

Welcome to the LCLUC Program

- ▶ LCLUC at a glance
- ▶ Early Career Scientists (ECS → X) selections
- ▶ GOFC-GOLD networks
- ▶ Projects inventory
- ▶ Metadata page
- ▶ LCLUC Mapper

Land-Cover/Land-Use Change Program



Regional Research Initiatives:

Northern Eurasia
NEESPI

South/Southeast Asia: **SARI**

Science Team Meetings
Annually

1 – DC area

1 - regional international

Annually: ~30 3-yr projects
> 300 researchers involved
25 years ~350 projects

Website
Newsletter
Webinars



Content

1/3	Detection & Monitoring
1/3	Impacts & Consequences
1/3	Drivers, Modeling, Synthesis

Program Vision:

- ✓ Map and monitor global LCLUC
- ✓ Interpret LCLUC and impacts
- ✓ Analyze drivers
- ✓ Model future LCLUC scenarios

Components

Remote sensing

- Spatial resolution: 1m-500m
- Temporal res.: daily-monthly
- Spectral: UV-Optical-IR-MW
 - Optical:
 - Passive, Lidars, Hyperspectral
 - Thermal IR
 - Microwave: radars

Socio-economic

- Census data
- Household surveys
- Econometric models

Mandatory in most LCLUC solicitations

Applications
SERVIR
HARVEST

Understanding human drivers to LCLUC

<http://lcluc.hq.nasa.gov>

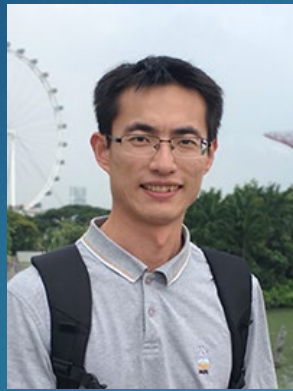
LCLUC-19 X-selectees



Nick Cuba,
Clark U.-->
Auburn U.



MEHA JAIN,
U. MICHIGAN



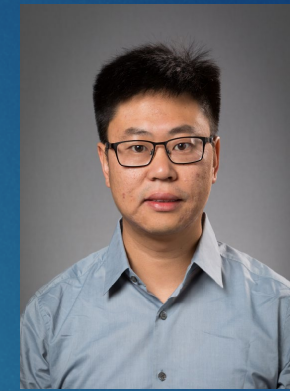
Zhenong Jin,
U. Minnesota



Carlos Munoz
Brenes
Conservation



Chris Nolte
Boston U.



