

Harmonization of global land use change and management for the period 850–2100 (LUH2) for CMIP6



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Science Questions

- What are the effects of land-use on the Earth's coupled carbon-climate system?
- How can data on multiple quantities, from multiple sources, and multiple time periods, be combined for consistent assessment of changes past-future?

Analysis/Results

- A new set of historical data based on land-use history, FAO statistics, and remote sensing are combined with multiple alternative scenarios of the future from Integrated Assessment Models.
- The harmonization approach builds off prior efforts for CMIP5 and new global gridded land use data are provided at higher spatial resolution (0.25°), longer time domain (850-2100), with more detail, and using more input data (incl. Landsat).

Significance

- Datasets are part of the official CMIP6 input data collection and are required forcing for diagnostic and historical climate simulations, and for related climate model intercomparison studies including future scenarios, land-use effects, and paleo-climate.
- Datasets are also required input for a range of other international studies including Global Carbon Project, IPBES, and ISIMIP.
- The use of these data across a wide range of global studies enables consistency across assessments.

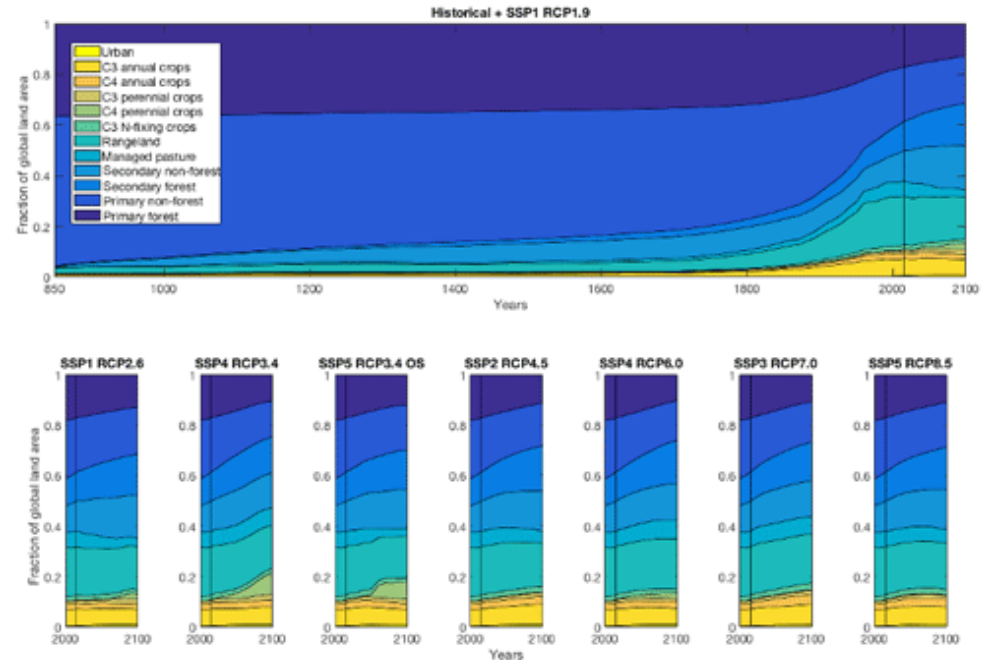


Fig. Harmonized global land use area fractions 850–2015 (baseline historical, top panel) and 2015–2100 (future, bottom panels) for the eight future scenarios.

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