BR ozone study blames trees, nitrogen oxide

By BOB ANDERSON
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Data just gathered on smog in Baton Rouge put the spotlight on trees and nitrogen oxide.

The study will provide help in devising a plan to bring ozone pollution in Baton Rouge within federal limits, some experts say; however, one official urges caution in its interpretation.

The data leave many questions unanswered and could be unfairly used to place the blame for smog on natural hydrocarbon sources, such as trees, said Mike McDaniel, head of the state's air and nuclear regulatory programs.

The data do indicate nitrogen oxide as well as hydrocarbons need to be considered in the state's plan for dealing with ozone pollution, McDaniel said.

Nitrogen oxide from industries and automobiles combines with some types of hydrocarbons to react with sunlight and form low-level ozone pollution — or smog, as it is more commonly known.

The information doesn't mean trees are the major source of the ozone problem, said McDaniel, who added that in areas where there are a lot of trees and little man-made pollution, ozone levels are usually pretty low.

There are many different types of hydrocarbons, he said. Some types are highly reactive, contributing greatly to ozone problems, while others may even abate ozone production.

One study indicates trees remove millions of tons of ozone from the lower atmosphere, McDaniel said.

The percentage of hydrocarbons...
released by trees doesn't mean trees cause that percentage of the ozone problem, he said. Still the hydrocarbons released by trees must be factored into the model. In Baton Rouge, the strategy for reduction of ozone has been to reduce hydrocarbon emissions, according to Thomas Perkins of the Ozone Advisory Committee. 

"Ozone is a complex problem," Perkins said. "Before we can find solutions, we need to analyze what causes ozone. This inventory of hydrocarbon and nitrogen oxide emissions represents just one piece of the puzzle for finding solutions to the ozone problem." 

In addition to Chameides, C-K Associates of Baton Rouge and Trinity Consultants of Dallas also gathered information for the study. The Ozone Advisory Committee is made of volunteers from industry, civic leaders, environmentalists and local business representatives. The public is invited to a meeting on smog Thursday in the Centroplex. The Ozone Advisory Committee is a volunteer organization made of volunteers from industry, civic leaders, environmentalists and local business representatives.

High levels of ozone pollution are most likely in Baton Rouge on sunny days when other weather conditions result in little atmospheric mixing. An increase in asthmatic complaints, upper respiratory problems, sinus attacks and eye irritation have been reported by physicians during periods of high ozone concentrations in the Baton Rouge area. High ozone levels can also cause sore throats, nausea and chest pain, according to the U.S. Environmental Protection Agency. Animal studies indicate high ozone interferes with the immune system and causes scar tissue in the lungs after repeated exposure. It has also been linked by some researchers to effects on blood enzymes, the endocrine system, the liver and the central nervous system.

Ozone also negatively affects tree growth and crop production, according to federal officials. So far this year, Baton Rouge has violated federal standards for ozone pollution four times. Cities that violate the standard more than once a year are subject to fines or face stringent enforcement. Because Baton Rouge and surrounding parishes are out of compliance with the standard, it has become more difficult for new industries that produce large amounts of hydrocarbons to open here.