

Submission

2016 National Research Infrastructure Roadmap

Capability Issues Paper

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Environment and Natural Resource Management

Question 19: Are there any international research infrastructure collaborations or emerging projects that Australia should engage in over the next ten years and beyond?

Question 20: Is there anything else that needs to be included or considered in the 2016 Roadmap for the Environment and Natural Resource Management capability area?

To Whom It May Concern:

My name is Dr. Joshua B. Fisher, and I am the Science Lead of the ECOSTRESS mission led out of NASA's Jet Propulsion Laboratory (JPL) in the USA. ECOSTRESS focuses on understanding plant water use and stress, drought, and land-atmosphere evaporative water fluxes. The mission, to be launched to the International Space Station (ISS) in 2018, will produce data products for land surface temperature and emissivity (LSTE), evapotranspiration (ET), water use efficiency (WUE), and the Evaporative Stress Index (ESI).

Working closely with the international community, including top-caliber scientists and infrastructure in Australia, will be beneficial to the mission as well as to our collective understanding of our changing environment. Australia is home to valuable ground monitoring network of intensive measurement sites called TERN/OzFlux, which provide measurements of the same types of products ECOSTRESS will be producing from space. By partnering with the scientists throughout this network, ECOSTRESS will be able to quickly compare its data products to the ground measurements to ensure high quality space-based data products. In turn, the Australian scientists will gain access to these data to be able to scale up their site level observations to Australia as a whole, and to the rest of the region and globe.

As such, on behalf of the associated scientists from the international community, I strongly support the continued investment and direction from the Australian scientific community in these measurements and networks, particularly over the next decade as the intersection of these measurements and the international space missions intersect to address pressing scientific and societal needs around water, vegetation, and drought.

Sincerely,

Joshua B. Fisher