ENVIRONMENTAL JUSTICE IN THE 21ST CENTURY

by Robert D. Bullard

Hardly a day passes without the media discovering some community or neighborhood fighting a landfill, incinerator, chemical plant, or some other polluting industry. This was not always the case. Just three decades ago, the concept of environmental justice had not registered on the radar screens of environmental, civil rights, or social justice groups.[1] Nevertheless, it should not be forgotten 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.

Another landmark garbage dispute took place a decade later in Houston, when African American homeowners in 1979 began a bitter fight to keep a sanitary landfill out of their suburban middle-income neighborhood.[2] Residents formed the Northeast Community Action Group or NECAG. NECAG and their attorney, Linda McKeever Bullard, filed a class action lawsuit to block the facility from being built. The 1979 lawsuit, *Bean v. Southwestern Waste Management, Inc.*, was the first of its kind to challenge the siting of a waste facility under civil rights law.

The landmark Houston case occurred three years before the environmental justice movement was catapulted into the national limelight in the rural and mostly African American Warren County, North Carolina. 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 over 500 arrests. The Warren County protests provided the impetus for an U.S. General Accounting Office study, *Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities*.[3] That study revealed that three out of four of the off-site, commercial hazardous waste landfills in Region 4 (which comprises eight states in the South) happen to be located in predominantly African-American communities, although African-Americans made up only 20% of the region's population. More important, the protesters put "environmental racism" on the map. Fifteen years later, the state of North Carolina is required to spend over $25 million to cleanup and detoxify the Warren County PCB landfill.

The Warren County protests also led the Commission for Racial Justice to produce *Toxic Waste and Race*,[4] the first national study to correlate waste facility sites and demographic characteristics. Race was found to be the most potent variable in predicting where these facilities were located--more powerful than poverty, land values, and home ownership. In 1990, *Dumping in Dixie: Race, Class, and Environmental Quality* chronicled the convergence of two social movements--social justice and environmental movements--into the environmental justice

movement. This book 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.

The 1991 First National People of Color Environmental Leadership 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.[5] The meeting also demonstrated that it is possible to build a multi-racial grassroots movement around environmental and economic justice.[6]

Held in Washington, DC, the four-day Summit was attended by over 650 grassroots and national leaders from around the world. Delegates came from all fifty states including Alaska and Hawaii, 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 September 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.




In response to growing public concern and mounting scientific evidence, President Clinton on February 11, 1994 (the second day of the national health symposium) 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.

Executive Order 12898 reinforces the 35-year 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 twenty-five year old 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 effect the quality of human health.

The Executive Order calls for improved methodologies for assessing and mitigating impacts, health effect 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 wildlife consumers. 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 focuses on "subsistence" fishers and wildlife consumers. 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 happen to be polluted. These subpopulations may be under protected when basic assumptions are made using the dominant risk paradigm.

Many grassroots activists are 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 1990. The federal EPA only took action on environmental justice concerns in 1990 after extensive prodding from grassroots environmental justice activists, educators, and academics.[7]

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.[8] Environmental justice advocates continue to challenge the current environmental protection apparatus and offer their own framework for addressing environmental inequities, disparate impact, and unequal protection.

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.[9] The environmental justice framework incorporates other social movements that seek to eliminate harmful practices (discrimination harms the victim), in housing, land use, industrial planning, health care, 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:

(1) *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 1964, Fair Housing Act of 1968 and as amended in 1988, and Voting

Rights Act of 1965.

(2) *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).

Overwhelming scientific evidence exists on the ill-effects of lead on the human body. However, very little action has been taken to rid the nation of childhood lead poisoning in urban areas. Former Health and Human Secretary Louis Sullivan tagged the "number one environmental health threat to children."[10]

The Natural Resources Defense Council, NAACP Legal Defense and Educational Fund, ACLU, and Legal Aid Society of Alameda County joined forces in 1991 and won an out-of-court settlement worth $15-20 million for a blood-lead testing program in California. The *Matthews v. Coye* lawsuit involved the State of California not living up to the federally-mandated testing of some 557,000 poor children for lead who receive Medicaid. This historic agreement triggered similar actions in other states that failed to live up to federally-mandated screening.[11]

Lead screening is an important element in this problem. However, screening is not the solution. Prevention is the solution. Surely, if termite inspections can be mandated to protect individual home investment, a lead-free home can be mandated to protect public health. Ultimately, the lead abatement debate, public health (who is affected) vs. property rights (who pays for cleanup), is a value conflict that will not be resolved by the scientific community.

(3) *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.

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.

(4) *The environmental justice framework would allow disparate impact and statistical weight, as opposed to "intent," to infer discrimination*. Proving intentional or purposeful discrimination in a court of law is next to impossible, as demonstrated in *Bean v. Southwestern Waste*. It took nearly a decade after *Bean v. Southwestern Waste* for environmental discrimination to resurface in the courts.

(5) *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. In the 1992, EPA report *Securing Our Legacy*, the agency's describes geographic initiatives as "protecting what we love."[12]

The strategy emphasizes "pollution prevention, multimedia enforcement, research into causes and cures of environmental stress, stopping habitat loss, education, and constituency building."[13] Geographic initiatives are underway in the Chesapeake Bay, Great Lakes, Gulf of Mexico programs, and the U.S.-Mexican Border program. Environmental justice targeting would channel resources to "hot spots," communities that are overburdened with more than their "fair" share of environmental and health problems.