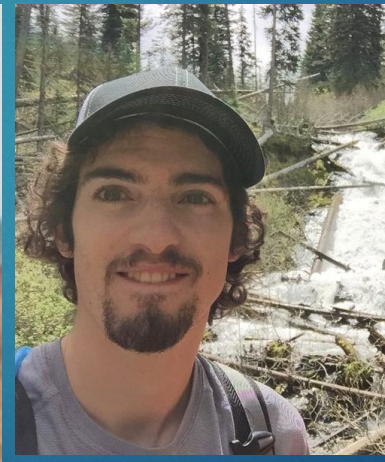
Xiaopeng Song,
Texas Tech U



Robert Heilmayr,
UC Santa Barbara

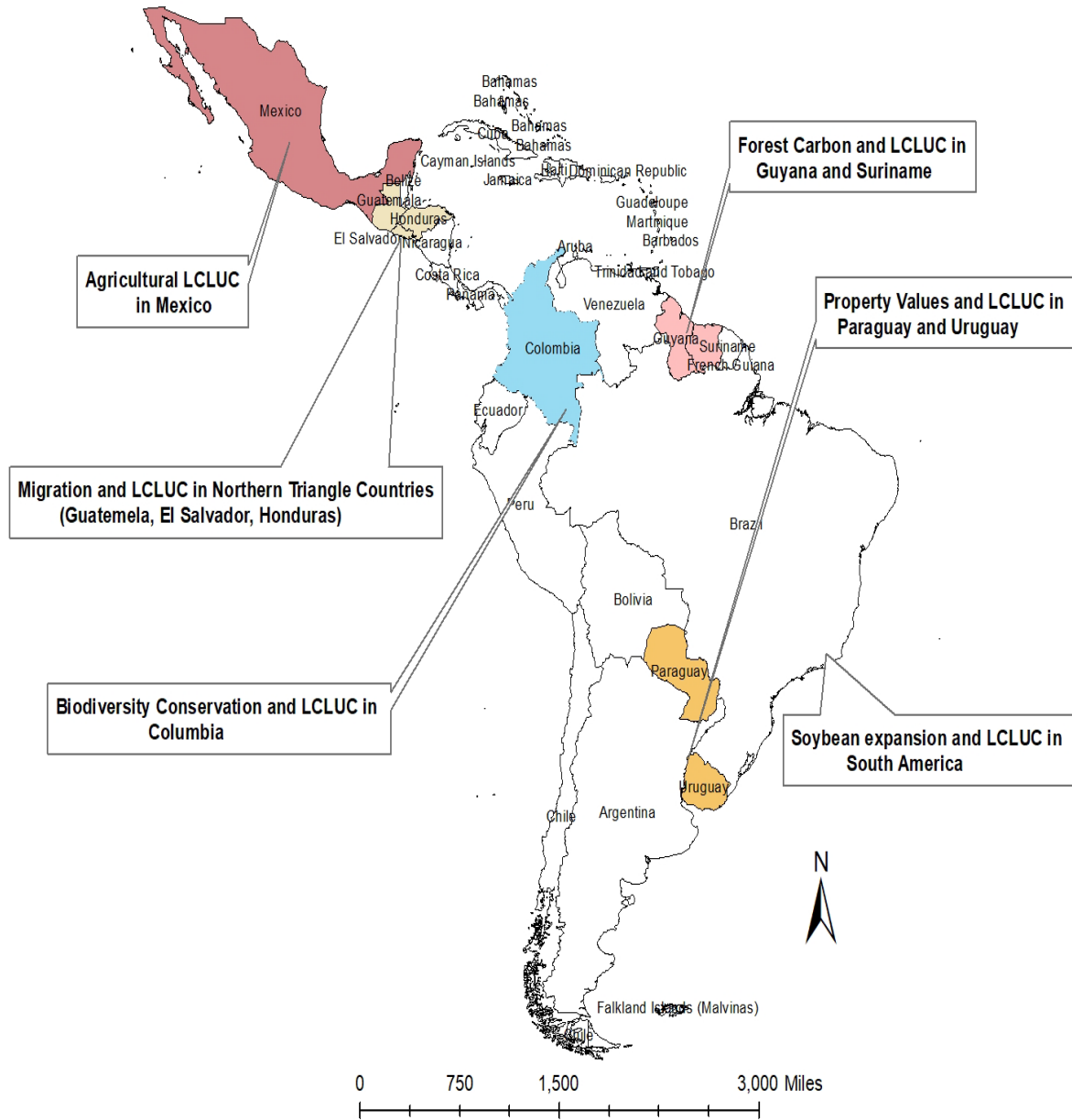


Xin Xi,
MICHIGAN TECH. U

