

LCLUC Science Team Meeting (In-Person)
April 2-4, 2024
Gaithersburg Marriott Washingtonian Center,
9751 Washingtonian Boulevard,
Gaithersburg, MD, 20878.

DAY 1 (Tuesday April 2nd, 2024)

9:00- 9:05 Welcome and Logistics – Chris Justice (UMD)

Program Presentations

9:05 - 9:50 Program Overview and Update – Garik Gutman (NASA HQ)

9.50 - 10:10 *Invited Talk*: An Update on ESE– Jack Kaye (NASA HQ)

10:10 - 10:30 *Invited Talk*: An Overview of the NASA Earth Science-to-Action Strategy – Sid Boukabara (NASA HQ)

10:30-10:45 *Invited Talk*: An Update on Earth Action– Tom Wagner (NASA HQ)

10:45 – 11:15 Break (30 mins)

LCLUC 2022 Presentation of Research Results

11:20 -11:40 Land-cover and Land-use Change at the Frontier: Socioeconomic and Environmental Factors Influencing Land-Use Transitions in the Cerrado Biome – Gillian Galford (U. Vermont)

11:40 - 12:00 Irrigation as climate-change adaptation in the Cerrado biome of Brazil evaluated with new quantitative methods, socio-economic analysis, and scenario models –Gustavo Oliveira [PI: Robert Pontius] (Clark U.)

12:00 - 12:20 Can Improved Stakeholder Representation Prevent Human-Caused Mangrove Loss in the Mesoamerican Reef Ecoregion? – Grant Connette (Smithsonian Inst.)

12:20-12:30 Group Picture

12:30 – 2:00 Lunch

2:00 - 2:20 Exploring the Nexus between LCLUC, Socio-Economic Factors, and Water for a Vulnerable Arid US-Mexico Transboundary Region – Saurav Kumar (Arizona State U.)

2:20 - 2:40 Disentangling Land-Use Change in Central Africa to Understand the Role of Local and Indigenous Communities in Forest Restoration and Conservation – Elsa Ordway (UCLA)

2:40 - 2:50 The NASA Pangea Scoping Effort – Elsa Ordway (UCLA)

2:50 – 3.00 The NASA ARID Scoping Project - Andrew Feldman (GSFC)

3:00 - 3:20 Multi-sensor Mapping of Refugee Agricultural LCLUC Hotspots in Uganda – Abena Boatemaa Asare-Ansah (UMD, College Park) [PI: Jamon Van Den Hoek (Oregon State U.)]

3:20 - 3:40 Break

SARI: LCLUC Regional Program in South/Southeast Asia

3:40 - 3:55 SARI Update – Krishna Vadrevu (NASA MSFC, SARI Lead)

3.55 - 4:25 South East Asia LCLUC Synthesis Update – Son Nghiem (JPL) & Peilei Fan (Tufts U.)

4.25 - 4.45 South Asia LCLUC Synthesis Update – Dave Skole (Michigan State U.)

Poster Session

4:45 – 5:30 Poster Lightning Introductions

5:30 – 7:00 Poster Session and Reception

LCLUC Project Posters

- Pre- and Post- Wildfire Analysis in Mediterranean Forests Using Combined SWIR TIR Orbital Remote Sensing (Nimrod Carmon, Jet Propulsion Laboratory)
- Quantifying Connections Between Urban LCLUC and Emerging Extreme Heat in Rapidly Growing Indian Cities (Glynn Hulley, Jet Propulsion Laboratory)
- Urbanization and Fire Risk at the Global Wildland-Urban Interface: A Multi-sensor Study of Past and Future Trends (Shijuan Chen [PI: Karen Seto], Yale U.)
- Detecting and Mapping War-Induced Damage to Agricultural Fields in Ukraine Using Multi-Modal Remote Sensing Data (Charitian Abys [PI: Sergii Skakun], U. of Maryland, College Park)
- Multiscale Monitoring of Drought-Induced Forest Mortality by Detecting Spatial Anomalies in Land Surface Temperature and Infrared Reflectance (Jonathan Wang, University of Utah, Salt Lake City)
- Multi-Source, Multi-Resolution Imaging of Urban Land Cover to Improve Predictions of Human Heat Exposures (Chengbin Deng [Michael Wimberly], U. of Oklahoma, Norman)
- Land Cover Land Use Change, Conflict, and Peacebuilding in Colombia - (Bing Peng [PI: McKenzie F. Johnson], U. of Illinois at Urbana-Champaign)
- Analyzing the land-use change impacts of oil and gas exploration related infrastructure changes on Arctic communities (Dan Sousa [PI: Latha Baskaran], NASA-JPL)
- Water Scarcity in the Serbian Danube: Agricultural Land Use Change and Irrigation (Sean Woznicki, Grand Valley State University)
- Multi-source Wildland Urban Interface Characterization Enhanced with Machine Learning Technique: Dynamics and Hazard Assessment (Yufang Jin, UC Davis)
- The Impact of Investment on Irrigated Rice, Dryland Agriculture and Afforestation in Senegal using SAR and Optical Time-Series Imagery in Data Fusion Approaches (Christopher Neigh, NASA GSFC)
- Global Hotspots of Change in Mangrove Forests (Cheryl Doughty [PI: Marc Simard] - NASA JPL)
- Using Planet Daily Imagery with the Sentinels and Landsat to Generate Deforestation Alerts (Sean Healey and Eric Bullock, USDA)
- Policy, Market, and Climate Change Impacts on Maize Production in Mexico (Victor Prudente [PI: Meha Jain], U. of Michigan)
- Mapping the spectral, thermal, and fine-scale textural characteristics of croplands in Central America and variation with rates of outmigration (2012-2018) (Nicholas Cuba, Auburn University)

