JULES Vegetation Module Update 2026

Valentina Lara (Exeter Uni.):

Evaluating different stomatal conductance/hydraulic representations in JULES using drought manipulation experiments in Europe. Comparing stomatal conductance simulated by the Medlyn model and profit max from Martin De Kauwe's team in Bristol. The overall aim is to improve the responses of European forests to heatwaves in JULES.

Ananya Jattla (Exeter Uni.):

Evaluating JULES-SOX regrowth responses in the Amazon and improving PFT representation in Savannas, which could possibly include a secondary forest PFT for the tropical forest.

Simon Jones (Exeter Uni.):

Incorporating drought mortality into the SOX stomatal optimisation model.

JULES Vegetation Module Update 2026

Toby Marthews (UKCEH):

Development of two oil palm PFTs for JULES to represent smallholder and commercial plantations in SE Asia.

Karina Bett-Williams, Emma Littleton, Carolina Duran Rojas, Debbie Hemming (Met Office, Exeter Uni.):

Developing an improved calibration of a range of European forests types (managed and unmanaged) in JULES as part of the EU project OptFor-EU.

Emma Littleton has led a paper: "Advancing forest modelling for next generation Earth-system models“ - recently submitted to GCB communications.

JULES Vegetation Module Update 2026

Wenyao Gan (Reading Uni.):

Implementing/developments to the sub-daily EEO based P-model for C3 and C4 photosynthesis in JULES. The aim is to improve the simulation of photosynthesis and plant environmental responses in JULES and to assess the impact on the carbon cycle.

Narender Kangari (Reading Uni.):

Working with the EEO based P-model in JULES at the global scale, with a particular focus on the photosynthetic acclimation processes in JULES.

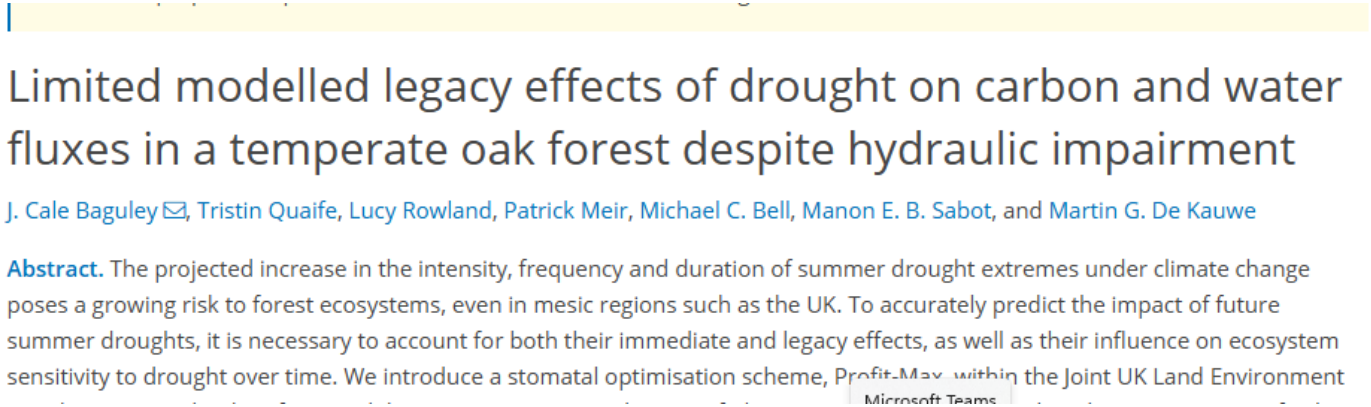
Boya Zhou and Timothee Corchia (Reading Uni.):

Developing an EEO based prognostic LAI model for JULES.

JULES Vegetation Module Update 2026

Martin De Kauwe (Bristol Uni.):

Implementing the Sperry profit-maximisation stomatal scheme and the SOX version into a working JULES branch, along with xylem impairment (paper in review- https://egusphere.copernicus.org/preprints/2026/egusphere-2026-4729/) and see presentation by Lirong You tomorrow.



