



Environmental Justice

Income, Race, Ethnicity, and Toxic Pollution in the Rockies Metro Areas

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The environmental movement in the Rockies region has managed to protect and preserve great expanses of open space, wilderness, water, and wildlife in the face of steady pressure to exploit the region’s natural riches. However, while environmentalists have devoted much time and energy to protecting other species, they have done less to protect their own. Critics of environmentalism often cite activists’ preference for nature over humanity, suggesting they have a blind spot for the welfare of people. While environmentalists have no inherent disregard for people, they may be ignorant of the people that most often need protection, namely minority and low-income groups.

The unfortunate reality that not everyone is equally exposed to environmental harm, and that harm is not randomly distributed, is the driver of a movement towards “environmental justice.” Drawing upon both the Civil Rights Movement and the environmental



movement, environmental justice is based upon the idea that people of every race, ethnicity, and income group deserve equal rights to clean air, water, and land.

In the Rockies, certain demographic groups are disproportionately exposed to a full quiver of environmental assaults, including air pollution, water pollution, and nuclear radiation, while those reaping the financial benefits of hazardous activities are lightly exposed. Our analysis shows that toxic-polluting industrial facilities in the Rockies are located in neighborhoods where residents earn nearly \$3,000 less per capita, are four percent more non-white, and are six percent more Hispanic than in neighborhoods without toxic facilities (Figure 1 through Figure 3). This imbalance in costs and benefits of polluting activities flies in the face of our region’s commitment to a healthy environment and healthy citizens. Socioeconomic status and race should not be determining factors in the ability of a Rockies family to lead a healthy and happy life,

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and industry must not use poor or minority communities as the path of least resistance for their negative externalities.

Unless this region is content as the land of opportunity for some, rather than all, we must address the injustices taking place in our communities. The environmental justice movement, of prime importance to disempowered communities in the region, remains in a state of infancy. First, this report explores the environmental justice movement's beginnings, development, and current state in the U.S., taking into consideration obstacles to furthering the movement. Following this background information, the focus shifts to environmental justice issues in the Rockies region. Finally, data on income, race, ethnicity, and proximity to sources of toxic pollution are presented generally for the entire region and in-depth for the region's 23 largest metro areas.

Environmental Justice in the U.S.

In 1978, Lois Gibbs realized her family and neighbors in Love Canal, New York, lived next to 20,000 tons of hazardous chemicals. While leading her working-class community on a successful three-year struggle to relocate 833 homes, Lois realized that no organization existed in the country to assist and empower communities in protecting themselves from environmental hazards, so she founded what is now called the Center for Health, Environment, and Justice (CHEJ) in 1981. "Neighbor by neighbor, one community at a time... CHEJ helps to harness the power of the grassroots to collectively change the balance of power."¹

The environmental justice movement emerged as people, like Lois Gibbs, recognized the relatively high exposure of low-income and minority communities to environmental hazards. The movement has produced results over the years, but the cause has a long way to go. A number of strong grassroots organizations, like CHEJ, are effectively addressing specific instances of environmental justice and building general support for regulation, but today, no enforceable regulation preventing inequitable environmental harm is in place at the federal or state level.

Uncovering Environmental Inequality

The federal government first acknowledged disparities in environmental equity in 1971 when the United States Counsel on Environmental Quality declared that low-income groups and people of color are disproportionately exposed to significant environmental hazards.² It wasn't until 1982, however, that the plight of the nation's disadvantaged fully emerged into public view. That year, residents of Warren County, North Carolina, which is primarily African-American, staged a non-violent demonstration to protest the siting of a polychlorinated biphenyl (PCB) landfill near their homes. Despite the major opposition, construction of the facility proceeded, but the demonstration was still a success. The more than 500 arrests that resulted attracted national attention to the budding environmental justice movement³ and spurred a cascade of research on the issue.

A 1983 report by the U.S. General Accounting Office found that three-fourths of off-site, commercial, hazardous wastefills in the southeastern United States were in black communities, even though blacks made up only one-fifth of the regional population.⁴ That same year, Robert Bullard determined that waste dumps in Houston were not randomly scattered. Instead, they were disproportionately located in black neighborhoods. The study led to his

Rockies Region

Per Capita Income and Proximity to Toxic Facilities, 2000

Figure 1

Source: See "Mapping Sources of Toxic Pollution" on page 109.

Neighborhoods Not Near Sources of Toxic Pollution

\$20,722

Neighborhoods Near Sources of Toxic Pollution

\$17,767



Percentage of Rockies Region Population Who Identify as Non-white and Proximity to Toxic Facilities, 2000

Figure 2

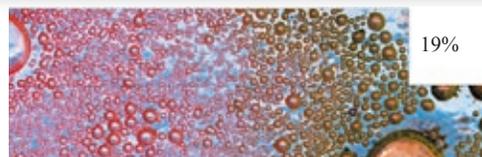
Source: See "Mapping Sources of Toxic Pollution" on page 109.

Neighborhoods Not Near Sources of Toxic Pollution

19%

Neighborhoods Near Sources of Toxic Pollution

23%



Percentage of Rockies Region Population Who Identify as Hispanic or Latino and Proximity to Toxic Facilities, 2000

Figure 3

Source: See "Mapping Sources of Toxic Pollution" on page 109.

Neighborhoods Not Near Sources of Toxic Pollution

19%

Neighborhoods Near Sources of Toxic Pollution

25%



book, "Dumping in Dixie: Race, Class, and Environmental Quality," one of the founding pieces of literature in the environmental justice movement.⁵

Evidence of environmental injustice continued to mount. In 1987, the United Church of Christ Commission for Racial Justice published "Toxic Waste and Race," finding that race is the most significant factor in siting waste facilities. The paper showed that three-fifths of all blacks and Latinos and half of all Asian Americans and Native Americans lived in communities with at least one toxic waste site. A 1994 follow-up to the study not only confirmed these findings, but also found that environmental conditions had actually worsened for minorities.⁶ Early environmental justice studies focused primarily on race and ethnicity, but as the movement grew to encompass low-income groups, researchers expanded their scope to include socio-economic status.

