

Environmental Change Institute



Planetary stewardship: looking after our home

Tom Harwood



1700

1800

1900

2000

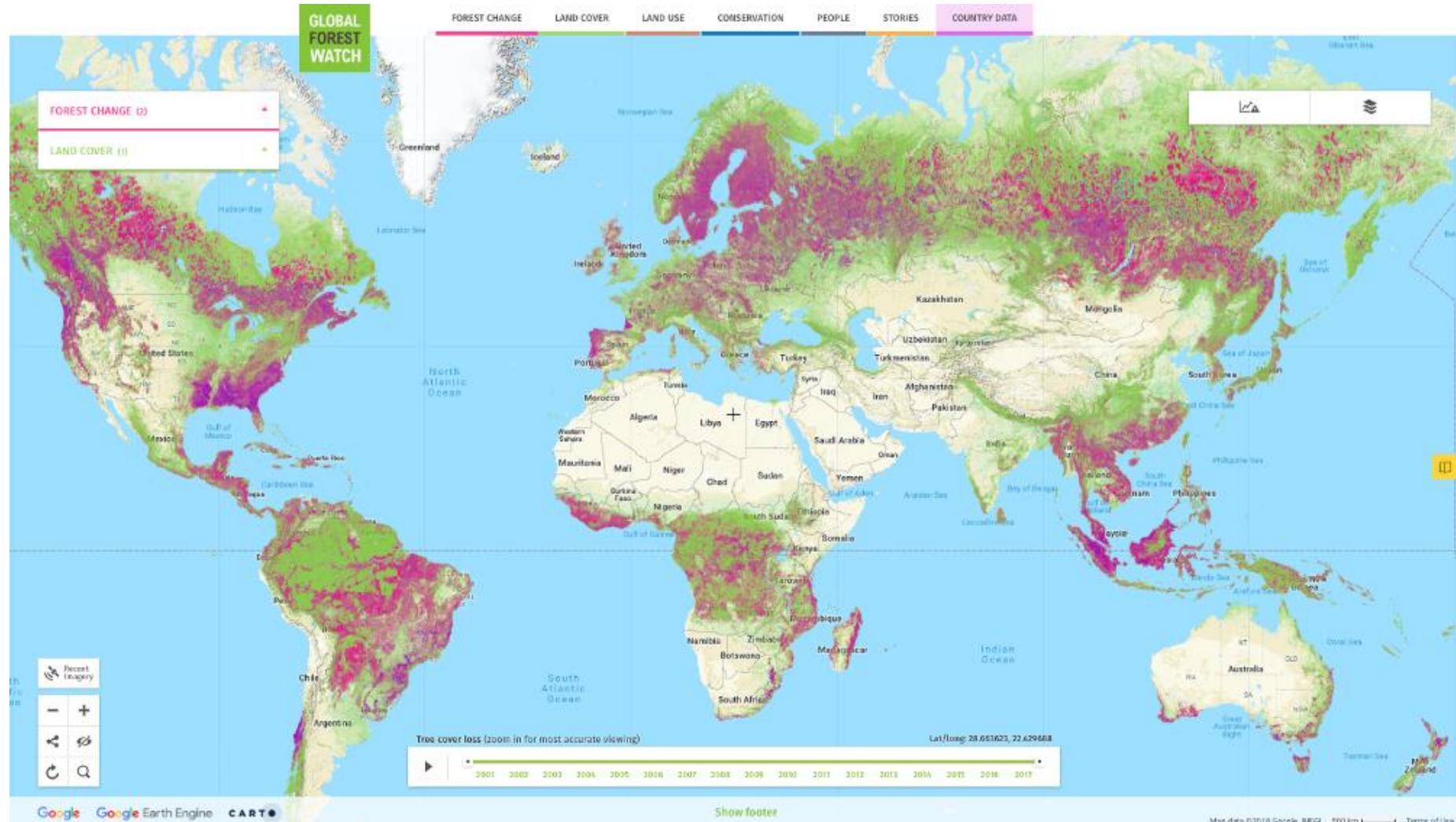
Feed the world



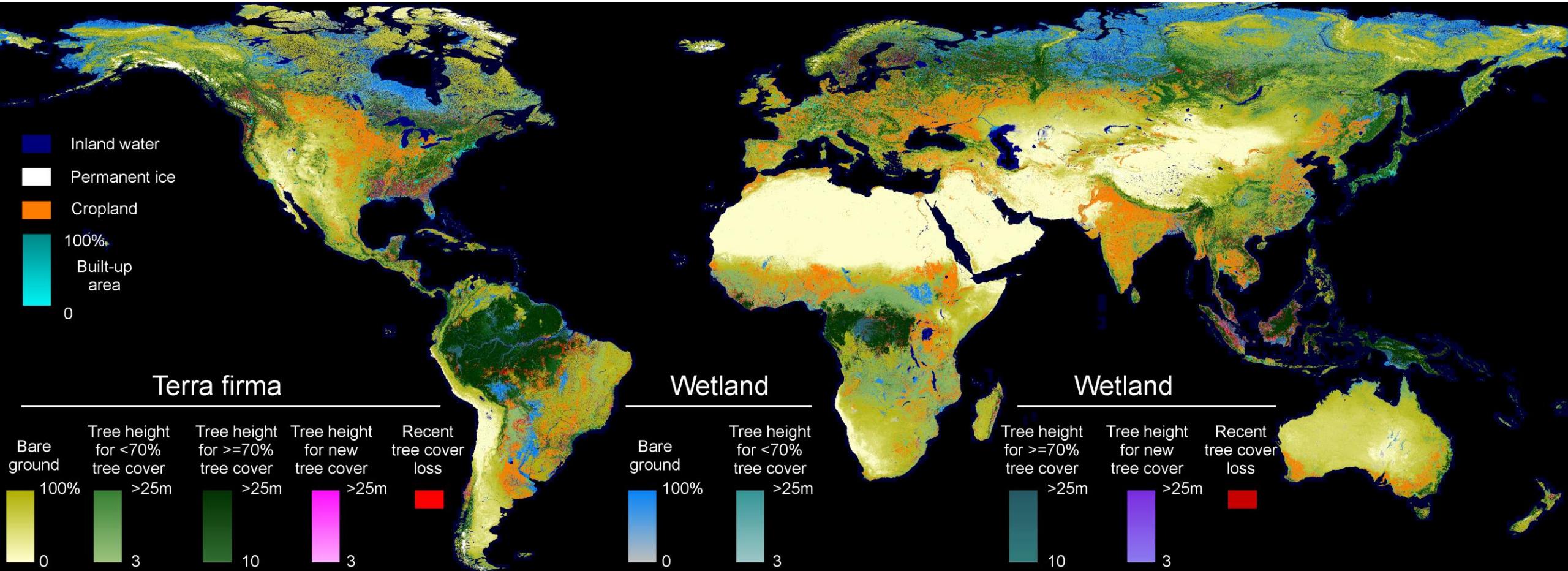
A satellite night map of the world showing city lights. The map is mostly dark blue, with bright white and yellow lights concentrated in urban areas. Major clusters are visible in North America, Europe, and Asia. Smaller clusters are scattered across Africa, South America, and Australia.

