese-American community. More than a thousand Vietnamese-American families live less than two miles from the edge of the new landfill. Father Nguyen views the landfill as a roadblock to his community's recovery as residents begin rebuilding. "This will have a chilling effect on our recovery," he said in a regional newspaper article in June. "There seems to be a disregard for human safety as well as recovery."[29]

The Mary Queen of Vietnam Parish is the headquarters for the Citizens for a Strong New Orleans East, and Father Nguyen says roughly half of his 4,000 parishioners live within a one-mile radius of the church. "Is this a deliberate effort to keep us from rebuilding?" he asked. "This is how a self-sufficient, self-reliant community is rewarded for their rebuilding efforts? We use those canals to water our gardens, and now they are filled with poison."[30]

A "Safe" Road Home

This is not the first time New Orleans residents have heard from official sources that a place is safe, only to discover evidence to the contrary. New Orleans' Agricultural Street community—which includes the Gordon Plaza subdivision, Housing Authority of New Orleans (HANO) housing and the Press Park residential area and community center—was built in the early 1980s on top of the Agricultural Street Landfill site. The 95-acre site was used as a municipal landfill (that included debris from Hurricane Betsy in 1965) for more than 50 years prior to being developed for residential and light commercial use. It closed in 1966.

Ag Street residents win their lawsuit against the City of New Orleans, 2005 (Photo by EJRC)

Metals, pesticides and polycyclic aromatic hydrocarbons (PAHs) were found in surface and subsurface soils in the Agricultural Street area during environmental studies in 1993. The EPA refused to declare the site eligible for the Superfund program in 1986, but, using standards that gave more weight to soil contamination, added the landfill to the National Priorities List as a Superfund site in 1994.[31] Residents immediately pushed for a property buy-out and relocation from the contamination. But the federal EPA disagreed, and ordered a $20 million "clean-up," which began in 1998 and was completed in 2001. "EPA did not do a cleanup, it was more like a cover-up," says Elodia Blanco, a longtime resident of the Agricultural Street community who lost everything in the Katrina flood.[32] "We were fighting an environmental justice struggle to get relocated before Katrina. None of us knew when we bought our homes that they were built on a toxic dump."

Government officials assured the Agricultural Street community residents that their neighborhood was safe after the "clean-up" in 2001. But the Concerned Citizens of Agriculture Street Landfill disagreed and filed a class-action lawsuit against the city of New Orleans for damages and relocation costs. Unfortunately, it was Katrina that accomplished the relocation—

albeit a forced one. This year, after thirteen years of litigation, Seventh District Court Judge Nadine Ramsey ruled in favor of the residents—describing them as poor minority citizens who were "promised the American dream of first-time homeownership," though the dream "turned out to be a nightmare."[33] Her ruling could end up costing the city, the Housing Authority of New Orleans and Orleans Parish School Board tens of millions of dollars.[34]

The case is currently on appeal. "It was a long and hard struggle, but we won," says Blanco. "It's a bitter-sweet victory because we lost our community before Katrina." A dozen or so FEMA trailers now house residents on the contaminated site, where post-Katrina government samples have turned up levels of benzo(a)pyrene exceeding EPA's residential guidelines.

In March 2006, seven months after the storm slammed ashore, organizers of "A Safe Way Back Home" initiative, the Deep South Center for Environmental Justice at Dillard University (DSCEJ) and the United Steel Workers (USW) undertook a proactive pilot neighborhood clean-up project—the first of its kind in New Orleans.[35] The clean-up project, located in the 8100 block of Aberdeen Road in New Orleans East, removed several inches of tainted soil from the front and back yards, replacing the soil with new sod and disposing the contaminated dirt in a safe manner. Residents who choose to remove the top soil from their yards—which contains sediments left by flooding—find themselves in a "Catch-22" situation with the LDEQ and EPA insisting the soil in their yards in not contaminated and the local landfill operators refusing to dispose of the soil because they expect it is contaminated. This bottleneck of what to do with the topsoil was unresolved a year and a half after the devastating flood.

Although government officials insist the dirt in residents' yards is safe, Church Downs Inc., the owners of New Orleans' Fair Grounds, felt it was not safe for its million dollar thoroughbred horses to race on. The Fair Grounds is the nation's third-oldest track. The owners hauled off soil tainted by Hurricane Katrina's floodwaters and rebuilt a grandstand roof ripped off by the storm's wind.[36] The Fair Grounds opened on Thanksgiving Day 2006. Certainly, if tainted soil is not safe for horses, surely it is not safe for people—especially children who play and dig in the dirt.

If tainted soil is not safe for horses, surely it is not safe for people—especially children who play and dig in the dirt.

The Safe Way Back Home demonstration project serves as a catalyst for a series of activities that will attempt to reclaim the New Orleans East community following the devastation caused by hurricane Katrina. It is the government's responsibility to provide the resources required to address areas of environmental concern and to ensure the workforce is protected. However, residents are not waiting for the government to ride in on a white horse to rescue us and clean up our neighborhoods.

"FEMA should replicate this demonstration project on thousands of blocks in hundreds of neighborhoods across the City of New Orleans and the Gulf Coast region," United Steelworkers President Leo W. Gerard said in a press release. "Only the federal government has the resources and authority to lead such a massive undertaking. But it has to be done. The human dignity and economic security of the people of the Gulf Coast depends on it."[37]

The DSCEJ/USW coalition received dozens of requests and inquiries from New Orleans East homeowners associations to help clean up their neighborhoods block by block. State and federal officials labeled the voluntary clean-up efforts as "scaremongering."[38] EPA and LDEQ officials said that they tested soil samples from the neighborhood in December and that there was no immediate cause for concern. According to Tom Harris, administrator of LDEQ's environmental technology division, and state toxicologist, the government originally sampled 800 locations in New Orleans and found cause for

concern in only 46 samples. Generally, the soil in New Orleans is consistent with "what we saw before Katrina," says Harris. He called the "A Safe Way Back Home" program "completely unnecessary."[39]

A "Safe Way Back Home" pilot neighborhood initiative to cleanup contamination left by Hurricane Katrina, New Orleans, 2006 (Photo by EJRC)

A week after the voluntary cleanup project began, an LDEQ staffer ate a spoonful of dirt scraped from the Aberdeen Road pilot project. The dirt-eating publicity stunt was clearly an attempt to disparage the proactive neighborhood clean-up initiative. LDEQ officials later apologized.

Despite barriers and red tape, a few Katrina evacuees are slowly moving back into New Orleans' damaged homes or setting up travel trailers in their yards. Homeowners are gutting their houses, treating the mold, fixing roofs and siding, and slowly getting their lives back in order. One of the main questions returning residents have is: Is this place safe? They're getting mixed signals from government agencies. In December, the LDEQ announced, "There is no unacceptable long-term health risk directly attributable to environmental contamination resulting from the storm." Two months later, in February, the Natural Resources Defense Council (NRDC) test results came out with different conclusions.[40] NRDC's analyses of soil and air quality after Hurricane Katrina revealed dangerously high levels of diesel fuel, lead and other contaminants in Gentilly, Bywater, Orleans Parish and other New Orleans neighborhoods (see Table 6.1).

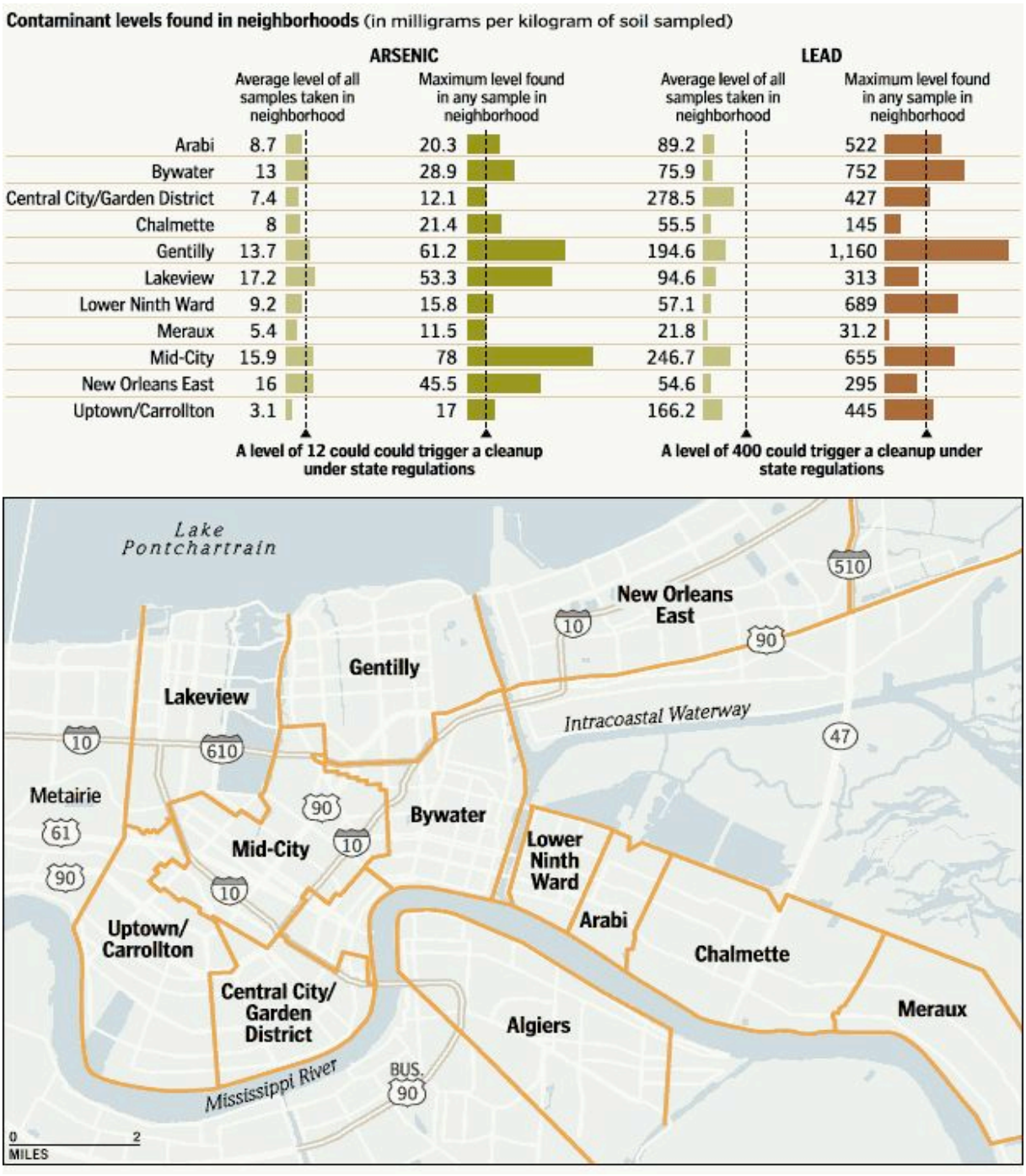
Although many government scientists insist the soil is safe, an April 2006 multi-agency task force press release distributed by the EPA raises some questions.[41] Though it claimed that the levels of lead and other contaminants in New Orleans soil was "similar" to soil contaminant levels in other cities, it also cautioned residents to "keep children from playing in bare dirt. Cover bare dirt with grass, bushes or 4-6 inches of lead-free wood chips, mulch, soil or sand."

Surely, if the federal government can pay for debris removal, blue tarp roofs, and temporary trailer housing (which have already cost an estimated $4.5 billion), it can make funds available to address the "silent killer" of childhood lead poisoning. Making $2,000-$3,000 government grants available to homeowners to test and clean up contamination in their yards would be a bargain given the millions of hurricane relief dollars wasted on profiteering, no-bid contracts and material markups.[42] The "band-aid" approach of, for example, covering bare dirt with grass and wood chips, stops short of addressing the root problem—environmental hazards found inside and outside homes in older neighborhoods.

Now, instead of cleaning up the mess that existed before the storm, government officials are allowing dirty neighborhoods to stay dirty forever. Just because lead and other heavy metals existed in some New Orleans neighborhoods before Katrina doesn't mean that they are safe, or that there isn't a moral or legal obligation to remediate any and all contamination uncovered. Government scientists have assured New Orleanians--including gardeners--that they do not need to worry about soil salinity and heavy metal

content. They also say residents need not worry about digging or planting in the soil. But given the uncertainties built into quantitative risk assessments, how certain are these government officials that all New Orleans neighborhoods are safe?

Figure 6.1 –Contamination Levels Left Behind by Hurricane Katrina



GRAPHICS: Seth Hamblin, Laris Karklis and Cristina Rivero, *The Washington Post*, February 23, 2006

If conditions are so safe, are these government officials willing to move their own families into environmental "hot-spot" neighborhoods while the debates rage about remediation strategy? Will they commit to enrolling their children in New Orleans neighborhood schools and allow them to play at neighborhood parks and playgrounds? Will they agree to eat a "Katrina salad" (tomatoes, cucumbers and lettuce grown in the neighborhood gardens) each night for ten years? In August 2006, nearly a year after Katrina struck, the federal EPA gave New Orleans and surrounding communities a clean bill of health, while pledging to monitor a handful of toxic hot spots.[43] EPA and LDEQ officials concluded that Katrina did not cause any appreciable contamination that was not already there. Although EPA tests confirmed widespread lead in the soil – a pre-storm problem in 40 percent of New Orleans – EPA dismissed residents' calls to address this problem as outside the agency's mission.

Some eighteen months after Katrina, half of New Orleans' residents had not made it back home. The road home for many Katrina survivors has been a bumpy one, largely due to slow government actions to distribute the $7.5 billion in federal aid to residents to rebuild. As of February 5, 2007, Governor' Blanco's Road Home program had accepted 105,739 applications and resolved only 532 cases, granting $33.8 million. At the current rate the program is moving, the Road Home would take more than 13 years to complete.[44] City, state and federal officials are playing the blame game over the slow distribution of relief aid. The federal government has set aside about $750 million for infrastructure projects. The state homeland security department, the agency charged with distributing the money, has only distributed about half that. The governor points the finger at the city as slow in completing the paperwork.