The dominant environmental protection 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 (1) institutionalized unequal enforcement, (2) traded human health for profit, (3) placed the burden of proof on the "victims" and not the polluting industry, (4) legitimated human exposure to harmful chemicals, pesticides, and hazardous substances, (5) promoted "risky" technologies such as incinerators, (6) exploited the vulnerability of economically and politically disenfranchised communities, (7) subsidized ecological destruction, (8) created an industry around risk assessment, (9) delayed cleanup actions, and (10) failed to develop pollution prevention as the overarching and dominant strategy.[14]

The mission of the federal EPA was never designed to address environmental policies and practices that result in unfair, unjust, and inequitable outcomes. 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 the problem be prevented? Vulnerable communities, populations, and individuals often fall between the regulatory cracks.

Impetus for a Paradigm Shift

The environmental justice movement has changed the way scientists, researchers, policy makers, and educators go about their daily work. This "bottom-up" movement has redefined environment to include where people live, work, play, go to school, as well as how these things interact with the physical and natural world. 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.

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.[15] During its 30-year history, the U.S. EPA has not always recognized that many of our government and industry practices (whether intended or unintended) have adverse impact on poor people and people of color. Growing grassroots community resistance emerged in response to practices, policies, and conditions that residents judged to be unjust, unfair, and illegal. Discrimination is a fact of life in America. Racial discrimination is also illegal.

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---not just individuals or groups who can afford lawyers, lobbyists, and experts. Environmental protection is a right, not a privilege reserved for a few who can "vote with their feet" and escape or fend off environmental stressors that address environmental inequities.

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, noxious facilities, and locally unwanted land uses (LULUs) such as landfills, incinerators, sewer treatment plants, lead smelters, refineries, and other noxious facilities. 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.

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. A 1992 study by 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.[16]
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> 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 can expect different treatment from the government. Environmental decision-making operates at the juncture of science, economics, politics, special interests, and ethics. The current environmental model places communities of color at special risk.

The Impact of Racial Apartheid

Apartheid-type housing, development, and environmental policies limit mobility, reduce neighborhood options, diminish job opportunities, and decrease choices for millions of Americans.[17] The infrastructure conditions in urban areas are a result of a host of factors including the distribution of wealth, patterns of racial and economic discrimination, redlining, housing and real estate practices, location decisions of industry, and differential enforcement of land use and environmental regulations. Apartheid-type housing and development policies have resulted in limited mobility, reduced neighborhood options, decreased environmental choices, and diminished job opportunities for African Americans.

Race still plays a significant part in distributing public "benefits" and public "burdens" associated with economic growth. The roots of discrimination are deep and have been difficult to eliminate. Housing discrimination contributes to the physical decay of inner-city neighborhoods and denies a substantial segment of the African American community a basic form of wealth accumulation and investment through home ownership.[18] The number of African American homeowners would probably be higher in the absence of discrimination by lending institutions.[19] Only about 59 percent of the nation's middle-class African Americans own their homes, compared with 74 percent of whites.

Eight out of every ten African Americans live in neighborhoods where they are in the majority. Residential segregation decreases for most racial and ethnic groups with additional education, income, and occupational status. However, this scenario does not hold true for African Americans. African Americans, no matter what their educational or occupational achievement or income level, are exposed to higher crime rates, less effective educational systems, high mortality risks, more dilapidated surroundings, and greater environmental threats because of their race. For example, in the heavily populated South Coast air basin of the Los Angeles area, it is estimated that over 71 percent of African Americans and 50 percent of Latinos reside in areas with the most polluted air, while only 34 percent of whites live in highly polluted areas.[20]

It has been difficult for millions of Americans in segregated neighborhoods to say "not in my backyard" (NIMBY) if they do not have a backyard.[21] Nationally, only about 44 percent of

African Americans own their homes compared to over two-thirds of the nation as a whole. Homeowners are the strongest advocates of the NIMBY positions taken against locally unwanted land uses or LULUs such as the construction of garbage dumps, landfills, incinerators, sewer treatment plants, recycling centers, prisons, drug treatment units, and public housing projects. Generally, white communities have greater access than people of color communities when it comes to influencing land use and environmental decision making.

The ability of an individual to escape a health-threatening physical environment is usually related to affluence. However, racial barriers complicate this process for many Americans.[22] The imbalance between residential amenities and land uses assigned to central cities and suburbs cannot be explained by class factors alone. People of color and whites do not have the same opportunities to "vote with their feet" and escape undesirable physical environments.

Institutional racism continues to influence housing and mobility options available to African Americans of all income levels---and is a major factor that influences quality of neighborhoods they have available to them. The "web of discrimination" in the housing market is a result of action and inaction of local and federal government officials, financial institutions, insurance companies, real estate marketing firms, and zoning boards. More stringent enforcement mechanisms and penalties are needed to combat all forms of discrimination.

Uneven development between central cities and suburbs combined with the systematic avoidance of inner-city areas by many businesses have heightened social and economic inequalities. For the past two decades, manufacturing plants have been fleeing central cities and taking their jobs with them. Many have moved offshore to Third World countries where labor is cheap and environmental regulations are lax or nonexistent.

Industry flight from central cities has left behind a deteriorating urban infrastructure, poverty, and pollution. What kind of replacement industry can these communities attract? Economically depressed communities do not have a lot of choices available to them. Some workers have become so desperate that they see even a low-paying hazardous job as better than no job at all. These workers are forced to choose between unemployment and a job that may result in risks to their health, their family's health, and the health of their community. This practice amounts to "economic blackmail." Economic conditions in many people of color communities make them especially vulnerable to this practice.

