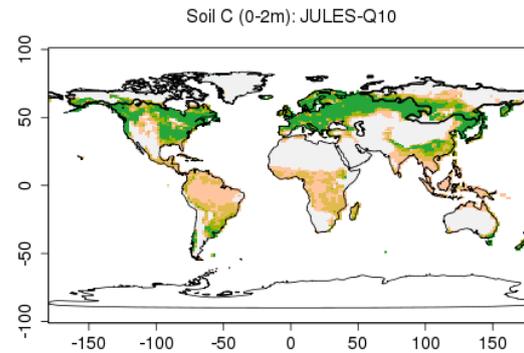


Soil biogeochemistry module update

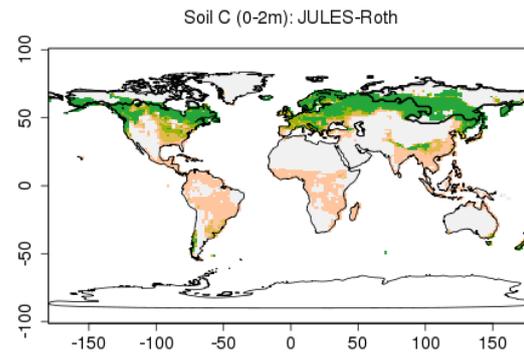
- Module has grown
- Change of leadership (now Sarah Chadburn and Eleanor Burke)
- New developments in trunk:
 - Layered soil carbon
 - Soil nitrogen (part of nitrogen model)
 - Layered soil nitrogen
 - ECOSSE code on its way into the trunk
- Time for a module-specific meeting?

Layered soil carbon

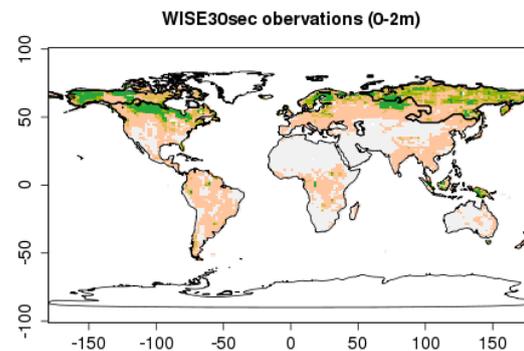
- Model development paper published. Burke *et al.*, *Geosci. Model Dev*, **10** 959 (2017)
- Switch: `I_layeredc` in new JULES namelist `jules_soil_biogeochem.nml`
- Parameters: `tau_resp` and `tau_lit` (decay of soil respiration with depth and decay of litter input with depth)



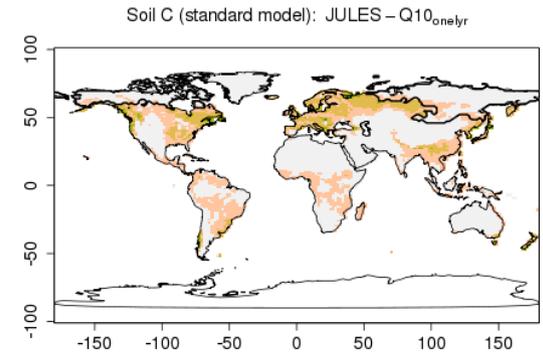
Global total: 2976 Pg C



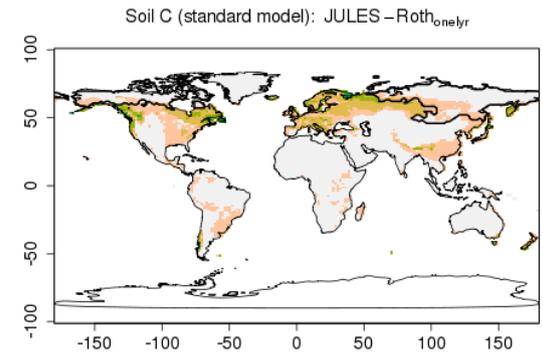
Global total: 2545 Pg C



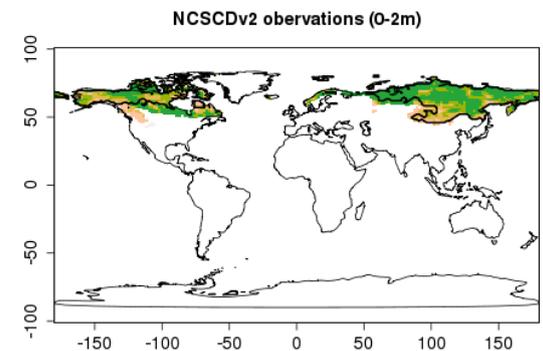
Global total: 1943 Pg C



Global total: 1311 Pg C



Global total: 1259 Pg C



JULES-ECOSSE: update

(Douglas Clark)