Limited modelled legacy effects of drought on carbon and water fluxes in a temperate oak forest despite hydraulic impairment

J. Cale Baguley, Tristin Quaife, Lucy Rowland, Patrick Meir, Michael C. Bell, Manon E. B. Sabot, and Martin G. De Kauwe

Abstract. The projected increase in the intensity, frequency and duration of summer drought extremes under climate change poses a growing risk to forest ecosystems, even in mesic regions such as the UK. To accurately predict the impact of future summer droughts, it is necessary to account for both their immediate and legacy effects, as well as their influence on ecosystem sensitivity to drought over time. We introduce a stomatal optimisation scheme, Profit-Max, within the Joint UK Land Environment

Microsoft Teams

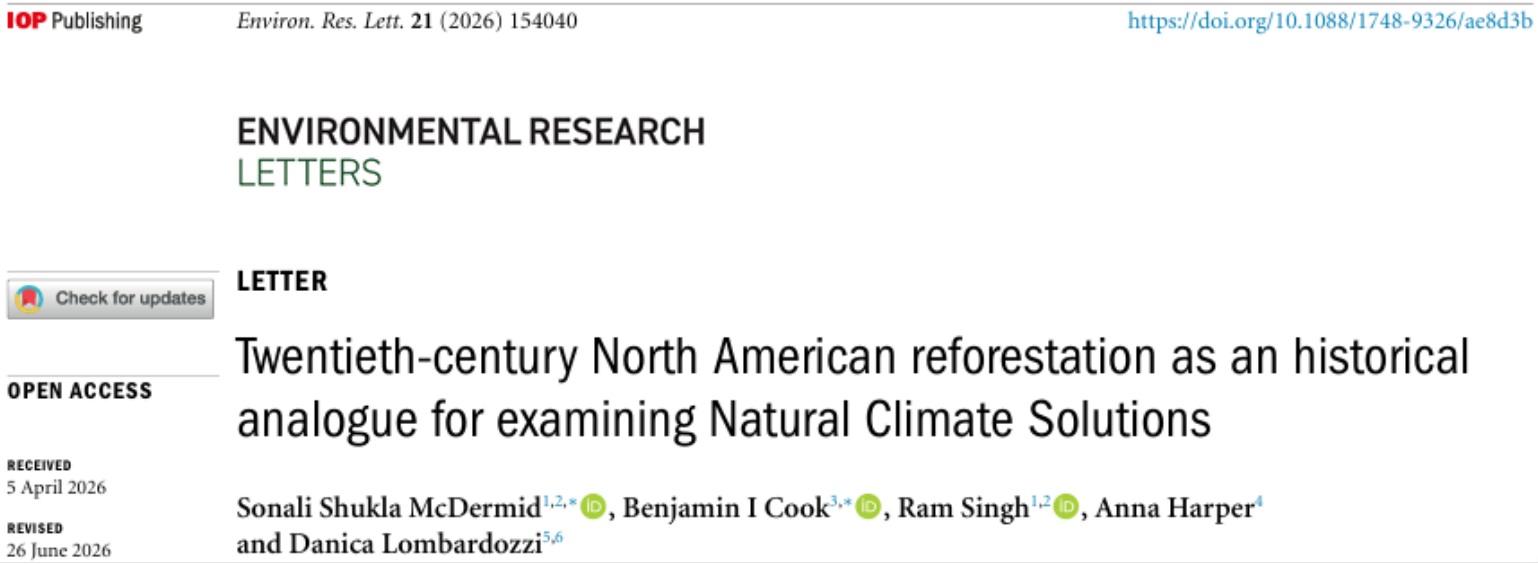
Work in progress coupling the SOX stomatal optimisation model to the multi-layer canopy scheme.

JULES Vegetation Module Update 2026

Anna Harper (University of Georgia):

Using TRENDY model output to assess forest regrowth in the eastern US. There was large variation across models in the regrowth response to climate and land cover change, with CO2 fertilisation found to be a dominant driver for the magnitude of regrowth.

The LUH2 land cover dataset used in TRENDY model experiments under prescribes the areal extent of reforestation in this region.