Some polluting industries have been eager to exploit this vulnerability. Some have even used the assistance of elected officials in obtaining special tax breaks and government operating permits. Clearly, economic development and environmental policies flow from forces of production and are often dominated and subsidized by state actors. Numerous examples abound where state actors have targeted cities and regions for infrastructure improvements and amenities such as water irrigation systems, ship channels, road and bridge projects, and mass transit systems. On the other hand, state actors have done a miserable job in protecting central city residents from the ravages of industrial pollution and nonresidential activities valued as having a negative impact on quality of life.[23]

Racial and ethnic inequality is perpetuated and reinforced by local governments in conjunction with urban-based corporations. Race continues to be a potent variable in explaining urban land use, streets and highway configuration, commercial and industrial development, and industrial facility siting. Moreover, the question of "who gets what, where, and why" often pits one community against another.[24]

Zoning and Land Use

Some residential areas and their inhabitants are at a greater risk than the larger society from unregulated growth, ineffective regulation of industrial toxins, and public policy decisions authorizing industrial facilities that favor those with political and economic clout.[25] African Americans and other communities of color are often victims of land-use decision making that mirrors the power arrangements of the dominant society. Historically, exclusionary zoning (and rezoning) has been a subtle form of using government authority and power to foster and perpetuate discriminatory practices.

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.). Zoning ordinances, deed restrictions, and other land-use mechanisms have been widely used as a "NIMBY" (not in my backyard) tool, operating through exclusionary practices. Thus, exclusionary zoning has been used to zone against something rather than for something. With or without zoning, deed restrictions or other devices, various groups are unequally able to protect their environmental interests. More often than not, people of color communities get shortchanged in the neighborhood protection game.

In Houston, Texas, a city that does not have zoning, NIMBY was replaced with the policy of "PIBBY " (place in blacks back yard).[26] The city government and private industry targeted landfills, incinerators, and garbage dumps for Houston's black neighborhoods for more than five decades. These practices lowered residents' property values, accelerated physical deterioration, and increased disinvestment in the communities. Moreover, the discriminatory siting of landfills and incinerators stigmatized the neighborhoods as "dumping grounds" for a host of other unwanted facilities, including salvage yards, recycling operations, and automobile "chop shops."[27]

The Commission for Racial Justice's landmark *Toxic Wastes and Race* study found race to be the single most important factor (i.e., more important than income, home ownership rate, and property values) in the location of abandoned toxic waste sites.[28] The study also found that (1) three out of five African Americans live in communities with abandoned toxic waste sites; (2) sixty percent (15 million) African Americans live in communities with one or more abandoned toxic waste sites; (3) three of the five largest commercial hazardous waste landfills are located in predominately African American or Latino communities and accounts for 40 percent of the nation's total estimated landfill capacity; and (4) African Americans are heavily overrepresented in the population of cities with the largest number of abandoned toxic waste sites, which include

Memphis, St. Louis, Houston, Cleveland, Chicago, and Atlanta.

Waste facility siting imbalances that were uncovered by the U.S. General Accounting Office (GAO) in 1983 have not disappeared.[29] The GAO discovered three out of four of the offsite commercial hazardous waste landfills in Region IV (Alabama, Florida, Georgia, Kentucky, Mississippi, North Carolina, South Carolina, and Tennessee) were located in predominately African American communities. African Americans still made up about one-fifth of the population in EPA Region IV. In 2000, 100 percent of the offsite commercial hazardous wastes landfills in the region is dumped in two mostly African Americans communities.

Environmental Racism

Many of the differences in environmental quality between black 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. Historically, 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.

Environmental racism is real. It is just as real as the racism found in the housing industry, educational institutions, employment arena, and judicial system. 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.[30] Environmental racism is reinforced by government, legal, economic, political, and military institutions.

Environmental decision making and policies often mirrors the power arrangements of the dominant society and its institutions. Environmental racism disadvantages people of color while providing advantages or privileges for whites. A form of illegal "exaction" forces people of color to pay costs of environmental benefits for the public at large. The question of who pays and who benefits from the current environmental and industrial policies is central to this analysis of environmental racism and other systems of domination and exploitation.

Racism influences the likelihood of exposure to environmental and health risks as well as accessibility to health care.[31] 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.[32]

Elevated public health risks are found in some populations even when social class is held constant. For example, race has been found to be independent of class in the distribution of air pollution,[33] contaminated fish consumption[34], location of municipal landfills and incinerators,[35] toxic waste dumps,[36] cleanup of superfund sites[37], and lead poisoning in children.[38]

Lead poisoning is a classic example of an environmental health problem that disproportionately impacts children of color at every class level. Lead affects between 3 to 4 million children in the United States---most of whom are African American and Latinos who live in urban areas. Among children 5 years old and younger, the percentage of African American children who have excessive levels of lead in their blood far exceeds the percentage of whites at all income levels.

In 1988, the federal Agency for Toxic Substances Disease Registry (ATSDR) found that for families earning less than $6,000, 68 percent of African American children had lead poisoning, compared with 36 percent for white children. In families with income exceeding $15,000, more than 38 percent of African American children suffer from lead poisoning compared with 12 percent of whites. The average blood lead level has dropped for all children with the phasing out of leaded gasoline. Today, the average blood lead level for all children in the U.S. is under 6 ug/dl.[39] However, these efforts have not had the same positive benefits on all populations. There is still work to be done to address the remaining problem. The lead problem is not randomly distributed across the nation. The most vulnerable populations are low-income African American and Hispanic American children who live in older urban housing.[40]

Figures reported in the July 1994 *Journal of the American Medical Association* on the Third National Health and Nutrition Examination Survey (NHANES III) revealed that 1.7 million children (8.9 percent of children aged 1 to 5) are lead poisoned, defined as blood lead levels equal to or above 10 ug/dl.[41] Lead-based paint (chips and dust) is the most common source of lead exposure for children. Children may also be exposed through soil and dust contamination built up from vehicle exhaust, lead concentration in soils in urban areas, lead dust brought into the home on parents work clothes, lead used in ceramics and pottery, folk medicines, and lead in plumbing.

