Environmental Justice Initiatives 1993. Washington, DC: Environmental Protection Agency; Report No.:EPA-200-R-93-001. 24 P. Available From: NTIS, Springfield, VA.;PB95-182416
The report describes EPA's efforts and initiatives to provide environmental protection for all Americans regardless of race, ethnic background, or income status.

Strategic elements for environmental justice. Environ Health Perspect 1995;103(9):796-800.

No. FE09-91SR-18217. 157 P. Available From: NTIS, Springfield, VA.;DE93015421
This technical report presents the age-adjusted total, and race and sex specific geographic patterns of cancer mortality for South Carolina (SC) counties utilizing the 1953--1987 average annual age-adjusted mortality rates (AAMRs). The mortality information was obtained from the State Cancer Control Map and Data Program produced by the National Cancer Institute , Centers for Disease Control and the American Cancer Society. The AAMRs for selected primary sites are classified as significantly different or not significantly different from the corresponding United States and SC mortality rates. Categories for classification of the rates are determined using 95% confidence intervals. Geographic patterns of significantly high county AAMRs are identified and discussed. Individual county rates are not emphasized. The terminology, mortality rates used throughout this report pertains to the 1953--1987 AAMRS. Sponsored by Department of Energy, Washington, DC.

George DB, Wells MJ, Clark YR, Riemer JW, Mookherjee HN, Rollins SL, Gilbert AH. **Wastewater environmental justice in small communities**. 212th American Chemical Society National Meeting, Orlando, Florida, Usa, August 25-29, 1996. Abstracts Of Papers American Chemical Society; 212 (1-2). 1996. Envr 125. BIOSIS COPYRIGHT: BIOL ABS. RRM MEETING ABSTRACT WASTEWATER TREATMENT.

Gochfeld M, Campbell V, Landsbergis PA. **Demography of the hazardous waste industry**. Occup Med 1990;5 (1):9-23.
This article attempts to characterize the workforce of the hazardous waste industry. The growth of the industry is discussed, including its deployment into various activity categories, and its size is estimated. Finally, demographics of the workforce are presented.

Gold DR, Rotnitzky A, Damokosh AI, Ware JH, Speizer FE, Ferris BG Jr, Dockery DW. **Race and gender differences in respiratory illness prevalence and their relationship to environmental exposures in children 7 to 14 years of age**. Am Rev Respir Dis 1993;148(1):10-8.
Race and gender differences in respiratory illness prevalence rates were assessed in a cohort of 8,322 white children and 1,056 black children 7 to 14 yr of age from four U.S. cities. Boys had higher rates of wheeze, asthma, cough, phlegm, and bronchitis than girls. Black children had higher rates of persistent wheeze, shortness of breath with wheeze, asthma, chronic cough, and chronic phlegm than white children. We examined whether the racial disparity in respiratory illness prevalence could be accounted for by environmental exposures and socioeconomic factors. The proportion of families without a parent who had graduated from high school was higher for blacks than for whites, as was the proportion of single-parent households. Black children took up smoking less frequently; their mothers smoked fewer cigarettes. Personal and maternal smoking predicted higher rates of persistent wheeze, chronic cough, chronic phlegm, and chest illness. The relative odds for persistent wheeze were 1.34 (1.07, 1.69) for smoking children compared with nonsmoking children. The relative odds for persistent wheeze were 1.35 (1.13, 1.60) for children whose mother smoked > 30 cigarettes per day versus children with no maternal smoke exposure. Other predictors of respiratory illnesses included parental respiratory illness, parental education, only-child status, single-parent household, air conditioner use, and body mass index. Nevertheless, adjustment for socioeconomic factors, environmental exposures, and body habitus did not significantly reduce the excess respiratory illness prevalence observed among black children. The adjusted relative odds were 1.47 (1.25, 1.74) for persistent wheeze and 1.57 (1.17, 2.10) for asthma for black children versus white children.(ABSTRACT TRUNCATED AT 250 WORDS).

