The Socio-Environmental Data Explorer

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Associated Program:
Data-Intensive Analysis and/or Modeling for Socio-Environmental Synthesis [1]

Collaborative Site:
Group Collaboration [2]

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Data generated by social media provides an unprecedented amount of rich information on social perception with the potential to advance research on a wide variety of coupled social-environmental systems (SES) problem domains. Leveraging that data, however, requires integrating cyberinfrastructure and data intensive methods with SES frameworks. Building on advances in CyberGIS, we propose developing the Socio-Environmental Data Explorer (SEDE), a web-based textual and visual analytic system that will collect social media and environmental data in near real-time and enable scientists, decision makers, and stakeholders to rapidly assess environmental impact and perceptions of risks of hazards through space and time. Transdisciplinary collaborative activities at SESYNC will increase the actionability of SEDE as a decision-support tool capable of gaging environmental impact and social amplification and attenuation of risk—processes of information communication and perception that heighten or dampen public anxiety about risk threat incommensurate with actual risk—that sometimes misdirect policies and can, perversely, increase risk vulnerability. We will use SEDE to explore the case study of extreme weather events, disturbances with immediate and longer term implications for the resilience of SES. We expect SEDE will help advance risk perception theory by enabling comparative analysis of social response to environmental risk across space and time; improve best practices for social media data integration and user involvement in CyberGIS; and gain new insights into a pressing socio-environmental issue by engaging various scientific and non-scientific communities from cyber, social, and environmental perspectives that will improve overall tool functioning.

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