Limited Response to Environmental Justice

In the early 1990s, environmental justice advocates succeeded in putting the movement's objectives on the national agenda thanks to the work of researchers and grassroots organizations in documenting and publicizing environmental inequality. The White House established the Office of Environmental Equity, now the Office of Environmental Justice, as an arm of the United States Environmental Protection Agency (EPA) in 1992. President Bill Clinton

issued Executive Order (E.O.) 12898 in 1994, requesting that federal agencies identify and address the disproportionate health and environmental effects of its actions.⁷ Finally, environmental justice gained a foothold in the United States government.

Through E.O. 12898, environmental justice complaints against federal agencies can be taken to the EPA. However, the EPA has heard more than 130 environmental justice cases, and in none of those cases has the agency cited an environmental justice violation. The agency defends its decisions by explaining that Clinton's E.O. 12898 requires only assessment of inequitable environmental effects, not their elimination.⁸

In 2003, the United States Commission on Civil Rights reprimanded the EPA, the U.S. Department of Housing and Urban Development, the Department of Transportation, and the Department of the Interior for failing to implement E.O. 12898 by not incorporating environmental justice into their programs.⁹ The following year, an independent auditor criticized the EPA for its poor efforts to improve environmental justice.¹⁰ The EPA's opinion of E.O. 12898 certainly contributes to the agency's sluggish behavior in enforcing it. "The agency can't base what it's doing on an executive order," claims Barry Hill, director of the Office of Environmental Justice. "If someone said we had to, I'd have to say 'Are you on drugs?'"¹¹

While government efforts to curb environmental injustices seem to be all talk and little action, there are instances of solid equity enforcement and promotion. In 1998, the Nuclear Regulatory



Commission (NRC) killed a Louisiana company's plan to construct a nuclear facility that would require relocating a road between two black neighborhoods. The NRC cited the company for failing "to fully assess the disproportionate socio-economic impacts of the proposal on the adjacent African-American communities."¹²

Additionally, the Environmental Justice Small Grants Program, established in 1994 by President Clinton, survives to this day.¹³ Under this program, the EPA annually selects projects across the nation to receive \$25,000 grants for the advancement of environmental justice. The number of grants awarded has dropped precipitously. During Clinton's last

five years in office, 684 grants were awarded, compared to 296 during President Bush's most recent five years in office.¹⁴

Obstacles to Environmental Justice

Although the environmental justice movement has had some success in documenting injustice, garnering national attention and support, and paving legislative ground, it still has a long way to go. A variety of obstacles bar advancement of the movement's goals. The impotence of E.O. 12898 at remedying environmental inequities, coupled with a weak legislative framework, provides little support for at-risk communities. Several other factors slow the wheels of the environmental justice movement: industry and worker opposition; tension between environmental justice and mainstream environmentalism; opponents to the fundamental ideas of creating equity through policy or legislating people's private decisions; a small activist base; and difficulty producing relevant risk assessments.

Legal Obstacles

The federal government has laws in place that are intended to mitigate environmental harm and keep people healthy. On paper, they call for equal protection for all, but in action, they do not result in equal protection. There are no national laws that specifically require environmental equity, leaving little legal foundation for victims of environmental injustice to redress their grievances. As a result, environmental justice has a dismal legal case history. Typically, litigation on the grounds of an environmental injustice involves invoking Title VI of the Civil Rights Act of 1964. Title VI requires that the victim prove intentional discrimination, a nearly impossible task. Consequently, no environmental justice suits have been resolved in favor of the victim under the Civil Rights Act.¹⁵

State governments, which have little experience addressing environmental injustice, often seek guidance from the U.S. EPA.¹⁶ Unfortunately, the EPA has not set a strong example. National civil rights law mandates that every state annually assures the EPA that all state-approved permits do not create environmental injustice. Although states continue to make assurances, a 2002 Public Interest Law Center of Philadelphia survey of environmental justice in state environmental agencies illustrated a general ignorance of



environmental injustices. Of the 31 states that responded, only three had any environmental justice program, suggesting that few states have grounds for their assurances to the EPA.¹⁷

Other Obstacles

Economic factors give industry incentive to perpetuate environmental inequality. It simply costs less to site toxic facilities in low-income areas where land is cheap. Furthermore, siting a hazardous facility in a poor or minority area can be easier, because these communities may have fewer resources available to devote to understanding the environmental implications of the siting, organizing opposition, and hiring adequate legal representation.

Additionally, some groups argue that environmental regulation and protection injure income potential of workers, many of whom are the poor minorities the environmental justice advocates are working to protect. “Clean air and water is in everyone’s best interest,” explains John Meredith of the African-American Leadership Network, “but the elitist agenda of the environmental movement hurts... economic well-being.”¹⁸ Residents living near a hazardous facility may depend on that facility as a source of employment, and, therefore, they may be opposed to any regulations that could potentially lower their wages or cost them their jobs.

A surprising obstacle to environmental justice is mainstream environmentalism itself. Although both activist groups share the goal of preventing environmental degradation, they give priority to very different types of environmental problems. Mainstream environmental activism, especially in the West, is strongly focused on preserving natural landscapes and ecosystems and not on protecting the public from environmental hazards.

It would be unfair and inaccurate to implicate the entire mainstream environmental movement, but there is clearly some conflict between certain mainstream environmentalists and environmental justice advocates. As a result, these groups have had difficulty working collaboratively toward their common goal. Some environmentalists warn that working on environmental justice issues is a drain on their political power and other resources that could be better used to address more important problems, mainly protecting nature. Some environmental justice advocates accuse mainstream environmentalists of being elitists who would devote more care, time, and money to saving one tree than one human being.

