Ecosystem Restoration

Charles T. Driscoll

Distinguished and University Professor, Civil and Environmental Engineering

CURRENT RESEARCH

Long-term measurements and experiments that explain the effects of disturbance on ecosystems, and inform their remediation and recovery

An ecosystem is made up of organisms and their environment, including soil, water, and air, and their interactions. Ecosystems can be impacted by air pollutants including the release of sulfur dioxide, nitrogen oxide, and mercury; changing climate; as well as land disturbance and nutrient inputs. Dr. Charles Driscoll, Distinguished and University Professor of Civil and Environmental Engineering at Syracuse University, addresses the consequences of human activities on ecosystem structure and function, and develops cost-effective approaches to mitigate these consequences. His work largely looks at ecosystems and the components of ecosystems that make up the natural environment, like forests, wetlands, streams, lakes, and estuaries to the oceans. By examining pollutant inputs and other disturbances to ecosystems and studying their response to these perturbations, Driscoll determines the severity and consequences of these impacts and identifies approaches to restore the form and function of disturbed ecosystems.

Dr. Driscoll's work is largely field-focused and addresses long-term -- or decadal -- responses of natural environments to disturbances. Using a multi-tiered approach, he: 1. measures the inputs of energy, water, and different chemicals, and their processes and transformations within the ecosystems; 2. conducts large-scale experiments over many decades to track how ecosystems respond to acid rain and climate change obtaining insight to restore these environments back to a healthy state; and 3. creates and applies computer models to gain a better perspective of disturbances. He simulates the past conditions of ecosystems before disturbance occurred and projects forward under future environmental...

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AFFILIATION

Syracuse University

EDUCATION

- Ph.D. in Environmental Engineering 1979,Cornell University
- M.S. in Environmental Engineering 1976, Cornell University
- B.S. in Civil Engineering 1974, University of Maine

AWARDS

- National Academy of Engineering, 2007-present
- Highly Cited Researcher for Engineering and Environmental Science, 2003-present
- Presidential Young Investigator Award, 1984

RESEARCH AREAS

Environment, Ecology, Geology, Remediation

FUNDING REQUEST

Your contributions will help Dr. Charles Driscoll and his team at Syracuse University conduct long-term field measurements and experiments and apply models to evaluate the effects of disturbance on ecosystems, and determine approaches to mitigate these effects. Donations will help support the $1M-2M required to support personnel, travel, supplies, and equipment costs, and any small or big donations will be useful in supporting unfunded student projects and other items. Help restore ecosystems and make the air we breathe, the soil we rely on, and the water we drink better for future generations by supporting Dr. Driscoll's research.