Greetings!

We are happy to share recent updates from our Science Team Members and related research on Land Cover and Land Use Change.

This edition includes a detailed programmatic update from our Program Manager Dr. Garik Gutman, fresh off the press publications from our team and related projects, recent and upcoming satellite missions and data products, awards, news highlights, books, call for papers, webinars and much more.

Be sure to check out the LCLUC mapper product on our website which shows the geographic distribution of principal investigators, project team members and geographic area of research projects.

We invite you to join our mailing list for future updates and to receive information about our webinar series.

Enjoy the updates!

Visit our Website

Message from the program Manager

Dear LCLUCers,

Just looking at the picture of me on the right with the canyon in the background and thinking: this is where I would be right now. The Desertification Conference was supposed to be held this November right there - Sde Boqer, Israel, where this picture was taken a few years ago. And here I am, stuck at home like everyone else, haven’t been to the office since March, no travel on the horizon (the Desertification Conference, though, can be attended virtually, see our website for the link). So, we adjusted to the new mode of working and recently had a successful LCLUC Science Team meeting – our first virtual one. The sessions were held, questions answered but... No, it’s not the same as our regular annual gatherings, where new and veteran LCLUCers, early career and mature scientists, meet in person, interact during breaks, have informal conversations during lunch, etc. The content and the ideas can be conveyed but it’s uncomfortable not seeing the audience while presenting, having no idea who is listening and who’s not, not seeing smiles or shaking heads, and making a joke to a muted crowd. But we have to deal with it, plan more virtual workshops (watch scheduling on our website) and continue working remotely on projects, albeit without field work. Hopefully, we will resume our normal life some time next year. Dr. Krishna Vadrevu has been assigned Deputy Program Manager in addition to being the SARI lead and GOFC-GOLD coordinator. His plate is full but he’s been handling tasks rather efficiently, currently scheduling the GOFC-GOLD networks’ virtual workshops and helping me with numerous tasks in the program and the Earth Science Directorate. Several LCLUCers received awards/prizes during the past year – you can see them below. Here, I’d just like to highlight LCLUC Program Scientist Chris Justice receiving his well-deserved prize - the NASA’s Distinguished Public Service Medal for his outstanding contributions to our agency’s goals. He also stepped up to be GOFC-GOLD Chair as the former Chair Tony Janetos, my predecessor as LCLUC Manager, passed in August 2019. We dedicated our 2020 Science Team meeting to Tony, remembering his life and contribution to NASA LCLUC. I would like to welcome the newcomers to the LCLUC family – the awardees in the LCLUC-19 Early Career Scientists round and in the LCLUC-20 MuSLI hotspots round. So, here is my appeal to you and the veteran LCLUC selectees: please carry on with your project’s plans and, hopefully, in a few years from now the year of 2020 will be an “interesting” part of history to recall. The new year is coming soon, together with the new government, and the 25th anniversary of our program. Keep on doing good work and write to me if you need my help or advice.

- Garik

Achievements
Dr. Christopher Justice has been awarded NASA’s Distinguished Public Service Medal. This is NASA’s highest form of recognition awarded to non-government individuals whose distinguished services and mission has directly contributed to the advancement of NASA’s objective for the United States.

Dr. Jiquan Chen (Michigan State University) received Williams J Beal Outstanding Faculty Award- MSU (2020). Dr. Chen has published 12 books and more than 400 peer-reviewed articles in such journals as “Ecosystems, Landscape and Urban Planning,” “Nature,” “PLOS ONE” and “Remote Sensing of Environment”

Catherine Nakalembe (University of Maryland) has been named as a 2020 Africa Food Prize Laureate. The Africa Food Prize represents global recognition of Nakalembe’s dedication to improving food security in some of the most vulnerable regions in the world through the enhanced use of Earth Observation. Catherine served a role of LCLUC program support during her PhD.

Ariane de Bremond (Global Land Program, University of Bern, University of Maryland) was awarded a Chinese Academy of Sciences President’s International Fellowship Initiative visiting scientists award.

Karen Seto (Yale University) receives national honor for outstanding contributions to Remote Sensing Research from the American Association of Geographers (AAG). This Award seeks to recognize individuals who have made outstanding contributions to the field of remote sensing and to the geographic community through their remote sensing research, teaching, and/or outreach.