In general, the American public has some ideological resistance to the environmental justice movement. Many Americans support policy that is blind to race and class, contending that policy should not provide for one group of people differently than it does for another. They support equality in the legal process rather than effective equality, or equality in the ultimate outcomes of the legal process.¹⁹ Some contend that specifically assisting communities deemed at particular risk of environmental injustice implies that others don’t deserve as much justice, thereby marginalizing the very underpinnings of the movement. Also, many Americans believe that people’s free



choices should remain out of the public purview, and some argue that living in an area exposed to hazardous chemicals is simply one’s free choice.²⁰

Environmental Justice in the Rockies

The Rockies region bears an inequitably high share of the nation’s pollution, as documented in the *2005 State of the Rockies Report Card*. The EPA requires certain industrial and governmental polluters to report details on the emission of hazardous substances from their facilities as part of the national Toxics Release Inventory. TRI emission data show that more toxic pollution is released per square mile in the Rockies, even with its low population density, than the rest of the country. However, the situation is probably even more inequitable than the data show, because mining and agriculture, two of the largest and most environmentally degrading industries in the Rockies region, are not accurately documented in the TRI.

Almost all agriculture is exempt from reporting to the TRI, even though on average, 20 acres of every square mile in the Rockies region are treated with chemical fertilizers and soil conditioners and 15 acres per square mile are treated with chemical pesticides for agricultural use.²¹ In 2002, a controversial court decision reaffirmed the mining industry's exemption from reporting the movement and exposure of unprocessed, but still toxic, waste rock material to the TRI.²² This exemption is staggering, considering mining accounts for nearly half of all toxic emissions to air, land, and water in the United States.²³

Some of the inequity in the Rockies results as the rest of the nation takes what it wants from the region and leaves behind a mess. Heavily polluting industrial operations, like open-pit mines, extract natural resources from the region for use elsewhere. Additionally, the rest of the nation puts what it does not want in the Rockies. Big pollution sources, like coal-burning power plants supplying electricity to West Coast cities, are sited in the Rockies region, where less opposition is encountered.

Understanding Injustice in the Rockies

Aside from this national environmental injustice against the Rockies region, environmental injustice is taking place within the Rockies itself. The demographic evolution of the region, combined with the above-mentioned regional industrial activities, create the unique growing conditions for its own organic injustices and corresponding movements to remedy them.

Historically, the Rockies have been highly reliant on mineral extraction, timber harvest, and agriculture for income in rural

communities. While the image of black smoke from steel and power plants of large Midwest and East Coast cities is readily associated with corresponding health hazards, classic images of gold prospectors, lumberjacks, and potato farmers are not readily viewed as threats to community health. But mining, forestry, and agriculture have modernized into large, highly polluting industries that impact nearby rural communities. And the Rockies region as a whole is more modern than people tend to think. Furthermore, most people in the region live in cities—cities with smokestacks, wastewater pipes, and landfills.

Native Americans have a long-standing history in the region and long-standing environmental injustices to accompany it. Native American culture is intimately tied to place and environment, and tribes have had the time and unity to develop strong environmental justice-related resources, which are only bolstered by tribal sovereignty over reservation land. However, poverty throughout Native American reservations is a strong incentive for tribes to accept environmental risks in exchange for financial prospects. Thus, Native Americans are still common victims of environmental injustice along with other minority groups and people earning low incomes. Other minority groups in the Rockies region are less unified and have not inhabited the region for as long, resulting in less developed civil rights and environmental justice infrastructure, but pockets of successful activism do exist.

One example is the Southwest Network for Environmental and Economic Justice (SNEEJ), based in Albuquerque, New Mexico. SNEEJ is one of the leading environmental justice organizations in the nation. Since it was founded in 1990, SNEEJ has worked “to



strengthen the work of local organizations and empower communities and workers to impact local, state, regional, national, and international policy on environmental and economic justice issues”²⁴ with the following goals:

- Provide grassroots organizations throughout the region and Mexico with a means of sharing local victories and organizing ideas, as well as promoting solidarity with one another;
- Provide skills, organizing, and technical training and leadership development to local network affiliates relevant to the history and cultures of the Southwest, and involve existing human resources in bringing such efforts to fruition;
- Promote leadership by people of color in an effort to address the poisoning of communities of color;
- Strengthen work which links in practice environmental and economic justice;
- Develop regional perspectives and strategies to address environmental degradation and other social, racial, and economic justice issues;
- Develop a bi-national organization which brings together U.S. and Mexican-based grassroots community, labor, human rights, youth, and student organizations.²⁵

Government Response to Rocky Mountain

Environmental Injustice

Environmental justice in the Rockies region lacks solid support from the national government, and state government has little infrastructure in place for addressing disproportionate environmental burden in the region. But there are signs of progress. Communities in the Rockies are receiving national grants to address environmental justice problems, and state governments are incorporating environmental justice into their environmental departments.

At the federal level, the EPA is facilitating a handful of projects in the Rockies region under the Small Grants Program and a similar initiative, the Environmental Justice Collaborative Problem-solving Grant Awards. In 2004, two small grants were awarded in the Rockies. One went to a Denver organization to teach youth how to research environmental hazards and how to overcome institutional and policy barriers faced by low-income and minority populations. The other went to improve health on the Wind River Indian Reservation in Wyoming.²⁶ Also in 2004, Colorado environmental justice advocates received two problem-solving grants. One was awarded to a Pueblo nonprofit for the education of Latino and black communities that are subjected to high levels of air and water pollution. The other went to a Denver community organization to create an information center for Spanish-speaking residents living in a heavily exposed neighborhood.

