

REACH CANDIDATES ACROSS
DESKTOP, MOBILE, AND SOCIAL.

See how far a single post will take you.

GET STARTED

MONSTER

SPACE DAILY

your portal to space

EARTH OBSERVATION

Satellites help scientists see forests for the trees amid climate change

by Staff Writers
Edmonton, Canada (SPX) Nov 03, 2016

Scientists have found a way to use satellites to track photosynthesis in evergreens - a discovery that could improve our ability to assess the health of northern forests amid climate change.

An international team of researchers used satellite sensor data to identify slight colour shifts in evergreen trees that show seasonal cycles of photosynthesis - the process in which plants use sunlight to convert carbon dioxide and water into glucose.

Photosynthesis is easy to track in deciduous trees - when leaves bud or turn yellow and fall off. But until recently, it had been impossible to detect in evergreen conifers on a large scale.



Scientists are using satellite sensors to keep an eye on how the world's boreal forests are adapting to climate change.

"Photosynthesis is arguably the most important process on the planet, without which life as we know it would not exist," said John Gamon, lead researcher and a professor of biological sciences at the University of Alberta. "As the climate changes, plants respond - their photosynthesis changes, their growing season changes. And if photosynthesis changes, that in turn further affects the atmosphere and climate."

Through their CO2-consuming ways, plants have been slowing climate change far more than scientists previously realized. The "million-dollar question" is whether this will continue as the planet continues to warm due to human activity, Gamon said.

Scientists have two hypotheses - the first is that climate change and longer growing seasons will result in plants sucking up even more CO2, further slowing climate change. The other predicts a drop in photosynthetic activity due to drought conditions that stress plants, causing them to release CO2 into the atmosphere through a process called respiration - thereby accelerating climate change.

"If it's hypothesis one, that's helping us. If it's hypothesis two, that's pretty scary," said Gamon.

The research team combined two different satellite bands - one of which was used to study oceans and only recently made public by NASA - to track seasonal changes in green (pigment created by chlorophyll) and yellow (created by carotenoid) needle colour. The index they developed provides a new tool to monitor changes in northern forests, which cover 14 per cent of all the land on Earth.

Gamon has taken a leave of absence from the U of A to further the research, now funded by NASA, at the University of Nebraska-Lincoln. His lab in the U.S. is reviewing 15 years' worth of satellite data on forests in Canada and Alaska to ultimately determine whether photosynthetic cycles are happening earlier because of climate change and whether forests are becoming more or less productive at converting CO2.

"Those are key questions we haven't been able to answer for the boreal forest as a whole," he said.

Comment on this article using your Disqus, Facebook, Google or Twitter login.

0 Comments

spacedaily

Donnette Thayer

Recommend

Share

Sort by Best



Start the discussion...

Be the first to comment.

weightwatchers
Live Fully

Results you want.
Flavors you crave.

Join Now

Santa Fe Sport

LEASE STARTING AT
\$249 per mo.

for 36 months with \$2,249 due at lease signing. \$0 security deposit. Excludes tax, title and license.

Find Yours Learn More

Subscribe free to our newsletters via your Email Address

- SPACE DAILY
- SPACE WAR
- TERRA DAILY
- ENERGY NEWS
- MARS DAILY
- GPS DAILY
- SEED DAILY
- WIND DAILY
- DISASTER NEWS
- SOLAR ENERGY
- MEDICAL NEWS
- NUCLEAR NEWS
- OIL & GAS NEWS
- BIO FUEL DAILY

Sponsored Links

- Lincoln, Nebraska: This Brilliant Company Is Resha...** (EverQuote Insurance Quotes)
- How To Fix Your Fatigue And Get More Energy** (Vital Reds Supplement)
- Congress Gives Homeowners Who Owe Less Than \$300-625k A Once...** (LowerMyBills)
- Odd Trick To Fix Saggy Skin Is Absolutely Genius** (South Beach Skin Lab)

The root of all your stomach problems



Watch Shocking Presentation

NUCIFIC

Powered by Google

Canada, Russia Eye 'Bridge' Over Melting...