Goldberg MS, Al-Homsi N, Goulet L, Riberdy H. **Incidence of cancer among persons living near a municipal solid waste landfill site in Montreal, Quebec**. Arch Environ Health 1995;50(6):416-24.
The Miron Quarry municipal solid waste landfill site in Montreal, Quebec, generates copious quantities of methane and other gases, including a rich mixture of volatile organic compounds, some of which are recognized or suspected human carcinogens. The site is the third largest in North America and is located in the center of a densely populated area. Using data from the Quebec Tumour Registry, we conducted Poisson regression analyses to evaluate whether cancer incidence among persons who lived near the site was higher than expected. Potential exposure to ambient air pollutants from the site was defined in terms of a set of geographic exposure zones proximal to the site. A set of reference areas distal from the site was selected to be similar to these exposure zones with respect to several key sociodemographic factors. Risk ratios (RRs) were adjusted for age and calendar year. Among men living in the exposure zone closest to the site, elevated risks were observed for

cancers of the stomach (RR = 1.3, 95% confidence interval [95% CI] = 1.0-1.5); liver and intrahepatic bile ducts

exposure for minority and low-income populations. This study is a continuation of that earlier research. Sponsored by Department of Energy, Washington, DC.

Perlin SA, Setzer RW, Creason J, Sexton K. **Distribution of industrial air emissions by income and race in the United States: an approach using the Toxic Release Inventory**. Environ Sci Technol 1995;29(1):69-80. BIOSIS COPYRIGHT: BIOL ABS. There currently is a scarcity of scientific information to guide public policy decisions about issues of environmental justice; broadly defined as the goal of achieving adequate protection from the harmful effects of environmental agents for everyone, regardless of age, culture, ethnicity, gender, race, or socioeconomic status. This paper highlights several key methodological issues that need to be addressed as part of ongoing efforts to strengthen the scientific foundation for informed decision-making regarding environmental justice. Specifically, careful thought must be given to the selection of appropriate (1) statistical tests, (2) geographic unit(s) of analysis, (3) exposure estimators, and (4) comparison (reference) populations. These methodological issues are examined in the context of a nationwide study looking at the differences by ethnicity/race and household income in county-level air emissions of industrial chemicals. National and regional comparisons are made for 1990 using emission estimates from the Toxic Release Inventory, demographic data from the Census, and income data from the Donnelley Marketing Information Services.

Pittenger DB. **Letter report: Population estimates by age, sex and race for 10-county study area**. Hanford Environmental Dose Reconstruction Project. Washington, DC: Department of Energy; Report No.:PNL-7931-

Communities surrounding the Rocky Mountain Arsenal (RMA), a Superfund site in Colorado, were studied in order to determine whether exposures to mercury were greater among persons who resided there than among residents of a comparison area 12-15 miles distant. From a census-based stratified random sample, 469 persons were interviewed and urine samples were obtained for biomonitoring. Mercury was detected in urine from 32 (6.8%) of the 469 persons sample at a detection limit of 5 ppb. Trace levels of mercury (detectable, but nonquantifiable) were found in 80 (17.1%) of the persons sampled. Neither the frequency of detection, the arithmetic mean, nor the geometric mean value for urine mercury was found to be statistically different when persons living near the site were compared to persons from the more distant comparison area. The risk of mercury exposure associated with demographic variables, residence, occupation, hobbies, dietary habits, water supply, housing, and activity patterns was evaluated. In the second stage of the evaluation, the Neurobehavioral Core Test Battery (NCTB) is being used to assess individual functional deficits and nervous system disorders associated with exposure to mercury and other neurotoxic chemicals.

Rios R, Poje GV, Detels R. **Susceptibility to environmental pollutants among minorities**. Toxicol Ind Health 1993;9(5):797-820.
BIOSIS COPYRIGHT: BIOL ABS. Susceptibility to environmental pollutants involves both biological and nonbiological factors. Individuals belonging to minority groups are much more likely to be subject to a number of these factors. This paper examines biological susceptibility of minorities to environmental pollutants and provides specific examples of susceptibility resulting from: genetic makeup, occupation; other factors such as compromised health status, exposure to mixtures of pollutants, substance abuse, and unemployment; and social inequality of access to health care, education, and communication skills. Recommendations are made for specific actions and for additional studies.

Sachs A. **Upholding human rights and environmental justice**. In: Brown LR, Editor. State Of The World, 1996. New York: WW Norton and Company; 1996. P. 133-51.
BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK CHAPTER HUMAN IMPACT ENVIRONMENTAL DESTRUCTION HAZARDOUS WASTE DISPOSAL POLLUTION SUSTAINABLE DEVELOPMENT CIVIL LIBERTIES.