Conclusion

As the waters began to recede, and the light of day was cast on the enormous, even unbelievable, extent of the damage to New Orleans and the Gulf Coast, speculations on the city's recovery or its demise began to echo across the media. How extensive was the environmental contamination? Has New Orleans become a Superfund site? Is it safe to return? The inability of both federal and state agencies (EPA, LDEQ, CDC, ATSDR) to effectively and accurately answer these questions created a quandary that both slowed the recovery and paralyzed the ability of citizens to make a decision on returning. To date, the information on the environmental safety of residents in New Orleans is nothing short of "double talk." On the other hand, EPA tells citizens that the city is safe, although their own test sampling says otherwise and is refuted by credible environmental scientists. Furthermore, after giving the city a clean bill of health, EPA then provides instructions for parents to follow in order to keep their children safe when they play outside. Finally, LDEQ then attempts to discredit citizen actions to organize their community to work with labor unions, nonprofit organizations and volunteers to clean up their own neighborhoods. This schizophrenic response by government to what has been described as the largest environmental disaster this country has ever seen and the "mother of all toxic clean-ups" bares some of the responsibility for the slow recovery of the city of New Orleans.

We can only speculate on what progress could have been made toward rebuilding New Orleans with the return of most of its citizens if the environmental clean-up that we deserved would have been done. What if the same priority for clean-up and safety given to the French Quarter, the Central Business District and the race track for horses had been given to the Lower Ninth Ward, New Orleans East and other hard-hit sections of the city?

Just after the storm, a story appeared in the *Dallas Morning News* citing the Army Corps of Engineers as saying that it would take them three months to scrape the city clean of all contaminated soil and sediment. This, of course, did not happen. What did occur was politics as usual, and the losers were the citizens of New Orleans with African-Americans taking the biggest hit.

Residents of devastated New Orleans neighborhoods do not need government agencies debating the "chicken or egg" contamination argument ("which came first, the contamination or Katrina?"). They need the government to clean up the mess. All levels of government have a golden opportunity to get it right this time. Cleanup and reconstruction efforts in New Orleans' have been shamefully sluggish and patchy, and environmental injustice may be compounded by rebuilding on poisoned ground.

The opportunities are only fading as Katrina slowly slips off the political radar. It is no accident that not one word about Katrina and the Gulf Coast reconstruction was mentioned in President Bush's State of the Union address in January 2007—some seventeen months after the devastating storm. Displaced residents need a "road home" program that is not only fair but is also safe. It is immoral—and should be illegal— to unnecessarily subject Katrina survivors to contamination—whether the pollution was there before or after the storm. Clearly, prevention and precaution should be the driving force behind the environmental cleanup in post-Katrina New Orleans. Either we all pay now or we pay later. It will cost more in terms of dollars and ill health if we wait. The nation cannot allow another immoral, unethical and illegal "human experiment" to occur in New Orleans and the Gulf Coast. The solution is prevention.

Endnotes

[1] Ted Steinberg, *Acts of God: The Unnatural History of Natural Disasters in America*. New York: Oxford University Press, 2003.
[2] Neil Smith, "There is No Such Thing as a Natural Disaster," *Understanding Katrina: Perspectives from the Social Sciences*. New York: Social Science Research Council, 2005, p. 1.
[3] Thomas Gabe, Gene Falk, Maggie McCarthy and Virginia W. Mason, *Hurricane Katrina: Social-Demographic Characteristics of Impacted Areas*. Washington, DC: Congressional Research Service Report RL33141, November 2005.
[4] See Robert D. Bullard, "Katrina and the Second Disaster: A Twenty-Point plan to Destroy Black New Orleans," December 23, 2005, http://www.ejrc.cau.edu/Bullard20PointPlan.html (accessed on December 28, 2005).
[5] Stephen Jackson, "Un/natural Disasters, Here and There," *Understanding Katrina: Perspectives from the Social Sciences*. New York: Social Science Research Council, 2005, p. 1.
[6] James J. Boyce, *Let Them Eat Risk? Wealth, Rights, and Disaster Vulnerability*. University of Massachusetts, Amherst, Political Economy Research Institute, Working Paper Series No. 4, March, 2000, p. 4.
[7] "The Mother of All Toxic Cleanups," *Business Week*, September 26, 2005, http://www.businessweek.com/magazine/content/05_39/b3952055.htm (accessed on December 21, 2005).
[8] Linda Luther, *Disaster Debris Removal after Hurricane Katrina: Status and Associated Issues*. Washington, DC: Congressional Research Service Report to Congress (June 16, 2006), p. 1.
[9] Lara Jakes Jordan, "Washington Extends Full Pickup Costs of Hurricane Debris Removal," *Associated Press*, WWLTV.com, June 29, 2006, http://www.wwltv.com/cgi-bin/bi/gold_print.cgi (accessed on July 1, 2006).
[10] Gerard Shields, "Five Parishes to Receive Help with Debris Cleanup," *The Advocate* (Baton Rouge), June 30, 2006.
[11] See Army Corps of Engineers, "Questions and Answers: Hurricane Recovery and Levee Issues," January 18, 2006, http://www.mvn.usace.army.mil/tgf/Q&A01.htm (accessed on July 1, 2006).
[12] U.S. EPA and Louisiana Department of Environmental Quality, "News Release: Top State and Federal Environmental Officials Discuss Progress and Tasks Ahead after Katrina," September 30, 2005, http://www.deq.state.la.us/news/pdf/administratorjohnson.pdf#search='katrina%20debris%20350%2C000%20automobiles' (accessed on July 2, 2006).
[13] Adam Nossiter, "Thousands of Demolitions Are Likely in New Orleans," *The New York Times*, October 2, 2005.
[14] Gwen Filosa, "House Razing Costs to Rise for N.O." *The Times-Picayune*, May 22, 2006.
[15] James Varney and Jan Moller, "Huge Task of Cleaning Up Louisiana Will Take at Least a Year," *Newhouse News Service*, October 2, 2005, http://www.newhousenews.com/archive/varney100305.html (accessed on July 2, 2006).
[16] Bob Dart, "Junk Cars, Boats Slow Recovery in Big Easy," *The Atlanta Journal-Constitution*, July 5, 2006.
[17] Cain Burdeau, "New Orleans Area Becoming a Dumping Ground," *Associated Press*, October 31, 2005.

[18] Patrick O'Driscoll, "Cleanup Crews Tackle Katrina's Nasty Leftovers," *USA Today*, December 12, 2005, http://www.usatoday.com/news/nation/2005-12-11-katrina-crews_x.htm (accessed on July 2, 2006)
[19] Andrew Martin, "Katrina's Garbage Rates a Category 5," *The Chicago Tribune*, January 4, 2006.
[20] Gordon Russell, "Landfill Reopening is Raising New Stink," *The Times-Picayune*, November 21, 2005, http://www.nola.com/news/t-p/frontpage/index.ssf?/base/news-4/1132559045240640.xml, (accessed on July 2, 2006).
[21] Linda Luther, *Disaster Debris Removal after Hurricane Katrina,* p. 1.
[22] *Ibid*., p. 9.
[23] Ann Pardo, "The Battle of Chef Menteur: The Movement to Close a New Orleans Landfill Presses On," *Reconstruction Watch*, July 6, 2006, http://www.reconstructionwatch.org/index.php?s=20&n=56 (accessed on July 15,2006)
[24] Leslie Eaton, "A New Landfill in New Orleans Sets Off a Battle," *The New York Times*, May 8, 2006, http://www.nytimes.com/2006/05/08/us/08landfill.html?ex=1151035200&en=99305c0b4651e848&ei=5055&partner=RRCOLUMBUS (accessed on July 15, 2006)
[25] *Ibid.*
[26] Gordon Russell, "Chef Menteur Landfill Testing Called a Farce: Critics Say Debris Proposal 'Would Be a Useless Waste of Time'" *The Times-Picayune*, May 29, 2006.
[27] Interview with Darryl Malek-Wiley conducted by the author on June 21, 2006.
[28] Mike Dunn, Debris Removal Need Trumps Protest," *The Advocate*, May 8, 2006.
[29] Father Vien quoted in Gordon Russell, "Storm Debris Landfill is OK'd," *The Times-Picayune*, April 14, 2006.
[30] Father Nguyen quoted in Frank Etheridge, "Don't Trash Our Neighborhood: A New Orleans East Vietnamese Community Battles a Landfill in Its Midst," *Gambit Weekly*, June 20, 2006.
[31] See Agency for Toxic Substances and Disease Registry, Public Health Assessment - Agriculture Street Landfill, New Orleans, Orleans Parish, Louisiana, Atlanta, GA: ATSDR (June, 1999); Alicia Lyttle, Agriculture Street Landfill Environmental Justice Case Study, University of Michigan School of Natural Resources, Ann Arbor, Michigan (January 2003).
[32] Telephone interview conducted with Elodia Blanco conducted by author on June 21, 2005.
[33] *Ibid*.
[34] Susan Finch, "Ag Street Landfill Case Gets Ruling: City Ordered to Pay Residents of Toxic Site," *The Times-Picayune*, January 27, 2006.
[35] See Deep South Center for Environmental Justice at Dillard University, "Project: A Safe Way Back Home," http://www.dscej.org/asafewayhome.htm (accessed on July 2, 2006).
[36] Brett Martell, "Horse Racing Returns to New Orleans," *Associated Press*, November 23, 2006.
[37] See "News from USW: New Pollution Data Confirms Concern" March 23, 2006, http://biz.yahoo.com/bw/060323/20060323005549.html?.v=1 (accessed on July 2, 2006)
[38] Quoted in Ann S. Simmons, "New Orleans Activists Starting from the Ground UP," *The Los Angeles Times*, March 24, 2006.
[39] Leslie Williams, "Groups Warn About Arsenic in Soil," *The Times-Picayune*, March 24, 2006.
[40] Gina M. Solomon and Miriam Rotkin-Ellman, *Contaminants in New Orleans Sediments: An Analysis of EPA Data*. New York: NRDC, February 2006, http://www.nrdc.org/health/effects/katrinadata/sedimentepa.pdf (accessed on July 1, 2006).
[41] U.S. EPA, "Release of Multi-Agency Report Shows Elevated Lead Levels in New Orleans Soil, Consistent with Historic Levels of Urban Lead," EPA Newsroom, March 4, 2006, http://yosemite.epa.gov/opa/admpress.nsf/0/BA5F2460D6C777F585257146006 93B5B (accessed on July 1, 2006)
[42] James Varney, "Senators Grill Corps, FEMA: Hearing Details Waste in Relief Spending," *The Times-Picayune*, April 11, 2006.
[43] Matthew Brown, "Final EPA Report Deems N.O. Safe," *The Times-Picayune*, August 19, 2006.
[44] Becky Bohrer, "New Orleans Residents Are Bailing Out," *The Atlanta Journal-Constitution*, February 9, 2007.

Chapter 7
The "Poster Child" for Environmental Racism in 2007: Dickson County, Tennessee*

Historically, African American and other people of color communities have borne a disproportionate burden of pollution from landfills, garbage dumps, incinerators, smelters, sewage treatment plants, chemical industries and a host of other polluting facilities. Many dirty industries have followed the "path of least resistance" allowing communities of color to become environmental "sacrifice zones" and the "dumping grounds" for all kinds of health-threatening operations.

This chapter provides a real-life example of the deadly mix of "wastes and race" in the early years of the twenty-first century—the Dickson County (Tennessee) Landfill and the contamination of an African American family's wells and their 150-acre homestead. The goal of our analysis is to illustrate how sluggish and inept government response to an environmental emergency is endangering the health and safety of African Americans two decades after the publication of *Toxic Wastes and Race* and sixteen months after Hurricane Katrina and the levee breach flooded New Orleans. It also illustrates that environmental racism is alive and well in America.

Environmental Racism and Land Use

Many of the differences in environmental quality between people of color and white communities result from institutional racism. Institutional racism influences local land use, enforcement of environmental regulations, industrial facility siting and where people of color live, work and play. The roots of institutional racism are deep and have been difficult to eliminate. Discrimination is a manifestation of institutional racism and causes life to be very different for whites and blacks. Racism has been and continues to be a major part of the American sociopolitical system, and, as a result, people of color find themselves at a disadvantage in contemporary society.

Racism is found in the housing industry, educational institutions, employment arena and judicial system.[1] Environmental racism has rendered millions of American citizens "invisible" to government regulations and to enforcement. What is environmental racism and how does one recognize it? *Environmental racism refers to any policy, practice or directive that differentially affects or disadvantages (whether intended or unintended) individuals, groups or communities based on race or color*. Environmental racism combines with public policies and industry practices to provide benefits for whites while shifting costs to people of color.[2] Environmental racism is reinforced by government, legal, economic, political and military institutions.[3]

Racism influences the likelihood of exposure to environmental and health risks as well as accessibility to healthcare.[4] Many of the nation's environmental policies distribute the costs in a regressive pattern while providing disproportionate benefits for whites and individuals who fall at the upper end of the education and income scale. Numerous studies, dating back to the seventies, reveal that people of color have borne greater health and environmental risk burdens than the society at large.[5] For example, people are subjected to elevated health risks from contaminated fish consumption,[6] location of municipal landfills and incinerators,[7] toxic waste dumps,[8] toxic schools,[9] toxic housing[10] and toxic air releases.[11]

Numerous studies, dating back to the seventies, reveal that people of color have borne greater health and environmental risk burdens than the society at large.

* The principal author of this chapter is Dr. Robert D. Bullard, Ware Distinguished Professor of Sociology and Director of the Environmental Justice Resource Center at Clark Atlanta University.

