



Drought-Net: A global network to assess terrestrial ecosystem sensitivity to drought

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All ecosystems will be impacted to some extent by climate change, with forecasts for more frequent and severe drought likely to have the greatest impact on terrestrial ecosystems. Terrestrial ecosystems are known to vary dramatically in their responses to drought. However, the factors that may make some ecosystems respond more or less than others remains unknown, but such understanding is critical for predicting drought impacts at regional and continental scales. To effectively forecast terrestrial ecosystem responses to drought, ecologists must assess responses of a range of different ecosystems to drought, and then improve existing models by incorporating the factors that cause such variation in response. Traditional site-based research cannot provide this knowledge because experiments conducted at individual sites are often not directly comparable due to differences in methodologies employed. Coordinated experimental networks, with identical protocols and comparable measurements, are ideally suited for comparative studies at regional to global scales. The US National Science Foundation-funded Drought-Net Research Coordination Network (www.drought-net.org) will advance understanding of the determinants of terrestrial ecosystem responses to drought by bringing together an international group of scientists to conduct two key activities conducted over the next five years: 1) planning and coordinating new research using standardized measurements to leverage the value of existing drought experiments across the globe (Enhancing Existing Experiments, EEE), and 2) finalizing the design and facilitating the establishment of a new international network of coordinated drought experiments (the International Drought Experiment, IDE). The primary goals of these activities are to assess: (1) patterns of differential terrestrial ecosystem sensitivity to drought and (2) potential mechanisms underlying those patterns.