Meet the Scientist!

As a research meteorologist, I study how climate variability and climate changes drive forest disturbances, like wildland fires. I also study how forest conditions affect the environment, and how to predict climate-forest interactions.

Dr. Yongqiang Liu

Research Meteorologist

Ph.D., Institute of Atmospheric Physics, Chinese Academy of Sciences

USDA Forest Service scientist

http://www.naturalinquirer.org

Important Scientist Characteristics

Math and computer programming are important for my work. For instance, atmospheric processes are described by a set of equations. We need to use math and statistics to analyze parts of the system. Numerical tools and computer programming are also helpful for solving the equations.

Example of a simple research question I have tried to answer:

What is the relationship between "megafires" and drought? How will a changing climate affect wildfires? Wildfires in the United States, especially large, damaging megafires, have increased in the past two decades.

Technology or equipment used in research:

Dynamical and statistical models simulate and predict events. In particular, we use models to simulate and predict interactions between climate and ecosystems. Dynamical models, like regional climate models and regional air quality models, are developed based on physical, chemical, and biological ideas. Statistical models, like Daysmoke and fire prediction models, are developed based on observational data.

Most Exciting Discovery

I studied the role of weather and climate anomalies, such as droughts, as drivers of fires. I used a dynamical model to simulate the 1988 Yellowstone National Park wildfires. Looking at the rainfall anomaly patterns in the continental U.S., the results suggested that the wildfires may have enhanced the severe drought in the northern U.S.

When did you know you wanted to be a scientist? I lived in China during grades K-12, which was during the Cultural Revolution. There was a newspaper called *Reference News* that reported important scientific news from around the world. I still remember reading a story explaining that changes in Earth's orbit had caused the ice age. That inspired my interest in science.

https://sites.google.com/site/forestdisturbance/about/atmospheric-science-team/yong-qiang-liu