Power the world

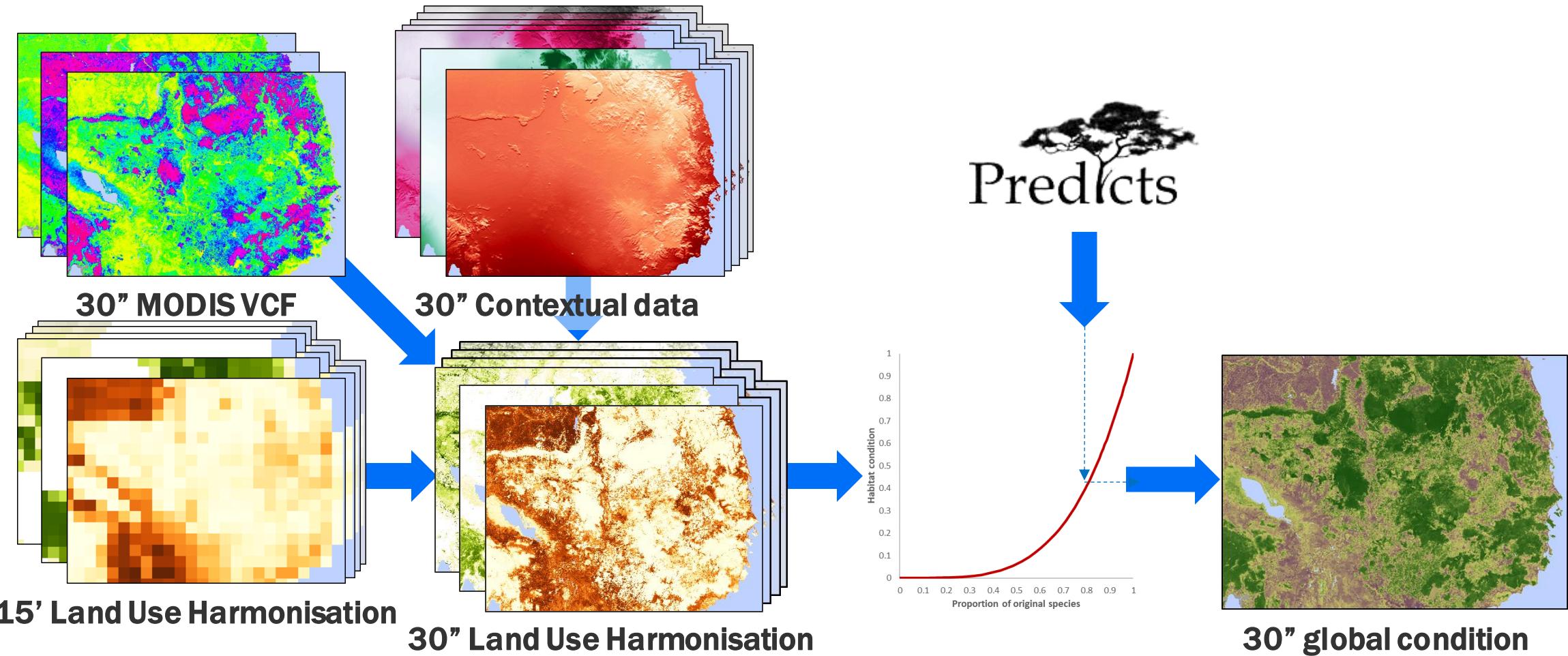
What can we measure from space?



