

LCLUC 25th Anniversary Science Team Meeting
October 18-20th, 2022
North Bethesda Hyatt Hotel, Maryland.

Meeting Objectives

The 2022 LCLUC Fall Science Team Meeting marks the 25th Anniversary of the NASA LCLUC program. On this special occasion, we will take some time to reflect on our past projects and share valuable experiences from the past quarter century with the LCLUC community. We will identify current research challenges and future directions for the program that will enable researchers to plan and build strong foundations for future research projects. The three-day meeting will focus on past accomplishments and current LCLUC issues with discussions on future directions to advance LCLUC research.

PRELIMINARY AGENDA

DAY 1 (Tuesday, October 18th, 2022)

9:00-9:05 Welcome and Logistics – Chris Justice (U. Maryland)

Program Presentations

9:05-10:00 Welcome Address and 25 Years of LCLUC at NASA: A Program Retrospective – Garik Gutman (NASA HQ)

10:00-10:25 The Program Roots: LUCC to LCLUC – Billie Turner (ASU)

10:25-10:45 Break (20 mins)

National and International Program Partnerships

10:45-11:05 The Global Land Program: Emerging Science Priorities – Ariane De Bremond (Global Land Program/U. Maryland)

11:05-11:25 LCLUC and USGS: Past and Current Activities – Tim Newman (USGS)

11:25-11:45 NASA-USAID Capacity Building Efforts – Nancy Searby (NASA HQ/SERVIR)

11:45 –12:05 Future Earth – Jianguo Qi (Michigan State U.)

12:05-12:15 Group Picture

12:15- 1:25 Lunch

1:25-1:45 The Status and Future of Remote Sensing in Land-Use Modeling – Dan Brown (U. Washington)

Urban Land Use

1:45-2:15 Strategic Directions for Urban Remote Sensing - Karen Seto (Yale U.)

2:15- 3:00 Panel on Challenges in Urban LCLUC Science (5 minutes w. 1 slide each followed by open discussion). Panel Members: Peilei Fan (MSU), Jody Vogeler (Colorado State U.), Yufang Jin (UC Davis), Dr. Kirsten de Beurs (Wageningen U.) -Alexey N. Shiklomanov (GSFC) (Moderator- Karen Seto)

3:00 – 3:20 *Break (20 mins)*

Regional Programs

3:20- 3:40 LBA Land-Cover and Land-Use Change Synthesis: Lessons Learned and Recent Developments– Michael Keller (USDA Forest Service)

3:40-4:10 The LCLUC NEESPI-NEFI: Accomplishments and Synthesis – Pasha Groisman (NC State U., NOAA National Centers for Environmental Information (NCEI))

4:10- 4:30 The LCLUC SARI: Accomplishments and Next Steps – Krishna Vadrevu (MSFC)

Poster Session

4:30 – 5:30 Introduction to the Posters and 2 Minute Poster Infomercials – Chris Justice (U. Maryland)

5:30 - 6:00 Celebratory speeches – 25 years of LCLUC in NASA R&A Program – Moderator Garik Gutman (NASA HQ)

6:00 – 7:30 In-person Poster Session and Celebratory Reception (Courtesy of KBR)

Posters

Yufang Jin (U. California Davis) - Multi-source Wildland Urban Interface Characterization Enhanced with Machine Learning Technique: Dynamics and Hazard Assessment

Christopher Neigh (GSFC) –The Impact of Investment on Irrigated Rice, Dryland Agriculture and Afforestation in Senegal using SAR and Optical Time-Series Imagery in Data Fusion Approaches

Alexandra Tyukavina (U. Maryland) - Multi-resolution quantification and driver assessment of hot spots of global forest disturbance

Nicholas Magliocca (U. Alabama) – the Hidden Visible: Accelerated Land-Use Change and Degradation Caused by Narco-Trafficking in and Around Central America’s Protected Areas