A 2004 state-by-state survey of environmental justice legislation, policies, programs, and initiatives shows that there is not one formal law or statute in the eight-state Rockies region addressing environmental injustice. Three out of eight Rockies states (Idaho, Nevada, and Wyoming) have no initiatives in place to address unfair environmental hazards, a ratio more than double the 18 percent of states nationwide that lack environmental justice initiatives.²⁷ Although the other states in the region claim no formal environmental justice policy, they have at least begun to lay some basic foundations that may one day support environmental justice legislation.

The secretary of the New Mexico Environmental Department (NMED) says state government “needs to look at issues of environmental justice—why pollution-creating facilities are too



often put in poor, minority communities.” Most state government awareness of environmental justice issues is arising in state environmental agencies, such as NMED. Even though New Mexico has no formal environmental justice policies on the books, NMED officials are meeting with environmental justice advocacy groups, and New Mexico has become the only Rockies state to provide in-depth environmental justice information on its Web site. Additionally, NMED’s secretary has pledged to “enforce environmental laws that are on the books [to promote environmental justice].”²⁸

Arizona’s Department of Environmental Quality (DEQ) hired a full-time environmental justice staffer and is required to notify poor and minority communities of proposed hazardous siting plans within 31 days of receiving permitting applications. Colorado’s State Environmental Project allows violators of environmental regulations to implement projects to improve environmental justice, like reducing health risk from environmental exposure to low-income communities, in exchange for a penalty reduction.²⁹

Rockies’ states are also addressing environmental inequity through Performance Partnership Agreements (PPAs) with the EPA. A PPA is an agreement that the state will support EPA’s environmental justice efforts, which emphasize the fair treatment of people of all races, incomes, and cultures with respect to environmental programs. Utah, Colorado, and Montana are onboard, but it must be noted that a PPA is only as powerful as the EPA’s weak environmental justice program.

Documenting Environmental Inequality in the Rockies' Metro Areas

Environmental justice has a long way to go in the Rockies region. An important step in furthering the movement is increasing awareness of the issue. Environmental inequality is overshadowed by other mainstream environmental issues in the Mountain West. In part, this is because many just do not realize environmental inequality is a widespread reality in the region. The following research shows that environmental injustice is a reality in the Rockies.

Mapping Sources of Toxic Pollution

Our study analyzes the income, race, and ethnicity of neighborhoods near sources of toxic pollution throughout the eight-state Rocky Mountain West. Over 10 percent of 18 million people living in the region live in neighborhoods near sources of toxic pollution. People living near toxic pollution sources earn 14 percent less income, are four percent more non-white, and are six percent more Hispanic than people not living near toxic pollution sources (Figure 1 through Figure 3).

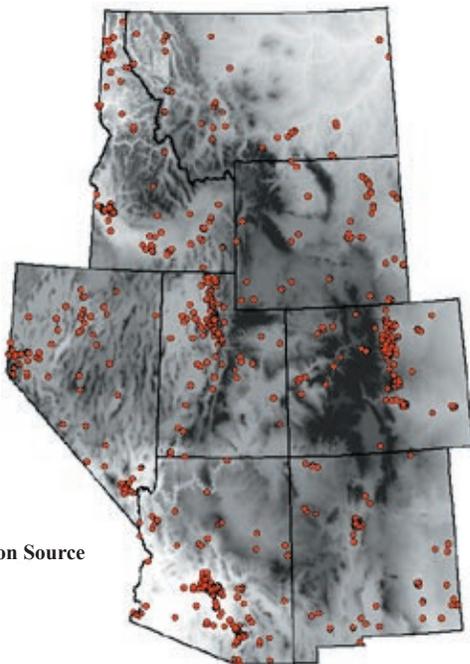
Sources of toxic pollution include all industrial and federal government facilities which were required to report to the EPA's 2003 Toxics Release Inventory (TRI) (Figure 4). The EPA is mandated by law to provide a publicly accessible database, the TRI, on the annual management details of over 600 toxic chemicals released by the more than 25,000 polluting industrial and federal facilities in the United States. Over 1,000 TRI facilities in the Rockies emit toxic pollution to the region's air, water, and land. These facilities include coal-burning power plants, open-pit mines, food-processing plants, and federal military and energy labs and testing grounds. Not all sources of pollution are required to report to the TRI. Visit www.epa.gov/tri for more information.

Data on per-capita income, percentage of the population that identify

All 1,066 TRI-reporting Facilities, 2003

Figure 4

Source: See "Mapping Sources of Toxic Pollution" on page 109.

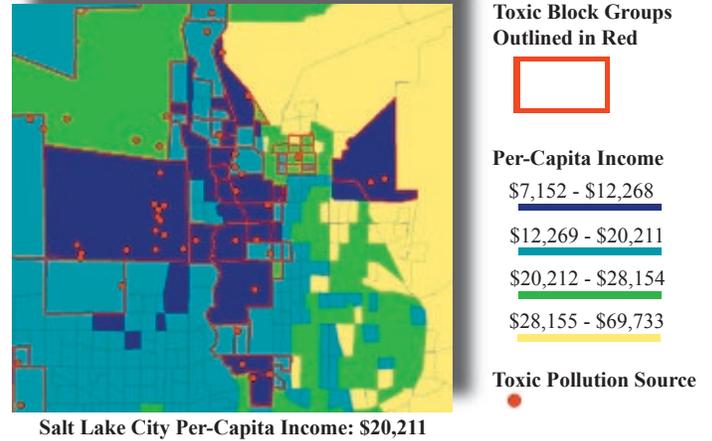


Salt Lake City, Utah

Sources of Toxic Pollution, Toxic Block Groups, and Per Capita Income

Figure 5

Source: See "Mapping Sources of Toxic Pollution" on page 109.



as non-white, and percentage of the population that identify as Hispanic or Latino of any race come from the 2000 Census. The United States Census Bureau divides counties into finer geographic areas called block groups. These are the "neighborhoods" used in the analysis. In the Rockies region, there are 281 counties and 13,214 block groups, or about 50 block groups per county. Block groups vary in size from just a few city blocks in a densely populated downtown to hundreds of square miles in sparsely populated areas. Block group population in the Rockies ranges from 0 to 14,658 residents.