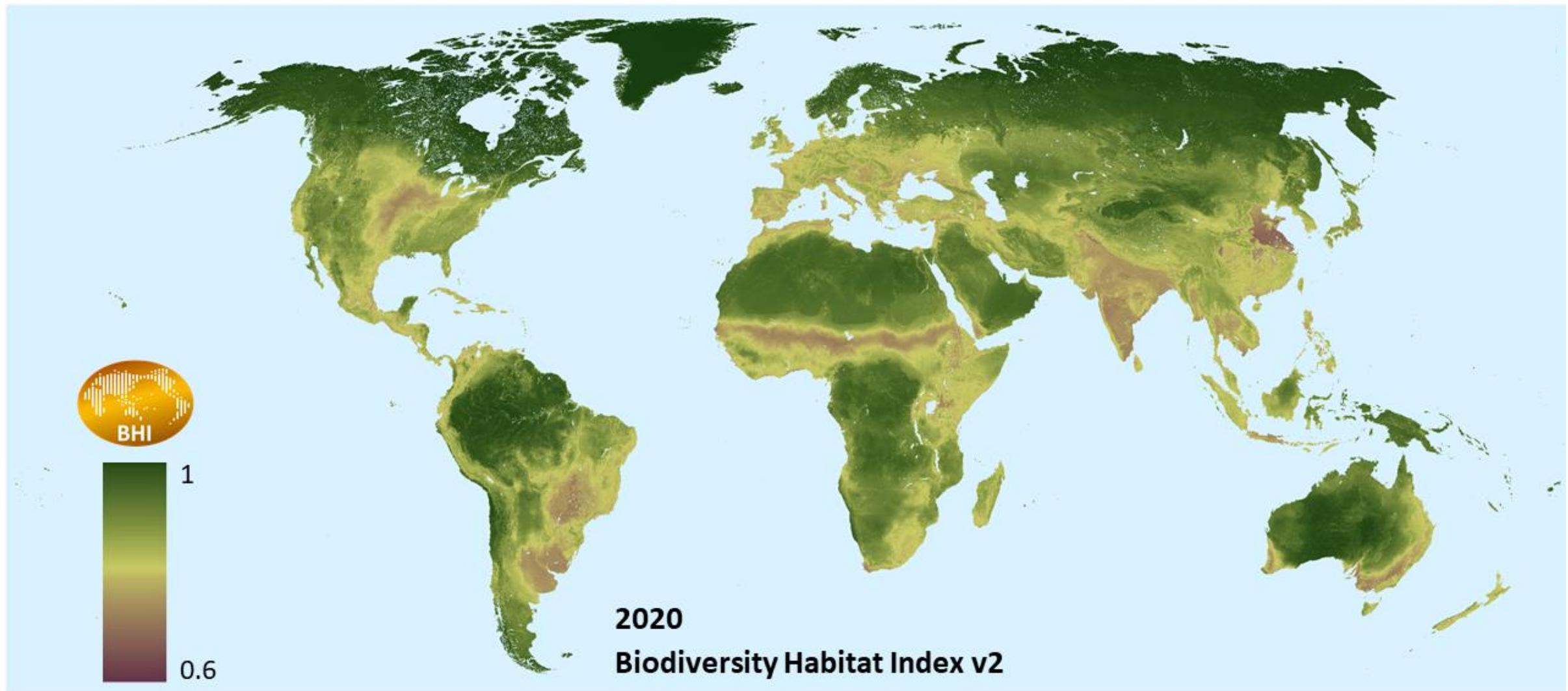
Global Land Analysis & Discovery



Downscaled land use to habitat condition

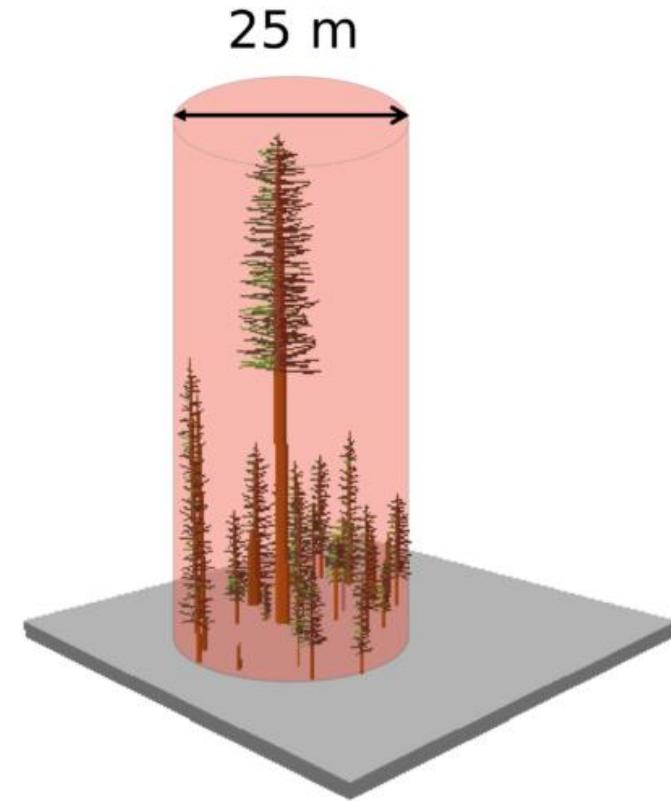
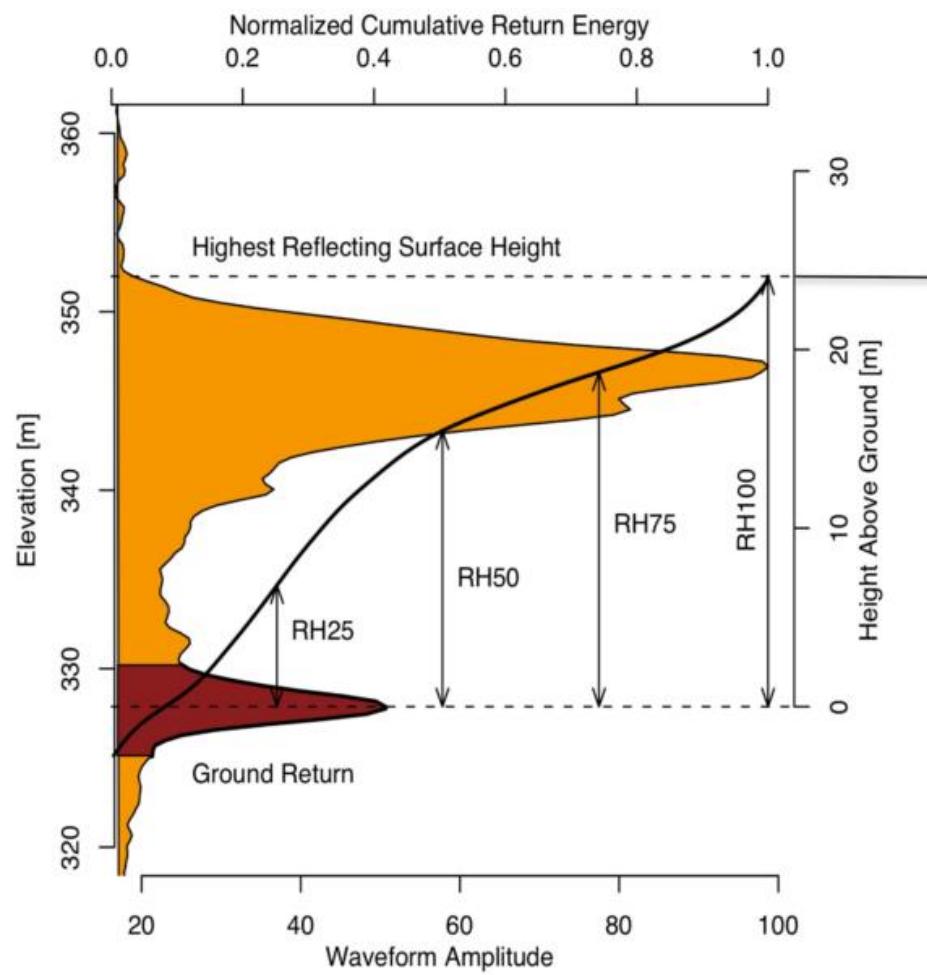


