

# Landscape Ecology Modelling & Simulation

Dr James Millington

These slides at:  
[cutt.ly/JM-PGT21](https://cutt.ly/JM-PGT21)



I study landscapes and how they change,  
often by using computer models.

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[cutt.ly/JM-PGT21](https://cutt.ly/JM-PGT21)



# Research Background

## Landscape Ecology



Succession-  
Disturbance

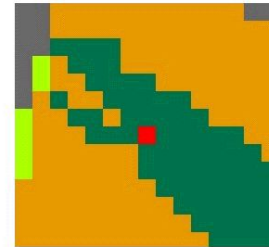
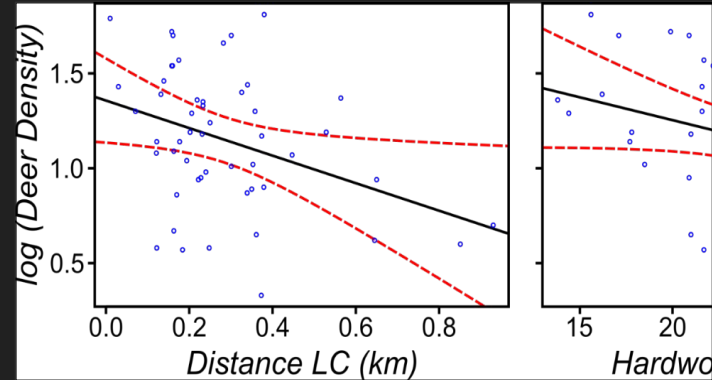
Coupled  
Human-Natural  
Systems

# Research Background

Relationships &  
Inference

Simulating  
Dynamics

## Modelling & Simulation



# Landscape Change



Mapping land use/cover change  
Inferring physical & human drivers of change  
Forecasting future change

# Fire in Mediterranean Landscapes



Millington et al. (2009)

Fischer et al. (2016)

Seijo et al. (2017)



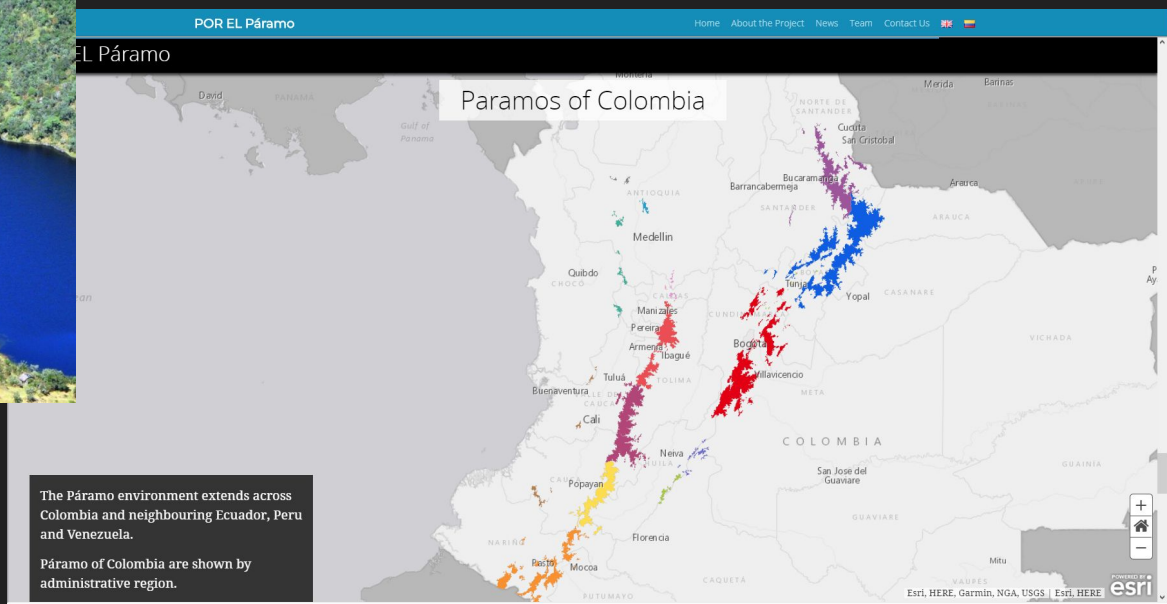
Human-mediated succession-disturbance regimes