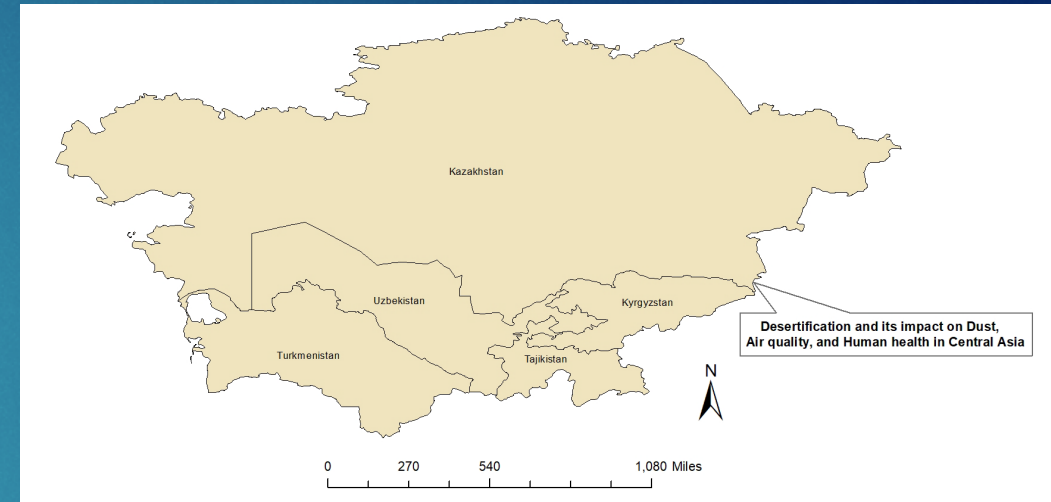


Aaron Sparks,
U. Idaho

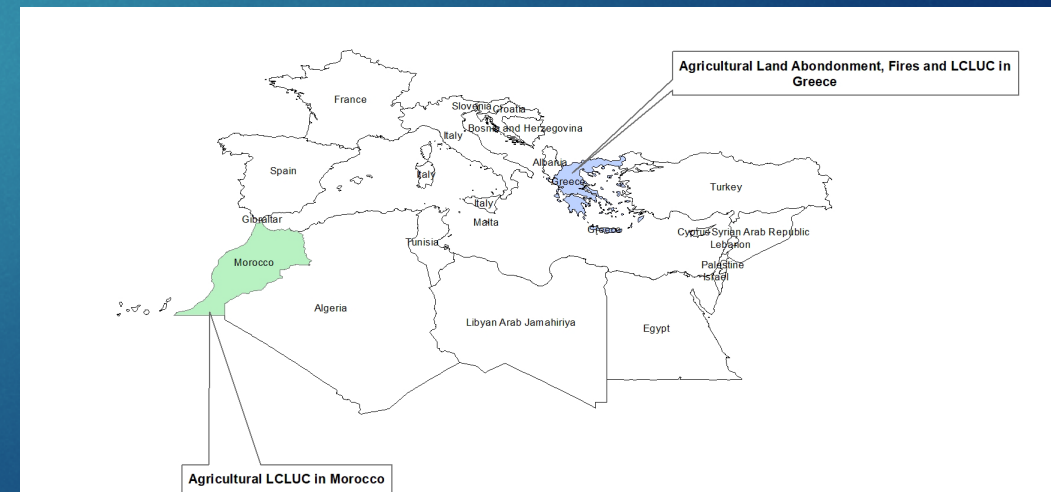
LCLUC 2019 Early Career Scientist Selections Study Regions