For the analysis, each of the 13,214 block groups in the Rockies has been classified as either "toxic" or "clean" depending on the proximity of that block group to a toxic facility. Figure 5 shows toxic block groups outlined in red, as they are defined below.

Toxic Block Group: Neighborhood either containing a toxic facility within its boundary or with a toxic facility within 1,000 meters of its geographic center.

Clean Block Group: Neighborhood that does not qualify as toxic.

It is important to note that residents of a toxic block group are not necessarily experiencing any negative health effects as a result of the nearby toxic facility. The health threat from a TRI facility varies dramatically from site to site depending on the amount of pollution released, the toxicity of the released chemicals, and the environmental conditions into which the pollution is released. That said, the presence of any facility that handles toxic chemicals elevates the potential toxic health threat to the surrounding area.

Toxic Pollution in the Rockies' Metro Areas

Given the clearly unequal toxic burden of low-income, non-white, and Hispanic neighborhoods regionally (Figure 1 through Figure 3), the analysis is taken further by looking at the Rockies' largest population centers, which are listed in Figure 6. Around 75 percent of all people in the Rockies live in the 23 most populous metropolitan statistical areas (MSA) in the Rockies, which include urban areas and their connected suburbs. About 70 percent of the region's toxic facilities are in these metro areas. The metro areas have been divided into two groups, large and small, to compare similar-sized metro areas. The 12 large metro areas are home to 68 percent of the



Metro Areas and Their Counties Included in the Study

Figure 6

Large Metro Areas

Albuquerque, New Mexico:

Bernalillo County, New Mexico; Sandoval County, New Mexico; Valencia County, New Mexico.

Boise, Idaho:

Ada County, Idaho; Canyon County, Idaho.

Colorado Springs, Colorado:

El Paso County, Colorado.

Denver-Boulder, Colorado:

Adams County, Colorado; Arapahoe County, Colorado; Boulder County, Colorado; Denver County, Colorado; Douglas County, Colorado; Jefferson County, Colorado.

Fort Collins, Colorado:

Larimer County, Colorado; Weld County, Colorado.

Las Vegas, Nevada:

Clark County, Nevada; Mohave County, Arizona; Nye County, Nevada.

Phoenix-Mesa, Arizona:

Maricopa County, Arizona; Pinal County, Arizona.

Provo-Orem, Utah:

Utah County, Utah.

Pueblo, Colorado:

Pueblo County, Colorado.

Reno, Nevada

Washoe County, Nevada

Salt Lake City-Ogden, Utah:

Davis County, Utah; Salt Lake County, Utah; Weber County, Utah.

Tucson, Arizona:

Pima County, Arizona

Small Metro Areas

Billings, Montana:

Yellowstone County, Montana.

Casper, Wyoming:

Natrona County, Wyoming.

Flagstaff, Arizona:

Coconino County, Arizona; Kane County, Utah.

Grand Junction, Colorado:

Mesa County, Colorado.

Great Falls, Montana:

Cascade County, Montana.

Las Cruces, New Mexico:

Dona Ana County, New Mexico.

Missoula, Montana:

Missoula County, Montana.

Pocatello, Idaho:

Bannock County, Idaho.

Santa Fe, New Mexico:

Los Alamos County, New Mexico; Santa Fe County, New Mexico.

Yuma, Arizona:

Yuma County, Arizona.

Rockies' population, and the 11 small metros are home to seven percent of the population.

Findings for per-capita income, percentage non-white, and percentage Hispanic of toxic block groups and clean block groups in the larger and smaller metro areas are displayed on the following three pages. The findings show that in the larger metro areas low-income and minority groups bear a clearly disproportionate burden, but in the smaller metro areas, the results vary.

Of the 12 larger metro areas, toxic block group residents (compared to all block group residents): earn less income in 11 metros, are more non-white in 11 metros, and are more Hispanic in 11 metros. Of the 11 smaller metro areas, toxic block group residents (compared to all block group residents): earn less income in six metros, are more non-white in six metros, and are more Hispanic in five metros. All results are displayed on the following pages (Figure 7 through Figure 15). The biggest inequalities in the larger metros for each category are:

Income (Figure 7 through Figure 9)

-*Salt Lake City, Utah:* Per-capita income is 23 percent lower in toxic block groups than it is in clean block groups.

-*Phoenix, Arizona:* Per-capita income is 21 percent lower in toxic block groups than it is in clean block groups.

-*Pueblo, Colorado:* Per-capita income is 19 percent lower in toxic block groups than it is in clean block groups.

Race (Figure 10 through Figure 12)

-*Phoenix, Arizona:* People living in toxic block groups are 13 percent more likely to be non-white than are people in clean block groups.

-*Salt Lake City, Utah:* People living in toxic block groups are nine percent more likely to be non-white than are people in clean block groups.

-*Colorado Springs, Colorado:* People living in toxic block groups are eight percent more likely to be non-white than are people in clean block groups.

Ethnicity (Figure 13 through Figure 15)

-*Phoenix, Arizona:* People living in toxic block groups are 17 percent more likely to be Hispanic than are people in clean block groups.

-*Pueblo, Colorado:* People living in toxic block groups are 16 percent more likely to be Hispanic than are people in clean block groups.

-*Albuquerque, New Mexico:* People living in toxic block groups are 11 percent more likely to be Hispanic than are people in clean block groups.