Biodiversity Habitat Index

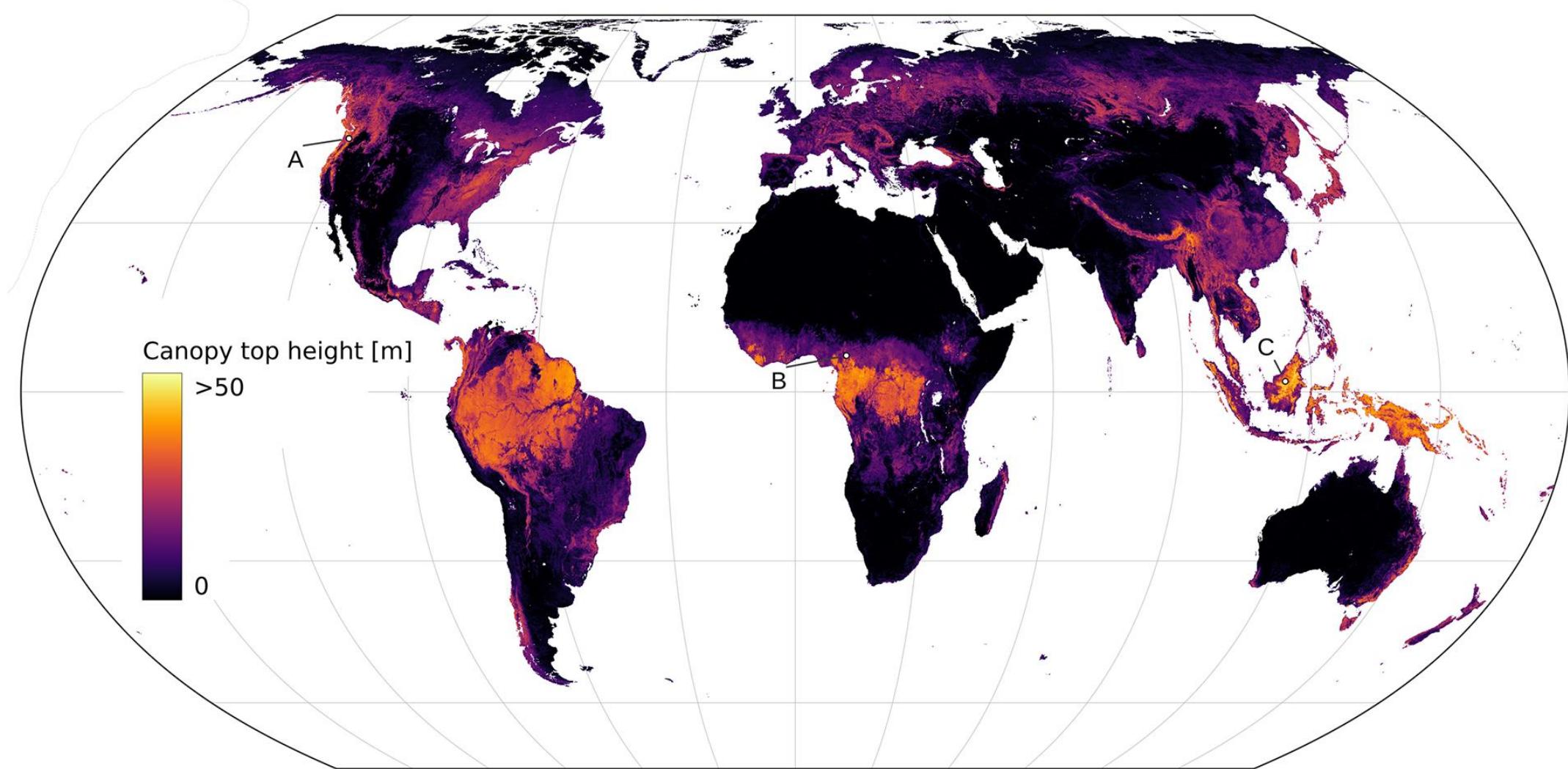


Harwood, T; Ware, C; Hoskins, A; Ferrier, S; Bush, A; Golebiewski, M; Hill, S; Ota, N; Perry, J; Purvis, A; Williams, Kristen (2022): BHI v2: Biodiversity Habitat Index: 30s global time series. v1. CSIRO. Data Collection. <https://doi.org/10.25919/3j75-f539>