People of color communities are often victims of land-use decision making that mirrors the power arrangements of the dominant society. Zoning is probably the most widely applied mechanism to regulate urban land use in the United States. Zoning laws broadly define land for residential, commercial or industrial uses, and may impose narrower land-use restrictions (e.g., minimum and maximum lot size, number of dwellings per acre, square feet and height of buildings, etc.).[12] Historically, exclusionary zoning (and rezoning) has been a subtle form of using government authority and power to foster and perpetuate discriminatory practices—including environmental planning.[13]

A 2003 report from the National Academy of Public Administration, *Addressing Community Concerns: How Environmental Justice Relates to Land Use Planning and Zoning*, found that most planning and zoning boards members are men; more than nine out of ten members are white; most members are 40 years old or over; and boards contain mostly professionals and few, if any, nonprofessional or community representatives.[14]

Local land use and zoning policies are “a root enabling cause of disproportionate burdens and environmental injustice” in the United States.[15] Exclusionary zoning has been widely used as a "NIMBY" (not in my backyard) tool to zone against something rather than for something. On the other hand, “expulsive” zoning has pushed out residential uses and allowed “dirty” industries to invade communities.[16] Largely the poor, people of color and renters inhabit the most vulnerable communities. Zoning laws are often legal weapons “deployed in the cause of racism” by allowing certain “undesirable” people (immigrants, people of color and poor people) and operations (polluting industry) to be excluded from areas.[17]

With or without zoning, deed restrictions or other devices, African Americans and other people of color groups are unequally able to protect their environmental interests. More often than not, these communities get shortchanged in the neighborhood protection game.[18]

The “Dumping Grounds” in a Tennessee Town

There are literally dozens of locations across the nation where environmental racism has left an ugly scar. Dickson, Tennessee, is a textbook case—the “poster child” for environmental racism. Dickson is a town of 12,244 located about 35 miles west of Nashville. Dickson County was 4.5 percent black in 2000.[19] Dickson’s mostly African American Eno Road community has been used as the dumping ground for garbage and toxic wastes dating back more than four decades. The black neighborhood was first used as the site of the Dickson “city dump” and subsequent city and county Class I sanitary landfills, Class III and IV construction and demolition landfills, balefills and processing centers. The site is currently being used as a C&D landfill, garbage transfer station and recycling center (Table 7.1).

The Town of Dickson purchased the land for a “city dump” in 1946. Sometime between 1946 and 1956, the newly acquired land, which was bounded by the old “Negro Coaling School,” a one-room county school with grades 1 through 9 that dates back to 1895, became the Dickson “city dump,” an open unlined dump. This point is made clear in Johnnie Hall’s property deed dated September 22, 1956. The deed described the location of the Hall property as follows:

> *Located in the First Civil District of Dickson County, State of Tennessee, bounded and described as follows: Beginning at an iron pin in the east boundary line of the Town of Dickson’s “City Dump” tract at the northwest corner of Roy Holt’s 7.4 acre tract; runs south 87½ deg. East 44 poles to a stake, the northeast corner of the aforesaid 7.4 acre tract; thence North 1 deg. East 16 poles to an iron pin; thence North 87½ deg. West 43.6 poles to a pile of stones in the aforesaid Town of Dickson’s east boundary line; thence South 2 deg. West 16 poles to the beginning, containing 4.4 acres, more or less.*
>
> *Being a part of the same property conveyed to Johnnie Hall by a deed from Tobe Hall of record in Deed Book No. 67, page 430 in the Register’s office of Dickson County Tennessee.*[20]

The Dickson County Landfill consists of 74 acres off Eno Road, 1.5 miles southwest of Dickson. The landfill contains four parts, the City of Dickson Landfill, the County Landfill Expansion and the Balefill; which are all now closed. The balefill disposed of solid waste that was compressed or bound. The fourth part consists of approximately 5 acres located on the eastern portion of the landfill.

Scovill-Schrader automotive company opened in Dickson, Tennessee, in 1964—the same year the U.S. Congress passed the sweeping Civil Rights Act that outlawed racial discrimination. The plant manufactured automotive tire valves and gauges. The process included metal plating, etching, rubber molding and application, polishing, degreasing and painting, according to documents prepared by the TDEC Division of Water Supply. An industrial operation like this generates lots of hazardous wastes that must be disposed.

According to government records, in 1968, the same year Dr. Martin Luther King was assassinated in Memphis, Scovill-Shrader and several other local industries, buried drums of industrial waste solvents at an "open dump" landfill site.[21] In 1972, the unlined landfill was granted a permit by the Tennessee Department of Health and Environment (TDEH). The town of Dickson operated the landfill up until 1977 when it was taken over and operated by Dickson County.[22] More than 1,400 people obtain their drinking water from private wells or springs within a four-mile radius of the landfill.[23] A 1991 Halliburton report acknowledged the fact that the Harry Holt well is close to the landfill. It states, "The closest private well [Harry Holt well] is located approximately 500 feet east of the landfill."[24]

The County Landfill initially started as a 41.6-acre expansion to the original City of Dickson Landfill, of which 28.6 acres was used for waste disposal. The expansion occurred after the county purchased the original City of Dickson Landfill, as well as 45 additional acres in 1977. The balefill was established as part of the 1987 expansion (see Table 7.1). For years, drums of toxic industrial waste solvents were dumped at the landfill, which later contaminated the groundwater.

Contaminated waste material was cleaned up from other areas in this mostly white county and was trucked to the landfill in the mostly black Eno Road community. For example, Ebbtide Corporation (Winner Boats) removed material from an on-site dump and transferred it to the Dickson County Landfill for disposal.[25] The company disposed of drummed wastes every week for 3 to 4 years. Scovill-Shrader Automotive manufacturing plant buried drums of industrial waste solvents at the landfill. The company's wastes are known to have contained acetone and paint thinner.[26] A 1991 EPA Site Inspection Report notes that soil containing benzene, toluene, ethylbenzene, xylenes and petroleum hydrocarbons from underground storage tank cleanups were brought to the landfill. In 1988, the Dickson County Landfill accepted 275 to 300 cubic yards of solid waste from the CSX White Bluff derailment cleanup.[27]

The Dickson County Landfill has received numerous unsatisfactory operational notices. The landfill received five notices of violations (NOV) from July 18, 1988 to April 12, 1999, including inadequate daily cover, violation of Groundwater Protection Standards, cadmium detected in ground water and springs at concentrations exceeding the MCL, and violation of inadequate depth cover and pooling of water on landfill cover.[28] The landfill noncompliance is summarized in the 2004 *Dickson County Landfill Reassessment Report* (Region 4):

> *The county has a long history of noncompliance related to groundwater and leachate violations since at least 1983. These violations have resulted in fines, Commissioner's Orders, and NOV. These violations were related to such issues as major and minor leachate seeps and flows, failure to provide immediate cover, failure to provide erosion control, excedance of groundwater standards for cadmium and TCE, discharge of leachate from the property without a permit, failure to maintain a stormwater pollution prevention plan, and implementation of required corrective actions.*[29]

Despite repeated violations at the Dickson County Landfill, the TDEC continued to grant permits for the site on Eno Road. TDEC permitted at least four landfills for the Eno Road site since 1988. In February 2007, Dickson County operated a recycling center, garbage transfer station and a C&D landfill at the Eno Road site—where 20-25 heavy-duty diesel trucks enter the sites each day—leaving behind noxious

fumes, dangerous particulates, household garbage, recyclables and demolition debris from around Middle Tennessee. The garbage transfer station alone handles approximately 35,000 tons annually.

Dickson County covers more than 490 square miles—an equivalent of 313,600 acres.[30] However, the only cluster of solid waste facilities in the county is located 54-feet from a 150-acre farm owned by an African American family in the small mostly black Eno Road community. It is no accident or statistical fluke that all the permitted landfills in Dickson County are concentrated in this black community. Blacks make up less than five percent of the county's population and occupy less than one percent of the county's land mass. When *New York Times* columnist Bob Herbert queried Dickson County attorney Eric Thornton in an October 2006 article, "Poisoned on Eno Road," about why it was peculiar that the Eno Road community had been chosen to absorb so much of the county's garbage and hazardous waste, his reply was "it has to be at some location."[31] While this may be true, the $64 million question remains unanswered—why must the "Somewhere USA" generally end up being in black and other people of color communities?

It is no accident or statistical fluke that all the permitted landfills in Dickson County are concentrated in this black community.

Treatment of Black Families in Dickson

After slavery, dozens of black families acquired hundreds of acres of land—not part of the empty "40 acres and a mule" government promise—and lived a quiet and peaceful existence in Dickson's historically black Eno Road community. That is, until their wells were poisoned by a county landfill.[32] One African American family in particular, the Harry Holt family, a family of black landowners that have deep roots in the Eno Road community, has been especially harmed by the toxic assaults of the city and county landfills and government inaction.

- **Harry Holt** – Prostate cancer, bone cancer, Type 1 diabetes, hypertension, kidney disease (died on January 9, 2007)
- **Beatrice Holt** – Rheumatoid arthritis, diabetes, cervical polyps
- **Sheila Holt-Orsted** – Breast cancer, diabetes, arthritis, gastrointestinal disorder
- **Bonita Holt** – Arthritis, colon polyps, hypertension, gastrointestinal disorder
- **Demetrius Holt** – Diabetes, gastrointestinal disorder
- **Patrick Holt** – Immune disorder, arthritis

Sheila Holt Orsted standing in front of landfill that poisoned her family's drinking water, 2004 (Photo by EJRC)

The Holt family's American Dream of land ownership has become a "toxic nightmare." For more than a decade, this black family has experienced the terror of not knowing what health problems may lay ahead for their children and their children's children.

Government records show trichloroethylene (TCE), a suspected carcinogen, was found in the Harry Holt and Lavenia Holt wells as early as 1988, the same year the Tennessee Department of Health and Environment issued a permit to Dickson County for operation of the facility as a sanitary landfill. The TDHE approved the Dickson County Landfill permit on December 2, 1988, even though government test results completed on

November 18, 1988 on the Harry Holt and Lavenia Holt wells showed TCE contamination. The Tennessee Department of Health and Environment sent letters to Harry Holt and Lavenia Holt on December 8, 1988 informing the family of the test results finding of contamination in their wells. The letter states: "Your water is of good quality for the parameters tested. It is felt that the low levels of methylene or trichloroethene may be due to either lab or sampling error." [33]

It seems a bit odd that the State of Tennessee would continue permitting landfills in the mostly black Eno Road community while government tests repeatedly turned up TCE contamination onsite and offsite in monitoring wells and in private wells—such as the Holt family wells—that are just a stone's throw from the facility. The MCL is the maximum concentration of a chemical that is allowed in public drinking water systems. Currently there are fewer than 100 chemicals for which an MCL has been established. However, these represent chemicals that are thought to pose the most serious risk. Some of the health effects associated with ingestion of TEC include liver disease, hypertension, speech impediment, hearing impairment, stroke, anemia and other blood disorders, diabetes, kidney disease, urinary tract disorders and skin rashes.[34]

Table 7.1
History of Landfill Permitting in Dickson, Tennessee Eno Road Community

Site Name	Year Permitted	Type Permit[1]
Dickson "City Dump"	N/A (1956)[2]	No Permit
Dickson "City Dump"	N/A (1968)	No Permit
Dickson City Landfill	1972	Class I
Dickson County Landfill	1977	Class I
Dickson County Landfill	1988	Class I
Dickson County Balefill	1988	Processing
Dickson County Balefill	1990	Processing
Dickson County Demolition	1992	Class III/Class IV

[1] The solid waste facility permits were granted for 100 Virgil Bellar Road, Dickson, Tennessee, located in the heart of the Eno Road community.

[2] The City of Dickson purchased the land for the Eno Road site in 1946. Government records indicate that the land was associated with the Dickson "city dump" tract as early as 1956. The site was an open dump in 1968 and in 1972 was first permitted by the State of Tennessee as a sanitary landfill.

Source: Tennessee Department of Environment and Conservation, Division of Solid and Hazardous Waste Management, Solid Waste Facility Database (2002).

On January 28, 1990 government tests found 26 ppb (parts per billion) TCE in the Harry Holt well—five times above the established Maximum Contaminant Level (MCL) of 5ppb set by the federal EPA. The MCL is the maximum concentration of a chemical that is allowed in public drinking water systems. On August 17, 1990 government tests found 3.9 ppb TCE in on the Harry Holt well. On August 23, 1991 government tests showed 3.7 ppb TCE in the Harry Holt well.

A January 28, 1991 EPA potential hazardous waste site inspection of the landfill was performed. The *Chronology of Events – Dickson County Landfill Appendix B* (*Dickson County Landfill Reassessment Report*) states:

> *Elevated levels of several pesticides were detected within the landfill. Questionable material was placed in the city dump prior to 1973. The private well was contaminated with TCE, and two municipal wells are within 4,000 feet. Soils within the landfill were contaminated with high levels of pesticides, metals and unidentified organics. Mr. Holt owns a home approximately 500 feet east of the landfill; however, the old dump is not used. The area is not fenced, and*

> *pedestrian traffic is possible. A landfill directly adjacent to the old city dump to the west is presently being used. Most waste was in drums and the old city dump is not lined.*[35]

The Harry Holt homestead is actually 54 feet (not 500 feet) from the landfill property line.