Sarpong SB, Hamilton RG, Eggleston PA, Adkinson NF Jr. **Socioeconomic status and race as risk factors for cockroach allergen exposure and sensitization in children with asthma**. J Allergy Clin Immunol 1996;97 (6):1393-401.

Schiffman SS, Miller EA, Suggs MS, Graham BG. **The effect of environmental odors emanating from commercial swine operations on the mood of nearby residents**. Brain Res Bull 1995;37(4):369-75.
The effect of environmental odors emanating from large-scale hog operations on the mood of nearby residents was determined using the POMS (Profile of Mood States). The scores for six POMS factors and the TMD (total mood disturbance score) for 44 experimental subjects were compared to those of 44 control subjects who were matched according to gender, race, age, and years of education. The results indicated a significant difference between control and experimental subjects for all six POMS factors and the TMD. Persons living near the intensive swine operations who experienced the odors reported significantly more tension, more depression, more anger, less vigor, more fatigue, and more confusion than control subjects as measured by the POMS. Persons exposed to the odors also had more total mood disturbance than controls as determined by their ratings on the POMS. Both innate physiological responses and learned responses may play a role in the impairment of mood found here.

Sexton K, Gong H Jr, Bailar JC 3d , Ford JG, Gold DR, Lambert WE, Utell MJ. **Air pollution health risks: do class and race matter?** Toxicol Ind Health 1993;9(5):843-78.
BIOSIS COPYRIGHT: BIOL ABS. Air pollution is not spread evenly across demographic groups. Exposures and associated health risks appear to fall disproportionately on populations that are poor and nonwhite. Although scientific evidence documenting disparities in air pollution exposures, doses, and health effects is scant, the available data strongly support the contention that disadvantaged groups, many of whom are ethnic and racial minorities, routinely encounter levels of air pollution that are higher than average. The extent to which exposure differentials contribute to observed differences in health status by class and race is unknown, but worthy of further investigation. We recommend several steps, all of them feasible and most of them relatively inexpensive, to improve our understanding and ability to address environmental health disparities.

Sexton K, Olden K, Johnson BL. **Environmental justice: the central role of research in establishing a credible scientific foundation for informed decision making**. Toxicol Ind Health 1993;9(5):685-727.
Although much of the evidence is anecdotal and circumstantial, there are mounting concerns that environmental health risks are borne disproportionately by members of the population who are poor and nonwhite. We examine the central role of environmental health research in defining the dimensions of the problem, understanding its causes, and identifying solutions. Environmental health sciences, including epidemiology, exposure analysis. pharmacokinetics, toxicology, and surveillance monitoring, must be employed to determine the extent to which society has achieved equity and justice in safeguarding the health and safety of its citizens. By improving our ability to identify, evaluate, prevent, and/or reduce risks for all members of society, environmental health research can contribute directly to fair and equitable protection for everyone, regardless of age, ethnicity, gender, race, or socioeconomic status.

Shrader-Frechette K. **Equity and nuclear waste disposal**. J Agriculture Environ Ethics 1994;7(2):133-56. gpt27. 9ugh r

Taboas AL. **Editorial principles of environmental protection strategy**. Environ Intl 1996;22(4):385-8. BIOSIS

Wernette D, Nieves L. **Minorities and air quality non-attainment areas: A preliminary geo-demographic analysis**. Washington, DC: Department of Energy; Report No.:ANL-CP-75440. Conf-9206158. Contract No.:W-31109-ENG-38. 22 P. Available From: NTIS, Springfield, VA.;DE92013054
A major section of the Clean Air Act Amendments (CAAA) focuses on reducing air pollution through extending and modifying the provisions for states and localities with US Environmental Protection Agency (EPA)-designated non-attainment areas. Specifically, Title 1 of the CAAA is concerned with non-attainment areas, as defined relative to the National Ambient Air Quality Standards for atmospheric ozone, carbon monoxide, and particulate matter; Title 2 is concerned with mobile sources or air pollution, which produce carbon monoxide, contribute to ozone concentrations, and in the past have been a major source of airborne lead; and Title 4 is concerned with acid deposition, mainly due to sulfur dioxide emissions. This paper has its origin in the question of the potential benefits for minorities--relative to the majority non-Black, non-Hispanic population--of reductions in air pollution that may result from these amendments. It is part of a larger effort to identify and assess the costs and benefits of the CAAA for minorities, relative to the majority population. The focus of this paper centers on comparing Black and Hispanic populations to White, non-Hispanic populations living in EPA-designated non-attainment area counties in the contiguous United States, which excludes Alaska and Hawaii. Subsequent comparisons of majority populations with Native Americans and Asian-Americans will include these two states. Socioeconomic energy research and analysis conference, Baltimore, MD (United States), 27-28 Jun 1992. Sponsored by Department of Energy, Washington, DC.