IOP Publishing Environ. Res. Lett. 21 (2026) 154040 https://doi.org/10.1088/1748-9326/ae8d3b

ENVIRONMENTAL RESEARCH
LETTERS

Check for updates

LETTER

OPEN ACCESS

RECEIVED
5 April 2026

REVISED
26 June 2026

Twentieth-century North American reforestation as an historical analogue for examining Natural Climate Solutions

Sonali Shukla McDermid[1,2,*], Benjamin I Cook[3,*], Ram Singh[1,2], Anna Harper[4] and Danica Lombardozzi[5,6]

JULES Vegetation Module Update 2026

Sophia Cunningham (Sheffield Uni.):

Measuring traits in urban tree species to parameterise urban tree PFTs in JULES. Regional runs under future climate scenarios to explore trade-off between water-use and carbon sequestration.

Phil Harris, Becky Oliver, Lina Mercado (UKCEH, Exeter University):

Implementing temperature independent variation of nocturnal respiration into JULES.

Article | Open access | Published: 26 September 2022

Nocturnal plant respiration is under strong non-temperature control

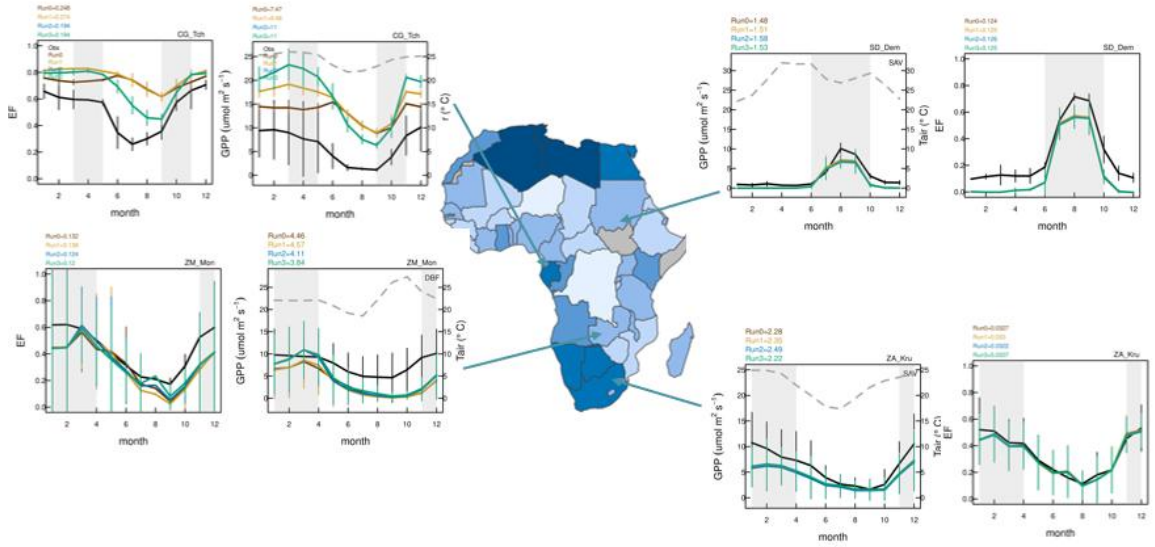
Dan Bruhn, Freya Newman, Mathilda Hancock, Peter Povlsen, Martijn Slot, Stephen Sitch, John Drake, Graham P. Weedon, Douglas B. Clark, Majken Pagter, Richard J. Ellis, Mark G. Tjoelker, Kelly M. Andersen, Zorayda Restrepo Correa, Patrick C. McGuire & Lina M. Mercado

Nature Communications **13**, Article number: 5650 (2022) | Cite this article

JULES Vegetation Module Update 2026

Becky Oliver, Eleanor Blyth (UKCEH):

Using JULES to simulate African savanna ecosystems at flux tower sites, and evaluating JULES by looking at the behaviour of GPP in response to dry-drown events.



Thank you.

For more information please contact:

rfu@ceh.ac.uk
ceh.ac.uk
@uk_ceh

UKCEH

Our planet.
Decoded.