Climate change adaptation and mitigation



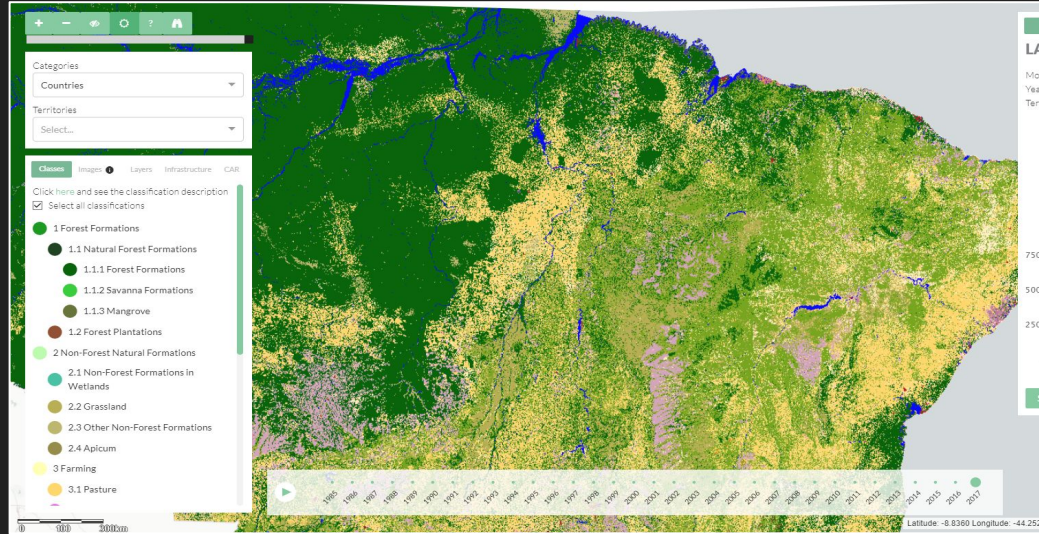
# Colombian Páramo - Fire and Land Use

With Terry Dawson, Mark Mulligan, Kris Chan



[porelparamo.org](http://porelparamo.org)

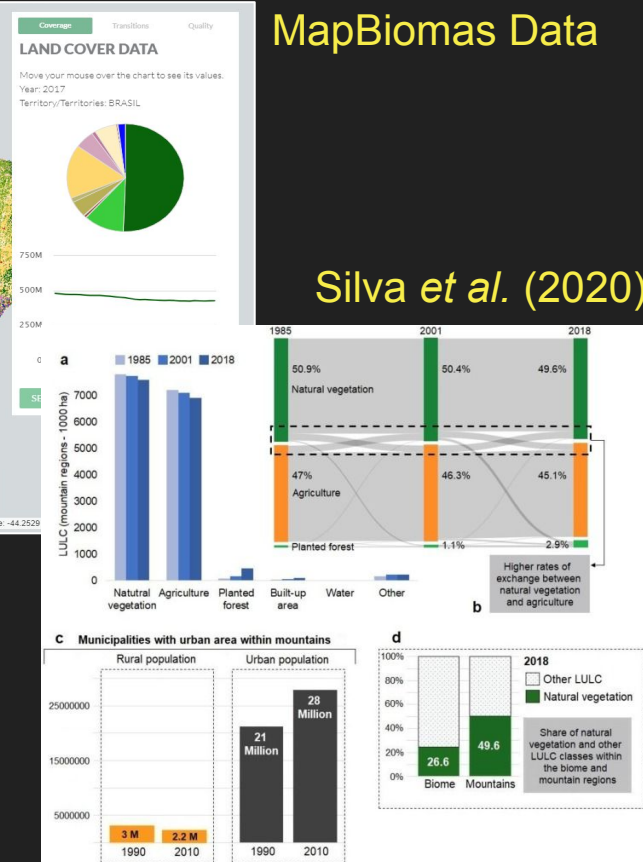
# Telecoupled Land Systems



MapBiomass Data

Silva et al. (2020)