Central Asia

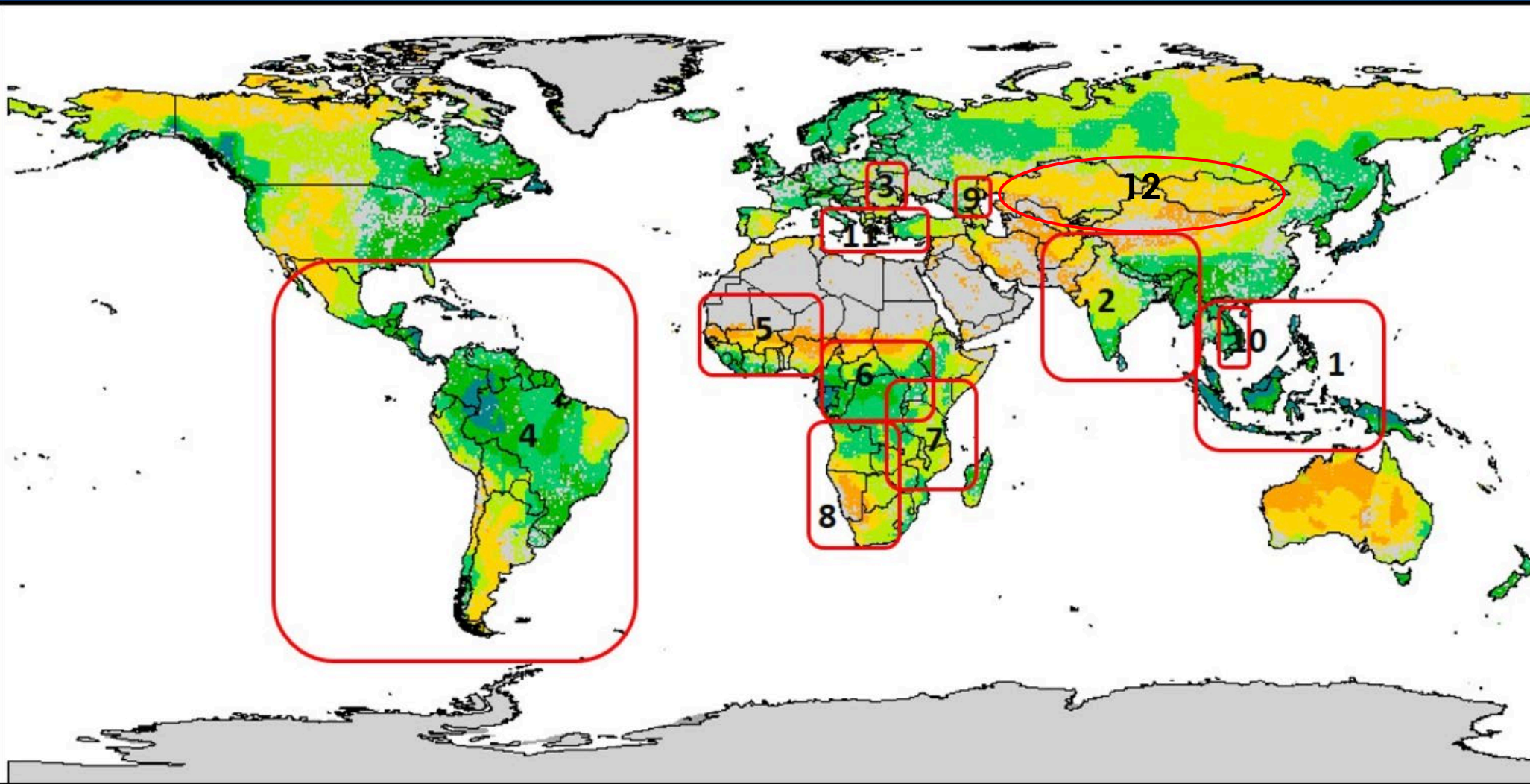


Mediterranean and North Africa



GOFC-GOLD Regional Networks

<https://gofcgold.org/>



1. Southeast Asia Regional Research and Information Network (SEARRIN);
2. South Asia Regional Information Network (SARIN);
3. South Central European Regional International Network (SCERIN);
4. Red Latinoamerica de Teledeteccion e Incendios Forestales (RedLaTIF);
5. West African Regional Network (WARN);
6. Observatoire Satellital des Forets d'Afrique Central (OSFAC);
7. Miombo Network (MIOMBO);
8. Southern Africa Fire Network (SAFNET);
9. Caucasus Regional Information Network (CaucRIN);
10. Mekong Regional Information Network (MekRIN);
11. Mediterranean Regional Information Network (MedRIN);
12. Central Asian Regional Information Network (CARIN)

