



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

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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 mechanistic basis underlying why some ecosystems respond more than others represents a critical knowledge gap, one that limits our ability to project drought impacts at regional and continental scales. To effectively forecast terrestrial ecosystem responses to drought, ecologists must determine the mechanisms underlying ecosystem sensitivity to drought across a range of different ecosystem types, and then improve existing modeling frameworks by incorporating such variation within the context of broader environmental gradients. Traditional site-based approaches cannot provide this knowledge because site-specific experiments are conducted in ways that makes comparisons among ecosystems difficult. Coordinated experimental networks, however, are ideally suited for comparative studies at regional to global scales. The Drought-Net Research Coordination Network (RCN) will bring together an international cadre of scientists to conduct three complementary activities: 1) planning and coordinating new research utilizing standardized measurements to leverage the value of existing drought experiments across the globe (Enhancing Existing Experiments, EEE), 2) finalizing the design and facilitating the establishment of a new international network of coordinated drought experiments (the International Drought Experiment, IDE), and 3) training highly motivated graduate students to conduct synthetic and network-level research through Distributed Graduate Seminars (DGS) focused on drought. Synthesis of data from these focal activities, in the context of past and ongoing drought research, will be an important activity conducted by Drought-Net participants.