

Air pollution assignment

[Environment](#), [Air](#)



Ohio is one of the many states that suffer from air pollution. Numbers are rising, deaths are occurring and many health risks are involved because of air pollution. Different toxins that are being released into our air cause a great deal of concern because this causes many frequent weather changes as well as population issues. People tend to move away from certain areas located near factories which release massive amounts of pollutants daily. There are land issues as well as waterways where contaminants are being released in our natural water resources.

Changes need to be made to improve our society as well as make a difference in our activity as residents of Ohio to ensure the best quality of our air as well. There could also be a series of non-profit organizations to help citizens become more aware of the problem that is exceeding. If we do not take action to solve this issue, we will slowly continue to ruin our space that we live in. Not only has these pollutants had an effect on our atmosphere, but our living conditions as citizens in Ohio has been exposed to harm and danger.

There are many health risks associated with mercury, sulfur dioxide, smog and other toxins that allow us to be at a Geiger risk than other regions outside of Ohio in the United States. The infant mortality rate in the state of Ohio as of 2008 was 7.7%. The crude death rate in Ohio was 955.5. While we can't give an exact death rate for air pollution we can give death rates of problems associated with environmental issues in Ohio. Heart disease is the number one killer in the country as well as in Ohio. The crude death rate of heart disease in Ohio is 238.1. The crude death rate of cancer in Ohio 217. (Department of Health). And the crude death rate for chronic lower

respiratory diseases in Ohio is 56. 3. Air pollutants are driving factors in these deaths. Chemicals such as mercury, carbon dioxide, sulfur dioxide and smog are released into the air do to the power plants and fossil fuels used at these factories surrounding suburban areas. These elements are the most dangerous of the toxins and could also result to serious health issues if not taking serious. Mercury is one of the most dangerous of the chemicals and can even be released airborne or into our natural water sources.

Statistics show that one and every ten women in the childbearing ages who are exposed to Mercury can expose their child to health risks such s asthma and bronchial diseases. A Recent study done in Columbus Ohio showed that Ohio emits more Mercury pollution in power plants than any other 48 states in Lignite States. In the year of 2010 Ohio released approximately 4, 21 8 pounds of mercury pollution. There have also been reports stating that mercury is being released in the surrounding bodies of water in Ohio which is causing a great amount of contamination to our fish farming.

One drop of mercury can dilute at least 25 acres of the body of water that it is released in. (Bogs, 2011) Mercury is released from coal burning eels in factories and other locations where power plants are established. Coal burning is one way to project fossil fuels but there are dangerous chemical reactions caused from this. Out of the top fifty polluting power plants that emit mercury into our atmosphere, four are located in Ohio and eleven more are in bordering states. This positions Ohio in the middle of various air pollution issues. Air Pollution in Southeast Ohio: Mercury and Other Problems, 2009). Although factories are beneficial to our sources of energy

conservation we need to establish a more efficient way to eliminate some of these dangerous chemicals that are of human exposure. Another chemical that most individuals are familiar with that can cause harm to our environment if not regulated properly is the amount of carbon dioxide that is released in our atmosphere. Carbon dioxide is one of the key pollutants that are associated with warming our earth to increase temperatures around the world.

Although humans release carbon dioxide which can be beneficial to our earth's plants, it can become harmful when power plants, cars, planes and the burning of other fossil fuels are the reason for emission. Studies show that over the past 150 years there has been enough carbon dioxide released into our earth's atmosphere to triumph the amount that was released a hundred thousand years ago. (Air Pollution) According to recent facts made by the Ohio Energy Data, it shows that Ohio is the number 4 state with the highest release of carbon output.

After calculating numbers, one individual can release up to 23 tons of carbon each year just by conducting everyday activities such as driving a car. Ohio is generally ranked high for energy consumption because of this. (Redder Energy Renewable, 2009). If each individual took the time needed to decrease their carbon footprint as much as they could daily then that would help our environment in the future. It takes each citizen to play their part and to be knowledgeable about our earth's atmosphere to understand how our activities affect us as a whole.

Sulfur dioxide is a pollutant that can be described as a substance that is harmful but yet somewhat helpful to our atmosphere. This chemical is originated from oil and gas and is also made up of other components such as zinc, lead, copper and iron. (North Central Texas Council of Governments). Sulfur is a component of smog which was originally only released from volcanoes. In today's society humans are the main cause of sulfur dioxide in our atmosphere. This particular element is effective with climate change because it acts as a cooling system and also blocks some of the sunlight that reaches the earth. (Air Pollution). However, if not monitored carefully sulfur dioxide can produce acid rain killing off our plants and animals associated with our environment. Sulfur dioxide is released more frequently in the Midwest Ohio Valley region due to the large amount of coal burning power plants located in that area. Cities in Ohio who are highly populated, urban, and with severe automobile traffic, are having issues with sulfur dioxide. (National Atmospheric Deposition Program) There are some natural gases as well as resources that the earth needs to ensure that we maintain a level of stability with oxygen and temperature.