Keelin Haynes, a Master's student in Geography at Miami University funded by NASA LCLUC project, successfully defended his thesis on July 20, 2020. He joined the NASA Harvest Team in August 2020.

Books
NASA LCLUC SARI Webinar Series

SARI webinar Series 2019-2020 featured LCLUC South/Southeast Asia Research Initiative (SARI) projects. 28 Webinars were conducted with total participation of 1845 researchers from 172 countries.

LCLUC COVID-19 Webinar series

Mark your calendars for the upcoming LCLUC webinar series on COVID-19 impacts on LCLUC related processes.

Register here

Recent And Upcoming Missions And Data

Multi-Sensor Land Surface Phenology Product Released for North America

Read More
Free and open access to the Italian PRISMA satellite mission products

Global Harmonized Landsat/Sentinel-2 (HLS) Data Products Released

DESIS data is open and available for all federally funded researchers and NASA has 50% tasking capacity on the instrument

Kongsberg Satellite Services (KSAT), Airbus and Planet to provide universal access to high-resolution satellite monitoring of the tropics

$1M grant from Luce Foundation launches interdisciplinary program on...
The LCLUC project in the Lower Mekong River Basin, led by PI Dr. Qi and his team, has promoted and facilitated a new project from Luce foundation, led by PI Amanda Flaim at Michigan State University. The newly funded project will integrate satellite and in-situ observations of the Mekong River basin to determine how climate change and hydropower damming are reshaping communities in downstream regions. It will seek to convey how those communities can forge unique cultural visions of food and environmental justice.

Degradation outpaces deforestation in Brazilian Amazon

Over the past two decades, degradation outpaced deforestation in Brazilian Amazon, according to the long-term study by LCLUC PI Dr. David Skole & team. By combining more than 20 years of satellite data with extensive field observations, a computer algorithm was trained to map changes in forest degradation through time across the entire Brazilian Amazon. This work reveals that 337,427 km² of forest were degraded across the Brazilian Amazon between 1992 and 2014.

Six Ways Satellites Tracked COVID-19

Three space agencies have released a database to help the public and policymakers trace the worldwide impact of the coronavirus. NASA, the European Space Agency (ESA), and the Japan Aerospace Exploration Agency (JAXA) have collaborated to provide an online portal with regularly updated metrics. At least 17 satellites are being actively used in the dashboard, and others will join in the future.

Recent and upcoming meetings

NASA LCLUC Virtual Science Team Meeting, 2020
October 19-21, 2020

Dedicated to Dr. Tony Janetos (1954-2019)
The first LCLUC Program Manager

2020 NASA LCLUC Annual Science Team Meeting was held virtually on October 19-21, 2020. More than 250 participants from 32 countries attended the meeting.
7th International Conference on Drylands, Deserts & Desertification
Sde Boqer, Israel (Virtual)
11/16/2020 to 11/18/2020

First Joint SCERIN and MedRIN Workshop
Thessaloniki Greece
06/07/2021 to 06/11/2021

4th joint EARSeL LULC & NASA LCLUC Workshop
Liege Belgium (Virtual)
03/30/2021 to 04/01/2021

Featured Publications

View all recent publications

Patterns of population displacement during mega-fires in California detected using Facebook Disaster Maps
The Facebook Disaster Maps (FBDM) work presented in this paper is the first time this platform has been used to provide analysis-ready population change products derived from crowdsourced data targeting disaster relief practices. FBDM data is analyzed to reveal the trend, magnitude, and agglomeration of population displacement during the Mendocino Complex and Woolsey fires in California, USA.

Read More

Fluorescence Correction Vegetation Index (FCVI): A physically based reflectance index to separate physiological and non-physiological information in far-red sun-induced chlorophyll fluorescence


An index Fluorescence Correction Vegetation Index (FCVI) is proposed here for the effects of physical processes on far-red SIF. FCVI is the difference between near-infrared and broadband visible reflectance. Normalizing SIF by FCVI and PAR is an estimate of fluorescence emission efficiency. FCVI was tested with a field measurement and a numerical experiment.

Read More

Call for Papers

Land Use Changes, Degradation and Impact On Ecosystem Services in Asia
Land Degradation & Development, Wiley Online Library - Special Issue

Recent Advances in Land Cover and Land use Classification
IEEE GRSS JSTARS - Special Issues

Monitoring Land Cover Change: Towards Sustainability
Land - Special Issues

Time series remote sensing for land surface dynamics monitoring