

Scott Goetz

Deputy Director and Senior Scientist
Woods Hole Research Center

Rapid Change in the Arctic and the tropics: Vulnerabilities and Opportunities

Abstract: The future trajectory of the global climate system depends, in part, on what happens to the earth's major pools of organic carbon. The largest and most vulnerable pools are stored in tropical forests and the organic soils of arctic and boreal biomes. The fate of the organic carbon stored in these systems will depend on how plants respond to both average climate change (e.g. mean change in temperature and precipitation) and changes in extreme weather events (e.g. droughts). Both systems are strongly influenced by the same fundamental biophysical processes controlling carbon exchange, including productivity, tree mortality, the frequency and severity of disturbance, its implications for post-disturbance vegetation structure and function, and the influence of climate. I'll discuss these and show examples of how drought, in particular, plays a critical role in driving these interacting processes. Finally, I'll touch on some ways we can address these issues.