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University of Illinois Professor Edwin Herricks checks radar equipment in Washington state for research on how to prevent flocks of birds from flying into the path of airplanes.

University of Illinois photos

UNIVERSITY OF ILLINOIS RESEARCH

Better bird spotting

UI professor's mission: To track wildlife in real time, avert plane crashes

By PAUL WOOD

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When wild things and jet airplanes share the same space, there's a danger that both can be damaged. A Jan. 15 emergency landing by a US Airways pilot of an airliner on the Hudson River, with all 155 passengers safe, is one of the happy endings.

A University of Illinois professor's research could help keep those happy landings coming.

About 220 people have been killed worldwide as a result of wildlife strikes since 1988, according to Bird Strike Committee USA, a government/science coalition formed in 1991 to study and prevent collisions between animals and aircraft.

It's Edwin Herricks' mission to find a way for radar to track animals in real time. The UI engineering professor has compiled more than 18 months' data from radars at two Washington state airports, data so enormous that he compares it to "drinking water out of a fire hose."

In a Federal Aviation Administration study, Herricks and his researchers will soon use avian radars at O'Hare International Airport, New York's John F. Kennedy Airport, Vancouver International Airport and Dallas/Fort Worth Airport. He said it could take two or three years to gather and analyze the data.

In a lower-tech test, he recently flew a radio-controlled model helicopter at the Seattle-Tacoma Airport to show his radar array can detect a bird-sized target in near-real time.

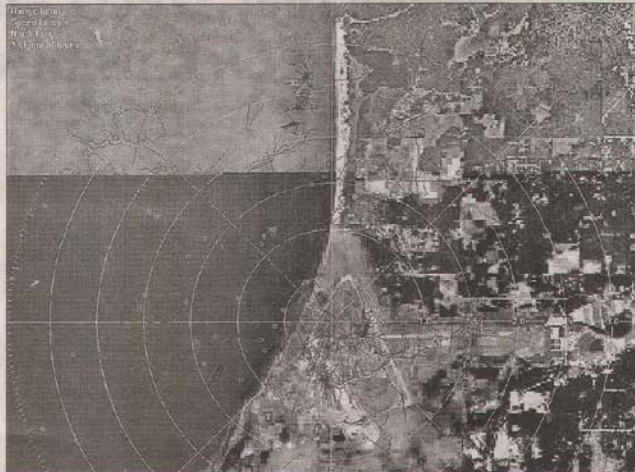
Rudy Frasca, who owns Frasca Aviation north of Urbana, has been flying since he was 14 — 63 years ago. He has a collection of planes from World War II to the latest technology that he regularly takes into the air.

Frasca's never had a bird collision.

"But there's always the first time," said Frasca, who notes that pilots enthusiastically support research on the problem.

Such collisions cost the U.S. \$600 million a year, according to Bird Strike Committee USA.

The airplanes can usually keep flying after they hit birds, the committee notes; however,



ABOVE: A radar readout shows real-time positioning of wildlife. BELOW: One of nine trailers housing avian radar control units that Herricks' team deploys at various airports.



"The issue is usually birds, but other wildlife such as coyotes and deer have been hit by airplanes."

Some researchers, especially those in the Agriculture Department, work on changing habitat for birds, studying the optimum height for grass or even harassing the birds, Herricks said.

His research is aimed at finding a way for air traffic controllers to know where flocks of birds are and where they're going.

"If you're observing birds, right now you are limited to when you can see them: daylight," he said.

Though there is some research on night goggles, "radar expands that potential to 24/7," Herricks said.

"We've been operating radar units in the West that generate terabytes of data. It's largely a matter of storage, because radars have a high frequency of data generation."

As computers and radars improve, he said, real-time observation will become a reality, just as 20 years ago wind shear was considered too difficult to measure, he said.

aircraft repairs are costly.

Herricks said the way to determine if birds or other wildlife caused a mishap is similar to a crime scene investigation.

"They will examine the

engines, and typically there is debris left in engines. They can identify species based on both feathers and DNA," he said. "There are very few things that could shut down both engines."