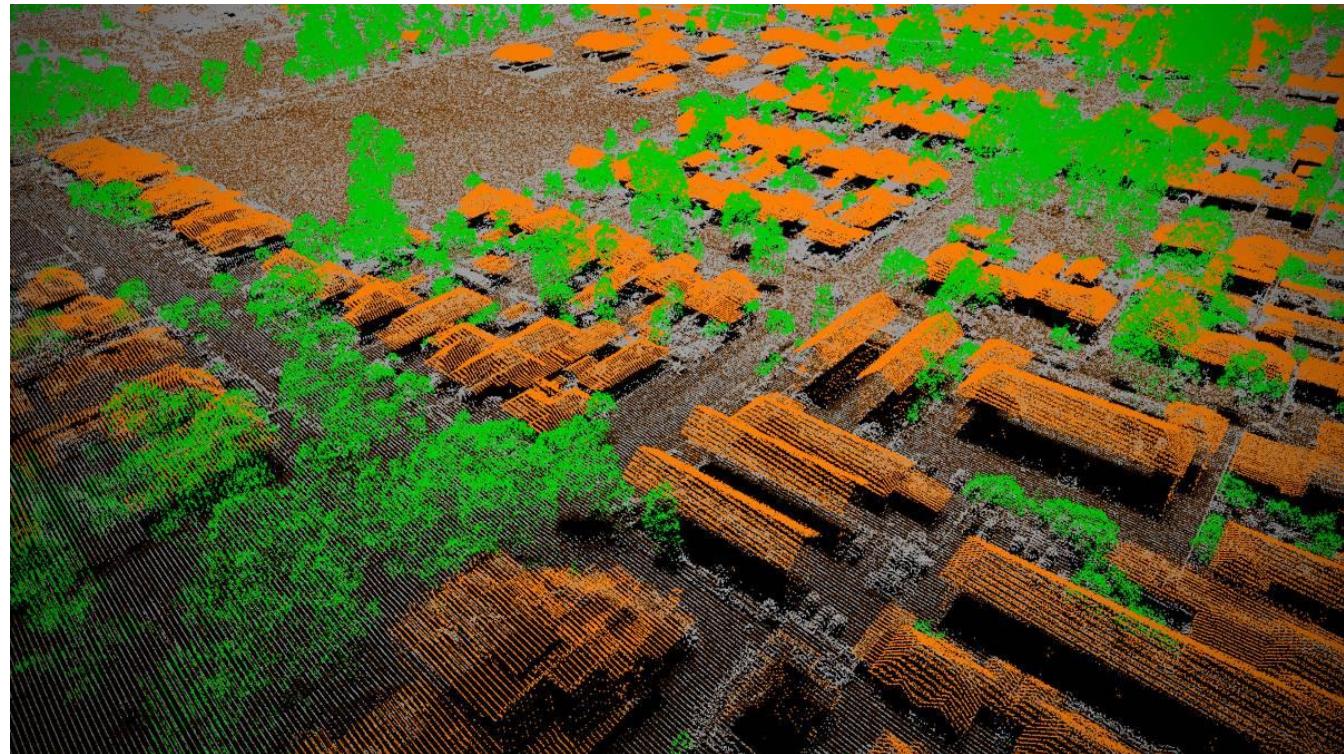
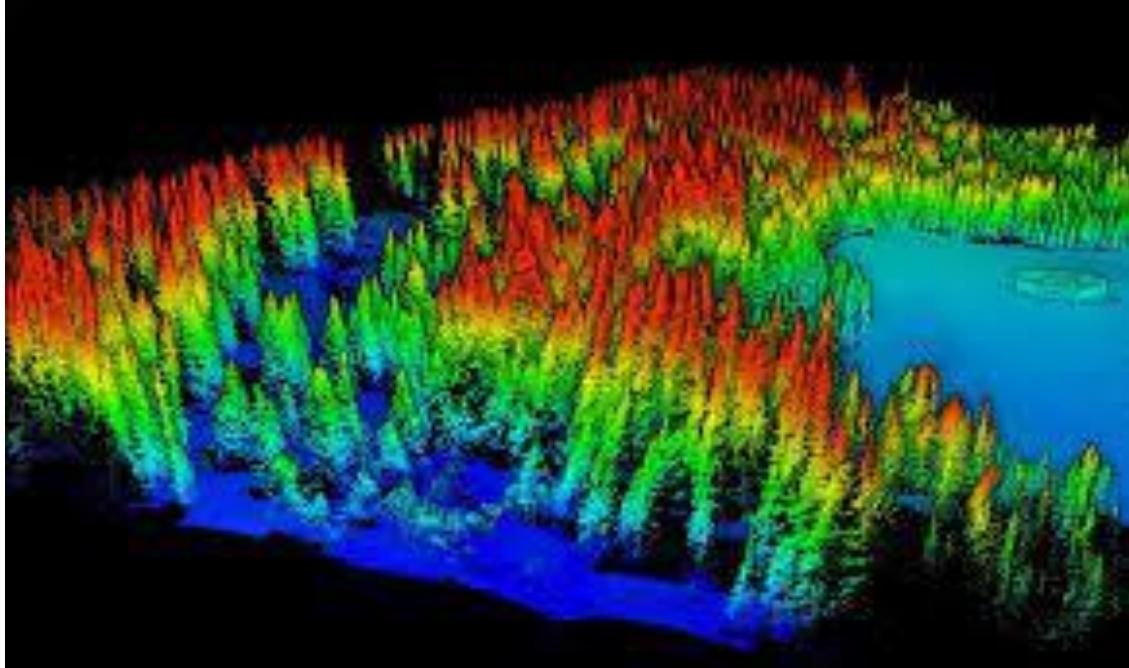
GEDI