The Right to Breathe Clean Air

Urban air pollution problems have been with us for some time now. Before the federal government stepped in, issues related to air pollution were handled primarily by states and local governments. Because states and local governments did such a poor job, the federal government set out to establish national clean air standards. Congress enacted the Clean Air Act (CAA) in 1970 and mandated the U.S. Environmental Protection Agency (EPA) to carry out this law. Subsequent amendments (1977 and 1990) were made to the CAA that form the current federal program. The CAA was a response to states unwillingness to protect air quality. Many states used their lax enforcement of environmental laws as lures for business and economic development.[42]

Central cities and suburbs do not operate on a level playing field. They often compete for scarce

resources. One need not be a rocket scientist to predict the outcome between affluent suburbs and their less affluent central city competitors.[43] Freeways are the lifeline for suburban commuters, while millions of central-city residents are dependent on public transportation as their primary mode of travel. But recent cuts in mass transit subsidies and fare hikes have reduced access to essential social services and economic activities. Nevertheless, road construction programs are booming--even in areas choked with automobiles and air pollution.[44]

The air quality impacts of transportation are especially significant to people of color who are more likely than whites to live in urban areas with reduced air quality. National Argonne Laboratory researchers discovered that 437 of the 3,109 counties and independent cities failed to meet at least one of the EPA ambient air quality standards.[45] Specifically, 57 percent of whites, 65 percent of African Americans, and 80 percent of Hispanics live in 437 counties with substandard air quality. Nationwide, 33 percent of whites, 50 percent of African Americans, and 60 percent of Hispanics live in the 136 counties in which two or more air pollutants exceed standards. Similar patterns were found for the 29 counties designated as nonattainment areas for three or more pollutants. Again, 12 percent of whites, 20 percent of African Americans, and 31 percent of Hispanics resided in the worse nonattainment areas.

Asthma is an emerging epidemic in the United States. The annual age-adjusted death rate from asthma increased by 40% between 1982 through 1991, from 1.34 to 1.88 per 100,000 population,[46] with the highest rates being consistently reported among blacks aged 15-24 years of age during the period 1980-1993.[47] Poverty and minority status are important risk factors for asthma mortality.

Children are at special risk from ozone.[48] Children also represent a considerable share of the asthma burden. It is the most common chronic disease of childhood. Asthma affects almost 5 million children under 18 years. Although the overall annual age-adjusted hospital discharge rate for asthma among children under 15 years old decreased slightly from 184 to 179 per 100,000 between 1982 and 1992, the decrease was slower compared to other childhood diseases[49] resulting in a 70% increase in the proportion of hospital admissions related to asthma during the 1980's.[16] Inner city children have the highest rates for asthma prevalence, hospitalization, and mortality.[50] In the United States, asthma is the fourth leading cause of disability among children aged less than 18 years.[51]

The public health community has insufficient information to explain the magnitude of some of the air pollution-related health problems. However, they do know that persons suffering from asthma are particularly sensitive to the effects of carbon monoxide, sulfur dioxides, particulate matter, ozone, and nitrogen oxides. Ground-level ozone may exacerbate health problems such as asthma, nasal congestions, throat irritation, respiratory tract inflammation, reduced resistance to infection, changes in cell function, loss of lung elasticity, chest pains, lung scarring, formation of lesions within the lungs, and premature aging of lung tissues.[52]

Nationally, African Americans and Latino Americans have significantly higher prevalence of asthma than the general population. A 1996 report from the federal Centers for Disease Control shows hospitalization and deaths rates from asthma increasing for persons twenty-five years or less.[53] The greatest increases occurred among African Americans. African Americans are two to six times more likely than whites to die from asthma.[54] Similarly, the hospitalization rate for African Americans is 3 to 4 times the rate for whites.

A 1994 CDC-sponsored study showed that pediatric emergency department visits at Atlanta Grady Memorial Hospital increased by one-third following peak ozone levels. The study also found that asthma rate among African American children is 26 percent higher than the asthma rate among whites.[55] Since children with asthma in Atlanta may not have visited the emergency department for their care, the true prevalence of asthma in the community is likely to be higher.

Exploitation of Land, Environment, and People

Environmental decision-making and local land-use planning operate at the juncture of science, economics, politics, and special interests that place communities of color at special risk.[56] This is especially true in America's Deep South. The Deep South has always been thought of as a backward land based on its social, economic, political, and environmental policies. By default, the region became a "sacrifice zone," a sump for the rest of the nation's toxic waste.[57] A colonial mentality exists in the South where local government and big business take advantage of people who are politically and economically powerless. Many of these attitudes emerged from the region's marriage to slavery and the plantation system---a brutal system that exploited humans and the land.[58] The Deep South is stuck with this unique legacy---the legacy of slavery, Jim Crow, and white resistance to equal justice for all. This legacy has also affected race relations and the region's ecology. Southerners, black and white, have less education, lower incomes, higher infant mortality, and lower life expectancy than Americans elsewhere. It should be no surprise that the environmental quality that Southerners enjoy is markedly different from that of other regions of the country.

The South is characterized by "look-the-other-way environmental policies and giveaway tax breaks."[59] It is our nation's Third World where "political bosses encourage outsiders to buy the region's human and natural resources at bargain prices."[60] Lax enforcement of environmental regulations have left the region's air, water, and land the most industry-befouled in the United States.