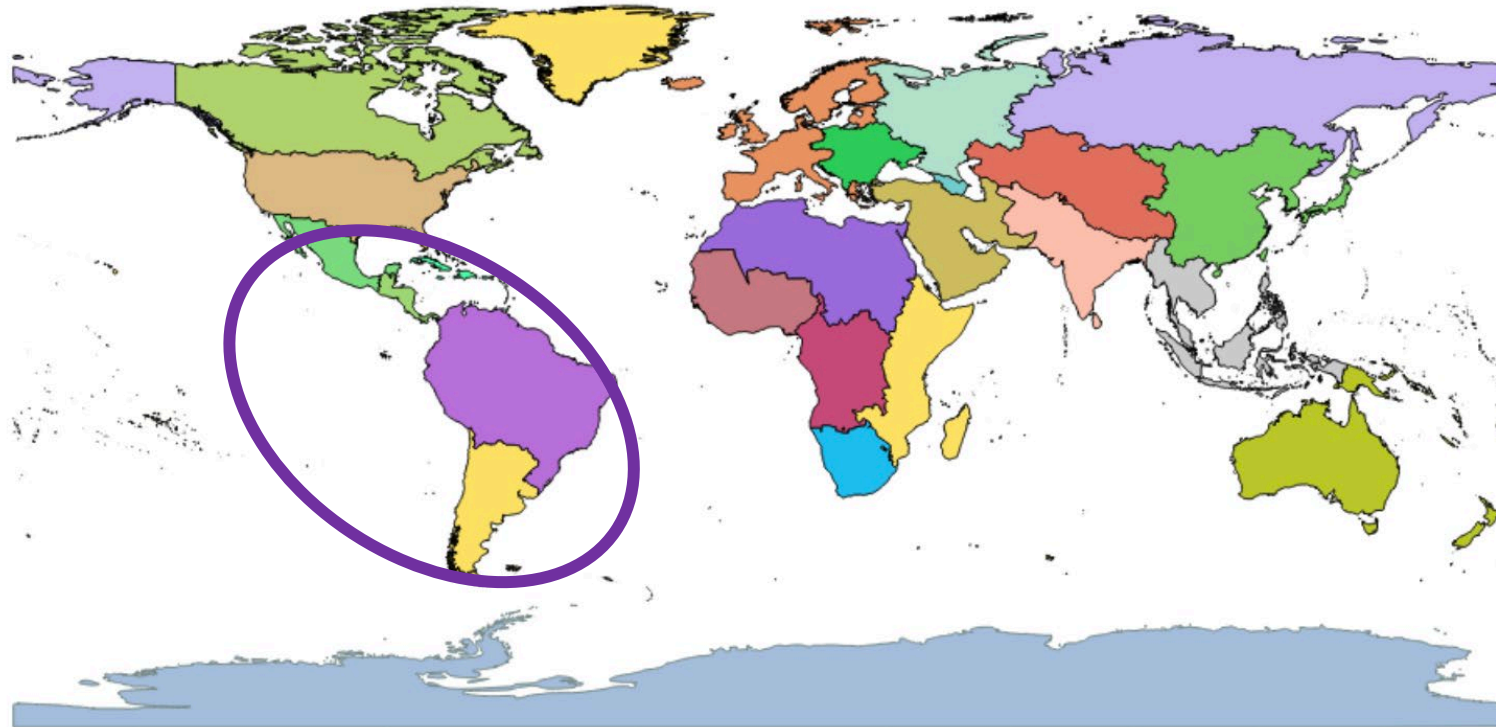
The Inventory of Projects



LCLUC

Land-Cover / Land-Use Change Program

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World

- Global

Oceania

- Australia and Oceania

Europe

- Europe
- Caucasus
- Eastern Europe
- Western Europe
- European Russia

Asia

- Asia
- Siberia and Russian Far East
- Middle East
- East Asia
- Southeast Asia
- South Asia
- Central Asia

Africa

- Africa
- North Africa
- Central Africa
- East Africa
- West Africa
- Southern Africa

Americas

- North America
- Alaska
- Continental U.S.
- Mexico
- Canada
- Central America
- Caribbean
- South America
- Amazon Basin

