Source: NRDC

“Most air pollution comes from energy use and production,” says John Walke, director of the Clean Air Project, part of the Climate and Clean Air program at NRDC. “Burning fossil fuels releases gases and chemicals into the air.” And in an especially destructive feedback loop, air pollution not only contributes to climate change but is also exacerbated by it. “Air pollution in the form of carbon dioxide and methane raises the earth’s temperature,” Walke says. “Another type of air pollution is then worsened by that increased heat: Smog forms when the weather is warmer and there’s more ultraviolet radiation.” Climate change also increases the production of allergenic air pollutants including mold (thanks to damp conditions caused by extreme weather and increased flooding) and pollen (due to a longer pollen season and more pollen production).

Effects of Air Pollution “While we’ve made progress over the last 40-plus years improving air quality in the U.S. thanks to the Clean Air Act, climate change will make it harder in the future to meet pollution standards, which are designed to protect health,” says Kim Knowlton, senior scientist and deputy director of the NRDC Science Center.

Smog and soot These two are the most prevalent types of air pollution. Smog, or “ground-level ozone,” as it is more wonkily called, occurs when emissions from combusting fossil fuels react with sunlight. Soot, or “particulate matter,” is made up of tiny particles of chemicals, soil, smoke, dust, or allergens, in the form of gas or solids, that are carried in the air. The EPA states, “In many parts of the United States, pollution has reduced the distance and clarity of what we see by 70 percent.” The sources of smog and soot are similar. “Both come from cars and trucks, factories, power plants, incinerators, engines—anything that combusts fossil fuels such as coal, gas, or natural gas,” Walke says. The tiniest airborne particles in soot—whether they’re in the form of gas or solids—are especially dangerous because they can penetrate the lungs and bloodstream and worsen bronchitis, lead to heart attacks, and even hasten death. Smog can irritate the eyes and throat and also damage the lungs—especially of people who work or exercise outside, children, and senior citizens. It’s even worse for people who

Source: NRDC

have asthma or allergies—these extra pollutants only intensify their symptoms and can trigger asthma attacks.

Hazardous air pollutants

These are either deadly or have severe health risks even in small amounts. Almost 200 are regulated by law; some of the most common are mercury, lead, dioxins, and benzene. “These are also most often emitted during gas or coal combustion, incinerating, or in the case of benzene, found in gasoline,” Walke says. Benzene, classified as a carcinogen by the EPA, can cause eye, skin, and lung irritation in the short term and blood disorders in the long term. Dioxins, more typically found in food but also present in small amounts in the air, can affect the liver in the short term and harm the immune, nervous, and endocrine systems, as well as reproductive functions. Lead in large amounts can damage children’s brains and kidneys, and even in small amounts it can affect children’s IQ and ability to learn. Mercury affects the central nervous system. Polycyclic aromatic hydrocarbons, or PAHs, are toxic components of traffic exhaust and wildfire smoke. In large amounts, they have been linked to eye and lung irritation, blood and liver issues, and even cancer. In one recent study, the children of mothers who’d had higher PAH exposure during pregnancy had slower brain processing speeds and worse symptoms of ADHD.

Greenhouse gases

By trapping the earth’s heat in the atmosphere, greenhouse gases lead to warmer temperatures and all the hallmarks of climate change: rising sea levels, more extreme weather, heat-related deaths, and increasing transmission of infectious diseases like Lyme. According to a 2014 EPA study, carbon dioxide was responsible for 81 percent of the country’s total greenhouse gas emissions, and methane made up 11 percent. “Carbon dioxide comes from combusting fossil fuels, and methane comes from natural

Source: NRDC

and industrial sources, including the large amounts that are released during oil and gas drilling," Walke says. "We emit far larger amounts of carbon dioxide, but methane is significantly more potent, so it's also very destructive."