Safe and Sustainable Water Resources Research Program

A monthly webinar series focused on EPA water research

EPA's Global Change Explorer Web Tools Collection

Wednesday, May 31, 2017 2:00 to 3:00 pm EDT

Register online: https://attendee.gotowebinar.com/register/1208629743139931394

EPA's Global Change Explorer is a collection of three web tools that allow visualization, comparison, and access to spatial data that describe potential future environmental change. These data can serve as a starting point to assess the vulnerability of air, water, ecosystems, and human health to climate change, land use change, and other large-scale environmental stressors. The data and tools in the Global Change Explorer are relevant across multiple scientific disciplines and environmental media, providing a foundation for integrated assessments of global change. The three web tools will be presented:

1. Land Use Tool - *Presented by Phil Morefield*

EPA's Integrated Climate and Land Use Scenarios (ICLUS) project developed scenarios of future human population, housing density, and impervious surface for the contiguous United States. These scenarios are broadly consistent with peer-reviewed storylines of population growth and economic development, now widely used by the climate change impacts community. The ICLUS project produced high-resolution spatial data for vulnerability and impacts assessments that integrate both climate and land use changes.

2. Watersheds Tool - *Presented by Dr. Thomas Johnson*

EPA's 20 Watersheds project has developed model simulations of how streamflow and water quality (nitrogen, phosphorus and sediment) respond to a range of potential mid-21st century climate change and urban development scenarios in 20 large, U.S. drainage basins. The watersheds used in the study represent a range of geographic, hydrologic, and climatic conditions across the nation. The Global Change Explorer provides online tools for visualization and comparison of simulation results.

3. Deposition Tool - *Presented by Dr. Christopher M. Clark*

Loads Mapper Tool enables decision makers, researchers, and the public to easily access information on atmospheric deposition of nitrogen and sulfur, critical loads, and their exceedances to better understand local and regional vulnerability to atmospheric pollution. This interactive mapping tool displays nitrogen and sulfur deposition levels through time for several air quality models, critical load levels for terrestrial and aquatic ecosystems in the National Critical Loads Database, and the exceedance of deposition over the critical loads as an estimate of vulnerability to air pollution.

Phil Morefield is a geographer in ORD-National Center for Environmental Assessment (NCEA). His research projects focus on the development of models and tools that help us understand the potential impacts of global change, especially the interactions of demographic, land use, and climate change.

Dr. Thomas Johnson is a hydrologist in ORD-NCEA. His technical interests include the interaction of hydrologic and ecological systems, and watershed management including climate and land use change effects on water and watershed systems.

Dr. Christopher Clark is a terrestrial ecologist in ORD-NCEA. His technical training and interests include biogeochemical cycling, statistics, community and ecosystem ecology, impacts from climate change and atmospheric deposition of nitrogen and sulfur on ecosystems, hydraulic fracturing, and the sustainability of biofuel production and supply chains.