Westra L. **Environmental integrity, racism and health**. Sci Total Environ 1996;184(1-2):57-66. BIOSIS COPYRIGHT: BIOL ABS. Environmental degradation seriously affects human health. Thus, a close relationship exists between the protection of ecosystem integrity and wilderness on one hand, and human health on the other. However, there is an overarching, holistic perspective in laws and regulations - as well as morality - to maintain a healthy relationship between the two. Problem areas focused on in this paper are: (a) climate change and global warming; (b) food production; and (c) global equity. This paper argues for the principle of integrity, which provides an holistic perspective, suggested as a better approach than that of current regulations to mitigate against associated threats to human health.

White JCe. **Environmental Science Research. Vol. 45. Global climate change linking energy environment economy and equity: Eighth Annual Conference of the Air Resources Information Clearinghouse**; 1991 Dec 5-6; Washington, DC. New York: Plenum Press; 1992. 242 p
BIOSIS COPYRIGHT: BIOL ABS. RRM BOOK MEETING SOCIAL CONCERNS LEGISLATION POLLUTION.

Whiteman DC, Dunne MP, Burnett PC. **Psychological and social correlates of attrition in a longitudinal study of hazardous waste exposure**. Arch Environ Health 1995;50(4):281-6.
The differences between responders and nonresponders (re(fuser)s and movers) in a follow-up survey of self-reported health effects associated with residing near a hazardous waste site were analyzed in this study. Responders and refusers did not differ with respect to demographic variables when comparison was made with measures from the initial survey; however, movers were more likely than refusers to be younger, to rent their homes, and to have lived in the area for the shortest period. In terms of psychological reactions, movers and refusers reported more intense worries, more stress, and more psychological intrusion about the problem than did responders. There were no differences between the groups with respect to self-reported prevalence of death and cancer, diseases, or symptoms of physical illness. The results indicated that the psychological impact of exposure to a hazardous waste site may be greatest in individuals who are lost to follow-up.

Wigley DC, Shrader-Frechette K. **Environmental justice: a Louisiana case study**. J Agricult Environ Ethics 1996;9(1):61-82.
BIOSIS COPYRIGHT: BIOL ABS. RRM LITERATURE REVIEW HUMAN ETHICS INFORMED CONSENT FAIRNESS RADIATION POLLUTION USA.

Wilkinson CH, Brumburgh GP, Edmunds TA, Kay D. **New approach for environmental justice impact assessment**. Washington, DC: Department of Energy; Report No.:UCRL-JC-123630. Conf-960648-4. Contract No.:W-7405-ENG-48. 11 P. Available From: NTIS, Springfield, VA.;DE96008484
President Clinton's Executive Order 12898 calls for examination of disproportionately high and adverse impacts to minority and low-income communities. In addition to demographic mapping, environmental justice analyses

should also include quantitative impact assessment to show presence or absence of disproportionate impacts. This study demonstrates use of a geographic information system (GIS) and a computer model. For this demonstration, a safety analysis report and a computer code were used to develop impact assessment data from a hypothetical facility accident producing a radiological airborne plume. The computer code modeled the plume, plotted dose contours, and provided latitude and longitude coordinates for transfer to the GIS. The GIS integrated and mapped the impact and demographic data toprovide a graphical representation of the plume with respect to the population. Impacts were then analyzed. The GIS was used to estimate the total dose to the exposed population under the plume, the dose to the low-income population under the plume, and the dose to the minority population under the plume. Impacts among the population groups were compared to determine whether a dispropotionate share of the impacts were borne by minority or low-income populations. Annual conference of the National Association of Environmental Professionals: practical environmental directions - a changing agenda