

BREAKING NEWS» Seeing the light

News

- Trail Report
- News**
- Opinion
- Sports
- Lifestyles
- Ads
- Extras
- Services
- Design an Ad
- All Access E-Edition

/ News /

« Nancy Gruber

Rainforest researcher»

Rainforest researcher

Tech professor leads global warming study in Puerto Rico

July 2, 2014

Dan Roblee (droblee@mininggazette.com) , The Daily Mining Gazette

Save |

By DAN ROBLEE

droblee@

mininggazette.com

Article Photos



Photo courtesy Michigan Technological University

HOUGHTON - Tropical forests are one of the earth's great defenses against global warming. Through photosynthesis, the forests take in more carbon dioxide than they release, helping to limit environmental concentrations of the largely man-made greenhouse gas seen as most responsible for climate change.

But with temperatures already inching up, some scientists are concerned the forests won't be able to continue that function. According to Michigan Technological University professor Dr. Molly Cavaleri, climatological data and laboratory studies have indicated that raising temperatures can both increase mortality in tropical forests and change how those forests process CO2.

"These plants have evolved over millions in years in a very narrow temperature range," Cavaleri said Monday. "They haven't evolved to be able to deal with temperature change."

Now, Cavaleri is leading one of the first field studies to examine the impacts of warming on tropical forests. Along with colleagues Tana Wood from the Puerto Rico Conservation Foundation and the U.S. Forest Service, and Sasha Reed of the U.S. Geological Survey, she's set up a research station at the El Yunque National Forest in Puerto Rico. Over the next three years they'll artificially warm both tree canopies and soil and measure the effects on respiration, the process by which both plants and soil release carbon dioxide, and

CLICK HERE FOR SAVINGS econofoods

Houghton, MI **76°F** [Extended Forecast](#) [Find Another Location](#)

Data provided by The Weather Channel ©

News, Blogs & Events

I am looking for:

in:

- News, Blogs & Events
- Web



Need Better Eye Tracking?

grinbath.com
Mobile Eye Tracking Solutions Get More out of Your Research

photosynthesis, which plants use to capture the gas.

"With warming, there could be a tipping point where (trees) stop taking in, and actually put out more CO2," she said. "This small change in balance could cause more CO2 in the air and exacerbate global warming."

Cavaleri said researchers have noted widespread changes in tropical forests, including higher plant mortality, more woody vines and some forests that have actually increased their growth rate. Some theories show increased carbon dioxide helping forests and increasing growth, while others predict decreased growth in the long run, with "not much data on the ground" to prove either, she said.

"People don't really know what's causing these changes," Cavaleri said. "That's the benefit of a controlled experiment - by only changing one thing, we can focus on the impact of changing temperatures."

The El Yunque project, Cavaleri said, actually got its start back in 2009, with the Forest Service investing about \$1 million since then setting up workshops, infrastructure and logistics at the International Institute of Tropical Forestry. Now, a three-year, \$960,000 grant from the Department of Energy is getting the actual research underway.

Cavaleri said the project will build two or three 80- to 85-foot towers to get into the forest's canopy, and will use heating wire propped under branches to heat the upper extremities of trees by 4 degrees Celsius, a method that's been previously used in Panama. Smaller trees and soil will be heated with infrared lamps placed about three or four meters off the ground. Infrared thermometers will be used to measure temperatures, and there will be control plots left in their natural condition for comparison.

"No one has ever used this method in a site this wet, so there'll be some troubleshooting to see if it works," Cavaleri said, adding that there's a proposal under consideration to use soil rods for additional work deeper in the soil.

Michigan Tech graduate student Alida Mau is also involved in the research, and Cavaleri said she's hiring another grad student and a full-time technician.

Cavaleri said she doesn't expect to propose solutions to global warming or forests' woes after the study, but said it's possible scientists could eventually develop plants better able to deal with changing climates.

Her study, she said, "is more about understanding what's happening and what's going to happen. We're not really advocates for any particular kind of management."

To learn more about the research, go to forestwarming.org.

[Save](#) |

Recommend Be the first of your friends to recommend this.



[Subscribe to The Daily Mining Gazette](#)

Sponsored From Around the Web



[If You Don't Speak Spanish, Watch This Video Now](#)



[What Happens When You Take a Testosterone Supplement](#)



[Why Women Are Flipping for Kate Hudson's New Athletic Line](#)



[Cheats to Boost Testosterone](#)



[74-Year-Old Outsmarts Doctors. Saves on Facelift.](#)



[Find Out if Any of Your Ancestors Were Famous - or Infamous](#)



[New Fat Burner Takes GNC by Storm](#)



[REVEALED: How People Are Paying LESS THAN \\$24 For New Michael Kors Purses](#)

?

	Shop Brilliant Earth's beyond conflict free diamond rings, antique rings, and fine jewelry!		New Rule in Michigan: If you pay for car insurance you better read this...		Side Effects: Weight Gain, Rashes, Diarrhea & More...
--	---	--	--	--	---

Advertisement

The Daily Mining Gazette

P.O. Box 368 , Houghton, MI 49931 | 906-482-1500

© 2014. All rights reserved. | [Terms of Service and Privacy Policy](#)