And on December 3, 1991 the federal Environmental Protection Agency (EPA) sent the Harry Holt family a letter informing him of the three tests performed on his well and deemed it safe. The letter states: "Use of your well water should not result in any adverse health effects." [36] The letter further states:

> It should be mentioned that trichloroethylene (TCE) was detected at 26 ug/1 in the first sample. Because this detection exceeded EPA's Maximum Contaminant Level (MCL) of 5 ug/1, the well water was resampled. TCE was detected at 3.7 ug/1 in the second sample; however, it was noted this sample contained air bubbles. EPA took then took a third sample with results nearly identical to the second (3.9 ug/1). Trichloroethylene (TCE) originates from the disposal of dry cleaning material and the manufacture of items such as pesticides, paints and paint thinners, waxes and varnishes, and metal degreasers.[37]

A December 17, 1991 letter from the Tennessee Department of Conservation expressed some concern about the level of TCE contamination found in the Holts' well. Tennessee Department of Health and Environment officials agreed that Mr. Holt's well should continue to be sampled. However, this was not done. The letter states: "Our program is concerned that the sampling twice with one considerably above MCL and one slightly below MCL in a karst area such as Dickson is in no way an assurance that Mr. Holt's well water will stay below MCL's. There is a considerably seasonal variation for contaminants in karst environments and 3.9 ppb TCE is only slightly under the MCL of 5 ppb."[38]

Although Tennessee state officials expressed concern about the tests, they stood by and allowed the Holt family to continue to drink contaminated well water. A January 6, 1992 letter from the Tennessee Department of Health and Environment continued to express concern about the level of contamination found in the Holt well. The letter states:

> Mr. Holt's well was sampled as a result of the Preremedial Site Investigation and Ranking package on the Dickson County landfill for NPL consideration. Mr. Carr told me the field investigation was complete and that he was not in a position to sample Mr. Holt's well again even though it had sporadically shown TCE contamination above MCL's. He agreed that Mr. Holt's well should continue to be sampled. There may be some chance of the site going NPL, but that will be at least 1-2 years away. Mr. Carr suggested I contact Nathan Sykes at (404) 347-2913 to determine why it was not felt that further monitoring or an alternate water supply was necessary.[39]

A month later, February 12, 1992, state officials continued to discuss the Holt family wells and allegations that the Dickson County Landfill was the source of the TCE contamination. The letter states:

> A search of our Division's files has been made concerning the allegation that a domestic well, located on the Harry and Lavenia Holt property, may have been adversely impacted by the Dickson County Landfill. No substantial evidence was found in our files to support this allegation.
>
> Attached is a 1988 memo from our Division showing that groundwater samples from the Holt well were obtained and analyzed at that time. Those sample results showed that trichloroethylene (TCE) and methylene chloride were found to be at the upper regulatory limit of the acceptable drinking water standards set by EPA. It was concluded by this Division that these detection levels may have been due to either laboratory or sample error. There is no record that any additional samples were obtained at a later date by either our Division or by the EPA.[40]

A March 13, 1992 letter from the TDEC sides with EPA on the Holt family well water being "safe." The letter states:

> Since EPA has already completed a site investigation, has identified the pollutants involved, and has, in part, determined the extent of the leaching, I would suggest that they, EPA, continue with their chosen course of action, rather than create the added confusion of various agencies making their own agendas. I would suggest that if Mr. Holt is concerned about possible health risks in using his well water between now and June (when EPA's priority decision is made), that he should rely on bottled or city water for cooking and drinking purposes until he is convinced that his well water is safe.[41]

In the final analysis, the state handed the ball off to the federal government and in short handed the Holt family a "death sentence." Government records also show that the Harry Holt well was *not* retested or monitored as recommended by state officials. According to the 2004 EPA *Dickson County Landfill Reassessment Report*, no government tests were performed on the Harry Holt family well between August 24, 1991 and October 8, 2000—a full nine years.[42] No scientific explanation has been given for this gap in government testing, even though the TDHE and the federal EPA were periodically performing tests on private wells that were within a one-mile radius of the leaky Dickson County Landfill.

The Harry Holt well, one of the closest wells to the landfill and one of the earliest private wells to show TCE contamination, was routinely left out of government testing and monitoring protocol for wells within a one-mile radius of the Dickson County Landfill. In February 1997, TCE was detected at 1.3 parts per billion in water from a production well (DK-21) operated by the City of Dickson and located northeast of the landfill. The maximum contaminant level (MCL) is 5 parts per billion. The Harry Holt homestead is a mere 54 feet from the landfill property line and lies between the landfill and the DK-21 public water supply. An April 7, 1997 TDEC confirmation sample at DK-21 showed TCE at 14 parts per billion and Cis-1, 2 dichloroethene at 1.3 parts per billion. And on April 18, 1997, the City of Dickson stopped using the DK-21 well as a supplement to the municipal water source after a call from the state requiring an aeration, or water filtration, system, according to the TDEC Division of Water Supply, and began using the Piney River exclusively (closed DK-21) as the municipal water source, according to the TDEC Division of Water Supply.[43]

A dye-tracer study, *Summary and Results of Dye-Tracer Tests Conducted at the Dickson County Landfill, Tennessee, 1997 and 1998*, was conducted to help evaluate whether the landfill was a possible source of the contamination.[44] The study used 24 dye-injection and detection sites. The test sites included wetlands, springs, ponds and wells owned by the City of Dickson, monitoring wells and domestic wells. The 24 sites were located on all sides of the landfill. One of the dye-tracer test sites was the Humane Society of Dickson County, a facility located at 410 Eno Road that houses more than 300 animals per month. The Harry Holt homestead is located at 390 Eno Road—a few hundred feet from the animal shelter. However, the Harry Holt, Roy Holt and Lavenia Holt family wells were not part of the 1997-1998 government study even though they are all within several hundred feet from the landfill.

It appears that Dickson County, state, and EPA officials were more concerned about ducks in a pond and dogs waiting to be euthanized than protecting the Holt family from TCE released from the county landfill.

It appears that Dickson County and EPA officials were more concerned about ducks in a pond and dogs waiting to be euthanized than protecting a Holt family from TCE released from the county landfill. The Harry Holt well was not retested until October 9, 2000 when it registered a whopping 120 ppb TCE, and a second test on October 25, 2000 registered 145 ppb—24 times and 29 times, respectively, higher than the Maximum Contaminant Level (MCL) of 5ppb set by the federal EPA.[45] It was only after the extremely high TCE levels in 2000 that a Dickson County Landfill official visited the Holt family home informing them that their wells were unsafe. No written reports or letters were sent to the Holt family explaining the October 9, 2000 test results.

The Holt family was placed on Dickson City water on October 20, 2000—twelve years after the first government tests found TCE in their well in 1988. On December 2, 2003, the Harry Holt family filed a lawsuit against the City of Dickson, County of Dickson and Scovill Inc. (Scovill is the company that owned the former Scovill-Shrader Automotive manufacturing plant in Dickson).

In a September 23, 2003 "Community Meeting Questions and Answers," TDEC officials discussed the TCE contamination in the Holt family wells.[46] The State officials also discussed the one municipal water well (DK-21) that had detectable levels of TCE contamination and was taken out of service and permanently closed in 1998. The Harry Holt homestead is located between the Dickson County Landfill property and DK-21 site. It stands to reason that if the landfill site was contaminated and the DK-21 water supply site was contaminated, there is a good chance that the Harry Holt well also was contaminated.

Before the county landfill was sited, the Holt family wells were clean and the water was safe to drink and it was free. Not only has the Dickson County Landfill contaminated the Holt family wells and endangered their health, it now means that the Holt family must incur an added expense of paying the county for clean water. The county had been paying the Holts' entire water bills since 2000 because well water on the property tested positive for TCE. After the Holts filed their lawsuit, the Dickson County Commission stopped paying the family's water bill in 2004.[47]

In November 2004, Dickson County Circuit Court Judge George Sexton ruled that a racial discrimination amendment could be added to the Holt family's complaint involving the alleged toxic poisoning of their well water near the Dickson County Landfill. The lawsuit is still pending in Dickson County Circuit Court.

While earning some $3 million a year from the Eno Road waste operation, Dickson County is profiting off of the suffering inflicted on the Holt family who lives next door. Dickson County has not been a "good neighbor." Moreover, county officials refuse to right the wrong committed against the Holt family and the Eno Road African American community, thereby compounding the injustice that dates back almost 40 years.[48]

While earning some $3 million a year from the Eno Road waste operation, Dickson County is profiting off of the suffering inflicted on the Holt family who lives next door.

Discrimination against the Holt family did not end with the filing of their lawsuit. The Holts received differential treatment from white families as recent as November 6, 2006—when in a special called meeting, Dickson County Commissioners voted unanimously to settle lawsuits with several white families that had alleged groundwater contamination from the leaky Dickson County Landfill located in the historically black Eno Road community.[49] The city and county have now settled with all the white families, but have refused to deal fairly with the Holt family.

Treatment of White Families in Dickson

Government testing and monitoring of the black Holt family's wells differed markedly from the treatment of white families whose spring and wells were contaminated. Treatment differed in terms of testing, notification, remediation and provision of alternative water supply—temporary (providing bottled water) and permanent (connecting to city water system). The racial disparity in government testing is clearly presented in Table 7.2 (Summary of TCE and DCE Results, Springs and Private Water Supplies, Dickson County, Tennessee) of the *Dickson County Landfill Reassessment Report*.[50]

Treatment of White Family Near Sullivan Spring

On March 5, 1994 TCE was detected in Sullivan Spring—a water supply used by two white families. On September 1, 1994 tests were conducted on the spring to confirm it was indeed contaminated. Sullivan Spring is located one-third mile from the landfill. On September 8, 1994, TDEC sent the white family a "Notification of Contaminants in Drinking Water" letter. The letter states:

As I discussed with you on September 6, 1994, the spring used to supply drinking water to your residence has shown levels of Trichloroethylenecis-1,2-dichloroethene, and dichloroethene above the allowable levels. It is recommended that you discontinue use of this water as your drinking water supply. As I have been informed Mr. Lunn of the Dickson County Solid Waste Program contacted you on September 2, 1994 to notify you of the impact to your spring.[51]

Table 7.2
Summary of TCE and DCE Results, Springs and Private Water Supplies
Dickson County, Tennessee

Residence/Water Supply	Date	TCE (*g/L)	DCE (*g/L)
L. Gorley/ private well	October 25, 2000	0.6	BDL
L. Gorley/ private well	October 31, 2000	0.5J	BDL
H. Holt/private well	October 12, 2000	3.5	BDL
H. Holt/private well	January 28, 1990	26.0	BDL
H. Holt/private well	August 17, 1990	3.9	BDL
H. Holt/private well	August 23, 1991	3.7	BDL
H. Holt/private well	October 9, 2000	120.0	6.6
H. Holt/private well	October 25, 2000	145.0	8.6
H. Holt/private well	January 2001	64.0	2.9
H. Holt/private well	October 2001	160.0	2.0
H. Holt/private well	May 2002	34.0	1.0
H. Holt/private well	April 2003	16.0	1.1
L. Holt/private well	October 25, 2000	1.2J	BDL
L. Holt/private well	October 2001	BDL	BDL
L. Holt/private well	May 2002	BDL	BDL
L. Holt/private well	October 2002	BDL	BDL
L. Holt/private well	April 2003	BDL	BDL
R. Holt/private well	November 2000	5.0	BDL
R. Holt/private well	January 2001	8.0	BDL
R. Holt/private well	October 2001	3.0	2.2
R. Holt/private well	May 2002	2.0	BDL
R. Holt/private well	October 2002	2.0	BDL
R. Holt/private well	April 2003	9.0	134
Sullivan Spring	March 5, 1994	18.0	5.0
Sullivan Spring	June 25, 1994	83.0	19.0
Sullivan Spring	September 1, 1994	59.0	9.8
Sullivan Spring	September 28, 1994	84.0	17.0
Sullivan Spring	May 22, 1995	31.0	6.8
Sullivan Spring	August 19, 1996	<5	<5
Sullivan Spring	December 3, 1996	<5	<5
Sullivan Spring	May 14, 1997	230.0	31.0
Sullivan Spring	August 26, 1999	160.0	39.0
Sullivan Spring	September 20, 2000	16.0	25.0
Sullivan Spring	May 2002	23.0	1.0
Sullivan Spring	November 2002	110.0	26.0
Sullivan Spring	April 2003	130.0	34.0

Source: Tetra Tech EM, Inc., *Dickson County Landfill Reassessment Report. A Report Prepared for the U.S. EPA, Region IV*. Atlanta: March 4, 2004, Table 2, p. 16

Dickson County officials even dug the white family a well to be used as an alternate water supply. The family was placed on the city tap water system after the new well was found to be contaminated. A total of nine tests were performed on the white family's spring between June 25, 1994 and September 20, 2000.[52] Three tests were performed in 1994, after the initial Mach 5, 1994 test turned up contamination in the spring. The spring was again tested in 1995, 1996 (two separate tests), 1997, 1999 and on September 20, 2000. Government tests were continued on the white family's spring even after its family members were placed on the city water system.

Treatment of White Families Near the Scovill-Schrader Site

According to an August 31, 1993 "Landowner Notification of TCE Contaminated Wells, Scovill-Schrader Site, Dickson, Tennessee" letter from the state, 29 residential water wells within a one-mile radius of the Scovill-Schrader Automotive Division Site in Dickson, Tennessee, were sampled for VOCs during May 11, 1993 through May 14, 1993 in accordance with Task 5 of the Phase II RCRA Facility Investigation. TCE was detected in the wells of nine white residents. The Scovill-Schrader site is located in the city of Dickson near a white neighborhood.