Posters of FINNEST and IDS 2021-22 LCLUC-related Selections

- Quantifying the impacts of forest biomass and productivity change on future Land cover and land use change projections (Meng Lu, U. Wisconsin, Madison)
- Quantifying Field-Level over Cropping Across the U.S. Midwest Using MultiSource Satellite Data (Qu Zhou, [PI: Kaiyu Guan] U. of Urbana Champaign)
- Agriculture Velocity of Winter Wheat (Leonid Shumilo, [PI: Sergii Skakun], U. of Maryland).
- Understanding the integrated ecosystem and geomorphologic evolution across the land-ocean gradient in response to dam disruptions. (Kyra Adams, NASA JPL)

- Predicting the Impact of Contemporary Climate Extremes on Nitrogen Flux along the Land-to-Ocean Continuum: Integrated Remote Sensing and Modeling Applied to the Mississippi River Basin. (Charles Vorosmarty, City University of NY)
- Watersheds, Water Quality, and Coastal Communities in Puerto Rico (Water2Coasts): An interdisciplinary island landscape to coastal ocean assessment with socioeconomic implications (Juan Torres-Perez , NASA Ames Research Center)
- Wildfire Impacts on Communities in the Wildland Urban Interface and Ecosystems in Protected Areas (Volker Radeloff, University of Wisconsin, Madison)

DAY 2 (Wednesday, April 3 2024)

LCLUC 2022 Presentation of Research Results (Cont'd)

9:00 – 9:20 Modulation of Climate Risks by Intensification of Urban and Agricultural Land Uses in the Arabian Peninsula. Cascade Tuholske (Montana State U.)

9:20 – 9:40 Drivers and constraints of land cover land use change in Asian aquaculture hotspots – Lin Yan (Michigan State U.)

9:40 – 10:00 Institutional Forcings on Agricultural Landscapes in Post-Socialist Europe: Diachronic Hotspot Analysis of CAP Influences on Agricultural Land Use in Romania 2002-2024. Monika Tomaszewska [PI: Geoffrey Henebry] (Michigan State U.)

10:00 – 10:20 Energy LCLUC hotspot: Characterizing the dynamics of energy land use and assessing environmental impacts in the Permian Basin. Xiaopeng Song (U. Maryland, College Park)

10:20 – 10:50 Break

10:50 -11:10 The Interplay between Land User Decisions and Landcover Change in Coastal Ecosystems and Working Lands Under Sea Level Rise in the Mid- Atlantic U.S. Elizabeth Hunter (Virginia Tech.)

International Partner Programs

11:10 - 11:30 *Invited Talk*: Global Land Project Update – Ariane DeBremond (U. Maryland, College Park)

11:30 - 11:50 *Invited Talk*: GOF-C-GOLD Fire IT priorities – David Roy (Michigan State U.)

11:50 - 12:10 *Invited Talk*: GOF-C-GOLD Land Cover IT priorities – Dave Skole (Michigan State U.)

12:10 - 12:30 *Invited Talk*: CEOS LPV Land Cover WG activities – Alexandra Tyukavina (U. Maryland, College Park)

12:30 -2:00 Lunch

HQ Program Crosswalks

2:00 - 2:20 *Invited Talk*: NASA Commercial Science Data Acquisitions – Frederick Policelli (NASA HQ/CSDA)

2:20 - 2:40 *Invited Talk*: NASA Digital Twins – Jacqueline Le Moigne (NASA HQ/ESTO)

2:40 - 3:00 *Invited Talk*: The critical need to include land-use data in weather forecast and climate models – Roger Pielke (U. of Colorado at Boulder)

3:00 - 3:20 *Invited Talk*: NASA's Earth Action Agriculture Program and potential cross-cuts- Brad Doorn (NASA HQ)

3:20 - 3:45 Break

3:45 - 4:05 *Invited Talk*: NASA Transform to Open Science – Rachel Paseka (NASA HQ)

4:05 - 4:25 *Invited Talk*: NASA SEDAC LCLUC-related products- Alex de Sherbinin (SEDAC, Columbia U.)

4:25 - 5:00 Discussion on Program Crosswalks – Moderator: Chris Justice (U. Maryland, College Park)

DAY 3 (Thursday, April 4, 2024)

Mission and Data Product Updates

9:00 – 9:30 *Invited Talk*: Landsat 9 and Landsat Next Status and Plans – Chris Neigh/Bruce Cook (NASA GSFC)

9:30 – 9:50 *Invited Talk*: Harmonized Landsat Sentinel (HLS) Status and Plans – Junchang Ju (NASA GSFC)

9:50 – 10:10 *Invited Talk*: NISAR Mission Status and Plans – Gerald Bawden (NASA HQ)

10:10 – 10:30 *Invited Talk*: Observational Products for End-Users from Remote Sensing Analysis (OPERA):
Surface Disturbance Product – Matt Hansen (U. Maryland, College Park)

10:30 – 10:50 Break

LCLUC Program Feedback Session

10:50 – 11:20 Discussion and Feedback on Emerging Science Directions for the LCLUC Program – Moderator:
Chris Justice (U. Maryland, College Park)

Program Presentation

11:20 – 11:30 Summary of the Meeting – Chris Justice (U. Maryland, College Park)

11.30 – 12:00 Concluding Remarks – Garik Gutman (NASA HQ)

End of Meeting