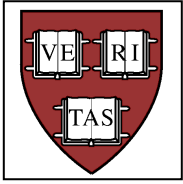
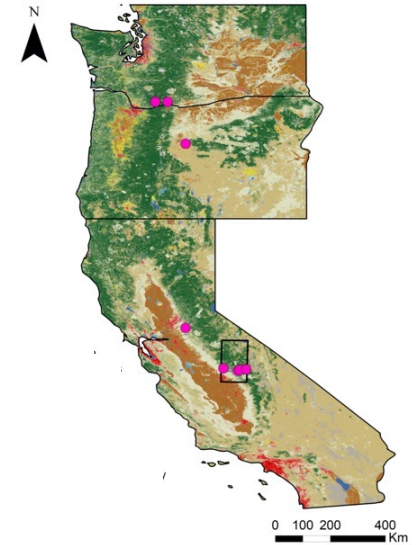


# Using GEDI Waveform Lidar to Constrain Terrestrial Biosphere Model Predictions of Current and Future Carbon, Water & Energy Fluxes



Paul Moorcroft, Liling Chang<sup>1</sup>, Shaoqing Liu<sup>1</sup> & Alexander Antonarakis<sup>2</sup>

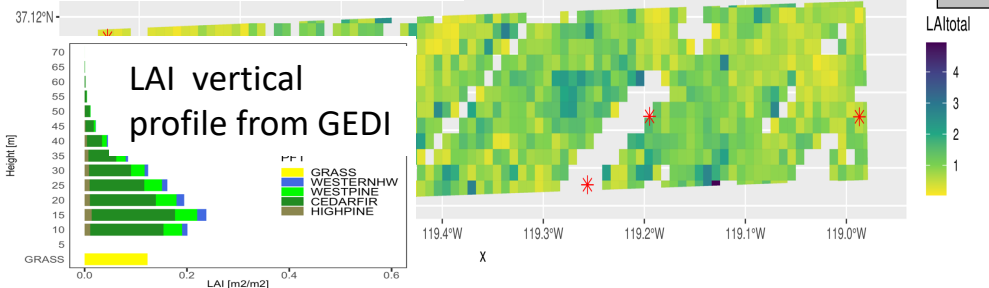
<sup>1</sup> Harvard University, <sup>2</sup> University of Sussex



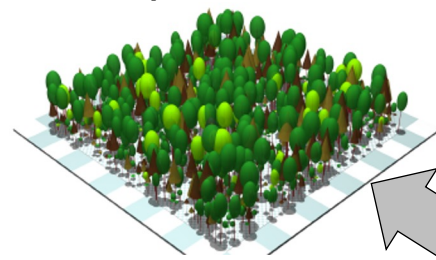
## Objectives

- determine how forest structure and resulting rates of carbon uptake and storage vary across the Pacific Coast region
- examine the role that Pacific Coast ecosystems will play in mitigating atmospheric CO<sub>2</sub> over the coming decades under different climate scenarios
- Additional funding from Harvard to conduct similar analyses in tropical forests

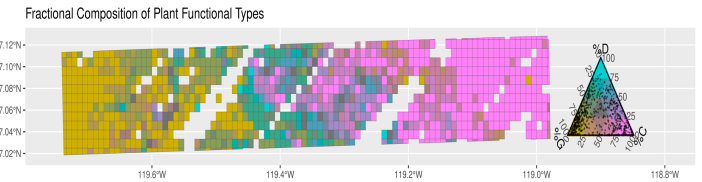
### GEDI-derived canopy structure



ED2 Terrestrial Biosphere Model

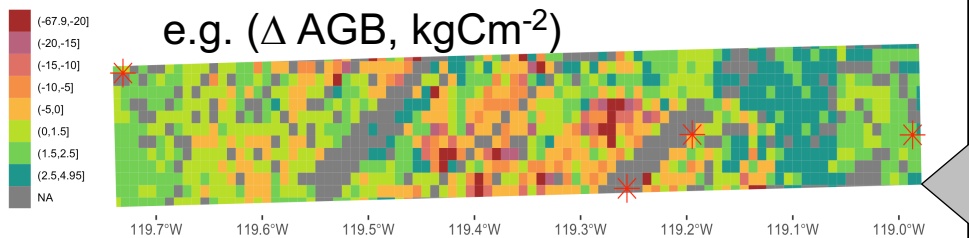


### AVIRIS-derived ecosystem composition



Meteorological Forcing  
GCM & RCP Scenarios

e.g. ( $\Delta$  AGB, kgCm<sup>-2</sup>)



Carbon, Water & Energy  
(Fluxes & Stocks)