



# How a deadly environmental disaster changed our ideas about the air we breathe

By Lauren Tarshis

As You Read Think about the causes of the Great Smog of 1952.

**L**ike so many terrible things, the dark cloud seemed to appear out of nowhere. It swept over London, England—black and poisonous. It brought terror and sickness.

It would kill 12,000 people.

The cloud was not a monster from a nightmare. It was not a super storm or an alien invasion. This killer cloud was air—a massive brew of toxic, polluted air. For five days, it blanketed London, causing fear, panic, and death. It became known as the Great Smog of 1952, and it remains one of the deadliest environmental disasters in history.

Watch the Behind the Scenes video at Scope Online.



## Plunged Into Darkness

December 5, 1952, was a quiet day. Brian Bone, 9, was at home with his parents and his 15-year-old brother, Hugh. When Brian opened the backdoor to let out

his dog, a German shepherd named Tarzan, he noticed that the morning was damp and hazy. That wasn't unusual for London at that time of year though. Tarzan trotted into the fenced-in yard, and Brian shut the door and went about his day.

It was only later, when Brian went to call Tarzan in, that he realized something was horribly wrong. The hazy morning had turned midnight black. The air had a sharp smell—a mixture of chemicals and rotten eggs. Brian and his parents called for Tarzan, but the dog had escaped



Brian Bone, about two years before the Great Smog, with his dog, Tarzan

through a hole in the fence. Normally, Tarzan would have been able to sniff his way home. But even a dog's powerful sense of smell was no match for the smothering smog.

For hours the family searched the neighborhood, braving the darkness as they called for Tarzan. Yet he remained hopelessly lost.

Across London, millions of people had been plunged into the same darkness. Buses screeched to a halt. Trains stopped on their tracks. Cars crashed. People stumbled along the streets, unable to find their way home. A few got so lost they fell into the Thames River and drowned. Staying indoors provided no escape. Black air crept under doors and through keyholes,

filling up homes and offices and hospitals.

What was happening?

## Pea Soup Smog

For centuries, London had been famous for its fog, a swirling white mist that wrapped itself around the city on chilly days. The fog was as much a part of the city as Buckingham Palace and Tower Bridge. It appeared in countless paintings and inspired celebrated poems and haunting ghost stories.

True, the fog made London gloomy at times, but it was natural and harmless. Fog, after all, is simply microscopic drops of water trapped in the air.

By the mid-1800s, however, as the city grew more crowded and **industrialized**, it wasn't only fog

### WHEN DAY TURNED TO NIGHT

Londoners make their way through darkened streets during the Great Smog of 1952. Right: A police officer directs traffic in the smog.





swirling around London. It was also pollution from factory smokestacks and home chimneys.

Much of this pollution came from the burning of coal, which produced an especially sooty and oily smoke. On foggy days, this smoke stuck to the drops of water in the foggy air. Trillions of tiny water bubbles **slathered** with dirty oil filled up every inch of open space.

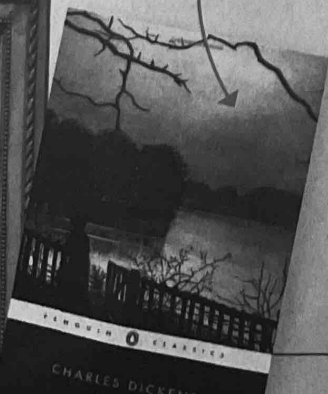
In 1905, this dirty fog was given an official name: smog. By then, smog had become a serious problem in London. It was especially bad on cold winter days. When the temperature dropped, people burned more coal to keep warm, and the smoke belching from millions of chimneys created a hideously green "pea soup" smog.

## A Fact of Life?

London was not the only city where air pollution was a problem. The early 1900s was a time of growth for cities across Europe as well as in the United States. Smog from factories and steel **mills** blanketed

London's fog appears in many of artist Claude Monet's paintings.

Charles Dickens used London's fog as a symbol of society's problems in his 1853 novel, *Bleak House*.



## America's Toxic Brew

In 1948, the smog in Donora, Pennsylvania, turned lethal, sickening half the town and causing 20 deaths. The air had been polluted by the city's railroads and steel and zinc plants. The tragedy led to the Air Pollution Control Act of 1955—the first federal law aimed at reducing air pollution.

American cities like Pittsburgh and Cleveland. Kids playing outdoors would return home with blackened clothes, their lashes and brows coated with dark slime that could be removed only with strong detergent.

In London, coal was the cheapest way to heat a home, and most Londoners could not afford cleaner heating systems. The owners of factories and power plants insisted that reducing pollution would be too expensive. Besides, what would happen if they closed their factories? People would lose their jobs.

Many assumed that nothing could be done to make the air cleaner. Smog, it seemed, was just a fact of modern urban life.

## A True Disaster

What few people understood was that smog wasn't just dirty and smelly—it was also dangerous. The smog contained toxic chemicals and particulates—very small bits of particles that get trapped in the air.



In the case of London's smog, those particulates included tiny specks of unburned coal. As Brian and his family searched outside for Tarzan, this poison was filling their lungs.

Even before scientists fully understood smog's impact on the human body, there were signs that it was harmful. On pea soup smog days in London, schoolkids hunched over their desks, wheezing and hacking as they tried to do their work. Elderly people collapsed in the streets. Emergency rooms routinely filled with patients showing signs of smog-related **respiratory** problems, such as asthma and pneumonia.

Chemicals and particulates in smog can damage the lungs—permanently. Still, decades went by and few steps were





### Air Pollution Today

Air pollution continues to be a problem around the world. This photo of Ghaziabad, India, appears to have been taken at night, but it was actually taken in the morning.

taken to reduce air pollution.