Larger Metro Area	All Block Groups (Per-Capita Income)	Toxic Block Groups (Per-Capita Income)	Clean Block Groups (Per-Capita Income)	Percentage Difference in Per-Capita Income of Toxic Block Groups from All Block Groups
Salt Lake City	\$19,781	\$15,293	\$20,396	-23%
Phoenix	\$21,909	\$16,984	\$22,682	-22%
Pueblo	\$17,163	\$13,818	\$17,454	-19%
Albuquerque	\$20,025	\$16,365	\$20,321	-18%
Denver	\$26,542	\$23,096	\$26,838	-13%
Las Vegas	\$21,210	\$18,880	\$21,314	-11%
Colorado Springs	\$22,005	\$19,717	\$22,236	-10%
Tucson	\$19,785	\$18,203	\$19,911	-8%
Provo	\$15,557	\$14,587	\$15,661	-6%
Reno	\$24,277	\$22,971	\$24,364	-5%
Boise	\$20,280	\$19,478	\$20,435	-4%
Fort Collins	\$21,709	\$23,393	\$21,469	8%

**Larger Metro Areas
Income of Toxic and Clean Neighborhoods**
Figure 7

Source: See "Mapping Sources of Toxic Pollution" on page 109.

**Smaller Metro Areas
Income of Toxic and Clean Neighborhoods**

Figure 9

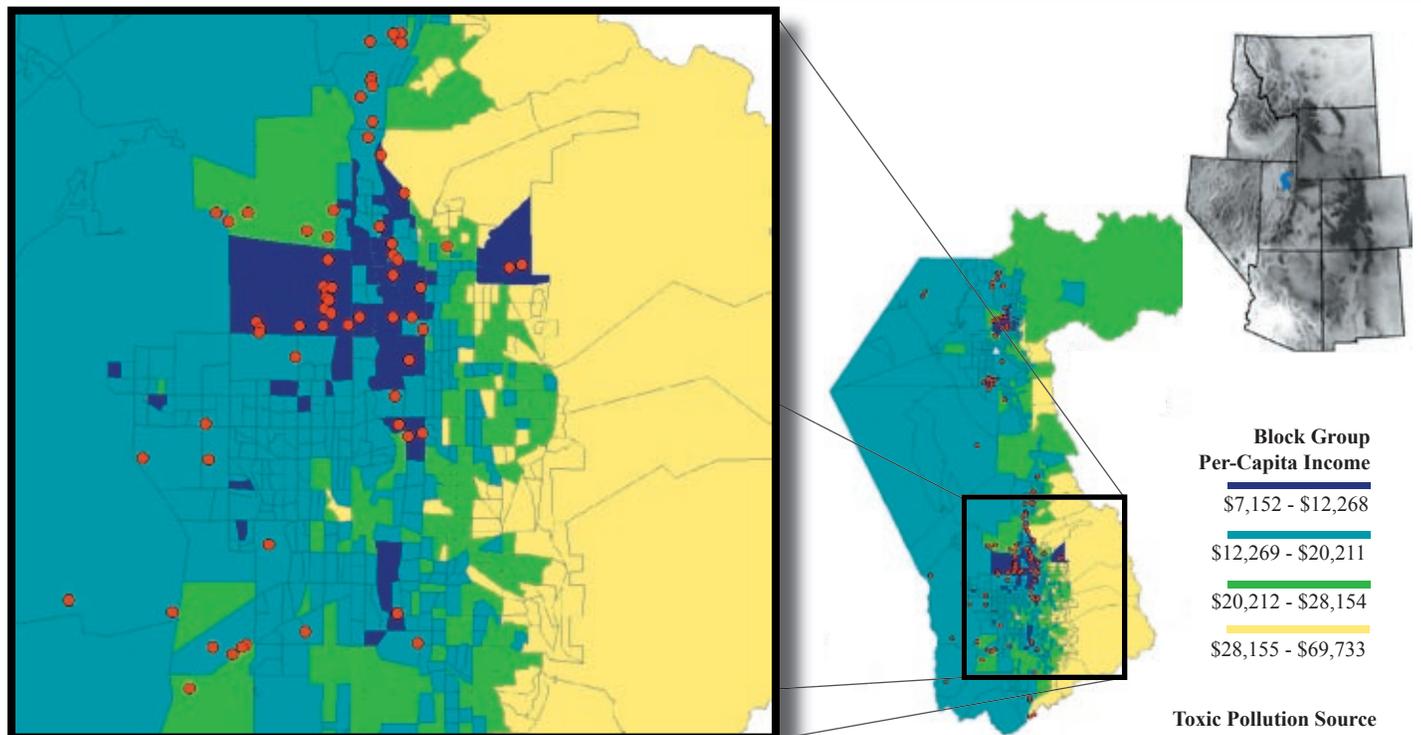
Source: See "Mapping Sources of Toxic Pollution" on page 109.

Smaller Metro Area	All Block Groups (Per-Capita Income)	Toxic Block Groups (Per-Capita Income)	Clean Block Groups (Per-Capita Income)	Percentage Difference in Per-Capita Income of Toxic Block Groups from All Block Groups
Billings	\$19,303	\$15,412	\$19,765	-20%
Casper	\$19,071	\$16,733	\$19,442	-12%
Cheyenne	\$19,634	\$17,345	\$19,974	-12%
Grand Junction	\$18,715	\$16,987	\$18,927	-9%
Flagstaff	\$17,056	\$15,908	\$17,105	-7%
Missoula	\$17,809	\$16,663	\$17,857	-6%
Pocatello	\$17,148	\$17,115	\$17,150	-0%
Great Falls	\$17,566	\$18,011	\$17,538	3%
Yuma	\$14,802	\$18,653	\$14,459	26%
Santa Fe	\$24,967	\$36,089	\$24,888	45%
Las Cruces	\$13,999	\$20,346	\$13,762	45%

