



Smog Alert!

A Georgia Air Quality Primer

What causes air pollution and what does it mean to you?

What can you do to educate yourself and your students and how can your actions improve air quality? All Georgians have the potential to positively impact air quality as educators, you can be the catalyst in providing the knowledge and resources necessary to bring about change.

What's the problem with our air?

Many areas in Georgia face problems with poor air quality. Currently, 24 counties in Georgia fail federal air quality standards for ground-level ozone, a major component of smog. This "non-attainment" status for ozone means that for many days particularly May 1 to September 30 air pollution levels are likely to exceed federal limits. In 2003, Georgia began monitoring for fine particulate

matter. Unlike ground-level ozone, particle pollution is a year-round hazard.

Why do we have poor air quality?

Poor air quality and traffic congestion are inextricably linked: the vehicles clogging our roads contribute to smog. In fact, a significant proportion of nitrogen oxides (NOx) emissions in Georgia are caused by on-road mobile sources, i.e., cars, trucks and buses. Despite

technological improvements that have made vehicles 70-90% cleaner than 30 years ago, increases in driving behavior make auto emissions a growing portion of the air pollution pie. To address our air pollution problem, changes need to be made in daily driving behavior.

No Longer Just Atlanta's Problem

The non-attainment area for metro Atlanta includes the following counties: Barrow, Bartow, Bibb, Carroll, Cherokee, Clayton, Cobb, Coweta, DeKalb, Douglas, Fayette, Forsyth, Fulton, Gwinnett, Hall, Henry, Newton, Paulding, Spalding, Rockdale, Walton, and parts of Murray. Other areas of the state include the Macon area (Bibb county and parts of Monroe) and the northwest corner of the state just south of Chattanooga (Catoosa and parts of Murray). Both the Columbus area (Muscogee County) and Augusta area (Richmond) narrowly escaped designation of non-attainment for ground-level ozone. However, these areas and other areas of the state may face air pollution designation in the future if steps are not taken now to ensure that anticipated growth does not also bring with it the perils of air pollution faced by Atlanta and Macon.

How does air pollution hurt us?

Health: The primary target of air pollution is the respiratory system, but it also attacks the heart and immune system.

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Air pollution disproportionately affects children, the elderly, and those with respiratory illnesses, but even healthy, active adults can be adversely affected after long-term exposure. High levels of particle pollution have been implicated in sudden cardiac arrest among healthy adults.

As educators, we must be especially sensitive to the health impacts of air pollution on children. Because children breathe faster and are often outside during the day when ozone levels are at their highest, their exposure is higher than most adults. In Georgia, 11% of children have asthma (higher than the national average), a condition that is severely aggravated by air pollution. An Atlanta-based study noted a 37% increase in asthma-related emergency room visits following days with high ozone levels. In 2000, 540,000 school absences were attributed to asthma, which demonstrates the significant impact of air pollution on children's health and on our educational system.

Economic Development: The bottom-line impacts of poor air quality and traffic congestion include lost productivity as workers waste time in traffic; loss of corporate relocations and expansions; and the inability to attract or keep skilled workers.

Environment: Ground-level ozone is damaging to plant life, has been shown to reduce crop yields, and can harm animal life. Like the dangers posed to our

waters, air pollution threatens our entire ecosystem.

What can be done?

Regulatory efforts, such as industry permits and emissions controls are working. Because of the detrimental impact of driving behavior on smog-forming emissions, voluntary change is essential to improve air quality and curb congestion.

You have the power to effect change. There are ways each of us can improve air quality:

- Try a commute alternative: take transit or carpool. Not

only will it reduce pollutants, it can also save money, reduce stress and may save time. Ride with a co-worker or spouse.

What is Smog?

Smog is created from a combination of pollutants that include:

- Ground-level ozone, a chemical soup created from a recipe of nitrogen oxides, or NOx, and volatile organic compounds (VOCs), cooked by sunlight and high outdoor temperatures.
- Particle pollution or particulate matter (PM), which consists of extremely small solids, such as dust, pollen, soot and aerosols that come from a variety of sources, including vehicles, industry and outdoor burning.

Because of ozone, we do see more smog in the summer, though poor air quality can occur at any time of the year.

- Refuel after 6:00 PM.
- Drive well-maintained vehicles. For your next vehicle purchase, buy the most efficient vehicle you can afford (see fuelconomy.gov for more information).
- Don't idle. Idling wastes gasoline and pollutes the air around you. Give

your car a rest and turn it off when you're waiting for someone.

- Turn off lights and your computer, buy energy efficient bulbs and EnergyStar appliances, and use manual or electric lawn tools.