Toxic waste discharge and industrial pollution are correlated with poorer economic conditions. Louisiana typifies this pattern. Nearly three-fourths of Louisiana's population---more than 3 million people---get their drinking water from underground aquifers. Dozens of the aquifers are threatened by contamination from polluting industries.[61] The Lower Mississippi River Industrial Corridor has over 125 companies that manufacture a range of products including fertilizers, gasoline, paints, and plastics. This corridor has been dubbed "Cancer Alley" by environmentalists and local residents.[62] Ascension Parish typifies what many people refer to as a toxic "sacrifice zone." In two parish towns of Geismer and St. Gabriel, 18 petrochemical plants are crammed into a nine-and-a-half-square-mile area. Petrochemical plants discharge millions pounds of pollutants annually into the water and air.

Louisiana citizens subsidize this corporate welfare with their health and the environment.

Tax breaks given to polluting industries have created a few jobs a high cost. Nowhere is the polluter-welfare scenario more prevalent than in Louisiana. The state is a leader in doling out corporate welfare to polluters. A 1998 *Time Magazine* article reported that in the 1990s, Louisiana wiped off the books $3.1 billion in property taxes to polluting companies.[63] The state's top five worse polluters received $111 million dollars over the past decade.

Global Dumping Grounds

There is a direct correlation between exploitation of land and exploitation of people. It should not be a surprise to anyone to discover that Native Americans have to contend with some of the worst pollution in the United States.[64] Native American nations have become prime targets for waste trading.[65] More than three dozen Indian reservations have been targeted for landfills, incinerators, and other waste facilities.[66] The vast majority of these waste proposals were defeated by grassroots groups on the reservations. However, "radioactive colonialism" is alive and well.[67] The legacy of institutional racism has left many sovereign Indian nations without an economic infrastructure to address poverty, unemployment, inadequate education and health care, and a host of other social problems. In 1999, Eastern Navajo reservation residents have filed suit against the Nuclear Regulatory Commission to block uranium mining in Church Rock and Crown Point communities.

Hazardous waste generation and international movement of hazardous waste pose some important health, environmental, legal, and ethical dilemmas. It is unlikely that many of the global hazardous waste proposals can be effectuated without first addressing the social, economic, and political context in which hazardous wastes are produced (industrial processes), controlled (regulations, notification and consent documentation), and managed (minimization, treatment, storage, recycled, transboundary shipment, pollution prevention, etc.). The "unwritten" policy of targeting Third World nations for waste trade received international media attention in 1991. Lawrence Summers, at the time he was chief economists of the World Bank, shocked the world and touched off an international scandal when his confidential memorandum on waste trade was leaked. Summers writes: "'Dirty' Industries: Just between you and me, shouldn't the World Bank be encouraging MORE migration of the dirty industries to the LDCs?"[68]

Consumption and production patterns, especially in nations with wasteful "throw-away" life styles as the United States, and the interests of transnational corporations create and maintain

unequal and unjust waste burdens within and between affluent and poor communities, states, and regions of the world. Shipping hazardous wastes from rich communities to poor communities is not a solution to the growing global waste problem. Not only is it immoral, but it should be illegal. Moreover, making hazardous waste transactions legal does not address the ethical issues imbedded in such transactions.[69] The practice is a manifestation of power arrangements and a larger stratification system where some people and some places are assigned greater value than others.

In the real world, all people, communities, and nations are not created equal. Some populations and interests are more equal than others. Unequal interests and power arrangements have allowed poisons of the rich to be offered as short term remedies for poverty of the poor. This scenario plays out domestically (as in the United States where low-income and people of color communities are disproportionately impacted by waste facilities and "dirty" industries) and internationally (where hazardous wastes move from OECD states flow to non-OECD states).

The conditions surrounding the more than 1,900 maquiladoras, assembly plants operated by American, Japanese, and other foreign countries, located along the 2,000-mile U.S.-Mexico border may further exacerbate the waste trade.[70] The industrial plants use cheap Mexican labor to assemble imported components and raw material and then ship finished products back to the United States. Nearly a half million Mexican workers are employed in the maquiladoras.

A 1983 agreement between the United States and Mexico required American companies in Mexico to return waste products to the United States. Plants were required to notify the federal EPA when returning wastes. Results from a 1986 survey of 772 maquiladoras revealed that only 20 of the plants informed the U.S. EPA that they were returning waste to the United States, even though 86 percent of the plants used toxic chemicals in their manufacturing process. Much of the wastes end up being illegally dumped in sewers, ditches, and the desert. All along the Lower Rio Grande River Valley maquiladoras dump their toxic wastes into the river, from which 95 percent of the region's residents get their drinking water.[71]

The disregard for the environment and public safety has placed border residents' health at risk. In the border cities of Brownsville, Texas and Matamoras, Mexico, the rate of anencephaly---babies born without brains---is four times the national average. Affected families have filed lawsuits against 88 of the area's 100 maquiladoras for exposing the community to xylene, a cleaning solvent that can cause brain hemorrhages, and lung and kidney damage.

Contaminated well and drinking water looms as major health threats. Air pollution is the colonias has contributed to a raging asthma and respiratory epidemic. The Mexican environmental

regulatory agency is understaffed and ill-equipped to adequately enforce its environmental laws.[72] Only time will tell if the North American Free Trade Agreement (NAFTA) will "fix" or exacerbate the public health, economic, and the environmental problems along the U.S.-Mexico border.

