Presenter

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Extreme Precipitation and Flooding in the Southern Appalachian Mountains: Implications of Subtropical Storm Alberto

Diverse in both climate and topography, the southern Appalachian Mountains are prone to extreme precipitation and flooding that often threaten the socio-economically vulnerable citizens that live in this rural region. Already waterlogged from an above average month of precipitation in April, the arrival of Subtropical Storm Alberto in late May threatened residents still recovering from prior flood damage. In Polk County alone, severely damaged roadways and the effects of a deadly debris flow in an earlier storm had effectively cut off communities. Due to the weak nature of Alberto, many living along the Blue Ridge were unprepared for the rate at which the rain would fall. The ensuing flash flooding and mudslides resulted in the closure of Highway 9 and Interstate 40, destroyed homes, threatened the collapse of Lake Tahoma Dam, and claimed at least 5 lives. By the end of the storm, portions of the Blue Ridge escarpment exceeded 400% of average monthly rainfall. Despite the event resulting in precipitation totals and flooding similar to Hurricanes Frances and Ivan, western North Carolina was denied a disaster declaration by FEMA as the month long flooding was deemed as separate and distinct events. As a result, crucial roadways remain damaged or closed, hindering the ability for some of the hardest hit communities to recover. Despite being disproportionately affected by extreme precipitation and flooding events such as Alberto, citizens of rural Southern Appalachia are among the least concerned about future impacts of climate change in the country. By better addressing climate change and extremes on a regional scale, we will be more equipped to engage with rural communities and improve disaster response in the future.