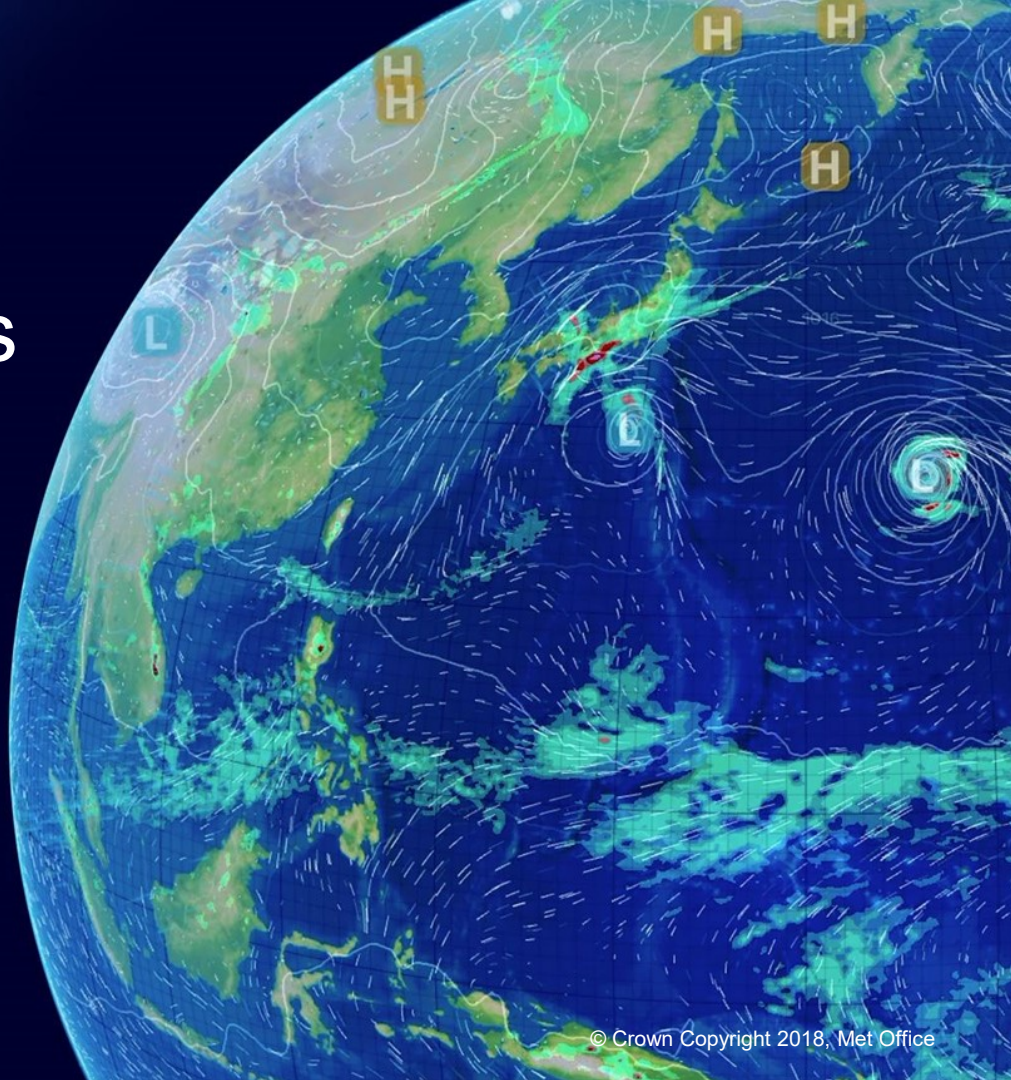
JULES
Joint UK Land Environment Simulator

JPEG (JULES Process Evaluation Group) Session

JULES annual meeting
University of Edinburgh
22-23 July 2019

Dr Deborah Hemming
Scientific Manager, Vegetation-Climate Interactions Group. Met Office
Fellow, Birmingham Institute of Forest Research, Birmingham University



Why JPEGs?

