

OF4-12/28/06 9:25AM PERFECTING LONG RANGE WEATHER FORECASTING

Meteorologists agree on how to go about predicting the weather for a 7-day period. But long-range climate forecasting is a new frontier.

Analysts have determined that 3-trillion dollars of the US economy is tied to weather conditions, everything from pro-sporting events to shipping to global health.

"Especially agriculture. In poor parts of the world, issues of food security are very much relevant, public health issues with infectious diseases, water resources management. But in our work, it can often be a matter of life and death." said Steve Zebiak.

Steve Zebiak directs the International Research Institute for Climate and Society at Columbia University where they're trying to develop ways to predict weather months, and even years, down the road. Long range climate forecasting right now is a big challenge.

"You cannot predict the details of the weather more than 2 weeks ahead because of the sort of internal chaotic processes in the atmosphere." said Zebiak.

Zebiak helped develop a forecasting model known as the El Nino-Southern Oscillation. It predicts warming of the eastern pacific ocean which shifts thunderstorms from the western to the central pacific.

"Those storms act like a heat source for the whole atmospheric circulation globally. Think of it like you've got a radiator in a cold room and you move it from one place to another and it actually changes the patterns of airflow." said Judah Cohen.

Judah Cohen of Atmospheric and Environmental Research, Inc is developing his own long range forecasting tool based on snowfall in Siberia.

"Siberia is the refrigerator for the entire northern hemisphere." said Cohen.

More snow in Siberia means colder winters for us.

"When there's snow versus no snow, much more sunlight is reflected back out into space as opposed to being absorbed at the earth's surface. That's a net cooling." said Cohen.

Governments and industry eagerly await progress in this fledgling science.

The Osgood File. Charles Osgood on the CBS Radio Network