Setting the Record Straight

The environmental protection apparatus is broken and needs to be fixed. The environmental justice movement has set out clear goals of eliminating unequal enforcement of environmental, civil rights, and public health laws. Environmental justice leaders have made a difference in the lives of people and the physical environment. They have assisted public decision makers in identifying "at risk" populations, toxic "hot spots," research gaps, and action models to correct existing imbalances and prevent future threats. However, impacted communities are not waiting for the government or industry to get their act s together. Grassroots groups have taken the offensive to ensure that government and industry do the right thing.

Communities have begun to organize their own networks and force their inclusion into the mainstream of public decision making. They have also developed communication channels among environmental justice leaders, grassroots groups, professional associations (i.e., legal, public health, education, etc.), scientific groups, and public policy makers to assist them in identifying "at risk" populations, toxic "hot spots," research gaps, and work to correct imbalances.

In response to growing public concern and mounting scientific evidence, President Clinton Executive Order 12898. The Executive Order is not a new law. It only reinforces what has been the law of the land for over three decades. Environmental justice advocates are calling for vigorous enforcement of civil rights laws and environmental laws.

The number of environmental justice complaints is expected to escalate against industry, government, and institutions that receive federal funds. Citizens have a right to challenge discrimination&emdash;including environmental discrimination. It is a smokescreen for anyone to link Title VI or other civil rights enforcement to economic disinvestment in low-income and people of color communities. There is absolutely no empirical evidence to support the contention environmental justice hurts brownfields redevelopment efforts.

The EPA has awarded over 200 Brownfield grants. In 1998, the agency had received some five dozen Title VI complaints. It is worth noting that not a single Title VI complaint involves a brownfields site. On the other hand, two decades of solid empirical evidence documents the impact of racial redlining on African American and other communities of color. Racial redlining by banks, savings and loans, insurance companies, grocery chains, and even pizza delivery companies thwarts economic vitality in black communities---not enforcement of civil rights laws. Racial redlining was such a real problem that Congress passed the Community Reinvestment Act in 1977.

States have had three decades to implement Title VI of the Civil Rights Act of 1964. Most states have chosen to ignore the law. States need to do a better job assuring nondiscrimination in the application and implementation of permitting decisions, enforcement, and investment decisions. Environmental justice also means sharing in the benefits. Governments must live up to their mandate of protecting all people and the environment. Anything less is unacceptable. The solution to environmental injustice lies in the realm of equal protection of all individuals, groups, and communities. No community, rich or poor, urban or suburban, black or white, should be allowed to become a "sacrifice zone" or the dumping ground.

Hazardous wastes and "dirty" industries have followed the "path of least resistance." Poor people and poor communities are given a false choice of "no jobs and no development" versus "risky low-paying jobs and pollution." Industries and governments (including the military) have often exploited the economic vulnerability of poor communities, poor states, poor regions, and poor nations for their "risky" operations. The environmental justice movement challenges toxic colonialism, environmental racism, and the international toxics trade at home and abroad.

Endnotes

1. Robert D. Bullard, 1994, *Dumping in Dixie: Race, Class and Environmental Quality*. Boulder, CO: Westview Press.

2. Robert D. Bullard, "Solid Waste Sites and the Black Houston Community," *Sociological Inquiry* 53 (Spring 1983): 273-288.

3. U.S. General Accounting Office (1983), *Siting of Hazardous Waste Landfills and Their Correlation with Racial and Economic Status of Surrounding Communities*, Washington, DC: Government Printing Office.

4. Commission for Racial Justice (1987), *Toxic Wastes and Race in the United States*, New York: United Church of Christ.

5. Charles Lee, 1992, *Proceedings: The First National People of Color Environmental Leadership Summit*. New York: United Church of Christ Commission for Racial Justice.

6. See Dana Alston, "Transforming a Movement: People of Color Unite at Summit against Environmental Racism," *Sojourner* 21 (1992), pp. 30-31.

7. William K. Reilly, "Environmental Equity: EPA's Position," *EPA Journal* 18 (March/April, 1992): 18-19.

8. See R.D. Bullard and B.H. Wright, "The Politics of Pollution: Implications for the Black Community," *Phylon* 47 (March, 1986): 71-78.

9. 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.

10. Louis Sullivan, "Remarks at the First Annual Conference on Childhood Lead Poisoning," in Alliance to End Childhood Lead Poisoning, *Preventing Child Lead Poisoning: Final Report*. Washington, DC: Alliance to End Childhood Lead Poisoning, October, 1991, p. A-2.

11. See Bill Lann Lee, "Environmental Litigation on Behalf of Poor, Minority Children, Matthews v. Coye: A Case Study." Paper presented at the Annual Meeting of the American Association for the Advancement of Science, Chicago (February 9, 1992).

12. Ibid., p. 32.

13. Ibid.

14. Robert D. Bullard, "The Environmental Justice Framework: A Strategy for Addressing Unequal Protection." Paper presented at Resources for the Future Conference on Risk Management, Annapolis, MD (November, 1992).

15. 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.

16. Marianne Lavelle and Marcia Coyle, "Unequal Protection," *National Law Journal*, September 21, 1992, pp. S1-S2.

17. Robert D. Bullard, ed.., *Confronting Environmental Racism: Voices from the Grassroots*. Boston: South End Press, 1993, chapter 1; Robert D. Bullard, "Waste and Racism: A Stacked Deck?" *Forum for Applied Research and Public Policy* 8 (Spring, 1993): 29-35; Robert D. Bullard (ed.), *In Search of the New South: The Black Urban Experience in the 1970s and 1980s* (Tuscaloosa, AL: University of Alabama Press, 1991).