**Salt Lake City, Utah
Toxic Pollution Sources and Block Group Per-Capita Income**

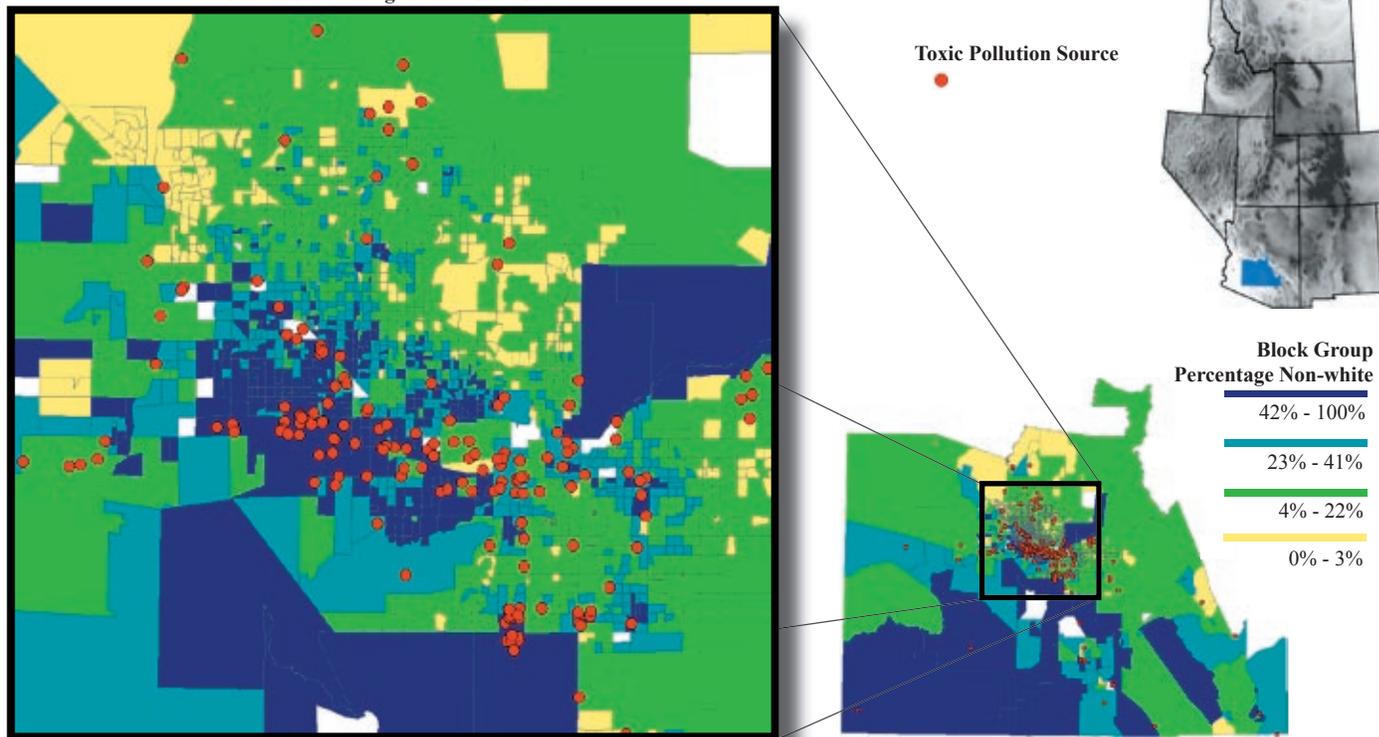
Figure 8

Source: See "Mapping Sources of Toxic Pollution" on page 109.



Salt Lake City Per-Capita Income: \$20,211

Phoenix Percentage Non-White: 23%



**Phoenix, Arizona
Toxic Pollution Sources and Block Group Percentage Non-White**

Figure 10

Source: See "Mapping Sources of Toxic Pollution" on page 109.

Larger Metro Area	All Block Groups (Percentage Non-white)	Toxic Block Groups (Percentage Non-white)	Clean Block Groups (Percentage Non-white)
Albuquerque	30%	33%	30%
Boise	10%	12%	10%
Colorado Springs	19%	26%	18%
Denver	20%	23%	19%
Fort Collins	13%	13%	13%
Las Vegas	26%	29%	26%
Phoenix	23%	34%	21%
Provo	8%	11%	7%
Pueblo	21%	26%	20%
Reno	20%	17%	20%
Salt Lake City	13%	20%	11%
Tucson	25%	28%	25%

**Smaller Metro Areas
Percentage Non-White of Toxic and Clean Neighborhoods**

Figure 12

Source: See "Mapping Sources of Toxic Pollution" on page 109.

Smaller Metro Area	All Block Groups (Percentage Non-white)	Toxic Block Groups (Percentage Non-white)	Clean Block Groups (Percentage Non-white)
Billings	7%	10%	7%
Casper	6%	7%	5%
Cheyenne	11%	17%	10%
Flagstaff	35%	55%	34%
Grand Junction	8%	11%	7%
Great Falls	9%	7%	10%
Las Cruces	32%	24%	32%
Missoula	6%	10%	6%
Pocatello	8%	8%	8%
Santa Fe	24%	4%	24%
Yuma	32%	21%	33%

**Larger Metro Areas
Percentage Non-White of Toxic and Clean Neighborhoods**

Source: See "Mapping Sources of Toxic Pollution" on page 109.

Figure 11

Smaller Metro Areas

Percentage Hispanic of Toxic and Clean Neighborhoods

Figure 15

Source: See "Mapping Sources of Toxic Pollution" on page 109.