The Inventory of Latin America Projects

Principal Investigator	Project Name	Start Date	End Date
Martha Anderson	Characterizing Field-Scale Water Use, Phenology and Productivity in Agricultural Landscapes Using Multi-Sensor Data Fusion	05/01/2018	05/01/2021
Volker Radeloff	Monitoring Abandoned Agriculture, Fallow Fields, and Grasslands with Landsat and Sentinel-2	05/01/2018	05/01/2021
Sergii Skakun	Crop Yield Assessment and Mapping by a Combined use of Landsat-8, Sentinel-2 and Sentinel-1 Images	05/01/2018	05/01/2021
Naiara Pinto	Prototyping an Oil Palm Plantation MuSLI from Landsat and Dual-Wavelength Synthetic Aperture Radar	01/01/2018	01/01/2021
Kelly W. Jones	Land Tenure, Property Rights, and Land Cover and Land Use Change at Transboundary Sites in the Mesoamerican Biological Corridor	01/01/2013	01/01/2016
Billie Turner	Landscape Vulnerability-Resilience in the Southern Yucatan Peninsular Region (SYPR)	01/01/2005	01/01/2008
Marc Simard	Large Scale Assessment of Landscape Changes and Recovery in Forest Structure of Mangrove Wetlands Subject to Human Activities, Freshwater Diversion, and Natural Disturbances Using Enhanced SRTM Data	01/01/2004	01/01/2007
Matthew Hansen	Land Use Change Around Protected Areas in LCLUC Sites: Synthesis of Rates, Consequences for Biodiversity, and Monitoring Strategies	01/01/2001	01/01/2004
Andrew Hansen	Land Use Change Around Protected Areas in LCLUC Sites: Synthesis of Rates, Consequences for Biodiversity, and Monitoring Strategies	01/01/2001	01/01/2004
Billie Turner	Land-Cover and Land-Use Change in the Southern Yucatan Peninsula Region (SYPR): Part 2	01/01/2001	01/01/2004
Pamela Matson	Land-Use and Land-Cover Change in Sonora, Mexico: Trajectories of Agricultural Intensification and Consequences for Non-Agricultural Ecosystems: Part 2	01/01/2000	01/01/2003
Steven Sader	Monitoring the Mesoamerican Biological Corridor: A NASA/CCAD Cooperative Research Project	01/01/1999	01/01/2002
Pamela Matson	Land-Use and Land-Cover Change in Sonora, Mexico: Trajectories of Agricultural Intensification and Consequences for Non-Agricultural Ecosystems	01/01/1997	01/01/2000
Billie Turner	Land-Cover and Land-Use Change in the Southern Yucatan Peninsula Region (SYPR)	01/01/1997	01/01/2000

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Christopher Small	Multi-Source Imaging of Infrastructure and Urban Growth Using Landsat, Sentinel and SRTM	07/01/2015	07/01/2018
Daniel Slayback	Climatic and Socioeconomic Drivers of Land-Cover and Land-Use Change in Tropical Andean Alpine Wetlands	05/01/2015	05/01/2018
Marc Simard	Vulnerability Assessment of Mangrove Forests in the Americas	01/01/2012	01/01/2015
Laura Hess	Land and Resource Use on the Amazon Floodplain Under Evolving Management Systems and Environmental Change: Fish, Forests, Cattle, and Settlements	01/01/2012	01/01/2015
Daniel Slayback	The Impact of Disappearing Tropical Andean Glaciers on Pastoral Agriculture	07/01/2011	06/30/2014
John Mustard	Rates and Drivers of Land Use Land Cover Change in the Agricultural Frontier of Mato Grosso, Brazil	02/08/2011	02/07/2014
Michael Coe	Linking Historical and Future Land-Use Change to the Economic Drivers and Biophysical Limitations of Agricultural Expansion in the Brazilian Cerrado	01/28/2011	01/27/2014
John Townshend	Three Decades of Forest Cover Change in the Americas Evaluated Using the Geocover and MDGLS Data Sets	05/01/2008	04/30/2012
Chandra Giri	Tropical Mangrove Forests: Global Distributions and Dynamics (1990-2005)	01/01/2008	01/01/2011
Emilio Moran	Human and Physical Dimensions of LCLUC in Amazonia	01/01/2006	01/01/2009
Robert Walker	Spatially Specific Land Cover Econometrics and Integration with Climate Prediction: Scenarios of Future Landscapes and Land-Climate Interactions	01/01/2006	01/01/2009
Stephen Walsh	Multi-Agent Models of LCLUC Dynamics in the Northern Ecuadorian Amazon	01/01/2006	01/01/2009
Eric Davidson	Interactions of Edaphic and Land Use Factors on Water Budgets in Cerrado and Semi-Arid Caatinga Region of Brazil	01/01/2006	01/01/2009
Daniel Nepstad	Integration of Land Use, Fire and Carbon Flux in Critical Amazon Landscapes: The Xingu River Headwaters and the BR163 Highway Corridor	01/01/2004	01/01/2008
Ruth DeFries	Reducing Uncertainties of Carbon Emissions from Land Use-Related Fires with MODIS Data: From Local to Global Scale	01/01/2004	01/01/2007
Matthew Hansen	Land Use Change Around Protected Areas in LCLUC Sites: Synthesis of Rates, Consequences for Biodiversity, and Monitoring Strategies	01/01/2001	01/01/2004
Andrew Hansen	Land Use Change Around Protected Areas in LCLUC Sites: Synthesis of Rates, Consequences for Biodiversity, and Monitoring Strategies	01/01/2001	01/01/2004
Richard Bilborrow	Agricultural Colonization in the Ecuadorian Amazon: Population, Biophysical, and Geographical Factors Affecting Land Use/Land Cover Change and Landscape Structure: Part 2	01/01/2000	01/01/2003
John Townshend	Improvements in Landsat Pathfinder methods for monitoring tropical deforestation and their extension to extra-tropical areas	01/01/2000	01/01/2003
Foster Brown	Land-Cover/Land-Use Change and Carbon Dynamics in an Expanding Frontier in Western Amazonia: Acre, Brazil	01/01/2000	01/01/2003
Robert Walker	Pattern to Process: Research and Applications for Understanding Multiple Interactions and Feedbacks on Land Cover Change	01/01/2000	01/01/2003
William Laurance	Anthropogenic Landscape Changes and the Dynamics of Amazonian Forest Biomass	01/01/1998	01/01/2001
Emilio Moran	Human and Physical Dimensions of Land Use/Cover Change in Amazonia: Forest Regeneration and Landscape Structure	01/01/1998	01/01/2001
Daniel Nepstad	The Present and Future Effects of Ground Fires on Forest Carbon Stocks, Metabolism, Hydrology, and Economic Value in Amazonia and the Cerrado	01/01/1998	01/01/2001
Richard Bilborrow	Agricultural Colonization in the Ecuadorian Amazon: Population, Biophysical, and Geographical Factors Affecting Land Use/Land Cover Change and Landscape Structure	01/01/1997	01/01/2000