If not, there would be even more illnesses amongst our citizens and natural resources dying off at a more rapid pace. Ozone effects are the result from these chemicals combining with each other and creating air pollution issues in our environment. When the chemicals interact with one another they allow chemical reactions to take place which is harmful to our earth's environment. We need to ensure that we maintain our earth's atmosphere by reducing our carbon footprint as a whole.

These chemicals are not only having a great impact on our physical conditions, but there is a substantial amount of economic issues that coincide with the production of air pollution. David Beach writes, “ By 2095, Ohio could have the climate of present-day Arkansas. ” Over the last few years any Anion will tell you the weather in Ohio has been very unreliable. The change in weather according to David Beach can be expected to get worse. Air pollution creates a barrier for heat from the sun to get caught into the earth’s atmosphere. The major issue with pollution is the barrier that is created.

The earth’s atmosphere is neither prepared nor able to accommodate the vast heat that hovers around earth. The change in temperature amongst the earth causes what we know as global warming, which causes climate change. When you think Of Ohio many people first think Of The Ohio State University Mighty Buckeyes, some think of the delicious chocolate Buckeyes, others hind of the beautiful state parks that home the beautiful buckeye tree. What will we associate Ohio with within the next 75 years? Crankshaft cartoons posted this cartoon clip in response to Ohio’s dilemma.

The clip shows how Ohio’s common person is concerned with the Buckeye’s as the football team not the actually tree. According to Ethnographers Green there will be a shift of climate that will cause the Western and Southern parts of America to become too warm to hold the Buckeye species of trees causing them to only be held in Ohio. However, carbon dioxide production is redirected to double within the next 1 00 years which is believed to lower the

sustainability of Buckeye trees from 12 to 51 percent within the next 20 to 100 years. Ohio is not the only place that has rising carbon dioxide problems.

According to John R. Christy, America produces 25% of the world's anthropogenic carbon dioxide. Carbon dioxide is produced by every living thing, thus not all carbon dioxide constitutes as pollution. However, the issue being raised is the amount of carbon dioxide being produced. Not only are living things producing carbon dioxide but the burning of fossil fuels also produces carbon dioxide. Under the Kyoto Protocol of 1997, 37 industrialized countries discussed their compliance to lowering the emission of Greenhouse gases to 5% lower than 1990 levels.

Countries such as America, Japan, and England, agreed to find ways to lower their energy consumption in attempt to slow a drastic climate shift. While this is still underway, Ohio is being affected by the rise of carbon dioxide production. Ohio is considered to be the 4th largest carbon dioxide producer because of the large amount of coal burned (Environment News Service). David Beach writes, " By 2095, Ohio could have the climate of present-day Arkansas. Over the last few years any Anion will tell you the weather in Ohio has been very unreliable.

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which causes climate change. Now that we know what is causing the issues in Ohio, let focus on the exults of too much carbon dioxide in Ohio.

In other words, what does all this mean to the common Anion? Environment News Service explains that Ohio will suffer in the loss of tourist, loss of timber production, and fishing profits. Why would tourist rates lower? When you go on vacation, the things that attract you to certain locations are the things that are at that location. For example, people go to New York to see the Statue of Liberty, you go to Hawaii to experience the tropical beaches, you go to state parks to experience nature in a different way. However, if Ohio experience climate change the trees will e affected.

The Buckeye tree is special to Ohio and certain parts of Indiana however, the change in temperatures are affecting the trees. Without the ability to produce and maintain trees this will cause a \$1 5 billion loss in timber production contribution to Ohio's economy, not to mention the 119, 000 jobs lost. Not only are the trees being affected also Lake Erie is being affected. According to Environment News Service Lake Erie contributes 316 billion in fishing, trading, and tourism. Lake Erie also produces 46, 800 jobs for Anions. 0 years ago the Quahogs River caught on fire and Ohio saw the effects Of the inability to produce through Lake Erie (Environment News Service). The change in climate will not only affect our economy but it will also affect the health of current and future Anions. If the climate change continues Cleveland summer temperatures will be more like Cincinnati summers and Cincinnati temperatures will be more like Atlanta (Redefining Progress). The

issue with the temperature changing is the people who live in these areas are not physically able to endure hotter weather.

Hotter weather affects heart related diseases which is the number one cause of death. Sulfur emissions are some of the most harmful and environmentally damaging pollutants in our air. Each year uncontrolled power plants release as much sulfur into the air as cars, factories, and trucks combined. Most of the power plant sulfur comes from burning coal to produce electricity. The largest source of air pollution is still industrial pollution, which accounts for about fifty percent (50%) of all air pollution damage.