18. Florence Wagman Roisman, "The Lessons of American Apartheid: The Necessity and Means of Promoting Residential Racial Integration," *Iowa Law Review* 81 (December 1995): 479-525.

19. Joe R. Feagin, "A House is Not a Home: White Racism and U.S. Housing Practices," in R.D. Bullard, J. E. Grigsby, and Charles Lee, eds., *Residential Apartheid: The American Legacy*. Los Angeles: UCLA Center for Afro-American Studies Publication, 1994, pp. 17-48.

20. Eric Mann, *L.A.'s Lethal Air: New Strategies for Policy, Organizing, and Action.* Los Angeles: Labor/Community Strategy Center, 1991, p. 31.

21. Jim Motavalli, "Toxic Targets: Polluters that Dump on Communities of Color are Finally Being Brought to Justice," *E Magazine*, 4 (July/August, 1997): 29-41.

22. Joe Bandy, "Reterritorializing Borders: Transnational Environmental Justice Movement on the U.S.-Mexico Border," *Race, Gender, and Class* 5 (1997): 80-103.

23. See Bunyan Bryant and Paul Mohai, *Race and the Incidence of Environmental Hazards* (Boulder, CO: Westview Press, 1992); Bunyan Bryant, ed., *Environmental Justice*, pp. 8-34.

24. R. Pinderhughes, "Who Decides What Constitute a Pollution Problem*?" Race, Gender, and Class* 5 (1997): 130-152.

25. Diane Takvorian, "Toxics and Neighborhoods Don't Mix," *Land Use Forum: A Journal of Law, Policy and Practice* 2 (Winter 1993): 28-31; R.D. Bullard, "Examining the Evidence of Environmental Racism," *Land Use Forum: A Journal of Law, Policy, and Practice* 2 (Winter 1993): 6-11.

26. For an in-depth examination of the Houston case study see R.D. Bullard, 1987*, Invisible Houston: The Black Experience in Boom and Bust*. College Station, TX: Texas A&M University Press, pp. 60-75.

27. Ruth Rosen, "Who Gets Polluted: The Movement for Environmental Justice," *Dissent* (Spring 1994): 223-230; R.D. Bullard, "Environmental Justice: It's More than Waste Facility Siting," *Social Science Quarterly* 77 (September 1996): 493-499.

28. Commission for Racial Justice, *Toxic Wastes and Race in the United States*, pp. xiii-xiv.

29. See U.S. General Accounting Office, *Siting of Hazardous Waste Landfills and Their*

Correlation with Racial and Economic Status of Surrounding Communities . Washington, DC: U.S. General Accounting Office, 1983, p. 1.

30. 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; Regina Austin and Michael Schill, "Black, Brown, Poor and Poisoned: Minority Grassroots Environmentalism and the Quest for Eco-Justice*." The Kansas Journal of Law and Public Policy* 1 (1991): 69-82; Kelly C. Colquette and Elizabeth A. Henry Robertson, "Environmental Racism: The Causes, Consequences, and Commendations." *Tulane Environmental Law Journal* 5 (1991): 153-207; Rachel D. Godsil, "Remedying Environmental Racism." *Michigan Law Review* 90 (1991): 394-427.

31. 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

32. 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.

33. See Myrick A Freedman, "The Distribution of Environmental Quality." in Allen V. Kneese and Blair T. Bower (eds.), *Environmental Quality Analysis*. Baltimore: Johns Hopkins University Press for Resources for the Future, 1971; Michel Gelobter, "The Distribution of Air Pollution by Income and Race." Paper presented at the Second Symposium on Social Science in Resource Management, Urbana, Illinois (June 1988); Gianessi et al., "The Distributional Effects of Uniform Air Pollution Policy in the U.S." *Quarterly Journal of Economics* (May1979): 281-301.

34. 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;

35. 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.

36. 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.

37. Marianne Lavelle and Marcia Coyle, "Unequal Protection: The Racial Divide in Environmental Law." *National Law Journal*, September 21, 1992.

38. Agency for Toxic Substances Disease Registry, *The Nature and Extent of Lead Poisoning in Children in the United States: A Report to Congress*. Atlanta: U.S. Department of Health and Human Resources, 1988, pp. I-12.

39. J. Schwartz and R. Levine, "Lead: An Example of the Job Ahead," *EPA Journal* 18 (March/April, 1992): 32-44.

40. Centers for Disease Control and Prevention, "Update: Blood Lead Levels - United States, 1991-1994," *Mortality and Morbidity Weekly Report* 46, no. 7 (February 21, 1997): 141-146.

41. James L. Pirkle, D.J. Brody, E.W. Gunter, R.A. Kramer, D.C. Paschal, K,M. Glegal, and T.D. Matte, "The Decline in Blood Lead Levels in the United States: The National Health and Nutrition Examination Survey (NHANES III)," *Journal of the American Medical Association* 272 (1994): 284-291.

42. Arnold W. Reitze, Jr., "A Century of Air Pollution Control Law: What Worked; What Failed; What Might Work," *Environmental Law* 21 (1991), p. 1549.

43. For an in-depth discussion of transportation investments and social equity issues see R.D. Bullard and G.S. Johnson, eds*., Just Transportation: Dismantling Race and Class Barriers to Mobility*. Gabriola Island, BC: New Society Publishers, 1997.

44. Sid Davis, "Race and the Politics of Transportation in Atlanta," in R.D. Bullard and G.S. Johnson, *Just Transportation*, pp. 84-96; Environmental Justice Resource Center*, Sprawl Atlanta: Social Equity Dimensions of Uneven Growth and Development*. A Report prepared for the Turner Foundation, Atlanta: Clark Atlanta University (January 1999).