Adding the ECOSSE model of soil C and N

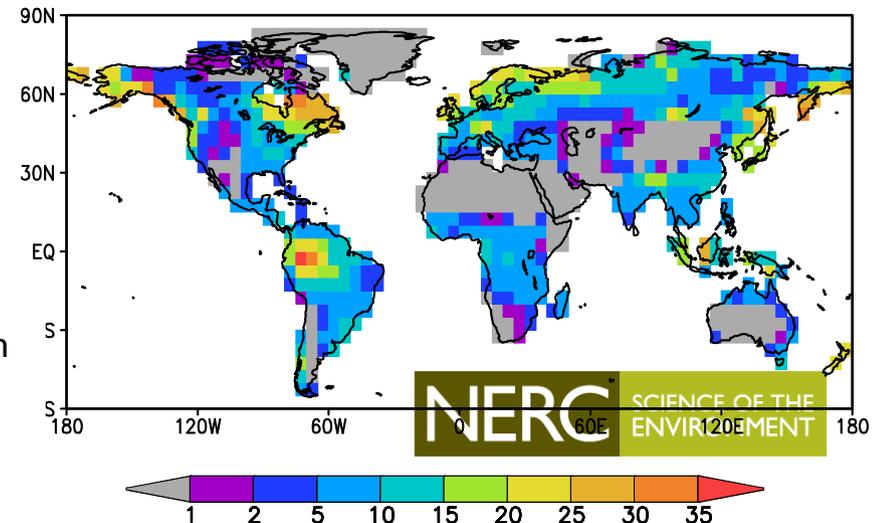
Differences from the RothC-based model include having 2 inorganic N pools (NO_3^- , NH_4^+) and speciated N gas fluxes.

Code development activities in the last year:

- Separating the soil and vegetation parts of TRIFFID to allow alternative soil models (vn4.8 has `jules_soil_biogeochem.nml`)
- Initial stages of adding ECOSSE
 - vn4.9 will include 2 tickets on i/o and control-level code
- Now adding the “science” code

The plan is to have ECOSSE fully functional in vn5.1.