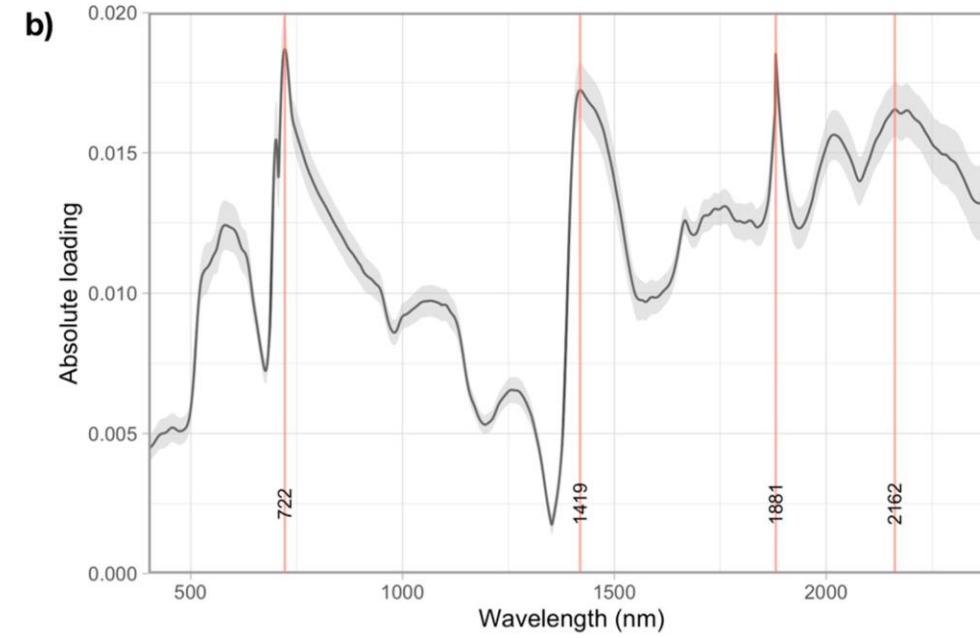
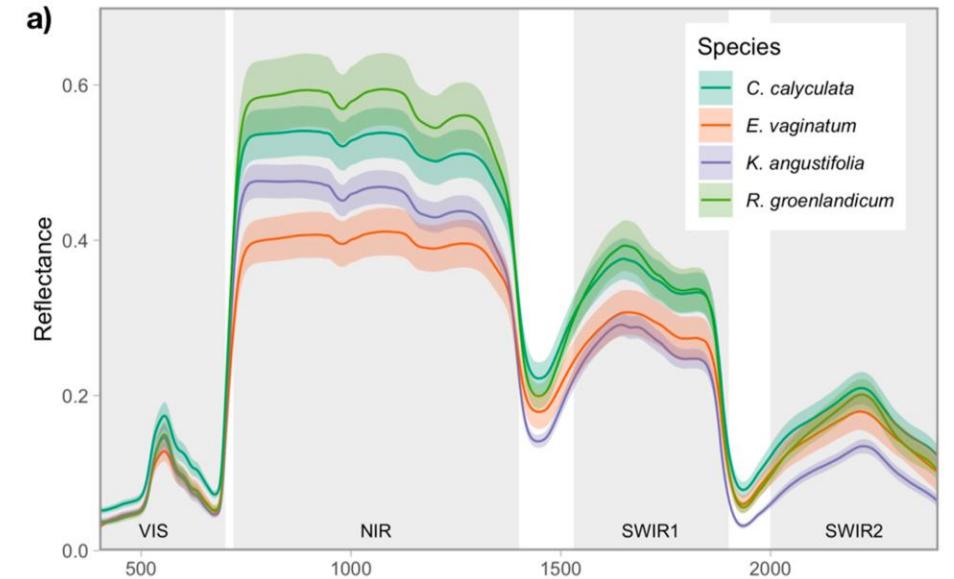
GEDI + Sentinel