For more information on air quality and its solutions, visit: www.cleanaircampaign.com.

The Air Quality Index

Because poor air quality is a public health issue, the US EPA created the AQI Index, which is used to convey forecasted and current air quality levels to the public, along with associated health advisories.

Air quality forecasts are made each day and can be accessed at www.cleanaircampaign.com.



Two Metro Atlanta Schools Take on Traffic and Fight for “Better Air”

By Jennifer Owens, Education Coordinator, The Clean Air Campaign

In August 2004, two elementary schools Rebecca Minor in Gwinnett County and Barnwell in Fulton County, became the first “Better Air Schools” in Georgia. As pilots for a new school-based program, they tackled the twin issues of air pollution and traffic congestion by embracing innovative programs to educate their school communities about air quality and to encourage behavior changes to improve traffic and air quality around the school.

The “Better Air Schools” program is modeled after The Clean Air Campaign’s successful employer outreach program, but incorporates additional program components that meet the education and transportation needs of schools. A school can become a “Better Air School” by implementing clean air activities selected to address the school’s special needs and interests, including:

- An anti-idling campaign that reduces harmful smog-forming emissions
- A fun, educational musical assembly program that features BAIR, the Better Air Bear
- Air quality lesson plans for grades 4-8. Lesson plans meet Georgia Performance Standards (GPS), and are posted to the Georgia Learning Connections Web site.
- Smog Alert awareness program
- *Ride There! For Clean Air*, a program to encourage bus ridership
- *Walk There! for Clean Air*, a program to encourage walking to school

The pilot programs at both schools were greeted with great enthusiasm and high levels of support. . At Minor Elementary, the first “Walking School Bus” program had approximately 50% participation by



BAIR&Hands – BAIR performance at Stone Mountain Elementary, DeKalb County.

eligible students. These students walked to school together in groups, chaperoned by parent and faculty volunteers on four



Barnwellbusraffle – Winner of the Barnwell Bus challenge – Alex Taylor was rewarded with 4 tickets to a Falcons game for being a loyal bus rider. Also pictured: Douglas Brown, principal of Barnwell and Ellen Macht, Executive Director of The Clean Air Campaign. Barnwell E.S. is in Fulton County.

consecutive Fridays. Together they saved 311 car trips from being made! Walking to school not only reduces vehicle miles traveled and traffic congestion in the car lane at school, but also gets children up and moving, combating the growing epidemic of physical inactivity and childhood obesity.

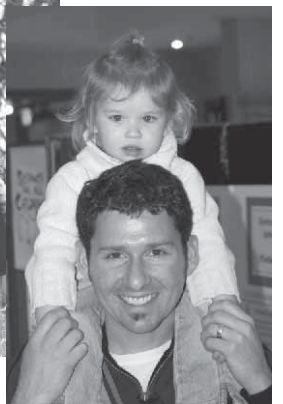
“Our goal is to provide a rigorous curriculum where healthy children are ready and able to participate in the educational process,” said Principal Barbara Engle. “Minor’s participation in the “Better Air Schools” program allows us the opportunity to educate our children, parents, faculty and the community about air quality.”

At Barnwell Elementary the “Ride There! for Clean Air” program is increasing bus ridership and reducing single-family occupancy car lines by providing parents information on school bus safety and rewarding bus riders with incentives and goodies. Both schools are also implementing anti-idling

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Pictorial Highlights of the **2005 EEA Conference**

March 11 - 13, 2005 • Unicoi State Park, Helen





Students Get Their Hands on Clean Air:

New Statewide Lesson Plans Provide Tools for Educators

Since its inception in 1996, The Clean Air Campaign has emphasized public education on the importance of healthy air and a call to personal action to reduce polluting behaviors. Creating a fundamental and long-lasting change in our mobility “ethic” is a long-term process, so The Clean Air Campaign is turning its attention to the citizens and commuters of the future: elementary and middle school-age children.