Sergii Skakun (U. Maryland) - High-Impact Hot Spots of Land Cover Land Use Change: Ukraine and Neighboring Countries

David Lutz (Dartmouth College)– Rapid Change and Development in a Tropical Biodiversity Hotspot: A Multi-Sensor Fusion Approach to Quantify Terrestrial and Aquatic Impacts and Test Policy Effectiveness

Sean Healey (USDA Forest Service) - Sensor Fusion Using Daily Planet Imagery Allows Rapid Deforestation Monitoring in Madagascar

Volker Radeloff (U. of Wisconsin-Madison) - Global Hotspots of the Wildland-Urban Interface

Marc Simard (JPL) – Global Hotspots of Change in Mangrove Forests

Jody C. Vogeler (Colorado State U.) - The last urban frontier: Assessing drivers of urbanization and tradeoffs among social and ecosystem services associated with LCLUC in Africa

Xin Xi (Michigan Tech U.) – Mapping and modeling desertification and its impact on aeolian dust and human health in Central Asia

Xiao-Peng Song (U. Maryland) - Soybean expansion in South America: Quantifying historical land-use change, modeling socioeconomic drivers and projecting future trajectories

Meha Jain (U. Michigan) - Policy, market, and climate change impacts on maize production in Mexico

Carlos Munoz Brenes (Conservation International Foundation) – Impacts of global markets and national policies on forest carbon trajectories and social outcomes in the Guiana shield ecoregion

Robert Heilmayr (U. of California) – Mapping property values to understand land-use change in South America

Zhenong Jin (U. of Minnesota) – Evaluating land use change and livelihood responses to large investments for high-value agriculture: managing risks in the era of the Green Morocco Plan

Christoph Nolte (Boston U.) – Comparing the effectiveness of conservation instruments in the Colombian Andes biodiversity hotspot

Aaron Sparks (U. of Idaho) – Understanding the socioeconomic drivers of agricultural land abandonment and associated fire risk in Greece

Nicholas Cuba (Auburn U.) – Evaluating the drivers of international migration from the Northern Triangle of Central America and its implications for land systems in the region

Geoffrey Henebry (Michigan State U.) – Land surface phenologies in Central Asian highlands

Mark Cochrane (U. Maryland/Appalachian Lab) - Land-use transitions in Indonesian peatlands

Peter Potapov (U. Maryland) – Shifting cultivation at a crossroad: drivers and outcomes of recent land-use changes in Laos PDR

Kirsten de Beurs (Wageningen U.) - Rapid urbanization, changing croplands and increasing population health vulnerabilities in the China-Central Asia-West Asia economic corridor

Peilei Fan (Michigan State U.) Divergent local responses to globalization: urbanization, land transition, and environmental changes in Southeast Asia

Lin Yan (Michigan State U.) – Forced and truncated agrarian transitions in Asia through the lens of field size change

Josh Gray (North Carolina State U.) – Sowtime: climate adaptive agriculture in the Eastern Gangetic Plains

Junchang Ju (U. Maryland/GSFC) – Recent developments on the Harmonized Landsat Sentinel-2 (HLS)

Ioannis Manakos (CERTH-ITI, Greece) – Land cover and land use products in service of agriculture and ecosystem monitoring EuroGEO showcases

Christopher Elvidge (Colorado School of Mines)- New results from ten years of VIIRS low-light imaging data

Diana Parker (U. Maryland) - Quantifying the impact of perverse incentives from Indonesia's deforestation moratorium

DAY 2 (Wednesday, October 19th, 2022)

Agriculture, Forest and Other Land Uses (AFOLU)

9:00-9:30 Global Monitoring of Forests and other Land Uses: Research to Operations – Matthew Hansen (U. Maryland)

9:30-10:00 Remote Sensing and the Policy Aspects of AFOLU – David Skole (Michigan State U., GOF-C-GOLD Land Cover)

10:00-10:30 Global Forest Observations Initiative (GEO GFOI) and GOF-C-GOLD Activities – Martin Herold (GFZ)

