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All of Earth's systems are connected, which means that pollution caused by car exhaust not only affects the atmosphere, but also the biosphere and hydrosphere. Acid rain is a common effect of atmospheric pollution; it is caused by the release of sulfur dioxide, sulfates, and nitrogen oxides found in petroleum diesel. Acid rain contaminates the soil when precipitated, and causes aluminum to be released into the soil. The release of aluminum not only kills plants, but soon ends up in rivers which lead to the ocean; aluminum is fatal to ocean life as well. Acid rain not only harms living creatures, but it can also increase the acidity of the oceans, reducing the cleanliness of our water. An inventive solution to pollution caused by exhaust is biodiesel. Biodiesel, derived from vegetable oil or animal fats, was surveyed by the Environmental Protection Agency; it was found to allow the significant reduction of emissions. With biodiesel, the emission of sulfates is completely eliminated. The emission of nitrogen oxides neither increases nor decreases; however, the absence of sulfur allows for the use of technology that reduces NO<sub>x</sub> (nitrogen oxides) emissions considerably. This technology could not be used with typical petroleum diesel. Not only does the use of biodiesel positively affect plant and animal life, but it also affects human health. Smog from petroleum diesel can cause health issues such as pneumonia and can worsen health problems such as asthma. Overall, scientists' understanding of the connected systems of the earth has allowed for the new technology biodiesel to be born. Biodiesel reduces harmful emissions, consequently preserving the health of plants, animals, and humans. In conclusion, biodiesel is an improvement in our world today, and without our understanding of Earth's connected systems, we may not have biodiesel at all.

