

Near surface/land-surface

	Idea	Short (< 1 year) Medium (1-2 yr) Long (2-5 yr)	NRI team
1	Automated benchmarking (surface states, fluxes – across domains/cycles) and evaluation across configurations	Short	Land+software
2	Automated harness (documentation, ease of use)	Short	User
3	High resolution / Australian specific surface data sets (land cover, vegetation, soil, urban, topography, river routing, stream flow, remotely sensed/reanalyse) and their management	Short-medium	land
4	JULES-CABLE interoperability	short	land
5	Infrastructure to allow new land science modules (e.g. urban, canopies, land-based chemistry emissions)	Medium-long	Land+software
6	Efficient pre-processing of land inputs to permit on-demand model configuration set up	long	Land+software

Surface

	Idea	Short (< 1 year) Medium (1-2 yr) Long (2-5 yr)	NRI team
1	Interoperability with HydroJULES (hydrology within a coupled system)	long	
2	High resolution / Australian specific surface data sets and their management	Medium/long	DA
3			
4			
5			
6			
7			

Any other notes

Is there a research community (of sufficient scale) to tackle boundary-layer issues over Australia? Is there a way to use the NRI to trigger a mechanism to incentivise research in BLM within the coupled modelling community?

Similarly, around river routing and other hydrological applications? On demand modelling for e.g. high impact weather.

Benchmarking: to include a range of data types – near-surface observations, boundary-layer observations, surface fluxes in physical, biogeochemical cycles, river flows

Assisting with the ease of transition from research to operations/applications needs to be considered as part of the prioritisation.