10:30-10:50 *Break (20 mins)*

10:50-11:30 Panel on Challenges for Forests in LCLUC Science (5 minutes w. 1 slide each followed by open discussion). Panelists: Sean Healey (USFS), Alexandra Tyukavina (U. MD), Christoph Nolte (Boston U.), Randolph Wynne (Virginia Tech.) [Moderator: Ruth DeFries (Columbia U)]

11:30- 11:50 Overview of the NASA Applied Sciences' Water and Agriculture resources – Brad Doorn (NASA HQ)

11:50 – 12:10 Harvest: Global Agricultural Monitoring – Inbal Becker-Reshef / Chris Justice (NASA Harvest)

12:10-12:30 Was Drought Really the Trigger Behind the Syrian Civil War in 2011? – Arnon Karnieli (Ben Gurion University, Israel)

12:30-1:40 *Lunch*

1:40-2:00 Global Land Abandonment – Alexander Prishchepov (U. of Copenhagen)

2:00- 2:20 The Status and Future of Remote Sensing of Rangelands Land Use –Ranjeet John (U. of South Dakota)

2:20- 3:00 Panel on Challenges in Agricultural Remote Sensing and Land-Use Change. Kaiyu Guan (U. Ill), Sergii Skakun (U. MD), Martha Anderson (USDA ARS), Xiao-peng Song (U. MD), (5 minutes - 1 slide each followed by open discussion) (Moderator: Meha Jain (U. Michigan))

3:00-3:20 *Break (20 mins)*

Fire

3:20-3:45 The Current Status and Future of Fire Monitoring – David Roy (Michigan State U., GOF-C-GOLD Fire)

3:45-4:10 NASA Fire Products: Current Status and Future Recommendations – Louis Giglio (UMD)

4:10-4:35 The NASA Wildfire Initiative Science Priorities – Michael Falkowski, (NASA AMES)

4:35-5:15: Panel on Challenges in Fire Monitoring and Land-Use Science – Volker Radeloff (U. Wisconsin-Madison), Luigi Boschetti (Idaho U.), Mark Cochrane (U. MD/Appalach Lab), Joanne Hall (U. MD) (Moderator: Krishna Vadrevu: MSFC/LCLUC)

DAY 3 (Thursday, October 20th, 2022)

International Program Partnership

9:00-9:30 Update on the ESA Sentinels for Land Remote Sensing - Benjamin Koetz (ESA)

9:30-10:00 An Overview of European Research Directions in Land-Use Science – Ioannis Manakos (CERTH, Greece/ EARSeL LULC Special Interest Group)

Missions, Data and Products

10:00-10:20 Landsat 8/9 and Status of Landsat Next: Chris Neigh (GSFC)

10:20-10:40: MuSLI/HLS - Garik Gutman (NASA HQ)

10:40-11:00 *Break (20 Minutes)*

11:00-11:20 GEDI status and data products - Ralph Dubayah (UMD)

11:20-11:40 NISAR status and data plans – Kyle McDonald (JPL)

11:40 – 12:00 NASA / Commercial Smallsat Data Acquisition Program: VHR Data Availability and Use – Will McCarty (ESD, NASA)

12:00 – 12:20 Coordination, Calibration and Algorithm Development of the Thermal Infrared Activities for the ESA Land Surface Temperature Monitoring (LSTM) Mission and NASA Surface Biology and Geology (SBG) Designated Observable - Simon Hook (JPL)

Program Presentation

12:20 – 12:35 The LCLUC Web Site Update – Chris Justice, Meghavi Prashnani (UMD)

12:35-12:45 Future Directions for the Program: Overview and Discussion on next 25 years of the LCLUC Program – Chris Justice (UMD) and Garik Gutman (NASA HQ)

12:45- 1:00 Meeting Summary and Concluding Remarks – Garik Gutman (NASA HQ)

1:00 *Meeting Adjourns / Lunch*