

Understanding Pollution: Killer Cars

One of the greatest technological marvels is also one of the greatest polluters in the world. Chances are if you don't use one yourself every day then you at least see them. I am talking about automobiles. It is estimated that automobiles account for one third of all carbon monoxide pollution, and twenty percent of all global warming.ⁱ While no one can argue the benefits and convenience that automobiles have brought into are lives, in order to be responsible human beings we must know the negatives. Pollution from automobiles occurs on three general levels. Firstly, there are the effects on local populations. There are then regional effects, and finally there are global effects. Even a well maintained, and governmentally approved vehicle produces pollution, and the problems only get worse if the vehicle is having difficulties of any kind.



The effects from automobiles begin at a local level. The most well-known pollutant from automobiles is Carbon Monoxide. It is an odorless, colorless and poisonous gas whose effects include the blocking of oxygen to the brain and other vital organs.ⁱⁱ In the United States 75% of all carbon monoxide emissions is from motor vehicles.ⁱⁱⁱ Automobiles also release gases called nitrogen oxide, and sulfur oxide. Studies have shown that even thirty minutes of exposure to nitrogen oxide can inflame the air passageways of a healthy adult, and is even more dangerous to those with breathing difficulties such as asthma.^{iv} Nitrogen oxide also weakens the immune system against future lung infections such as pneumonia.^v Sulfur oxide is even worse. A mere five

minutes of exposure can lead to a closing of the airways to the lungs in a healthy adult, and the problem is exacerbated with any elevation in breathing, such as from running or playing a game.^{vi} Cars also emit pollutants such as benzene and acetaldehyde which have been linked to 50% of ALL cancer cases.^{vii} These are only a few of the different gases and chemicals that are released every time a car's engine starts running, and you can see how deadly even these few are. All told it is estimated that 58,000 deaths a year occur due to the chemicals and gases released by automobiles, and that's only in the United States.^{viii}



As the level of pollutants released by motor vehicles is so high, it should come as no surprise that their effects do not stay local but move on to coalesce into bigger issues regionally. Some of the chemicals and particulate matter, which is solid particles mixed with liquid droplets,^{ix} which can come to rest in our soil and groundwater. Once there they have the potential to shut down the immune, respiratory, reproductive, and neurological systems of animals that come into contact with them.^x Another regional effect of automobiles comes from the infrastructure that supports them. Anyone who has ever gone off-roading knows that there are certain risks to your car that you don't have to deal with on a nice paved road. But what are the effects that roads are having on the environment? Just a few of the effects include vegetation removal, erosion, acidification, and direct animal death, or road kill.^{xi} Automobiles also release the chemicals, such as sulfur dioxide, that create acid rain.^{xiii} The effects of acid rain are many and varied, such as eating away at manmade structures, destroying plant and animal life, damaging water supplies, and damaging

humans and animals who may get stuck in the rain.^{xiii} Automobiles effects regionally are pretty bad, but things get worse.



The global effects of automobile pollution cannot be ignored. The greatest effect that automobiles are having globally is their contribution to accelerated climate change. It is believed that, even as world governments move to limit climate change, emissions are set to outpace what world governments are doing to contain the damage.^{xiv} The European Union just passed legislation that will require all automobiles to not exceed a certain level of CO₂ emission by 2015.^{xv} China and the United States also just made an agreement where the U.S. will help China to curb their CO₂ emissions.^{xvi} The effects of climate change cannot be ignored. They include such things as increased or decreased rainfall, depending on the region, damaging agriculture, forests, and marine and land ecosystems.^{xvii} As mentioned before, 1/3 of all carbon monoxide pollution is reported to come from automobiles. Since CO₂ is such a major contributor to climate change, it is not hard to believe that cars are having such a major impact on a global scale.