An August 31, 1993 letter has a detailed table that summarizes the steps taken to immediately notify the affected white residents and activities associated with providing temporary water supplies and permanent city utilities. The letter states:

> All of the residents with TCE detected in their wells were immediately contacted and all were provided bottled water for drinking and cooking within 48 hours. All other residents sampled within the one-mile radius were contacted and informed that the water samples taken indicated no problems with their water. In addition, all wells within the one-mile radius were re-sampled to verify the original water well sampling results. Residential wells within a one- to two-mile radius of the site were sampled during the month of July. Residents within the one- to two-mile radius will be contacted within the next week to inform them of the results of the last sampling event. It should be noted that all wells within the one- to two-mile radius were non-detectable for VOCs. A listing of the wells sampled within the one- to two-mile radius and date contacted to inform residents of the results will be under separate cover. As a precautionary measure, a water well sampling event is scheduled for the week of August 16, 1993 to re-sample selected wells near the wells found to contain TCE.[53]

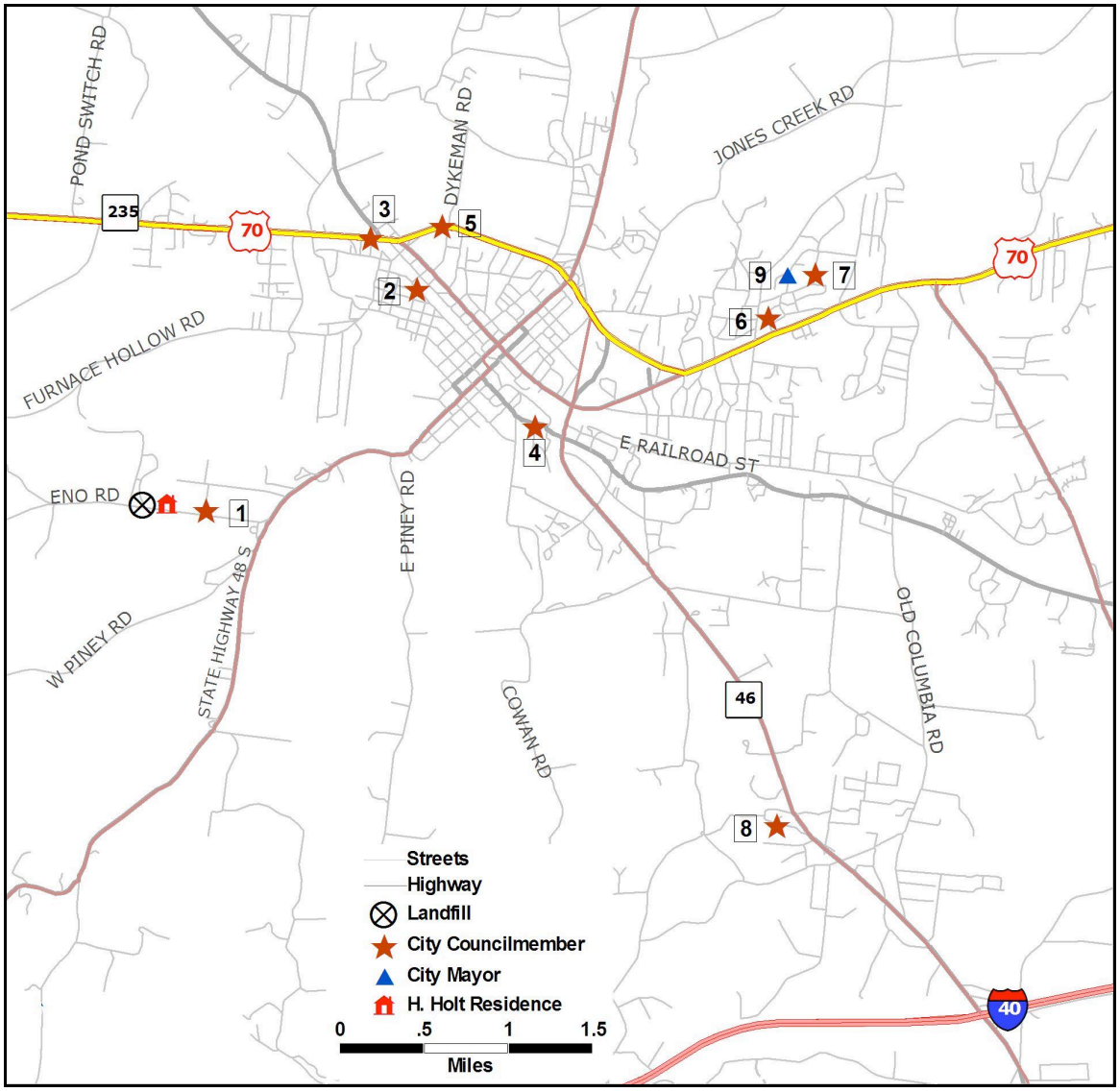
Clearly, the care and precaution that the government officials initiated to protect the health of the white families was not extended to the black Holt family. White families near the Scovill-Schrader site were provided swift response to toxic contamination emergencies, while the black family near the leaky landfill was made to wait. White families near the site were notified within 48 hours, provided with bottle water and placed on the city water system. On the other hand, the black family (Holts) whose property line was just 54 feet from the landfill was allowed to drink TCE-contaminated well water for twelve years after it was first discovered by the government in 1988.

Proximity of Dickson County Landfill to Elected Officials' Homes

Dickson city and county officials have the power to right a terrible injustice. However, the elected officials have chosen instead to use tax dollars to fight the family its landfill poisoned. It appears that "NIMBY" (Not in My Backyard) is being practiced by these officials. Harry Holt's property line is just 54 feet from the landfill property line. His well is 313 feet from the landfill property line.

How far is the landfill from city and county officials' homes? Only one Dickson City council member's home is within a one-mile radius of the landfill. Five of the eight city council members' homes are more than two miles from the landfill. The Dickson Mayor lives 3.85 miles from the landfill (see Figure 7.1 and Table 7.3).

Figure 7.1 – Map of Dickson City Officials and Proximity to Dickson County Landfill



Dickson County elected officials live even farther away from the leaky landfill than their Dickson City counterparts. Two county commissioners' homes are within two miles of the landfill; three commissioners live three to four miles from the landfill; and seven of the twelve county commissioners' homes are six or more miles from the landfill. Two of the commissioners live more than fifteen miles from the landfill. The county mayor lives three miles from the landfill (see Figure 7.2 and Table 7.4).

Conclusion

A major part of *Toxic Wastes and Race at Twenty* involved plotting the location of hazardous waste sites and the socio-demographic composition of the host communities. The Dickson County Landfill and the Harry Holt family case study was used to put a human face on the *Toxic Wastes and Race at Twenty* report. Clearly, Dickson, Tennessee, is the "poster child" for environmental racism and toxic dumping. The Holt family is paying the ultimate price with their health. Is the health of white families given higher value than the health of black families in Dickson County, Tennessee? Are health and environmental laws

applied differently to protect white and black families in Dickson County? These two questions form the heart of the Holt family's claim of environmental racism. It is clear from reams of government records that all levels of government failed the Harry Holt family.

Even having the facts was not sufficient to get government to respond in a timely manner to protect black families threatened by contamination in their drinking water. White and black families were treated differently. This differential treatment resulted in the African American Holt family experiencing prolonged exposure to contaminated drinking water and subjected them to unnecessary health risks.

Table 7.3
Distance Dickson City Officials Homes to the Dickson County Landfill

City Official	Home Address	Ward Number	Distance to Landfill (Miles)
1. R. Arnold	119 Edgewood Pl. Dickson, TN	2	0.33
2. J.R. Monsue	702 West 3rd St. Dickson, TN	3	1.85
3. M. Corlew	105 Marley Dr. Dickson, TN	3	1.95
4. R. Blue	115 Miller St. Dickson, TN	4	2.22
5. R.S. England	711 Henslee Dr. Dickson, TN	2	2.30
6. B. Rial	106 Forest Hills Circle Dickson, TN	1	3.65
7. M. Legg	105 Steven Nicks Dr. Dickson, TN	1	4.04
8. J. Jennings	122 Shady Brook Circle Dickson, TN	4	4.10
9. D. Weiss, Jr.	100 Belford Dickson, TN	Mayor	3.85

Source: City of Dickson, Tennessee, "City Council," found at http://cityofdickson.com/Council.aspx (Accessed March 15, 2006).

Various levels of government acted promptly to protect the rights (and health) of white families but failed to protect the rights of black families. Nearly 150 years after the infamous *Scott v. Painter* U.S. Supreme Court Decision in 1857, Harry Holt understood how Dred Scott must have felt when the high court judges ruled, "No black man has any rights that any white man is bound to respect,"[54] and when the high court judges 40 years later, in 1896, told Homer Plessy, in the infamous *Plessy v. Ferguson* case, that codified "separate but equal" and "Jim Crow" segregation, to pay his full-fare but get on the "back of the train."[55] Harry Holt's 2003 lawsuit was still pending in court when he died on January 9, 2007. Mr. Holt was 66 years old and had lived in the Eno Road community all his life.

Because of overt and intentional discrimination by the city of Dickson, County of Dickson, State of Tennessee, and the federal EPA against the Holt family, their health was adversely affected, their property and land devalued, and their wealth diminished. Generations of Holts survived the horrors of post-slavery racism and "Jim Crow" segregation, but may not survive the toxic assault and contamination from the Dickson County Landfill.

Policy Recommendations

Because of the urgency of the environmental health disaster created by the Dickson County Landfill and government inaction, we are making the following recommendations to government and nongovernmental organizations:

Government

1. The Dickson County Commissioners immediately close all solid waste operations (recycling center, garbage transfer station and Class VI Construction and Demolition landfill) at the facility on Eno Road.
2. State of Tennessee institute a moratorium on the siting and permitting of waste facilities and other polluting facilities in the Dickson Eno Road community.
3. Require the federal EPA and the State of Tennessee to clean up the contamination caused by the Dickson County Landfill under the Resource Conservation and Recovery Act (RCRA) Corrective Action Program, a law passed by Congress compelling responsible parties to address the investigation and clean-up of hazardous releases themselves.
4. The U.S. Congress hold hearings on the EPA handling of the Dickson County Landfill and the treatment of black and white families whose private wells and springs were contaminated by the leaky landfill.
5. The U.S. EPA Office of Inspector General (OIG) conduct an independent study of the Dickson County Landfill Superfund site evaluation and hold hearings on the treatment of the Holt family and the African American community on Eno Road in Dickson, Tennessee, per EPA's requirements under the 1994 Environmental Justice Executive Order 12898.
6. The U.S. Department of Justice, Office of Civil Rights conduct an investigation of the City of Dickson, County of Dickson, and State of Tennessee handling of the contamination in the Holt family wells and the protection of their civil rights.

Nongovernmental Organizations

1. The national environmental and environmental justice groups "adopt" the Holt family and the Eno Road community as the "poster child" for environmental racism and use their political and economic clout to pressure the city, county and federal agencies to repair the harm done to the Holts and to the Eno Road community.
2. The environmental justice, legal, health and medical, scientific, education, civil rights and religious community converge on Dickson, Tennessee, to hold a series of national demonstrations to dramatize environmental racism with the goal of making Dickson County the "Warren County" of the 2000s.

Figure 7.2 – Map of Dickson County Officials and Proximity to Dickson County Landfill

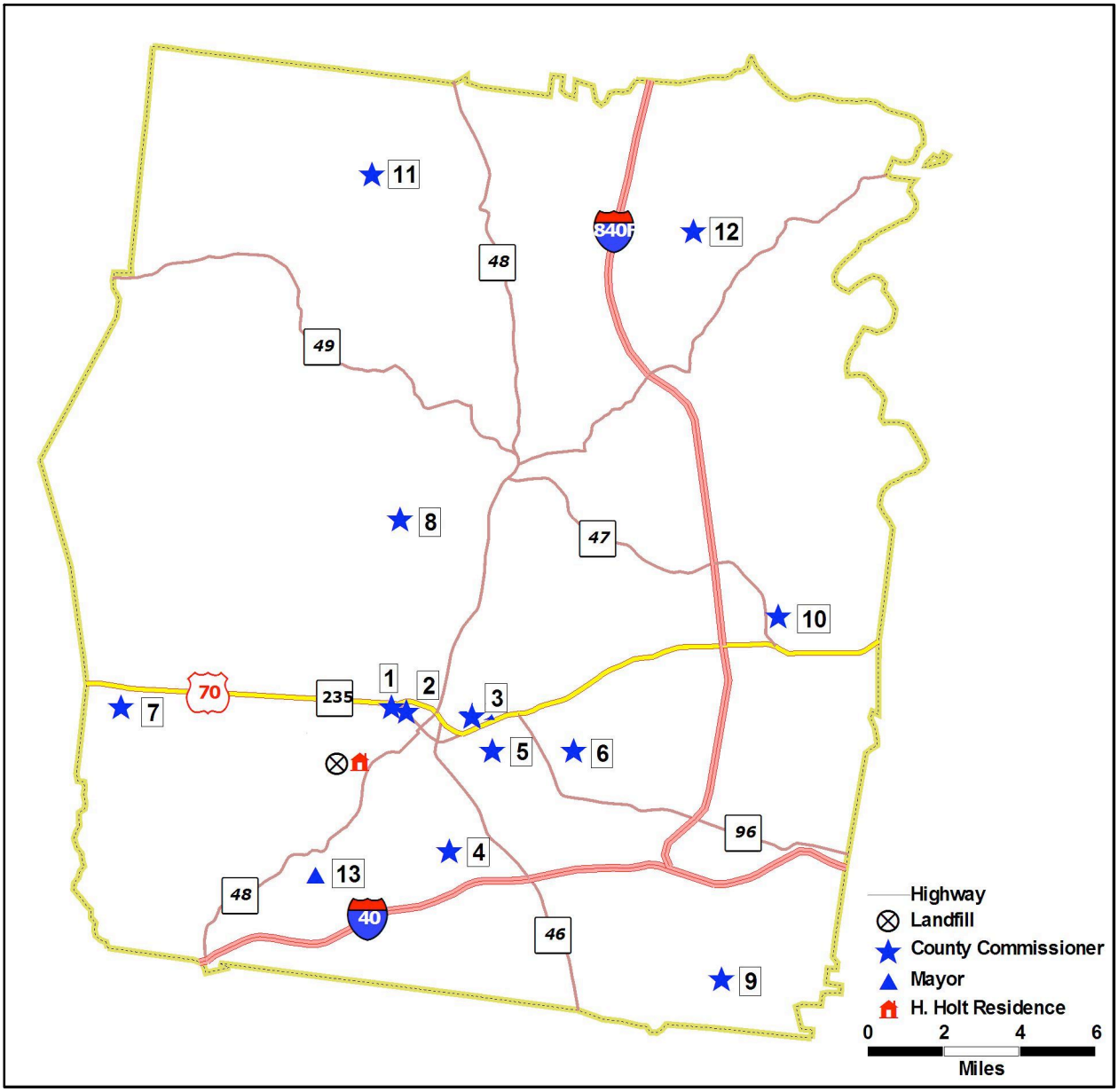


Table 7.4
Distance Dickson County Officials Homes to the Dickson County Landfill

City Official	Home Address	District Number	Distance to Landfill (Miles)
1. D. Corlew	1006 West 1st Street Dickson, TN	8	1.79
2. D. England	615 W. College St. Dickson, TN	9	1.95
3. B. Reed	108 Lone Oak Dr. Dickson, TN	10	3.55
4. V. Gray	665 Murrell Rd. Dickson, TN	7	3.70
5. D. Tidwell	209 Robinson Dr. Dickson, TN	11	4.00
6. J. Loggins	345 Loggins Rd. Burns, TN	12	6.00
7. R. Wetterau	325 McElhiney Rd. Dickson, TN	2	6.17
8. S. Batey	1128 Old Stage Rd. Dickson, TN	1	6.42
9. B. Spencer	885 Tidwell Rd. Burns, TN	6	11.50
10. G. Larkin	315 School Rd. White Bluff, TN	5	11.88
11. G. Suggs	2645 Wood Valley Rd. Cumberland Furnace, TN	3	15.40
12. J.B. Smith	1765 Maple Valley Rd. Charlotte, TN	4	16.50
13. L. Frazier	825 North Mount Sinai Rd. Dickson, TN	Mayor	3.00

Source: Dickson County Chamber of Commerce, "County Offices, Elected Officials and County Offices," found at http://www.dicksoncountychamber.com/community/offices.html (accessed February 26, 2006).

