

An import from Asia: Bad air

By **Warren Cornwall**
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On the day a Boeing 747 delivered Chinese President Hu Jintao to Everett this week, a tiny twin-propeller airplane loaded with electronic instruments lifted off from the same airport, looking for another delivery from China: dirty air.

Toxic mercury from Asian power plants. Ozone produced by growing fleets of Chinese cars. Smoke from burning Siberian forests. It all rides the jet stream across the Pacific Ocean and lands in places as remote as the Olympic mountains, scientists are discovering.

Most pollution here is still from local sources, and much of the Asian pollution is thought to reach the Northwest only in the spring because of seasonal weather patterns. But some local problems — mercury in fish in local lakes, for example, or the haze that rings Mount Rainier — could have Asian connections.

While local air-quality officials aren't worrying, federal scientists say the influx of bad air can exacerbate West Coast air-quality problems, especially as countries such as China rapidly industrialize.

"Environmental issues are really now a global concern, there's no question about that," said Professor Dan Jaffe, an atmospheric chemist at the University of Washington's Bothell campus.

Using a cramped Beechcraft Duchess airplane launched from Everett's Paine Field, Jaffe and his team of researchers have been continuing a yearslong search for international pollution to gauge how serious the problem is.

Now the hunt is getting a big boost with the addition of two huge, state-of-the-art planes, the first concerted federal effort to decipher how the air floating from **Asia** carries pollutants to America.

Years on the trail

Jaffe's quest to pinpoint the pollution from **Asia** has taken him and his teams from laboratories atop Mount Bachelor in Oregon to high on Cheeka Peak in the Olympics.

They use complicated computer models and measure certain chemicals that are associated with industrial activity, such as mercury and carbon monoxide.

In 1997, on Cheeka Peak, near the northwest tip of the Olympic Peninsula,

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[enlarge](#) MIKE SIEGEL / THE SEATTLE TIMES

Duli Chand, a research associate at the University of Washington's Bothell campus, carefully places equipment on a plane before departing from Everett's Paine Field.

Jaffe started finding higher-than-expected levels of carbon monoxide and a chemical that helps create ozone when the winds were blowing from **Asia**.

Four years later, he discovered that dust from massive Asian dust storms made up more than half of the small-particulate pollution in Seattle during one particular week. In 2003, he determined ozone that had pushed Seattle-area levels above federal air-quality limits could be traced to Siberian forest fires.

Then in 2004, Jaffe and his team found that mercury in the air around the summit of Mount Bachelor had originated in **Asia**, where coal burning is a major source of atmospheric mercury.

Cruising for plumes

Tuesday, Jaffe and two other UW scientists scrambled about the tarmac at Paine Field, piling computers, scientific instruments, and yards of wires and air hoses into the back of their rented Beechcraft.

The skies were relatively clear, but Jaffe's computer models suggested that a big puff of pollution was about to arrive from **Asia**.

So the mission was to fly toward Tatoosh Island off Cape Flattery, the northwestern corner of the Olympic Peninsula where the Strait of Juan de Fuca meets the Pacific.

The pilot and one scientist would go up to 20,000 feet, so high they would need to bring oxygen to breathe. Then they would gradually descend, measuring air all the way.

This particular mission came back empty-handed — they didn't find the pollution they had expected.

But now they have some help.

Monday, a modified C-130 cargo plane from the National Center for Atmospheric Research landed at Paine Field. And in Hawaii, a DC-8 jet from NASA has joined the hunt.

In a project spearheaded by NASA, both planes will spend the next month buzzing over the Pacific Ocean, sucking up samples from plumes of pollution from **Asia**.

Industrial growth

There has been a greater awareness lately that **Asia** is a source of U.S. air pollution, said Bill Brune, a Penn State professor who is helping to head up the NASA project.

That's partly because scientists have more sensitive equipment to track the pollution. And it's partly because Asian industry is growing.

"The concern is ... if it's business as usual, it's just going to get worse," Brune said.

For its part, China has been sensitive to claims that its pollution is spreading overseas. Earlier this month, the government-run Xinhua News Agency reported that a Chinese environmental official called the idea that mercury from Chinese factories was reaching the U.S. "entirely groundless."

And Denis Hayes, a leading environmentalist from Washington who has traveled and spoken in China about environmental problems, cautioned that while it's easy to point a finger across the Pacific, some of the Asian pollution is created by factories making products for U.S. markets.

"It's American consumers that are still creating demand for it," he said. "We've just off-shored the production and the pollution."

For now, air-quality officials in the Puget Sound area aren't focusing on air pollution from **Asia**.

"It's not an issue that we have a great ability to control, and it's insignificant in comparison to the local emissions that we can work with," said Dennis McLerran, executive director of the Puget Sound Clean Air Agency.

Nonetheless, the added pollution could push parts of the country over clean-air thresholds, or erase gains made from costly efforts to cut local pollution, said Terry Keating, a senior scientist in the Environmental Protection Agency's (EPA) office of Air and Radiation.

"If it takes millions of dollars of investment in the United States to get a small change in ozone and fine particles, and that same increment can be coming from overseas and may potentially grow in the future, then that's something that we're concerned about," he said.

The EPA has been seeking alliances with China to help cut air pollution there. In 2003 the EPA struck a deal to help Chinese officials monitor air-pollution levels and cut emissions.

Such efforts will lay a foundation to address the air pollution crossing oceans, said Keating.

"We're just at the beginning," he said.

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