45. D.R. Wernette and L.A. Nieves, "Breathing Polluted Air: Minorities are Disproportionately Exposed," *EPA Journal* 18 (March 1992): 16-17.

46. CDC, "Asthma - United States, 1982 - 1992." *MMWR* 43 (1995): 952-955.

47. CDC, "Asthma mortality and hospitalization among children and young adults - United States, 1980-1993." *MMWR* 45 (1996): 350-353.

48. Anna E. Pribitkin, "The Need for Revision of Ozone Standards: Why Has the EPA Failed to Respond?" *Temple Environmental Law & Technology Journal* 13 (1994): 104.

49. CDC/NCHS. *Health United States 1994.* DHHS Pub.No.(PHS) 95-1232; Tables 83, 84, 86, & 87.

50. CDC, "Asthma - United States, 1982 - 1992." *MMWR* 43 (1995): 952-955.

51. CDC, "Disabilities among children aged less than or equal to 17 years - United States, 1991-1992." *MMWR* 44 (1995): 609-613.

52. U.S. EPA, "Review of National Ambient Air Quality Standards for Ozone, Assessment of Scientific and Technical Information," OAQPS Staff Paper. Research Triangle Park, NC: EPA, 1996; Haluk Ozkaynk, John D. Spengler, Marie O'Neil, Jianping Xue, Hui Zhou, Kathy Gilbert, and Sonja Ramstrom, "Ambient Ozone Exposure and Emergency Hospital Admissions and

Emergency Room Visits for Respiratory Problems in Thirteen U.S. Cities," in American Lung Association, *Breathless: Air Pollution and Hospital Admissions/Emergency Room Visits in 13 Cities.* Washington, DC: American Lung Association, 1996; American Lung Association, *Out of Breath: Populations-at-Risk to Alternative Ozone Levels.* Washington, DC: American Lung Association, 1995.

53. Centers for Disease Control and Prevention, National Center for Environmental Health, Division of Environmental Hazards and Health Effects, Air Pollution and Respiratory Branch, "Asthma Mortality and Hospitalization Among Children and Young Adults - -United States, 1980-1993," *Morbidity and Mortality Weekly Report*, 45 (1996).

54. Centers for Disease Control, "Asthma: United States, 1980-1990," *MMWR* 39 (1992): 733-735.

55. Mary C. White, Ruth " Etzel, Wallace D. Wilcox, and Christine Lloyd, "Exacerbations of Childhood Asthma and Ozone Pollution in Atlanta," *Environmental Research* 65 (1994), p. 56.

56. See R.D. Bullard, "The Legacy of Apartheid and Environmental Racism*," St. John's Journal of Legal Commentary* 9 (Spring, 1994): 445-474.

57. Donald Schueler, "Southern Exposure," *Sierra* 77 (November/December, 1992): 45.

58. Robert D. Bullard, "Ecological Inequities and the New South: Black Communities under Siege." *Journal of Ethnic Studies* 17 (Winter, 1990): 101-115; Donald L. Barlett and James B. Steele, "Paying a Price for Polluters," *Time* (November 23, 1998), pp. 72-80.

59. Schueler, "Southern Exposure," p. 46.

60. Ibid., pp. 46-47.

61. James O'Byrne and Mark Schleifstein, "Drinking Water in Danger," *The Times Picayune*, February 19, 1991, p. A5.

62. Conger Beasley, "Of Poverty and Pollution: Keeping Watch in Cancer Alley," pp. 39-45.

63. Barlett and Steele, "Paying a Price for Polluters," p. 77.

64. See Conger Beasley, "Of Pollution and Poverty: Deadly Threat on Native Lands," *Buzzworm,* 2 (5) (1990): 39-45; Robert Tomsho, "Dumping Grounds: Indian Tribes Contend with Some of the Worst of America's Pollution," *The Wall Street Journal* (November 29, 1990); Jane Kay, "Indian Lands Targeted for Waste Disposal Sites," *San Francisco Examiner* (April 10, 1991); Valerie Taliman, "Stuck Holding the Nation's Nuclear Waste," *Race, Poverty & Environment Newsletter* (Fall 1992): 6-9.

65. See Bradley Angel, *The Toxic Threat to Indian Lands: A Greenpeace Report*. San Francisco: Greenpeace, 1992; Al Geddicks, *The New Resource Wars: Native and Environmental Struggles Against Multinational Corporations*. Boston: South End Press, 1993.

66. Jane Kay, "Indian Lands Targeted for Waste Disposal Sites," *San Francisco Examiner* (April 10, 1991).

67. Ward Churchill and Winona LaDuke, "Native America:The Political Economy of Radioactive Colonialism," *Insurgent Sociologist* 13 (1) (1983): 61-63.

68. Greenpeace, "The Logic Behind Hazardous Waste Export", *Greenpeace Waste Trade Update* (First Quarter 1992): 1-2.

69. Dana Alston and Nicole Brown, "Global Threats to People of Color," Pp. 179-194 in R.D. Bullard, ed., *Confronting Environmental Racism: Voices from the Grassroots*. Boston: Southend Press, 1993.

70. Roberto Sanchez, "Health and Environmental Risks of the Maquiladora in Mexicali", *Natural Resources Journal* 30 (1) (1990): 163-186.

71. Beatriz Johnston Hernandez, "Dirty Growth," *The New Internationalist* (August 1993).

72. T. Barry and B. Simms, *The Challenge of Cross Border Environmentalism: The U.S.-Mexico Case*, Albuquerque, NM: The Inter-Hemispheric Education Resource Center, 1994.