Metro Area	All Block Groups (Percentage Hispanic)	Toxic Block Groups (Percentage Hispanic)	Clean Block Groups (Percentage Hispanic)
Albuquerque	42%	52%	41%
Boise	9%	10%	8%
Colorado Springs	11%	13%	11%
Denver	18%	23%	17%
Fort Collins	16%	20%	16%
Las Vegas	21%	23%	20%
Phoenix	25%	40%	23%
Provo	7%	12%	6%
Pueblo	38%	53%	37%
Reno	17%	13%	17%
Salt Lake City	11%	17%	10%
Tucson	29%	30%	29%

Metro Area	All Block Groups (Percentage Hispanic)	Toxic Block Groups (Percentage Hispanic)	Clean Block Groups (Percentage Hispanic)
Billings	4%	5%	4%
Casper	5%	4%	5%
Cheyenne	11%	15%	10%
Flagstaff	11%	8%	11%
Grand Junction	10%	14%	10%
Great Falls	2%	1%	3%
Las Cruces	63%	47%	64%
Missoula	2%	2%	2%
Pocatello	5%	6%	5%
Santa Fe	44%	20%	45%
Yuma	51%	22%	53%

Larger Metro Areas

Percentage Hispanic of Toxic and Clean Neighborhoods

Figure 13

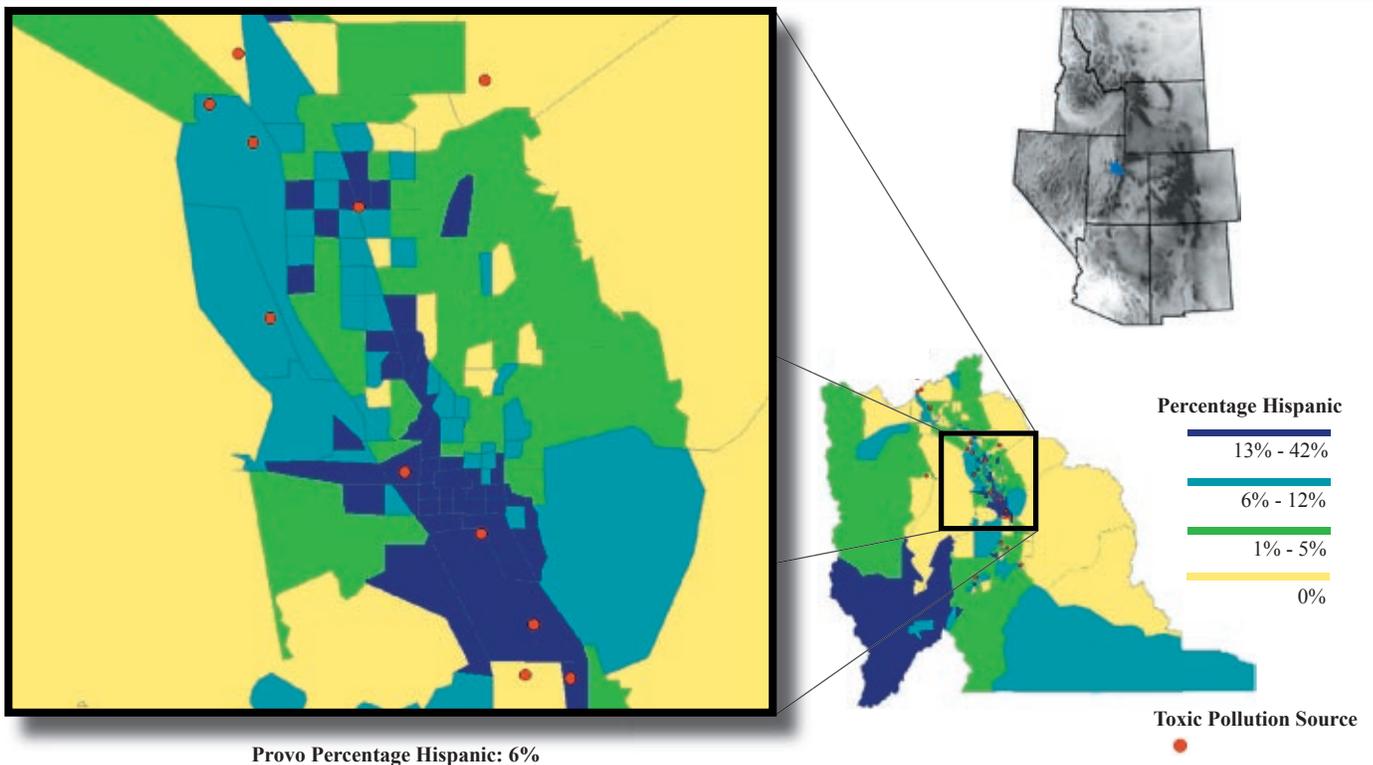
Source: See "Mapping Sources of Toxic Pollution" on page 109.

Provo, Utah

Toxic Pollution Sources and Block Group Percentage Hispanic

Figure 14

Source: See "Mapping Sources of Toxic Pollution" on page 109.



Conclusions

These findings demonstrate a real need for attention to environmental equity in the Rockies region. Low-income and minority neighborhoods are bearing a disproportionate share of the environmental hazard caused by regional economic activities. This unequal burden is clear in the 12 largest metro areas, where over two-thirds of the Rockies' population lives. Keep in mind this metro-oriented study analyzed just one realm of environmental inequality in the Rockies. Another major realm is rural environmental justice. Instances in which small, poor, and remote communities face serious environmental threats are common in this region of large-scale resource extraction.

Upon examining the state of the environmental justice movement, there is much hope in the hard work and success of grassroots organizations in eliminating specific instances of injustice, but much more needs to be done to build a larger network of support. Nationwide, obstacles to environmental justice must be overcome to effectively mitigate current injustices and prevent environmental injustice in the future. Our recommendations for advancing environmental justice in the Rockies include: amending and enacting environmental justice legislation, empowering disenfranchised communities, merging mainstream environmentalism and environmental justice, improving environmental justice research, and confronting the underlying causes of environmental justice.

Endnotes

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