End Notes

[1] Luke W. Cole and Sheila R. Foster, *From the Ground Up: Environmental Racism and the Rise of the Environmental Justice Movement*. New York: New York University Press, 2001; Laura Westra, Bill E. Lawson and Peter S. Wenz, *Faces of Environmental Racism: Confronting Issues of Global Justice.* Lanham, MD: Rowan & Littlefield, 2nd. ed., 2001.
[2] See Robert D. Bullard, ed*., Confronting Environmental Racism: Voices from the Grassroots*. Boston: South End, 1993; Robert D. Bullard, "The Threat of Environmental Racism," *Natural Resources & Environment* 7 (Winter 1993): 23-26; Bunyan Bryant and Paul Mohai, eds., *Race and the Incidence of Environmental Hazards.* Boulder, CO: Westview Press, 1992; Rachel D. Godsil, "Remedying Environmental Racism." *Michigan Law Review* 90 (1991): 394-427.
[3] Devon Pena, The Terror of the Machine: Technology, Work, Gender & Ecology on the U.S. – Mexico Border. Austin, Texas: The Center for Mexican American Studies, University of Texas, Austin, 1996; Davis Naguib Pellow, *Garbage Wars: The Struggle for Environmental Justice in Chicago*. Cambridge, MA: MIT Press, 2002; Ike Okonta and Oronto Douglas, Where Vultures Feast: Shell, Human Rights and Oil. New York: Verso, 2003; Mario Murillo, *Island of Resistance: Vieques, Puerto Rico, and U.S. Policy*. New York: Seven Stories Press, 2001.
[4] See Bullard and Feagin, "Racism and the City," pp. 55-76; Robert D. Bullard, "Dismantling Environmental Racism in the USA," *Local Environment* 4 (1999): 5-19
[5] See W. J. Kruvant, "People, Energy, and Pollution." Pp. 125-167 in D. K. Newman and Dawn Day, eds., *The American Energy Consumer*. Cambridge, Mass.: Ballinger, 1975; Robert D. Bullard, "Solid Waste Sites and the Black Houston Community." *Sociological Inquiry* 53 (Spring 1983): 273-288; United Church of Christ Commission for Racial Justice, *Toxic Wastes and Race in the United States*. New York: Commission for Racial Justice, 1987; Dick Russell, "Environmental Racism." *The Amicus Journal* 11 (Spring 1989): 22-32; Eric Mann*, L.A.'s Lethal Air: New Strategies for Policy, Organizing, and Action*. Los Angeles: Labor/Community Strategy Center, 1991; D. R. Wernette and L. A. Nieves, "Breathing Polluted Air: Minorities are Disproportionately Exposed." *EPA Journal* 18 (March/April 1992): 16-17; Bryant and Mohai, *Race and the Incidence of Environmental Hazards*; Benjamin Goldman and Laura J. Fitton, *Toxic Wastes and Race Revisited*. Washington, DC: Center for Policy Alternatives, NAACP and United Church of Christ, 1994.
[6] Patrick C. West, J. Mark Fly and Robert Marans, "Minority Anglers and Toxic Fish Consumption: Evidence from a State-Wide Survey in Michigan." In Bryant and Mohai*, Race and the Incidence of Environmental Hazards*, pp. 100-113;
[7] Robert D. Bullard, "Solid Waste Sites and the Black Houston Community." *Sociological Inquiry* 53 (Spring 1983): 273-288; Robert D. Bullard*, Invisible Houston: The Black Experience in Boom and Bust*. College Station, TX: Texas A&M University Press, 1987, chapter 6; Robert D. Bullard, "Environmental Racism and Land Use." *Land Use Forum: A Journal of Law, Policy & Practice* 2 (Spring 1993): 6-11.
[8] United Church of Christ Commission for Racial Justice, *Toxic Wastes and Race*; Paul Mohai and Bunyan Bryant, "Environmental Racism: Reviewing the Evidence." in Bryant and Mohai, *Race and the Incidence of Environmental Hazards*; Paul Stretesky and Michael J. Hogan, "Environmental Justice: An Analysis of Superfund Sites in Florida," *Social Problems* 45 (May 1998): 268-287.
[9] Center for Health and Environmental Justice, *Poisoned Schools: Invisible Threats, Visible Actions*. Falls Church, VA: Child Proofing Our Communities - Poisoned School Campaign, Center for Health, Environment and Justice, March 2001. Also found at http:www.childproofing.org/mapindex.html.
[10] "Study: Public Housing is too Often Located Near Toxic Sites." CNN.com, October 3, 2000, http://www.cnn.com/2000/NATURE/10/03/toxicneighbors.ap/ (accessed on December 1, 2006)
[11] J. Sadd and M. Pastor, "Every Breath You Take.:The Demographics of Toxic Air Releases in Southern California," *Economic Development Quarterly* 13 (1999): 107-123.
[12] Charles M. Haar and Jerold S. Kayden, eds., *Zoning and the American Dream: Promises Still to Keep*. Chicago: American Planning Association, 1999.
[13] See Robert D. Bullard, *Unequal Protection: Environmental Justice and Communities of Color.* San Francisco: Sierra Club Books, 1994.
[14] National Academy of Public Administration, *Addressing Community Concerns: How Environmental Justice Relates to Land Use Planning and Zoning*. Washington, DC: NAPA (July, 2003), p. 50.

[15] Juliana Maantay, "Zoning Law, Health, and Environmental Justice: What's the Connection?" *Journal of Law, Medicine & Ethics* 30, no. 4 (Winter 2002), p. 572.
[16] Yale Rabin, "Expulsive Zoning: The Inequitable Legacy of Euclid," in Charles M. Haar and Jerold S. Kayden, eds., *Zoning and the American Dream: Promises Still to Keep*. Chicago: American Planning Association, 1999, pp. 106-108.
[17] Ibid., p. 25.
[18] See Manuel Pastor Jr., Jim Sadd and John Hipp, "Which Came First" Toxic Facilities, Minority Move-Ins, and Environmental Justice," *Journal of Urban Affairs* 23, no. 1 (2001), p. 3; also Daniel R. Faber and Eric J. Krieg, *Unequal Exposure to Ecological Hazards: Environmental Justice in the Commonwealth of Massachusetts.* Boston: Northeastern University, 2001.
[19] U.S. Bureau of Census, State and County QuickFacts, 2000, http://quickfacts.census.gov/qfd/states/47/47043.html, (accessed on December 1, 2006).
[20] Property Deed, Dickson County, State of Tennessee, September 22, 1956.
[21] Tetra Tech EM Inc., *Dickson County Landfill Reassessment Report. A Report Prepared for the U.S. EPA, Region IV*. Atlanta: March 4, 2004.
[22] Ibid, p. 15.
[23] Haliburton NUS Environmental Corporation, *Final Report: Site Inspection Dickson County Landfill, Dickson, Dickson County, Tennessee*. A report prepared for the U.S. EPA (October 10, 1991), p. ES-1.
[24] Ibid., p. 9.
[25] Ibid., p. 17.
[26] Ibid., p. 31.
[27] Ibid., p. 17.
[28] Tetra Tech EM Inc., *Dickson County Landfill Reassessment Report,* p. 19.
[29] Ibid., p. 51.
[30] U.S. Bureau of the Census, "State & County QuickFacts: Dickson County Tennessee," http://quickfacts.census.gov/qfd/states/47/47043.html, (accessed on December 1, 2006)
[31] Bob Herbert, "Poisoned on Eno Road," *The New York Times,* October 2, 2006.
[32] Holly Edwards, "Family Blames Health Woes on Dickson's Landfill," *Dickson Herald*, September 2, 2003.
[33] Letter from Mark McWhorter, Division of Solid Waste, Tennessee Department of Health and Environment sent to Harry Holt and Lavenia Holt, December 8, 1988.
[34] See Agency for Toxic Substances and Disease Registry (ATSDR), *Managing Hazardous Materials Incidents. Volume III – Medical Management Guidelines for Acute Chemical Exposures: Trichloroethylene (TCE)*. Atlanta, GA: U.S. Department of Health and Human Services, Public Health Service, 2003; Ginger L. Gist and JoAnne R. Burg, "Trichloroethylene: Review of the Literature in View of the Results of the Trichloroethylene Subregistry Results," http://iier1.isciii.es/NER/TCE/a6rev.html (accessed on December 2, 2006).
[35] Appendix B Chronology of Events – Dickson County Landfill Appendix B (Dickson County Landfill Reassessment Report), pp. B3-B4.
[36] Letter from Wayne Aronson, Acting Chief Drinking Water Section, Municipal Facilities Branch, U.S. EPA to Mr. Harry Holt, December 3, 1991.
[37] Ibid.
[38] Letter from Thomas A. Moss, Manager, Ground Water Management Section, Tennessee Division of Water Supply, Tennessee Department of Conservation, to Nathan Sykes, Drinking Water Section, Municipal Facilities Branch, U.S. EPA, Region IV, December 17, 1991.
[39] Letter from Tom Moss, DWS, Ground Water Management Section, Tennessee Department of Health and Environment to Dickson County File, DWS, January 6, 1992.
[40] Memorandum written by Debbie Sanders, Division of Solid Waste Management, Nashville Filed Office, Tennessee Department of Health and Environment, February 12, 1992.
[41] Debbie Sanders, Division of Solid Waste Management, Tennessee Department of Environment and Conservation, March 13, 1992.
[42] See Tetra Tech EM Inc., *Dickson County Landfill Reassessment Report*, p. 28.
[43] Appendix B, "Chronology of Event, Dickson County Landfill," pp. B-14-15.
[44] Gresham Smith and Partners, *USGS Dye Tracer Study: Summary and Results of Dye-Tracer Tests Conducted at the Dickson County Landfill, Tennessee, 1997 and 1998, Appendix B, April 2000*, p. 2.

[45] Tetra Tech EM Inc., *Dickson County Landfill Reassessment Report*, p. 28.
[46] Tennessee Department of Environment and Conservation, "Community Meeting Questions and Answers," http://www.state.tn.us/environment/swm/ppo/response.pdf, (accessed on December 3, 2006).
[47] Katrina Cornwell, "County Commission Tables Decision to Pay Families' Water Bills," *The Dickson Herald (Tennessee)*, June 9, 2004, http://www.dicksonherald.com/news/stories/20040609/waterbills.shtml (accessed on October 17, 2005).
[48] Katrina Cornwell, "Contamination Problems Date Back Almost 40 Years," Dickson Herald, October 2, 2003, http://www.dicksonherald.com/news/stories/20031003/1003_timeline.shtml, (accessed on December 3, 2006).
[49] Patricia Lynch Kimbro, "County, city settle landfill lawsuits with families," *The Dickson Herald*, November 7, 2006.
[50] Tetra Tech EM Inc., *Dickson County Landfill Reassessment Report. A Report Prepared for the U.S. EPA, Region IV*. p. 28.
[51] Letter from C. Jason Repsher, Geologist, Division of Solid Waste Management, Tennessee Department of Environment and Conservation to Mrs. Ann Sullivan, September 8, 1994.
[52] Tetra Tech EM Inc., *Dickson County Landfill Reassessment Report*, p. 27.
[53] Letter from Patricia Thompson to Claudia Brand, ICF Kaiser, August 31, 1993, pp. 1-2.
[54] See "Scott v. Sandford," *Wikipedia: The Free Encyclopedia*, http://en.wikipedia.org/wiki/Dred_Scott_v._Sandford (accessed on December 26, 2006).
[55] "Plessy v. Ferguson," *Wikipedia: The Free Encyclopedia*, http://en.wikipedia.org/wiki/Plessy_v._Ferguson (accessed on December 26, 2006).

Chapter 8
Conclusions and Recommendations

The environmental justice movement emerged in response to environmental inequities, threats to public health, unequal protection, differential enforcement and disparate treatment received by the poor and people of color. The movement redefined environmental protection as a basic right. It also emphasized pollution prevention, waste minimization and cleaner production techniques as strategies to achieve environmental justice for all Americans without regard to race, color, national origin or income.

The movement set out clear goals of eliminating unequal enforcement of environmental, civil rights and public health laws. It also targeted differential exposure of vulnerable populations to harmful chemicals, pesticides and other toxins in the home, school, neighborhood and workplace—and challenged faulty assumptions in calculating, assessing and managing risks, discriminatory zoning and land-use practices, and exclusionary policies and practices that limit low-income persons and people of color from participation in decision making. Many of these problems could be eliminated if current environmental, health, housing, land use and civil rights laws were vigorously enforced in a nondiscriminatory way.