The largest single industrial source of emission is the coal-fired power plants. Sulfur air pollutants from power plants include sulfur dioxide. Sulfur Dioxide is a colorless gas with a pungent smell. Sulfur dioxide is a deadly gas that is toxic to communities near power plants. These air pollutants are responsible for asthma attacks, heart attacks, lost workdays, school absences and thousands of premature deaths each year. The same sulfur pollutants also cause hazy parkland's and city skylines, and acid rain-damaged ecosystems.

Due to a loophole in the Clean Air Act, millions of tons of sulfur air pollution are being unnecessarily released in the atmosphere each year by “grandfathered” power plants. This is occurring despite the fact that “scrubbers” have been in use for two decades capable of authorizing and removing most of the sulfur emissions from America’s largest and dirtiest smokestacks(I). Now that we understand the problem, there must be a

solution. The equipment is there, but because they are not required to many companies do not spend the extra money to do the right thing.

Sulfur “ scrubbers” typically remove and reduce as much as 90-95% of sulfur dioxide gas emissions from coal-fired power plant smokestack. Scrubber technologies (flue gas desulfurization-or FIG) are well known in the industry, and have been in use for about three (3) decades. Scrubber Operate y adding a lime (calcium) slurry to the flue gas that combines with the sulfur dioxide gas and results in a solid waste byproduct composed of marketable elemental sulfur or gypsum(calcium sulfite) that in some cases can be used to produce wallboard.

Newer methods are being developed such as an ammonia scrubber that produces ammonium sulfate. There are no technological or market barriers that would limit use of sulfur scrubbers and a 90-95% level of reduction can be assumed to be achievable for most coal plants by applying existing methods. These scrubbers may be a solution to a serious problem in our state as well as across the nation. Upon release, sulfur dioxide gas emissions rapidly form sulfate, which is a common form of fine particulate matter. When mixed with water the sulfur dioxide becomes a completely different problem but no less damaging to the environment.

Air pollution can take on many forms, but one of the most detrimental to an ecosystem is acidic deposition, commonly referred to as acid rain. Acidic deposition in either a dry form (ex particulates) or wet (rain, snow) can harm aquatic ecosystems by causing the water to become acidic. The smoke and fumes from burning fuels (ex. Coal, gas) rise into the atmosphere and

imbibes with moisture in the air and comes down as acid rain. The main chemicals in this type of air pollution that creates the acid rain are sulfur dioxide and nitrogen oxides. This forms a nasty solution of sulfuric acid and nitric acid.

Sunlight only increases the rate of most of these reactions. Rain water, snow, fog, and other forms of precipitation fall to the earth as an acid rain. The chemical reaction that change air pollution to acid rain can take several hours to, in some cases several days. When smokestacks are only a few stories high, pollution from these smokestacks will stay near the ground and settle on the ground nearby. This causes very unhealthy conditions immediately around that particular power plant. These concentrations are much greater in these areas as well. To combat this problem the U. S. Congress came up with a brilliant idea. The government passed law allowing for the construction of taller smokestacks. The thought was that if the smoke was sent higher in the air that would solve the pollution problem in the immediate areas around these power plants. Scientists now realize that sending the pollutants higher in the air simply delays the inevitable. Duh Gravity. In addition, the wind will carry the pollutants for hundreds of miles, which spreads the problem out to a much wider area. Why is this a demographic issue? Acid rain affects the water supplies, soil, and urban runoff.

Acid rain alters the pH balance making it lower and lower. Most healthy lakes have a pH balance between six (6) and eight (8). Seven (7) is a neutral pH. The acid rain will bring the pH level down below a five (5) which is very

acidic. As the pH falls lower than a six (6) that particular ecosystem will begin to see a decline in the number of aquatic species and their populations. Clams and snails will be the first species to go. This will be the first domino to fall; as you start taking links out of the food chain then many more dominoes are sure to fall.

The progressive loss of fish populations will be the next casualty. Then because the feeders are gone the mosses and plankton take over the waterways. Many terrestrial animals that are dependent will be affected. For example, waterfowl depend on the aquatic organisms for nourishment and nutrients. As these food sources are eliminated the quality of this particular habitat declines and the reproductive success of most bird species is now affected. Many species will begin to lose the ability to reproduce.

Even if a female is able to spawn the young will most likely not survive. Because the weather system in the US tends to travel in a southwest to northeast pattern (1 1 many acidification problems tend to occur in the northeast. The northeast is where the population of people is. Acid Rain looks, feels, and tastes just like clean rain. The harm to people from acid rain is not direct. Walking in an acid lake is no more dangerous than walking or swimming in clean water. However, the pollutants that cause acid rain- sulfur oxide and nitrogen oxide-do damage to human health.

These gases interact in the atmosphere to form fine sulfate and nitrate particles that can be transported long distances and inhaled deep into people's lungs. Fine particles can also penetrate indoors. Many scientific studies have identified a relationship between elevated levels of fine

particles and increased illness and premature death from heart and lung disorders, such as asthma and bronchitis. Have discussed the causes of Acid Rain and the damage that it causes to human health.