Eleven exciting, hands-on curriculum units and lessons available for grades 4 to 8 will have students huffing and puffing in experiments to prove that air has mass and exerts pressure. Each unit consists of two to three lesson plans that educate students about air chemistry, health and human behaviors, as well as the air

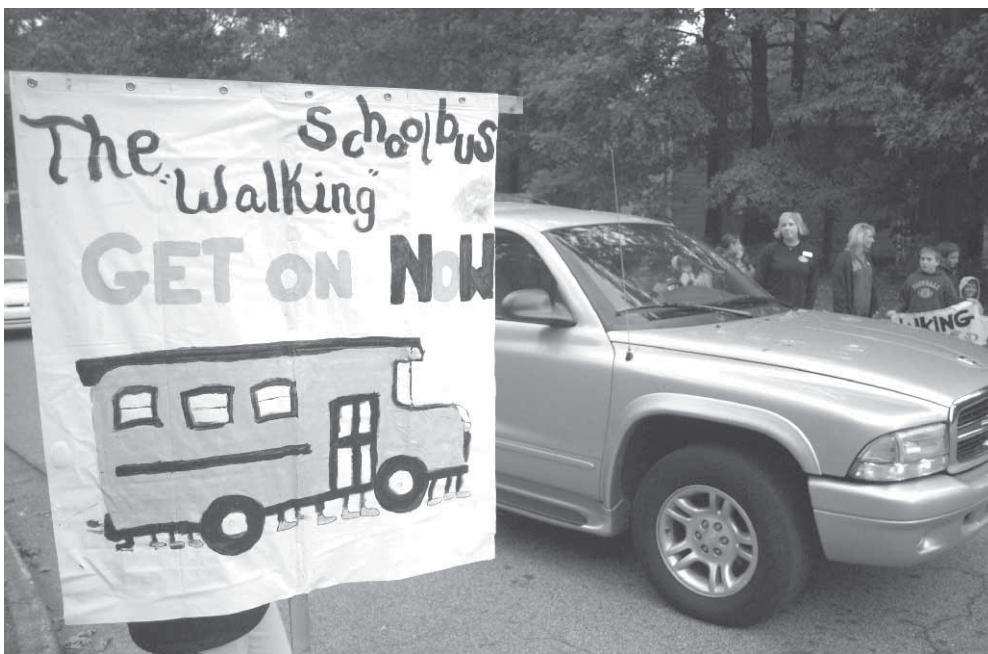
pollution challenges facing all Georgians. The lessons cross several subjects including science, social studies, geography, and English.

Topics include:

- What's in the Air?
- The Chemistry of Air Pollution
- Every Breath You Take
- Lung Power & Pollution
- The Heat Island Effect
- Monitoring Ground-Level Ozone

The Clean Air Campaign and the Georgia Environmental Protection Division, who wanted air quality education to be included among the other issues more often addressed in environmental education, such as recycling, water quality, and land use, created the lesson plans. Collaboration with educators, environmentalists, and health experts has ensured that the lesson plans are scientifically accurate, highly engaging to students, and practical for classroom application.

The lesson plans have been carefully crafted to meet current state standards and can be viewed at www.cleanaircampaign.com and the Georgia Learning Connection (GLC) website.



Walkingsign – Walking School bus @ Minor E.S. in Gwinnett

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campaigns and building toward a comprehensive approach to air quality education and behavior change.

One component of the Better Air School program, familiar to thousands of school children is our mascot BAIR, the Better Air Bear. The high-energy, live show, featuring original songs and audience interaction, teaches basic concepts about air and air pollution, the importance of healthy air and lungs, the sources, and how the students and their families can protect the air. BAIR is available at no cost to metro Atlanta elementary schools.

For more information about Better Air Schools or to inquire about having BAIR at your school, contact The Clean Air Campaign at 1-877-CLEANAIR or visit cleanaircampaign.com.

20 Things You Can Do for Cleaner Air

- Carpool
- Walk or ride a bike
- Ride public transit or telecommute
- Accelerate your car gradually
- Obey the speed limit
- Combine your errands into one trip
- Keep your car tuned
- Don't top off at the gas pump
- Replace your car's air filter
- Keep your tires properly inflated
- Look for the most efficient, lowest polluting model or even a zero-polluting electric car



- Use water-based paints. Look for paints labeled zero-VOC.
- Use a push or electric lawn mower.
- Start your barbecue briquettes with an electric probe. Or use a propane or natural gas barbecue.
- Turn off the lights when you leave a room.
- Replace energy-hungry incandescent lights with fluorescent lighting.
- Add insulation to your home.
- Insulate your water heater.
- Choose recycled products.
- Avoid using leaf blowers and other types of equipment that raise a lot of dust. Try using a rake or broom.



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Fill out this form and mail it along with a check to Elachee Nature Science Center at the address above.

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Annual Spring Conference and Fall Retreat - Held at different sites throughout Georgia with guest speakers, workshops and field trips. A great opportunity to meet people and share.

Sharing and Exchanging Exhibits - The opportunity to find out and exchange exhibits from member organizations.

The Georgia Environmental Education Teacher Resource Guide - 132 pages of environmental education resources and learning opportunities in Georgia.

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Environmental Education Alliance of Georgia