This new report includes the first national-level study to employ the 2000 census and distance-based methods to a current database of commercial hazardous waste facilities to assess the extent of racial and socioeconomic disparities in facility locations in the U.S. Prior national-level studies have gone no further than determining whether hazardous waste facilities and census tracts (or zip code areas) are coincident. Distance-based methods on the other hand take into account precise geographic locations. In this study precise geographic locations were determined for all commercial hazardous waste facilities operating in the U.S. at the time the 2000 Census was taken. Using distance-based methods, the racial and socioeconomic characteristics of all neighborhoods within 3 kilometers (1.8 miles) of these locations were assessed.

Key Findings

The application of these new methods for assessing environmental injustices, which better match where people and hazardous sites are located, reveals that racial disparities in the distribution of commercial hazardous wastes are greater than previously reported. In fact, these distance-based methods show that people of color make up the majority of those living in host neighborhoods within 3 kilometers of the nation's hazardous waste facilities. Moreover, evidence is clear that racial disparities in the location of hazardous waste sites are prevalent throughout the country and among different racial/ethnic groups.

National Disparities

For 2007, host neighborhoods with commercial hazardous waste facilities are 56% people of color whereas non-host areas are 30% people of color. Thus, percentages of people of color as a whole are 1.9 times greater in host neighborhoods than in non-host areas. Percentages of African Americans, Hispanics/Latinos and Asians/Pacific Islanders in host neighborhoods are 1.7, 2.3 and 1.8 times greater in host neighborhoods than non-host areas (20% vs. 12%, 27% vs. 12% and 6.7% vs. 3.6%), respectively. These racial disparities are statistically significant at a 0.001 level, i.e., there is less than 1 chance in 1000 that they are due to random chance.

Poverty rates in the host neighborhoods are 1.5 times greater than non-host areas (18% vs. 12%) and mean annual household incomes in host neighborhoods are 15% lower ($48,234 vs. $56,912). Mean owner-occupied housing values are also disproportionately low in neighborhoods with hazardous waste facilities. These socioeconomic disparities are also significant at a 0.001 level. Depressed economic conditions characterize host neighborhoods of the nation's hazardous waste facilities.

Neighborhoods with Clustered Facilities

Neighborhoods with clustered facilities have higher percentages of people of color than those with non-clustered facilities (69% vs. 51%). Likewise, neighborhoods with clustered facilities have disproportionately high poverty rates. These differences are statistically significant at a 0.001 level.

Percentages of African Americans and Hispanics in the neighborhoods with clustered facilities are significantly higher than neighborhoods with non-clustered facilities (29% vs. 16% and 33% vs. 25%, respectively).

Clustered facility neighborhoods have higher poverty rates than non-clustered facility neighborhoods (22% vs. 17%). Mean household incomes are 10% lower in neighborhoods with clustered facilities ($44,600 vs. $49,600), and mean housing values are 14% lower ($121,200 vs. $141,000).

Because people of color and the poor are highly concentrated in neighborhoods with multiple facilities, they continue to be particularly vulnerable to the various negative impacts of hazardous waste facilities.

EPA Regional Disparities

Racial disparities for people of color as a whole exist in nine out of 10 EPA regions (all except Region 3) and are statistically significant at the 0.001 level. Disparities in people of color percentages between host neighborhoods and non-host areas are greatest in: Region 1, the Northeast (36% vs. 15%); Region 4, the southeast (54% vs. 30%); Region 5, the Midwest (53% vs. 19%); Region 6, the south (63% vs. 42%); and Region 9, the southwest (80% vs. 49%).

Seven EPA regions have statistically significant disparities in Hispanic or Latino percentages, seven EPA regions have statistically significant disparities in African American percentages and six EPA regions have statistically significant disparities in percentages of Asians/Pacific Islanders.

Differences in poverty rates between hazardous waste host neighborhoods and non-host areas are greatest for Region 1 (16% vs. 8.7%), Region 2 (19% vs. 12%), Region 5 (19% vs. 9.6%), Region 7 (15% and 10%), Region 8 (15% and 10%) and Region 9 (21% vs. 13%). Socioeconomic disparities are statistically significant in nine of 10 EPA regions, all except Region 9.

Disproportionately high percentages of people of color are found in 7 of the 9 regions with clustered facility neighborhoods. Differences between clustered and non-clustered facility neighborhoods are greatest in Region 5 (62% and 46%), Region 7 (59% vs.25%), Region 8 (55% vs. 26%) and Region 9 (89% vs. 75%). Regions 1, 3 and 4 also have large disparities between clustered and non-clustered facility neighborhoods.

In sum, racial disparities in the location of the nation's commercial hazardous waste facilities exist in nine of 10 EPA regions. For Hispanics, African Americans and Asians/Pacific Islanders, statistically significant disparities exist in the majority or vast majority of EPA regions. Moreover, the pattern of people of color being especially concentrated in areas where facilities are clustered is also geographically widespread throughout the country.

State Disparities

Alaska, Delaware, Hawaii, New Hampshire, Montana, Wyoming and the District of Columbia did not have licensed and operating commercial hazardous waste facilities in 1999. Forty of the remaining 44 states (90%) with facilities have disproportionately high percentages of people of color in circular host neighborhoods within 3 km. of the facilities – on average about two times greater than the percentages in non-host areas (44% vs. 23%). Host neighborhoods in 19 states are majority people of color.

States with the 10 largest differences in people of color percentages between host neighborhoods and non-host areas include (in descending order by the size of the differences): Michigan (66% vs. 19%),

Nevada (79% vs. 33%), Kentucky (51% vs. 10%), Illinois (68% vs. 31%), Alabama (66% vs. 31%), Tennessee (54% vs. 20%), Washington (53% vs. 20%), Kansas (47% vs. 16%), Arkansas (52% vs. 21%) and California (81% vs. 51%). Differences in these percentages range from a high of 47% for Michigan to 30% for California. For both California and Nevada, people of color percentages in host neighborhoods are about 80%. For three additional states, Illinois, Alabama, and Michigan, people of color make up a two-thirds or more majority in these neighborhoods. Arizona and Texas also have nearly two-thirds majorities in host neighborhoods.

Host neighborhoods in Arizona, California and Nevada are majority Hispanic or Latino. Other states with very large disparities in Hispanic or Latino percentages include: Colorado, Connecticut, Florida, Illinois, Kansas and Utah. Differences in these percentages between host neighborhoods and non-host areas range from a high of 32% for Nevada to 13% for Kansas. Twenty-five other states have disparities in Hispanic percentages.

Host neighborhoods in Alabama and Michigan are majority African American. Other states with very large disparities in African American percentages: Arkansas, Illinois, Kentucky, Nevada, North Carolina, Ohio, Tennessee and Wisconsin. Among these 10 states, differences in African American percentages between host neighborhoods and non-host areas range from a high of 46% for Michigan to 19% for Nevada. Twenty-eight other states have African American disparities.

The state of Washington has the largest disparity in the percentage of Asians/Pacific Islanders (26% vs. 5.6%). Some of the other 20 states with Asian/Pacific Islander disparities include California, Massachusetts, Minnesota, New York, Oregon, Rhode Island and Utah.

Thirty-five states have socioeconomic disparities, i.e., in poverty rates. In these states, the average poverty rate in host neighborhoods is 18% compared to 12% in non-host areas.

In sum, racial disparities in the location of the nation's commercial hazardous waste facilities exist in 9 of 10 EPA regions. For Hispanics, African Americans and Asians/Pacific Islanders, statistically significant disparities exist in the majority or vast majority of EPA regions. Moreover, the pattern of people of color being especially concentrated in areas where facilities are clustered is also geographically widespread throughout the country.

Metropolitan Disparities

In metropolitan areas, people of color percentages in hazardous waste host neighborhoods are significantly greater than those in non-host areas (57% vs. 33%). Likewise, the nation's metropolitan areas show disparities in percentages of African Americans, Hispanics/Latinos and Asians/Pacific Islanders, 20% vs. 13%, 27% vs. 14% and 6.8% vs. 4.4%, respectively. Socioeconomic disparities exist between host neighborhoods and non-host areas, with poverty rates of 18% vs. 12%, respectively.

One hundred and five of the 149 metropolitan areas with facilities (70%) have host neighborhoods with disproportionately high percentages of people of color, and 46 of these metro areas (31%) have majority people of color host neighborhoods.

Host neighborhoods in the 10 metropolitan areas with the largest number of people of color living in the host areas have a total of 3.12 million people of color, which is 60% of the total population of people of color in all hazardous waste host neighborhoods in the country (5.16 million). Six metropolitan areas account for half of all people of color living in close proximity to all the nation's commercial hazardous waste facilities– Los Angeles, New York, Detroit, Chicago, Oakland and Orange County, CA. Los Angeles alone accounts for 21% of the people of color in host neighborhoods nationally.

In sum, significant racial disparities exist within the nation's metropolitan areas, where four of every five hazardous waste facilities are located.

Continuing Significance of Race

In 1987, *Toxic Waste and Race in the United States* found race to be more important than socioeconomic status in predicting the location of the nation's commercial hazardous waste facilities. In 2007, our current study results show that race continues to be a significant and robust predictor of commercial hazardous waste facility locations when socioeconomic and other non-racial factors are taken into account. A separate analysis of metropolitan areas alone produces similar results.

Conclusions

Twenty years after the release of *Toxic Wastes and Race, s*ignificant racial and socioeconomic disparities persist in the distribution of the nation's commercial hazardous waste facilities. Although the current assessment uses newer methods that better match where people and hazardous waste facilities are located, the conclusions are very much the same as they were in 1987. In fact, people of color are found to be more concentrated around hazardous waste facilities than previously shown.

Race matters. People of color and persons of low socioeconomic status are still disproportionately impacted and are particularly concentrated in neighborhoods and communities with the greatest number of facilities. Race continues to be an independent predictor of where hazardous wastes are located, and it is a stronger predictor than income, education and other socioeconomic indicators. Indeed, a watershed moment has occurred in the last decade. People of color now comprise a majority in neighborhoods with commercial hazardous waste facilities, and much larger (more than two-thirds) majorities can be found in neighborhoods with clustered facilities. People of color in 2007 are more concentrated in areas with commercial hazardous sites than in 1987. African Americans, Hispanics/Latinos and Asian Americans/Pacific Islanders alike are disproportionately burdened by hazardous wastes in the U.S.

Race maps closely with the geography of pollution. The findings in our new report are consistent with a September 2005 Associated Press (AP) study showing African Americans were more than twice as likely as white Americans to live in neighborhoods where air pollution seems to pose the greatest health danger. Hispanics and Asian also were more likely to breathe dirty air in some regions of the United States. However, toxic chemical assaults are not new for many people of color who are forced to live next to and often on the fence line with chemical industries that spew their poisons into the air, water and ground.

Place matters. People of color are particularly concentrated in neighborhoods and communities with the greatest number of hazardous waste facilities, a finding that directly parallels that of the original UCC report. This current appraisal also reveals that racial disparities are widespread throughout the country – whether one examines EPA regions, states or metropolitan areas, where the lion's share of facilities is located. Significant racial and socioeconomic disparities exist today despite the considerable societal attention to the problem noted in previous chapters. These findings raise serious questions about the ability of current policies and institutions to adequately protect people of color and the poor from toxic threats.

Unequal protection places communities of color at special risk. Not only are people of color differentially impacted by toxic wastes and contamination, they can expect different responses from the government when it comes to remediation—as clearly seen in the two case studies in Post-Katrina New Orleans and in Dickson County, Tennessee. Thus, it does not appear that existing environmental, health, and civil rights laws and local land use controls have been adequately applied or adapted to reducing health risks or mitigating various adverse impacts to families living in or near toxic "hot spots."

Polluting industries still follow the path of least resistance. For many industries, it is a "race to the bottom," where land, labor and lives are cheap. It's about profits and the "bottom line." Environmental "sacrifice zones" are seen as the price of doing business. Vulnerable communities, populations and individuals often fall between the regulatory cracks. They are in many ways "invisible" communities. The environmental justice movement served to make these disenfranchised communities visible and vocal.

The current environmental protection apparatus is "broken" and needs to be "fixed." The current environmental protection system fails to provide equal protection to people of color and low-income communities. Various levels of government have been slow to respond to environmental health threats from toxic waste in communities of color. The mission of the U.S. EPA was never designed to address environmental policies and practices that result in unfair, unjust and inequitable outcomes. The impetus for changing the dominant environmental protection paradigm did not come from within regulatory agencies, the polluting industry, academia or the "industry" that has been built around risk management. The impetus for change came from grassroots mobilization that views environmental protection as a basic right, not a privilege reserved for a few who can "vote with their feet" and escape from or fend off locally undesirable land uses or LULUs—such as landfills, incinerators, chemical plants, refineries and other polluting facilities.

Slow government response to environmental contamination and toxic threats unnecessarily endangers the health of the most vulnerable populations in our society. Government officials have knowingly allowed people of color families near Superfund sites and other contaminated waste sites to be poisoned with lead, arsenic, dioxin, TCE, DDT, PCBs and a host of other deadly chemicals. Having the facts and failing to respond is tantamount to an immoral "human experiment."

Clearly, the environmental justice movement over the last two decades has made a difference in the lives of people of color and low-income communities that are overburdened with environmental pollution. After years of intense study, targeted research, public hearings, grassroots organizing, networking and movement building, environmental justice struggles have taken center stage. Yet, all communities are still *not* created equal. People of color neighborhoods are still the dumping grounds for all kinds of toxins. Federal agencies such as the EPA have dropped the ball in implementing environmental justice and civil rights policies and programs that could truly make a difference to affected communities.