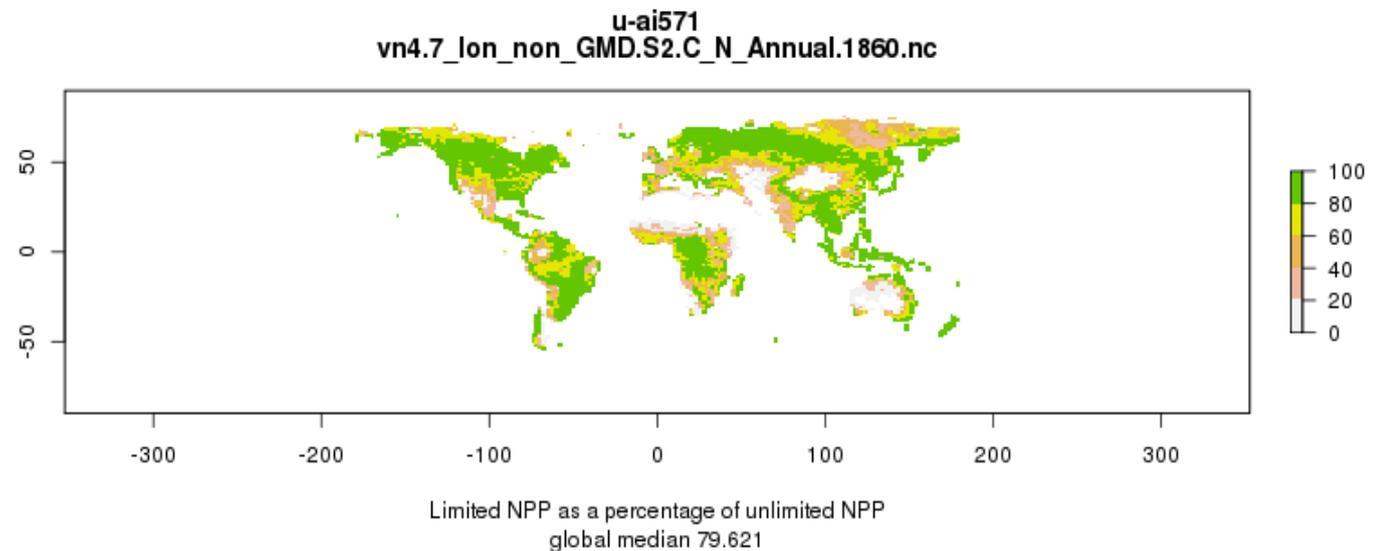
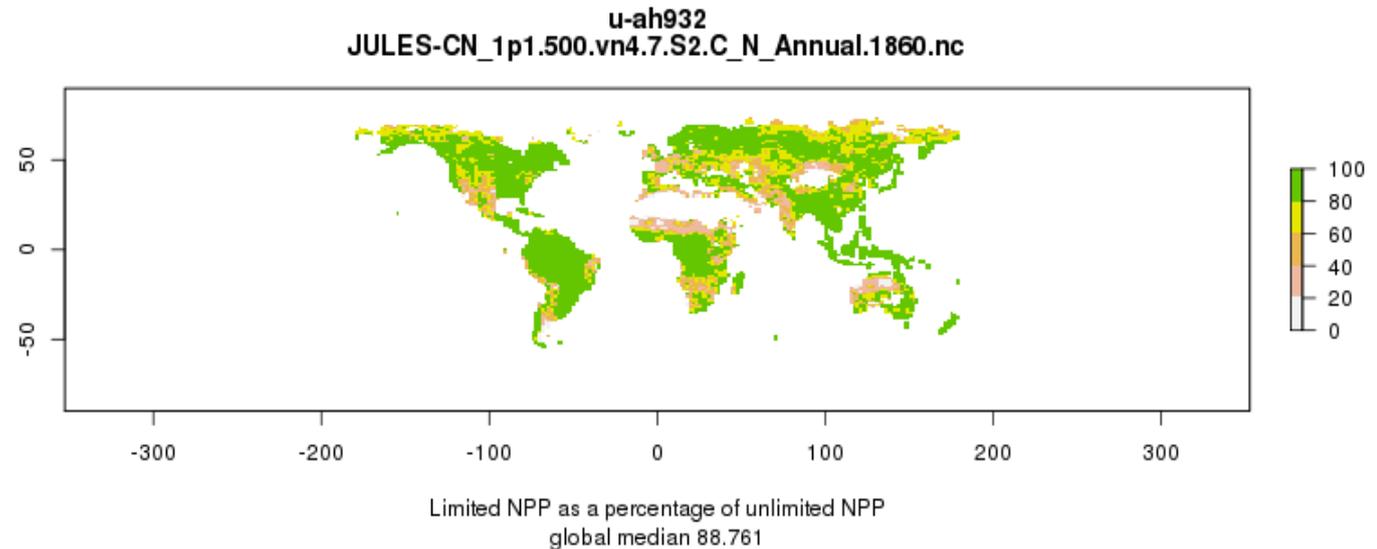
(Note: a model including DOC production and P is required for the LOCATE project – see separate presentation.)



Soil nitrogen

(Andy Wiltshire, Eleanor Burke, Sarah Chadburn, others)

- Non-layered version written by Andy.
- Layered version developed by Eleanor and Sarah.
- In trunk but still being tested.



Work ongoing in BGC

- Work involving soil nitrogen (*T Davies-Barnard, Eleanor Burke, Sarah Chadburn, others...*)
- Adding dissolved organic carbon (*Andre Nakhavali, Pierre Friedlingstein, et al.*)
- Adding ECOSSE code (*Doug Clark*)
- Methane production (*Nic Gedney, CLIFFTOP*).
- People at CEH looking at soil carbon? (*Eleanor Blyth?*)
- People working on BGC at Bristol (*Anita Ganesan, Dawei Han, ?*)