Point cloud lidar

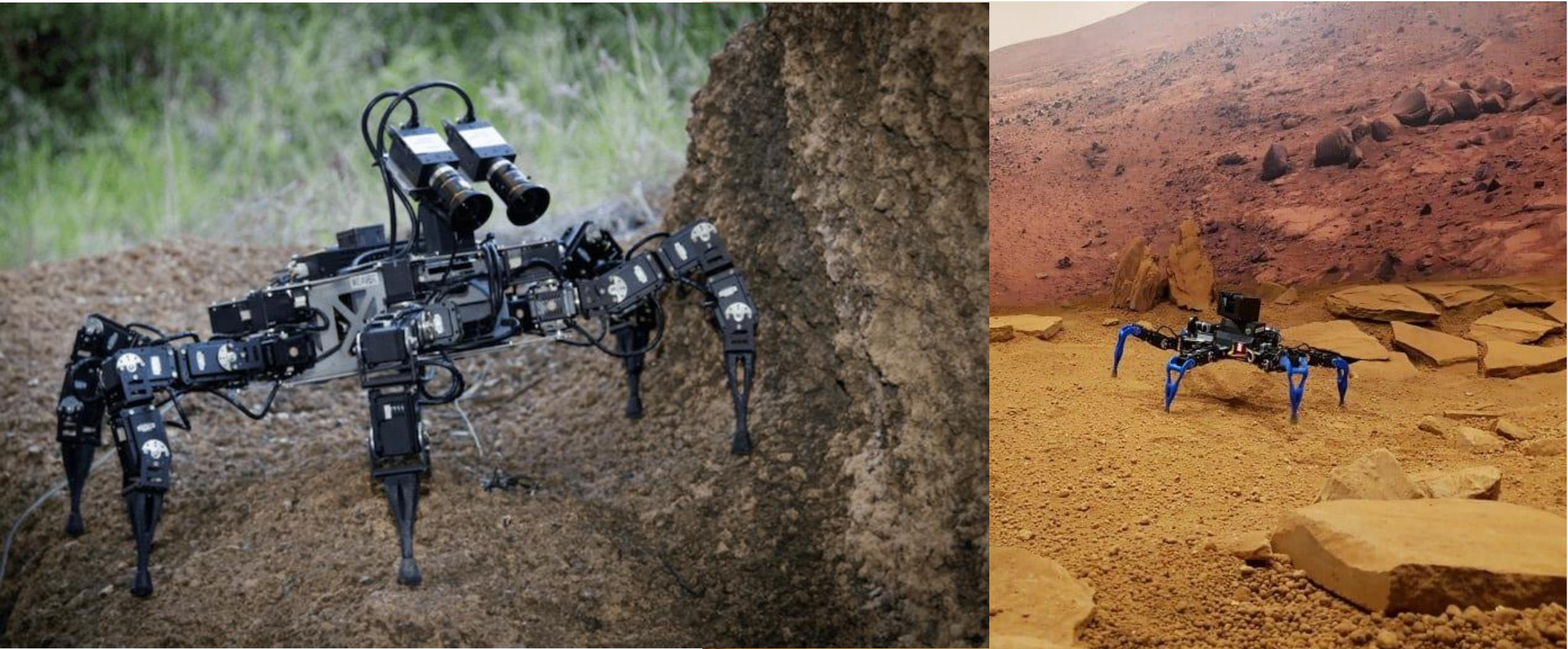


Hyperspectral imaging

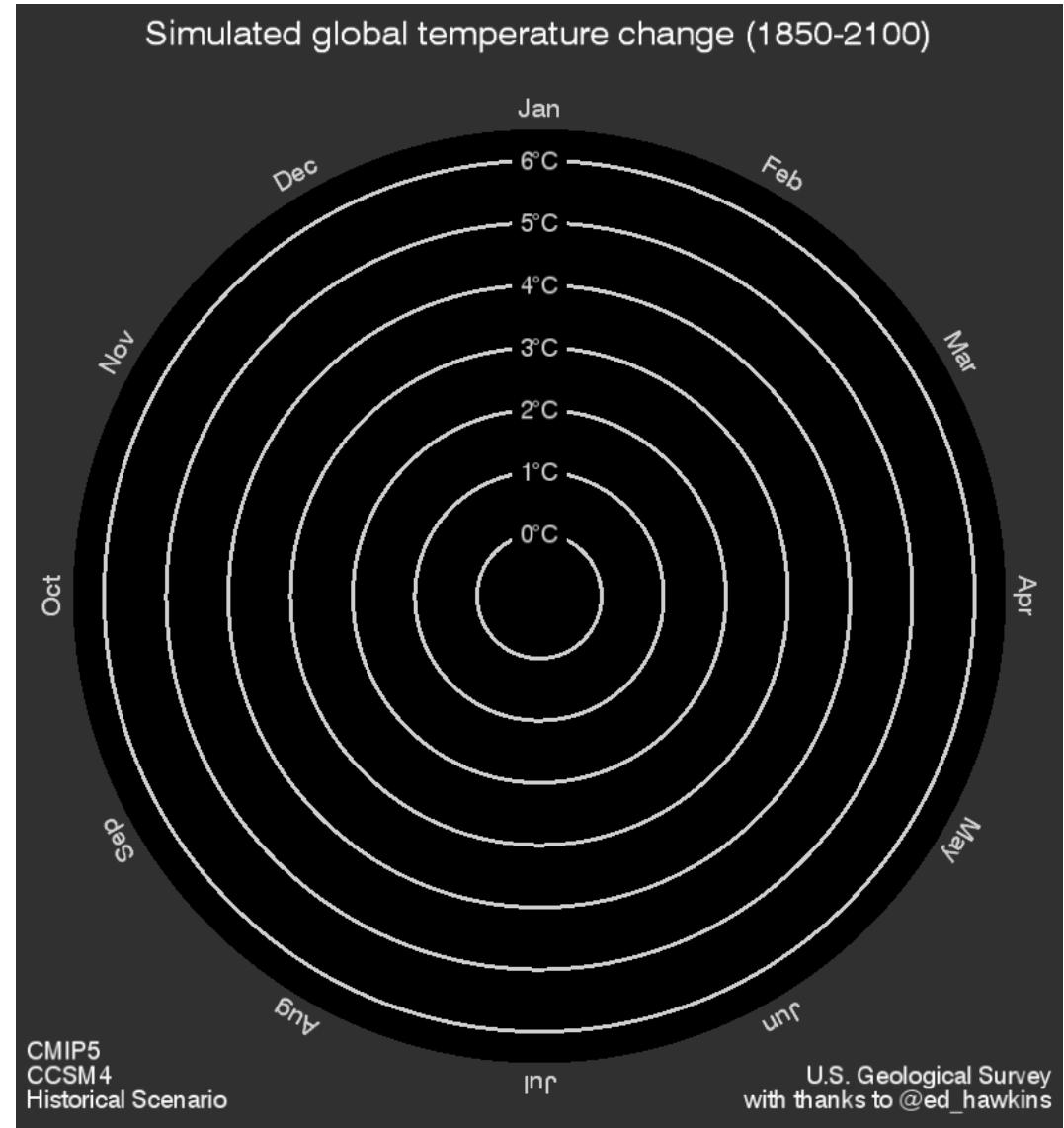
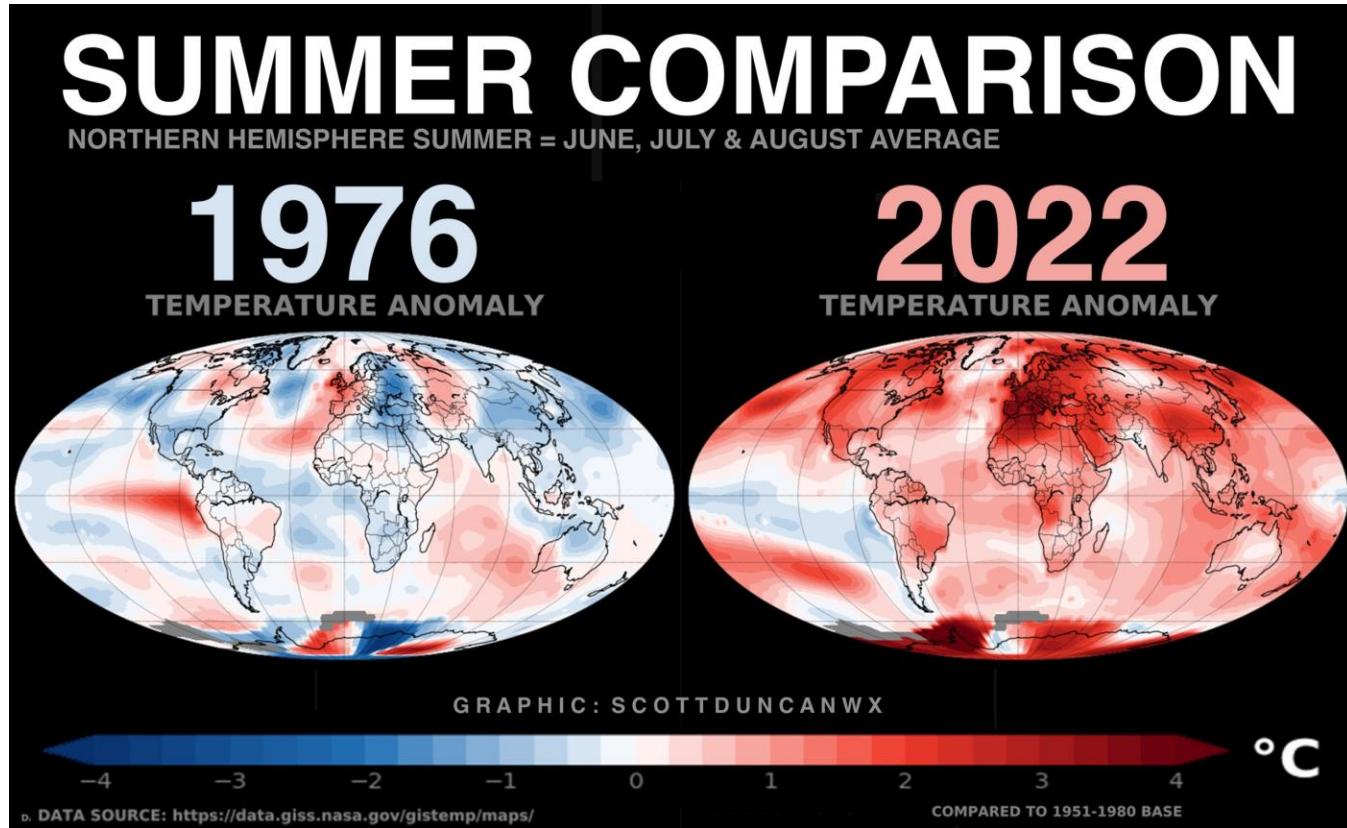