Community leaders who have been on the front line for justice for decades know that the lethargic, and too often antagonistic, government response to environmental emergencies in their communities is not the exception, but the general rule. They have come to understand that waiting for the government to respond can be hazardous to their health and the health of their communities. Many of these leaders are not waiting, but are mobilizing to force all levels of government to do the right thing—and do it in a timely manner before disaster strikes.

While communities all across the nation celebrate the twentieth anniversary of *Toxic Wastes and Race* and the new report, they know all too well that there is still much work to be done before we achieve the goal of environmental justice for all. While much progress has been made in mainstreaming environmental protection as a civil rights, human rights and social justice issue, the key is getting government to enforce the laws and regulations equally across the board—without regard to race, color or national origin.

Getting government to respond to the needs of low-income and people of color communities has not been easy, especially in recent years when the United States Environmental Protection Agency, the governmental agency millions of Americans look to for protection, has mounted an all-out attack on environmental justice and environmental justice principles established in the early 1990s. It has not been easy fending off attacks and proposals from the EPA that would dismantle or weaken the hard-fought gains made by individuals and groups that put their lives on the front line. Moreover, the agency has failed to implement the Environmental Justice Executive Order 12898 signed by President Bill Clinton in 1994 or apply Title VI of the Civil Rights Act.

Recommendations

Many of the environmental injustice problems that disproportionately and adversely affect low-income and people of color communities could be eliminated if current environmental, health, housing, land use and civil rights laws were vigorously enforced in a nondiscriminatory way. Many of the environmental problems facing low-income persons and people of color are systemic and will require institutional change, including new legislation. We also recognize that government alone cannot solve these problems but need the support and assistance of concerned individuals, groups and organizations from various

walks of life. The following recommendations are offered:

Congressional Actions

Codify Environmental Justice Executive Order 12898. In order to strengthen compliance and enforcement of environmental justice objectives at the federal level, ensure that discriminatory agency decisions and actions are addressed, and to provide clear leadership to the states, Congress should codify into law Executive Order 12898 "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations." By codifying the Executive Order, Congress will establish an unequivocal legal mandate and impose federal responsibility in ways that advance equal protection under law in communities of color and low-income communities. Executive Order 12898 provides significant impetus at the federal level and in the states. However, arguably the power of the Executive Branch alone is limited. Enacting a law which codifies the government's role in achieving environmental justice, expands the original list of seventeen agencies required to comply and establishes annual reports to Congress that would pave the way to government-wide action and provide a means of accountability.

Provide Legislative "Fix" for Title VI of the Civil Rights Act of 1964. Work toward a legislative "fix" of Title VI of the Civil Rights Act of 1964 that was gutted by the 2001 *Alexander v. Sandoval* U.S. Supreme Court decision that requires intent, rather than disparate impact, to prove discrimination. Congress should act to restore the status quo that existed prior to *Sandoval* by passing legislation to reestablish that there is a private right of action for disparate impact discrimination under the Title VI regulation. The failure to restore the private right of action will mean that private advocacy organizations will have to fight many discrimination battles with one hand tied behind their backs.

Re-instate the Superfund Tax. The new Congress needs to act immediately to re-instate the Superfund Tax, re-examine the National Priorities List (NPL) hazardous site ranking system and reinvigorate Federal Relocation Policy implementation in communities of color to move those communities that are directly in harm's way.

Hold Congressional Hearings on EPA Response to Contamination in EJ Communities. We urge the U.S. Congress to hold hearings on the U.S. Environmental Protection Agency's (EPA's) response to toxic contamination in EJ communities, including post-Katrina New Orleans, the Dickson County (Tennessee) Landfill water contamination problem, and similar toxic contamination problems found in low-income and people of color communities throughout the United States.

Convene Congressional Black Caucus and Congressional Hispanic Caucus Policy Briefings. We urge the Congressional Black Caucus and the Congressional Hispanic Caucus to convene policy briefings on the findings of *Toxic Wastes and Race at Twenty* to explore possible legislative and policy remedies.

Enact Legislation Promoting Clean Production and Waste Reduction. Require industry to use clean production technologies and support necessary R&D for toxic use reduction and closed loop production systems. Create incentives and buy back programs to achieve full recovery, reuse, recycling of waste and product design that enhances waste material recovery and reduction. Policies must include material restrictions for highly toxic and carcinogenic materials.

Require Comprehensive Safety Data for All Chemicals. Chemical manufacturing companies must provide publicly available safety information about a chemical for it to remain on or be added to the market. The information must allow for reasonable evaluation of the safety of the chemical for human health and the environment and must include hazard, use and exposure information. This is referred to as the "No Data, No Market" principle.

Executive Branch Actions

Implement EPA Office of Inspector General's Recommendations. Even the EPA's own Inspector General (IG) agrees that the agency has not developed a clear vision or a comprehensive strategic plan,

and has not established values, goals, expectations and performance measurements for integrating environmental justice into its day-to-day operations. The EPA should implement the EJ recommendations of the IG's 2004 and 2006 reports for addressing Executive Order 12898.

Fully Implement Environmental Justice Executive Order 12898. The U.S. EPA, FEMA, Army Corps of Engineers, Department of Labor, HUD and other federal agencies need to fully implement the Environmental Justice Executive Order 12898 in the cleanup and rebuilding in the hurricane-ravaged Gulf Coast region.

Protect Community Right-to-Know. Reinstate reporting emissions to the Toxic Release Inventory (TRI) database on an annual basis to protect communities' right to know. Reinstate reporting lower emission thresholds to the TRI.

End EPA Rollback of Environmental Justice Initiatives. Environmental justice leaders are demanding that the U.S. EPA end its attempts to roll back environmental justice and take aggressive steps to implement EJ Executive Order 12898 and provide targeted enforcement where the needs are the greatest, and where unequal protection places low-income and people of color populations at special risk.

Require Cumulative Risk Assessments in Facility Permitting. EPA should require assessments of multiple, cumulative and synergistic exposures, unique exposure pathways and impacts to sensitive populations in issuing environmental permits and promulgating regulations under the Resource Conservation and Recovery Act (RCRA), Clean Air Act (CAA), Clean Water Act (CWA) and other federal laws. Similar considerations should be made in establishing site-specific clean-up standards under Superfund and Brownfields programs.

Require Safety Buffers in Facility Permitting and Fenceline Community Performance Bonds for Variances. The EPA and states should adopt site location standards requiring a safe distance between a residential population and an industrial facility so that the population is not located within the area where deaths or serious injury to health or property would result in the event that a toxic or flammable substance stored, processed or generated by the facility would be released to the environment through explosion, fire or spill. If safety buffer exemptions are granted, require a locally administered Fenceline Community Performance Bond to provide recovery resources for residents impacted by chemical accidents.

State and Local Actions

Require State-by-State Assessments (Report Cards) on Environmental Justice. Require states to evaluate and report their progress made on environmental justice. From 1993 to present, nearly three-dozen states have expressly addressed environmental justice, demonstrating increased attention to the issue at a political level by passing legislation. However, little is known about the efficacy of these laws and if in fact they are being enforced.

Require Brownfields Community Revitalization Analysis (CRA). Parties seeking to benefit from governmental subsidies should be required to conduct a Community Revitalization Analysis (CRA) and take steps to address the most serious impacts identified in the analysis.

Develop Brownfields Partnerships with Academic Institutions. Residents in neighborhoods with brownfields sites must be an integral part of the redevelopment process. Many brownfields are located in or near low-income and people of color communities and historically black colleges and universities (HBCUs), Hispanic Serving Institutions (HSIs) and American Indian Tribally Controlled Colleges and Universities.

Establish Tax Increment Finance (TIF) Funds to Promote Environmental Justice-Driven Community Development. Environmental justice organizations should become involved in redevelopment processes in their neighborhoods in order to integrate brownfields priorities into long-range neighborhood redevelopment plans. This will allow for the use of Tax Increment Finance (TIF) funds accrued by the redevelopment process to fund the cleanup and redevelopment of brownfields sites

for community-determined uses. It is imperative that EJ groups and other community-based organizations are provided resources to drive the development process, as investment in an area increases and as real-estate values rise—to minimize gentrification and displacement of incumbent residents.

Establish Community Land Trusts. The establishment of Community Land Trusts (CLTs) could allow communities to purchase or obtain brownfields from local governments at below-market rates, and then redevelop them for a variety of community needs including limited-equity housing. CLTs are community-governed nonprofits, with development priorities that are determined by local residents.

Adopt Green Procurement Policies and Clean Production Tax Policies. State and local governments can show leadership in reducing the demand for products produced using unsustainable technologies that harm human health and the environment. Government must use its buying power and tax dollars ethically by supporting clean production systems. Ecological tax reform can assure that public money goes to safer materials and promotes pollution prevention.

Nongovernmental Organization (NGO) Actions

Develop Community Benefits Plans. Encourage environmental justice movement leaders to develop environmental justice criteria for Community Benefits Plans (modeled after those employed successfully in union organizing) in order to assess the desirability of any given brownfields redevelopment project proposed for a community.

Increase Private Foundations' General Support Funding for Environmental, Economic and Climate Justice, and Healthy Communities. Increase private foundation support for efforts of environmental justice groups and their allies to craft and implement legislative, public policy and legal advocacy campaigns to address long-ignored environmental and public health inequities. Currently there is a tremendous amount of attention and focus by environmental grantmakers in particular to issues of climate change. But very little attention is being paid (in terms of grants and philanthropic support) to campaigns that focus specifically on climate justice issues.

Fund Support for Training New Generations of Leaders. Environmental justice organizations, campaigns and collaborative partnerships, including environmental justice centers and academic programs at universities, remain the stepchild of philanthropic giving, thereby exacerbating environmental and public health disparities. Increasing the pool of young people of color in the environmental fields makes good economic sense. It is also good common sense, given the changing demographics of the country. Funders should challenge their environmental grantees to confront the issues of diversity on their staffs and boards.

Target the "Dirty Dozen" Environmental Justice Test Cases. Since much of the environmental protection apparatus was placed on hold or shut down altogether over the past decade, we urge the national environmental, civil rights, human rights, faith-based and political organizations to "adopt" environmental justice test cases to draw national attention back to the deadly mix of waste, race, class and government inaction. We recommend the national coalition compile a list and target the twelve worst cases, the "Dirty Dozen," of private industry and government installations that have polluted African American, Native American, Latino American, Asian American/Pacific Islander and poor White American communities and their residents.

Step up Efforts to Diversify Mainstream Environmental Organizations. There must be a serious and sustained effort to redress this utter lack of diversity within the mainstream environmental movement, an effort that moves beyond tokenism toward real organizational transformation. In the twenty years that have passed since the original publication of *Toxic Wastes and Race in the United States*, there continues to be a huge divide between "mainstream" environmental organizations and environmental justice groups. The environmental movement in the U.S. continues to be one of the most segregated spheres in American society. While a few environmental organizations took seriously the challenges put forward at the First National People of Color Environmental Leadership Summit in 1991, the overall lack of diversity at the staff, board and program level remains staggering.

Continue to Strengthen Racial, Ethnic, Cross-Class Collaborations Among Environmental Justice Organizations. Important strides have been made by the environmental justice movement in building multi-racial, multi-ethnic coalitions and in developing strategic alliances with mainstream environmental groups, organized labor, faith-based groups and the scientific community. An October 2005 conference called *Summit 2005 – Diverse Partners for Environmental Progress* took some initial steps at strengthening alliances within the environmental justice movement. Since then several regional meetings have occurred and in September 2007 "Summit 2007" will take place to "strengthen the network of environmental advocates that is reflective of race, ethnicity, culture, class and geography." We encourage these and similar efforts to work together in a multi-racial, multi-ethnic fashion to achieve our collective mission to end the suffering of communities most affected by environmental degradation.

Industry Actions

Adopt Clean Production Principles and Methods. Clean production is rooted in the Precautionary Principle and requires clean manufacturing processes that produce clean and safe products. As a healthy business strategy to transform the toxic chemical economy, industry is urged to adopt toxic use reduction, waste reduction, zero waste and closed loop production systems that promote use of renewable energy, nontoxic materials, safer chemical practices and sustainable product design. Industry must invest in research and development of sustainable chemicals, products, materials and processes. It can begin by adopting the Louisville Charter for safe chemicals developed in 2004 by a broad set of environmental justice and health organizations and professionals.

Phase Out Persistent, Bioaccumulative, or Highly Toxic Chemicals. Prioritize for elimination chemicals that are slow to degrade, accumulate in our bodies or living organisms, or are highly hazardous to humans or the environment, including those that disrupt hormones and the immune system and are particularly dangerous to children and other vulnerable populations. Ensure that chemicals eliminated in the United States are not exported to other countries.

Adopt Extended Producer Responsibility. Extended Producer Responsibility (EPR) requires producers take responsibility for the entire product life cycle including the post consumer phase of their product, thereby promoting closed loop systems. EPR makes producers responsible for the environmental and public health impacts of their products, for example, by prohibiting export of end-of-life product waste to other countries as a commodity. Industry must establish minimum recovery, reuse, and material recycling targets. Incineration or combustion should not be considered "recycling." Industry also must widely adopt end-of-life product buy-backs and phase out plans for all product wastes going to landfills, incinerators, cement kilns, or combustion facilities.

Support Community and Worker Right-to-Know. An informed public, workers, and communities must have access to information about industries' use and release of toxic chemical and industries' product chains. Disclose chemicals and materials, list quantities of chemicals produced, used, released and exported, and provide access to information. The public and workers must be made sufficiently aware of chemical hazards, uses and exposures to make informed decisions. Access to information must include citizen/community inspections. Corporations also must provide adequate information such as life cycle assessments and product labeling so that consumers and governments can use their spending power to support clean production. Industry must also provide meaningful involvement for the public and workers in decisions on chemicals.

Adopt and Uphold Legally-Binding Good Neighborhood Agreements. Uphold performance standards negotiated with fence line communities that may include community access to information, environmental and health monitoring, right to inspect the facility, accident preparedness, pollution prevention and support of good local jobs, union jobs, local economic needs, and means for dispute resolution.