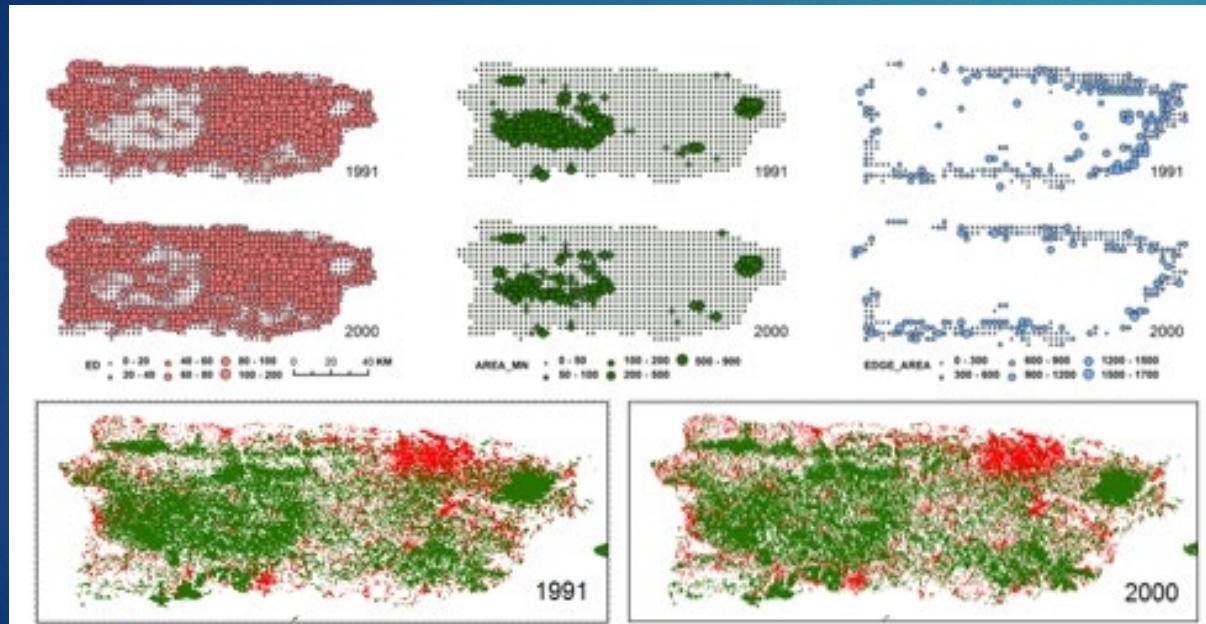
Metadata Page on LCLUC website

Puerto Rico: land cover, land fragmentation, and coastal wetlands migration

Principal Investigator: Mei Yu,

Institute for Tropical Ecosystem Studies, San Juan, Puerto Rico

2012 - 2015



The datasets of Puerto Rico include the Land Cover Map in 2010, Land Fragmentation in 1991 and 2000, and Coastal Wetlands Migration under Sea Level Rise by 2100

