

Study warns of pollution from ships

March 31 2009, By Robert Nolin

Thousands of merchant ships chug in and out of South Florida's bustling ports each year, bringing boatloads worth of economic benefit to the region.

They also deliver a more dangerous cargo: airborne pollution from giant diesel engines that can sicken coastal residents, or even shorten people's lives.

A study by the [National Oceanic and Atmospheric Administration](#), the most comprehensive yet, found that commercial vessels - freighters, tankers and cruise [ships](#) - generate enough [air pollution](#) to pose "a significant health concern for coastal communities."

The study caught South Florida's public health officials by surprise. But while they acknowledged the presence of maritime, they said local air-quality readings are generally good. Other, more congested areas of the world face greater danger.

The study was conducted last summer and its findings released in February. Lead researcher Daniel Lack of NOAA's Earth System Research Laboratory at the University of Colorado determined that the 51,000-odd commercial vessels now plying the world's oceans spew almost as much air pollution as half the total number of automobiles on the planet.

"It was definitely a surprise for me when we pulled those numbers out," Lack said in an interview. "These ships are emitting as much (pollution)

as 300 million cars. It's a hidden giant."

The pollution is called particulate matter: tiny specks of soot and sulfuric acid about 500 times as fine than the width of a human hair. Particles can hang in the air for as long as 10 days and travel 20 to 30 miles inland from the ship smokestacks where they originated.

They also can be inhaled by people.

"When the particles get down into your lungs they can cause inflammation," Lack said. "You can actually induce heart-type illness as well."

For two months, Lack and his colleagues on a 274-foot NOAA research vessel traveled from Charleston, S.C., to Houston, prowling shipping lanes and mechanically "sniffing" the exhaust of 1,100 merchant ships. Their examination of the exhaust residue led to the study's conclusions.

One of the study's co-authors, James Corbett, professor of marine and earth studies at the University of Delaware, conducted earlier research that quantified through statistical analysis how many people may die from shipborne pollution each year.

"Particulate matter emissions from oceangoing ship engines were estimated to contribute to the premature deaths of tens of thousands of people globally," Corbett said in an interview. That number, the professor said, totals about 60,000 deaths a year worldwide.

The problem is most severe in the Mediterranean, India and East Asia, where populations are dense and shipping prevalent. But because of crosswinds from shipping routes in the Atlantic and Gulf of Mexico, Florida's coastal residents are also at risk. "Florida is one of the most heavily impacted parts of the U.S. with regard to ship emissions and

particulate exposure," Corbett said.

The sooty cloud, however, has a silver lining. Last October, the International Maritime Organization enacted new mandatory standards for phasing in cleaner engine fuel. By 2020, sulfur in marine fuel must be reduced by 90 percent, decreed the IMO, which regulates shipping for 168 member nations.

Sulfur in fuel becomes sulfuric acid in air, which makes up about 50 percent of the particulate matter. Nearly eliminating sulfur in fuel will cut particulate matter in air by almost half, Lack said.

"What the IMO wants to do is make sure that shipping is doing its part to help reduce emissions generally for the sake of the planet," organization spokeswoman Natasha Brown said from her London office.

Shippers are keen to comply.

"There is a clear understanding, an appreciation on the part of the ships, that they cannot ignore growing concerns with pollution," said Carlos Buqueras, director of business development at Port Everglades, where more than 5,000 commercial vessels called last year.

New ships are also being built with technology to cut pollution. "It's a priority," Buqueras said. "The trend is that light, non-sulfur fuel is the way to go."

Roberta Backus, spokeswoman for Discovery Cruise Line, whose Port Everglades-based vessels cross to the Bahamas daily, said the company will eagerly comply with the new standards. "We do support those measures," she said. "We'll work with the various initiatives."

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