No one can argue against the convenience of having a car, and I say this as a man who loves driving his gas-guzzling Durango. Despite that, the only way we can save the world is by understanding the consequences of our actions. No one is saying that we need to go back to the days of the horse and buggy as our main means of transportation. One that would be absolutely ridiculous on so many levels, and two that comes with its own forms of pollution. Everything that we do leaves a

mark on the world. What we need to do is work to better understand the impact that our actions are creating. Do I love driving my Durango? Absolutely. Do I need to drive it every day? Not really. Carpooling is a wonderful thing, and riding a bike is both good for the environment and for you. You also have public transport in the bus and subway systems. A little cardio never hurt anyone. Everyone needs to make the conscious choice to try and make the world a better place. Not just for future generations, but for our generation, for ourselves.

About the Author



Dominick Principe is a graduate of Rowan University with dual Bachelor Degrees in Elementary Education and Writing Arts. He is a prolific reader who devours any book put before him, and feels that life is one great long book without an end. He fills his hours constantly exploring new information, and seeking to educate himself in the ways of the world. He puts all of that knowledge and his passion for learning to good use teaching English as a second

language to students of all ages. When his nose isn't buried in a book, or in class teaching, then he can generally be found typing away at his computer working on some random piece of writing that he was inspired to do.

ⁱ "Cars, Trucks, and Air Pollution." *Union of Concerned Scientists*. Union of Concerned Scientists. Web. 15 Nov. 2014. <http://www.ucsusa.org/clean_vehicles/why-clean-cars/air-pollution-and-health/cars-trucks-air-pollution.html#.VGdr6_mUdg8>.

ⁱⁱ "Health." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <<http://www.epa.gov/airquality/carbonmonoxide/health.html>>.

ⁱⁱⁱ <http://auto.howstuffworks.com/air-pollution-from-cars.htm>

^{iv} "Health." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <<http://www.epa.gov/oaqps001/nitrogenoxides/health.html>>.

^v "Cars, Trucks, and Air Pollution." *Union of Concerned Scientists*. Union of Concerned Scientists. Web. 15 Nov. 2014. <http://www.ucsusa.org/clean_vehicles/why-clean-cars/air-pollution-and-health/cars-trucks-air-pollution.html#.VGdr6_mUdg8>.

^{vi} "Health." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <<http://www.epa.gov/air/sulfurdioxide/health.html>>.

^{vii} "Cars, Trucks, and Air Pollution." *Union of Concerned Scientists*. Union of Concerned Scientists. Web. 15 Nov. 2014. <http://www.ucsusa.org/clean_vehicles/why-clean-cars/air-pollution-and-health/cars-trucks-air-pollution.html#.VGdr6_mUdg8>.

^{viii} "Streetsblog USA." *MIT Study: Vehicle Emissions Cause 58,000 Premature Deaths Yearly in U.S.* Massachusetts Institute of Technology. Web. 18 Nov. 2014.

<<http://usa.streetsblog.org/2013/10/22/mit-study-vehicle-emissions-cause-58000-premature-deaths-yearly-in-u-s/>>.

^{ix} "Basic Information." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <<http://www.epa.gov/pm/basic.html>>.

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- ^{xii} "What Causes Acid Rain." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <http://www.epa.gov/acidrain/education/site_students/whatcauses.html>.
- ^{xiii} "Why Is Acid Rain Harmful." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <http://www.epa.gov/acidrain/education/site_students/whyharmful.html>.
- ^{xiv} "Car, Truck and Airplane Pollution Set to Drive Climate Change." *Scientific American Global RSS*. Web. 15 Nov. 2014. <<http://www.scientificamerican.com/article/car-truck-and-airplane-pollution-set-to-drive-climate-change/>>.
- ^{xv} "Reducing CO2 Emissions from Passenger Cars." - *European Commission*. European Commission. Web. 19 Nov. 2014. <http://ec.europa.eu/clima/policies/transport/vehicles/cars/faq_en.htm>.
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- ^{xvii} "Impacts & Adaptation." *EPA*. Environmental Protection Agency. Web. 15 Nov. 2014. <<http://www.epa.gov/climatechange/impacts-adaptation/>>.