Build on existing modelling  
Brazilian Land Use/Cover Mapping  
Combine with agricultural data

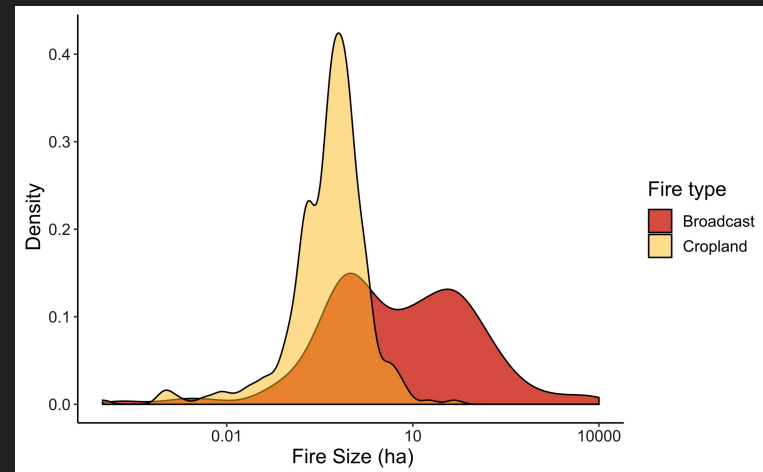




# Leverhulme Wildfire - Global ABM

## Improving representation of human fire in DVGMs Database of Anthropogenic Fire Impacts (DAFI)

- Improve representation of fire suppression
- Examine policy responses using secondary data
- Compare DAFI to remote sensing data



Poster



Data

# Landscape Ecology

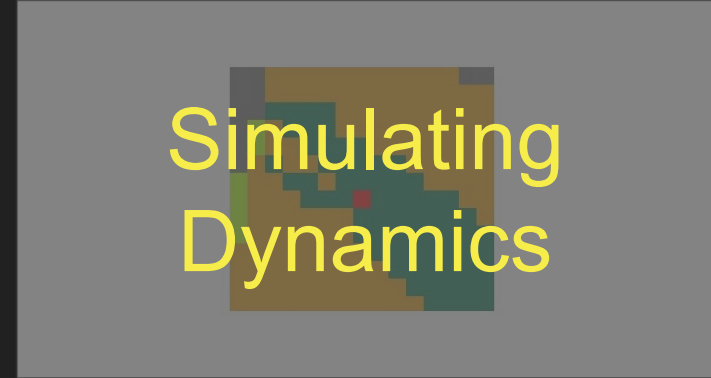
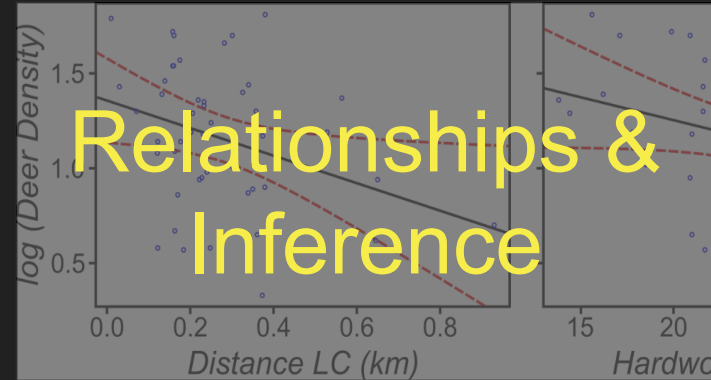


Succession-  
Disturbance



Coupled  
Human-Natural  
Systems

# Modelling & Simulation



Simulating  
Dynamics

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