JULES Process Evaluation Groups

'Communities of Practice'

- Bringing together science & IT experts to tackle key JULES issues

Enable JULES community to identify key focus areas

- Discussion sessions during annual JULES meetings

Plan for this session

Talks from the 3 current JPEGs 09:10 - 09:55, 15 mins each

- Anna Harper – Soil Moisture Stress
- Simon Dadson – Inundation in JULES
- Doug Kelley – Tree Mortality

Discussion session 09:55 – 10:30, ~15 mins each

- Propose new JPEGs – need to have a volunteer to lead any new JPEG
- Draft JULES Fair Use and Publication Policy

Talks from the 3 current JPEGs

- Anna Harper – Soil Moisture Stress
- Simon Dadson – Inundation in JULES
- Doug Kelley – Tree Mortality

Discussion session

- Propose new JPEGs – need to have a volunteer to lead any new JPEG
- Draft JULES Fair Use and Publication Policy

JPEG Ideas 2018

Soil
- Soil moisture and effect on vegetation vs bare soil
- Organic soils (this also came up on as a standalone idea)
- JULES having the ability to have different soil properties as inputs to current ones
- Root zone (with links to existing soil moisture JPEG, and possible standalone idea)

Spin up (also a barrier to work)
- Optimising long spin ups
- Have ways to use simpler configs in the spin up for a complex experiment run
- This was easier/possible before the nitrogen model in JULES

Aerodynamics
- Leaf temperatures too warm
- Setting up a framework to evaluate the multi-source flux work

Online/offline
- If people think this is an issue to sort, then the existing JPEG needs support

V_cmax
- How JULES uses this
- Work on GPP calculation, phenology, senescence
- Links to FACE sites for observations to help this

Groundwater
- How can this interact with JULES?
- Links to Hydro-JULES project
- Current soil moisture JPEG links

Observations
- Carbon 13 isotope observations and JULES can use them
- Better understanding of NPP/GPP in observations

Snow/Ice
- Glacier modelling
- Allowing fractional ice tiles
- Veg dynamics in snow
- Related hydrology, glacier melt, snow melt etc…

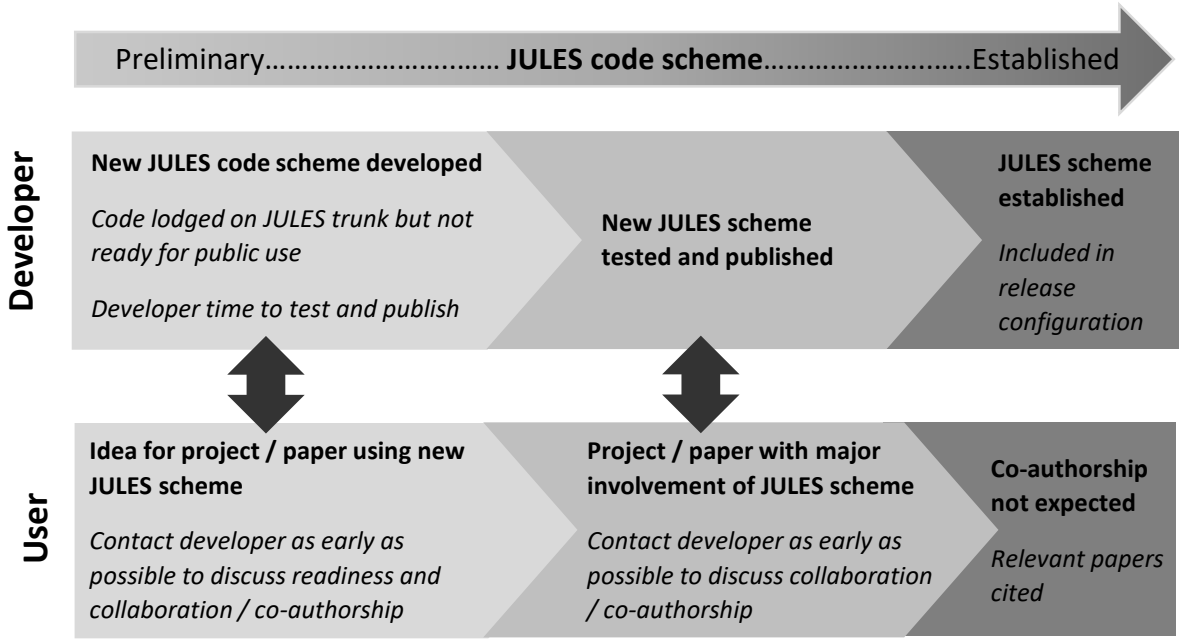
Inundation
- Links to wetland and methane emission work
- Rice crop modelling
- Coast zone – surge, tides, etc changing land to sea points
- River bursting banks making more wet land
- Modelling of Lakes drying out
- Effect on vegetation growth in such areas with wetting/drying land.

Technical Support (also a barrier to work)
- Running JULES on different platforms, ie MO HPC vs JASMIN, local systems
- Using ROSE

Phenology, Leaf temperature, COS

Draft JULES Fair Use and Publication Policy

See paper on desks and sent to JULES mailing list
Worked example of applying the policy to a JULES code development…



Please send any further comments / suggestions for the Policy to Debbie: **debbie.hemming@metoffice.gov.uk**