Download Link:

http://envsci.uprrp.edu/index.php?page=lcluc&hl=en_US

Dataset creators:

Mei Yu

Qiong Gao

U. Puerto Rico

Daniel Davila

Cuizhen

Wang

Product Title

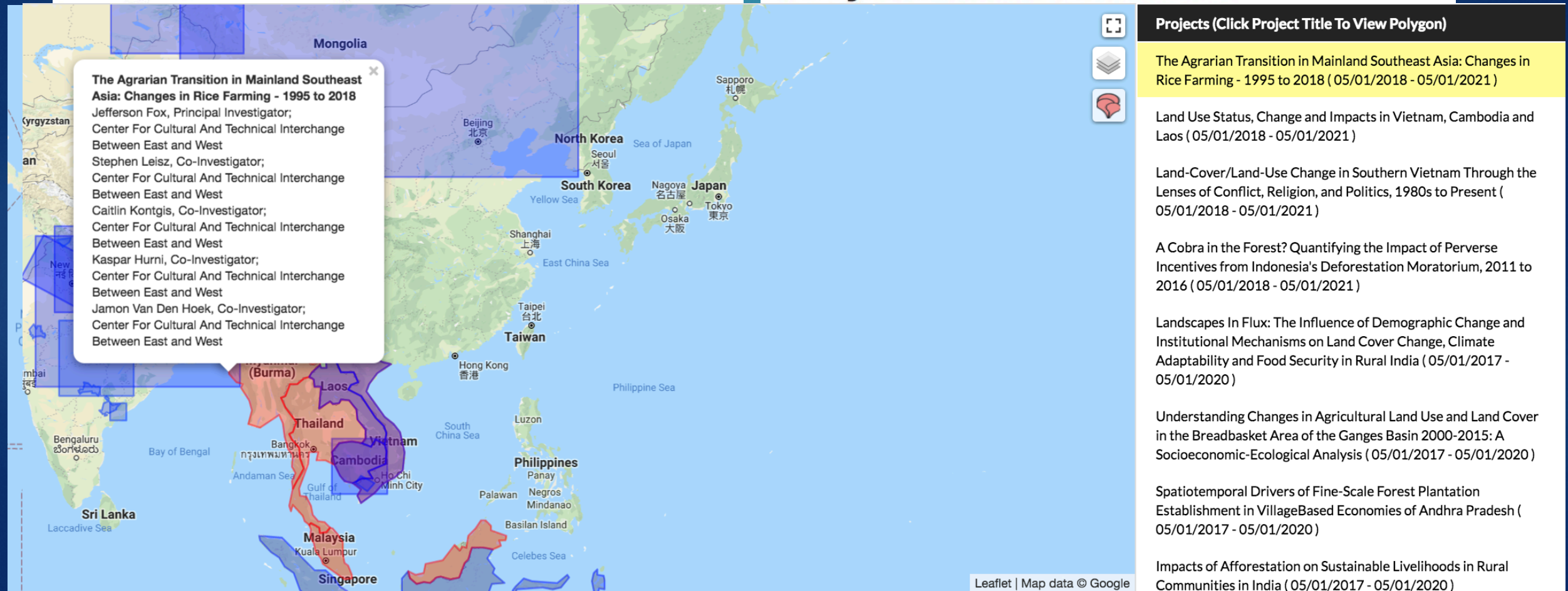
Puerto Rico: land cover, land fragmentation, and coastal wetlands migration



Citation: Gao and Yu, M. 2014. PLOS ONE doi:10.1371/journal.pone.0113140; Yu et al. 2016. Scientific Reports

The LCLUC Mapper

Geographic Areas of Research Projects





Thank you