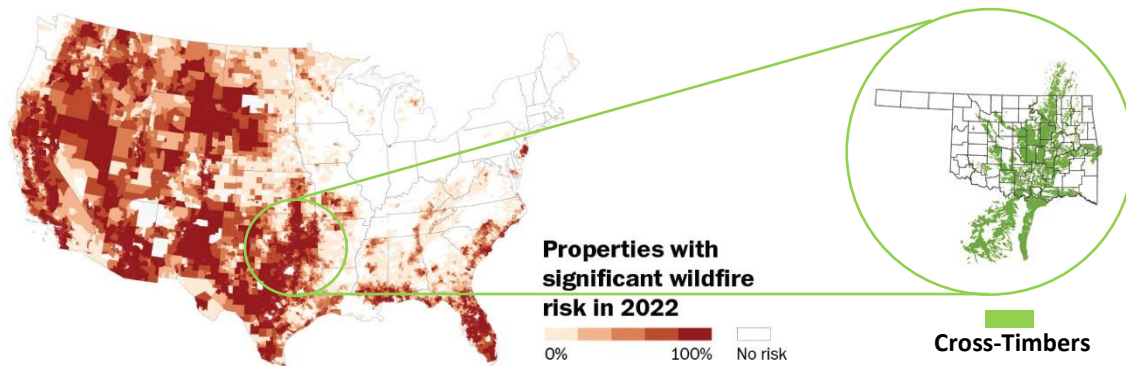# Thesis/project/internship opportunities

in German or English (SoSe 24 - WiSe 24/25)

(Washington Post 2022; University of Oklahoma)

Research area

Forests around the world have recently suffered catastrophic damage from wildfires. In some regions, the area burned, as well as the frequency and intensity of fires have increased to unprecedented levels. A major difference in the last years' escalation is the spread of this phenomenon to **areas that were traditionally not prone to wildfires**. In the United States, for example, the Cross-Timbers region is one of these areas.

The Cross-Timbers' ancient forests, known as some of the least disturbed primary forests in the United States, are now experiencing drastic changes in vegetation that contribute to an increase in flammable material and lead to wildfires.

Because most of the Cross-Timbers is privately owned with scarce forest management and research, we analyze **solutions and strategies for wildfire risk reduction** that are sustainable and appropriate for landowners.

Prospects

In **Prof. Kerstin Wiegand's "Ecosystem Modelling"** department at the **University of Goettingen**, you have several opportunities to contribute to our project. We are looking for students, who are interested in working on

- Remote sensing
- Machine learning and neural networks using remote sensing data
- Agent-based modeling, Monte Carlo methods, point pattern analysis, and statistics

Among the topics that could be developed are:

- Tree identification and segmentation
- Classification of vegetation
- Fire modeling
- Vegetation dynamics

For further information, please **contact Jose Ortega** (josemaria.ortegaballadares@uni-goettingen.de).