

PRESS RELEASE

[For Immediate Release]

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A Shrew's Trail: Urban Students Monitor Animals and Their Habitats in a Virtual Forest

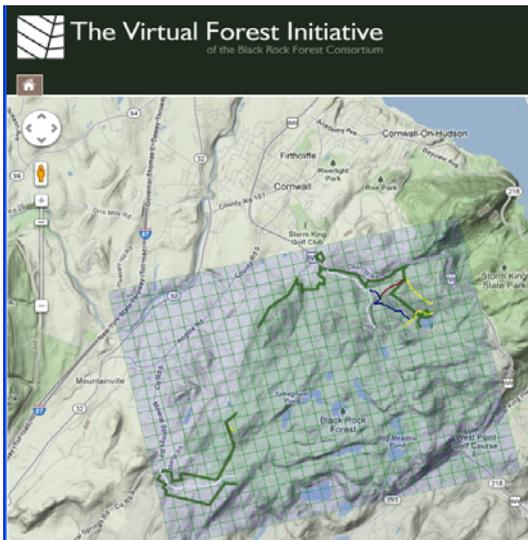
GPS, Radio Telemetry, and Computer Technologies Help Students Interpret a "Wired" Forest

(Cornwall, NY, November 5, 2012) Sophisticated information technologies are giving New York City middle- and high-school students a chance to see how the environment works up close, and to use the scientific method, in a Black Rock Forest Consortium project funded by a \$500,000 grant from the Toyota USA Foundation.



Using Geographic Information Systems initially developed to help cities keep track of urban infrastructure, students from Title I public schools in Brooklyn, Harlem and Governors Island are taking handheld GPS units deep into Black Rock Forest to collect data on mammal habitat for a "Virtual Forest," an online interface and set of databases that environmental scientists are using to store their data, and that educators are using to help students interpret those data (see

<http://blackrock.ccnmtl.columbia.edu/portal/>).



Forest mammals are tracked on a grid...

"Mammals like shrews and otters don't just live in the forest; they live in specific habitats within that forest," said Dr. Jeff Kidder, a zoologist and the Director of Education for Black Rock Forest Consortium. "They choose habitats based on many factors, including how to obtain food, find mates, and avoid predation. So using GPS coordinates to understand animal habitat ecology is a great way to find out where different species live," Kidder said.

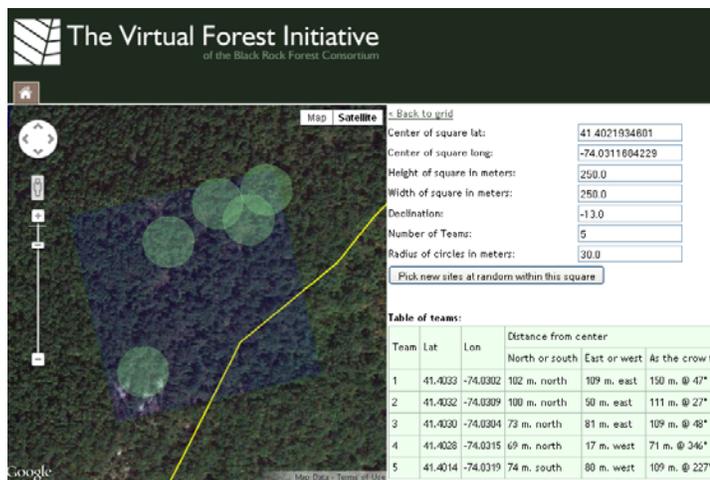
Computer technologists at Columbia University's Center for New Media Teaching and Learning (CCNMTL) will use student-gathered data to construct digital habitat maps in an online representation of Black Rock Forest.

The Toyota USA Foundation grant funds the development of two Virtual Forest biology and chemistry modules tied to New York City public school curriculum and offering hands-on investigations in the field. The grant will bring more than 400 urban students to Black Rock Forest over three years. Many are participating this fall in a

Water Chemistry Module (see <http://blackrock.ccnmtl.columbia.edu/waterchemistry>) that allows access to, and graphing comparisons of, online data collected by automated sensor stations at Cascade Brook in Black Rock Forest as well as the Hudson and Harlem Rivers. Computer data loggers record stream temperature, acidity and dissolved oxygen levels and employ radio telemetry to a base station and server prior to formatting for the Virtual Forest.

“In all honesty, the water chemistry module is a gift come down from heaven. I ran through module 01 on Wednesday [October 24] and the kids loved it,” said Mauricio Gonzalez, a Living Environment teacher at the Urban Assembly New York Harbor School. Gonzalez consulted for the Consortium in 2011 on early design of the module, and his students contributed the Harlem River data that the module uses in some of its 12 units. “The material helped me go through all the basics in a very animated way,” Gonzalez said.

“Our model for optimal learning about science and nature merges modern digital tools with direct, hands-on experience, helping us to serve thousands of middle- and high-school students,” said Dr. William Schuster, a forest ecologist and the Executive Director of the Consortium. “According to the U.S. Department of Education’s national assessment, hands-on activities in the sciences help students learn and score higher on tests. Getting your hands on actual data and analyzing it is the way real scientists learn. Students should have that opportunity,” Schuster said.



...and their GPS coordinates will help construct a habitat map.

About Black Rock Forest Consortium

Black Rock Forest Consortium is a nonprofit organization with a mission of advancing scientific understanding of the natural world through research, education and conservation. The Consortium maintains a 3,830-acre forest preserve and field station in Cornwall, New York, about an hour's drive north of New York City. Together with its members, prominent universities, colleges, schools and research institutions in the New York metro area, Black Rock Forest Consortium provides scientists, students and the public with windows into the interaction between a natural ecosystem and the highly developed communities that surround it. Since its founding in 1989, the Consortium has transformed Black Rock Forest into one of the nation’s most active biological field stations while enhancing the Forest’s long-term ecological stability. See www.blackrockforest.org for more information.

About the Toyota USA Foundation

The Toyota USA Foundation is a \$100 million charitable endowment created to support education programs serving kindergarten through 12th grade students and their teachers in the United States, with an emphasis on mathematics, science and environmental science. For additional information about the Toyota USA Foundation, visit www.toyota.com/foundation.