Autonomous robots



It's getting hot out there



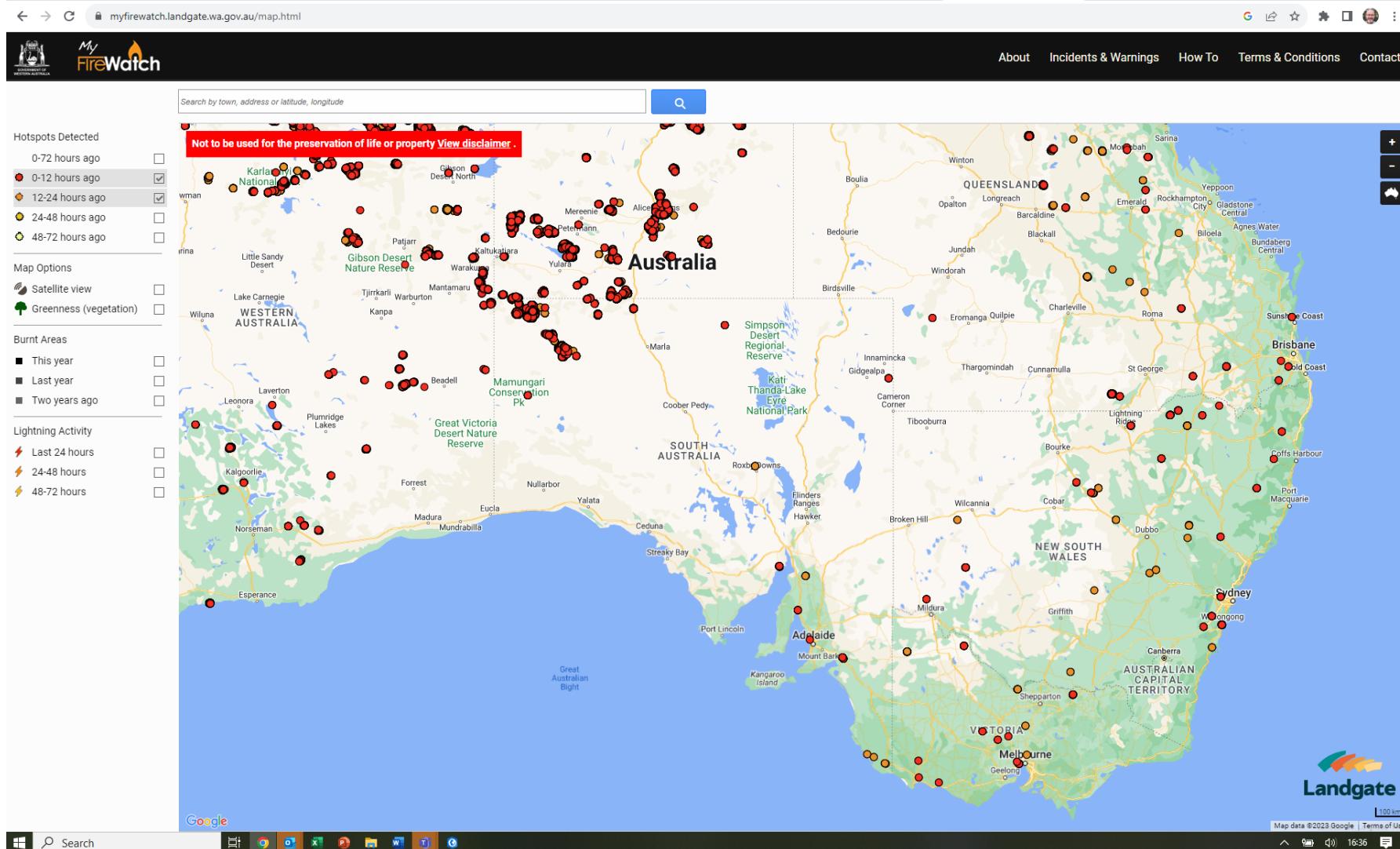
Permafrost



Arctic ice



Fire monitoring



Environmental *Change* Institute



Thank you