Until the Great Smog of 1952.

This smog was different from others before it, more extreme and longer-lasting. Frigid weather meant that people were burning more coal than usual to stay warm. What's more, a weather system was causing cold air to be trapped under the warmer air above it. There was no wind—nothing to clear away the smog.

So day after day, London remained dark. Schools stayed closed. Workers couldn't get to their jobs. Even funerals were canceled; grieving relatives couldn't see well enough to drive from churches to cemeteries to bury their loved ones.

By day three of the smog, there was some good news at the Bone house: Tarzan had somehow made his way home. But Brian couldn't do much celebrating. He was sick in bed with a burning, painful cough. He felt as though the smog itself was trapped inside his chest.

All over London, others were falling ill too—thousands and thousands of people. At first, most doctors believed

people were suffering from the flu or other common winter illnesses. Even scientists did not immediately make a direct connection between the smog and the many coughing and wheezing people staggering into hospitals.

London was in the grips of a disaster. The smog wasn't just making people sick. It was killing them.

By the time the smog finally cleared on the fifth day, more than 4,000 people had died. In the coming months, roughly 8,000 more would die from smog-related illnesses.

### New Laws for Cleaner Air

The Great Smog of 1952 changed the way people thought about air pollution. For the first time, there could be no doubt that smog was a deadly problem. Over the next three years, the British government passed laws designed to make air cleaner. Polluting factories were moved outside the city. The government helped people purchase cleaner heating systems that didn't rely on coal.

America passed clean-air laws of its own. Since 1955, these laws have enabled research on air pollution and set limits on the **toxins** that can be released into the air by factories, power plants, cars, and other sources of pollution.

In England and the United States, there have been no killer smogs since 1962. But dirty air continues to be a problem in many parts of both countries, due to cars and trucks as well as farming, factories, and power plants.

## HOW TO REDUCE SMOG

Cleaning up the air starts with us.

### 1 Walk, bike, or skateboard.

If you're going somewhere nearby, walk, ride a bike, or skate instead of having someone drive you. Most vehicles emit exhaust that contributes to smog and climate change.



### 2 Organize a carpool.

For longer trips, organize a carpool with your friends. You will pollute less, and everyone will spend less on gas.



### 3 Plant trees.

Trees can improve air quality. They remove pollutants from the air by filtering them through their leaves.



### 4 Turn off lights and electronics.

Generating electricity contributes to smog, but even little changes can make a difference—like turning off lights when you leave a room and turning off computers, TVs, and other electronics when you're not using them.





# Meet a Clean Air Hero

How one teen is planting trees to reduce pollution **By Adele Braun**

Imagine standing on a scorching treeless street on a 117-degree day. Miserable and sweaty, right? Not only that, but experts now know that high temperatures and lack of shade tend to increase air pollution too.

Just ask Jesus Mendoza, 17. He lives in Tucson, Arizona, one of the hottest cities in the United States. But Jesus and other volunteers are on a mission to make things better.

How? By planting trees.

A lot of trees.

## How Trees Help

Jesus volunteers with an organization called Tucson Clean and Beautiful. Its goal is to plant 1 million trees in Tucson by 2030. Trees are beautiful, and they also create much-needed shade.

That's good news for air quality. The shade lowers the temperature on sidewalks and in the air. As a result, people use less air-conditioning, which helps reduce air pollution. Trees also help clean the air by absorbing pollution through their leaves.

"It's like a roof over your head, but it provides wind and shade for everybody," says Jesus.

To date, Tucson Clean and Beautiful has planted more than 100,000 trees throughout the city.

Jesus's environmental work, however, encompasses more than trees. Since he was 15, Jesus has also

worked with an organization called Ironwood Tree Experience. He interviewed Tucson residents about how air pollution affects them. As a result of what he learned, he became an advocate for free public transportation as a way to reduce pollution from car exhaust.

"Air pollution is everywhere, in every single city and country," says Jesus. "And it gets worse and worse with time. What we can do to prevent it and reduce it is get together as a community."

## Looking Ahead

So what's next for Jesus?

He plans to stay in Tucson, continue his important work, and study environmental science at the University of Arizona.

"I really want to make a difference," he says, "no matter how big or small that difference is." ●



In other parts of the world, smog remains a deadly problem. Lahore, Pakistan, and Delhi, India, are just two of dozens of cities frequently shrouded in pea soup smogs from factories, burning coal, and car exhaust. Indeed, according to the World Health Organization, air

pollution is one of the world's most dangerous environmental problems. Millions suffer from pollution-related health issues such as asthma. Each year, about 6.7 million people die from exposure to particulates.

Few understand the dangers of air pollution better than survivors of the

Great Smog of 1952—like Brian Bone. Thankfully, Brian recovered from his illness. Throughout his life, however, he suffered from lung problems that may have been caused by the smog.

And he always understood what a gift it is to be able to take a deep breath of sweet, fresh air. ●

## Writing Contest

What positive changes came from the Great Smog of 1952? In what ways can we continue to clean up the air today? Answer these questions in a well-organized essay. Use text evidence from the article and sidebars. Entries must be submitted to **Killer Smog Contest** by a teacher, parent, or legal guardian.\* Three winners will each get a copy of *Turtles of the Midnight Moon* by María José Fitzgerald.

\*Entries must be written by a student in grades 4-12 and submitted by their teacher, parent, or legal guardian, who will be the entrant and must be a legal resident of the U.S. age 18 or older. See page 2 for details.

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