NASA Finds 2013 Sustained Long-Term...

Warm Climate - Cold Arctic?

Discovery of 'missing heat' prompts new...

Sea level rise less from Greenland,...

US scientist in race to learn from...

Related Links

- University of Alberta
- Earth Observation News - Suppliers, Technology and Application

Recommend

Share

15 people recommend this. Be the first of your friends.

Tweet

Share this article via these popular social media networks



Previous Report

EARTH OBSERVATION

NASA and NOAA Celebrate Five-Year Anniversary of Suomi NPP Launch

Greenbelt MD (SPX) Nov 02, 2016

After five years in space, the NASA/NOAA Suomi National Polar-orbiting Partnership (Suomi NPP) mission continues to contribute significant advances in severe weather prediction and environmental monitoring leading to better forecasts and situational awareness for the nation and users worldwide. Launched on Oct. 28, 2011, Suomi NPP is a bridge to National Oceanic and Atmospheric Administrat ... read more



SPACE TRAVEL

Weightless tourism just 4 years away

BRICS Space Agencies Sign Memorandum on Cooperation in Space Exploration

Clearing the Air in Space

Home Is Where the Astronaut Is

ROCKET SCIENCE

Aerojet Rocketdyne completes CST launch abort engine hot fire tests

NASA Uses Tunnel Approach to Study How Heat Affects SLS Rocket

SpaceX Aims to Resume Falcon 9 Flights in 2016, Blames Helium Tank for Explosion

Raytheon gets \$174 million Hypersonic Air-Breathing Weapon contract

MARS DAILY

Mars rover confirms 'Egg Rock' is fallen iron-nickel meteorite

Unusual Martian region leaves clues to planet's past

A record of ancient tectonic stress on Mars

Curiosity Mars Rover Checks Odd-looking Iron Meteorite

DRAGON SPACE

Kuaizhou-1 scheduled to launch in December

Nations ask to play part in space lab

China launches first heavy-lift rocket

China to launch Long March-5 carrier rocket in November

SPACE MART

ISRO's World record bid: Launching 83 satellites on single rocket

Shared vision and goals for the future of Europe in space

SSL delivers Sky Perfect JSAT satellite to Kourou

Dream coming true for ISS-bound rookie French astronaut

TECH SPACE

Trace metal recombination centers kill LED efficiency

Controlling the properties of matter in two-dimensional crystals

Lehigh scientists fabricate a new class of crystalline solid

Establishing an advanced bonding technique for tungsten and copper alloys

EXTRA SOLAR

What happens to a pathogenic fungus grown in space?

How Planets Like Jupiter Form

Giant Rings Around Exoplanet Turn in the Wrong Direction

Preferentially Earth-sized Planets with Lots of Water

OUTER PLANETS

Mystery solved behind birth of Saturn's rings

Last Bits of 2015 Pluto Flyby Data Received on Earth

Uranus may have two undiscovered moons

Possible Clouds on Pluto, Next Target is Reddish



[Memory Foam
Mattress
Review](#)

[SPACE MEDIA NETWORK PROMOTIONS](#)
[Solar Energy Solutions](#)
[Tempur-Pedic Mattress Comparison...](#)

Newsletters :: SpaceDaily :: SpaceWar :: TerraDaily :: Energy Daily
XML Feeds :: Space News :: Earth News :: War News :: Solar Energy News

The content herein, unless otherwise known to be public domain, are Copyright 1995-2017 - Space Media Network. All websites are published in Australia and are solely subject to Australian law and governed by Fair Use principals for news reporting and research purposes. AFP, UPI and IANS news wire stories are copyright Agence France-Presse, United Press International and Indo-Asia News Service. ESA news reports are copyright European Space Agency. All NASA sourced material is public domain. Additional copyrights may apply in whole or part to other bona fide parties. Advertising does not imply endorsement, agreement or approval of any opinions, statements or information provided by Space Media Network on any Web page published or hosted by Space Media Network. [Privacy Statement](#)