2021 National Research Infrastructure Roadmap Taskforce
Department of Education, Skills and Employment
GPO Box 9880
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Australian Academy of Science

To whom it may concern,

National Environmental Prediction System (NEPS) Scoping Study discussion paper

The Australian Academy of Science (the Academy) would like to take the opportunity to comment on the National Environmental Prediction System (NEPS) Scoping Study discussion paper recently open for community feedback as part of the 2021 National Research Infrastructure Roadmap Consultations.

Based on the discussion paper provided it is difficult to judge the feasibility and attractiveness of the proposed NEPS. While there is no question that advancing the power and coordination of environmental analytics is a desirable outcome, the Academy has several concerns related to the utility of the proposal.

A national system for environmental analytics will only be successful if it addresses the central issue: a lack of coordination between the many scientific bodies, legislative instruments and government agencies involved. It is the Academy's view that NEPS, as currently described, does not meet this need.

An important function of NEPS will be to inform the environmental decision-making of governments. However, the proposal indicates a research program largely disconnected from the needs and governance of potential users. User needs are critical in defining focus, scale, and robustness of environmental analytics. Users must be involved from the beginning right through to evaluation and adoption. Without such involvement there is a great risk that users will not adopt the analytics in their decision-making.

Ecological modelling is only as good as the data that informs it, and Australia is on a long journey to create better environmental data. The lack of environmental data has been a key finding of every Australian State of the Environment Report since 1996. Such information is not generally available at a national scale or requires a lengthy process of acquisition and authorisation from multiple sources to obtain where it does exist.

A better balance in investment across the environmental information supply chain than presented in the current proposal would be wiser and yield more value to users, such as the model presented in the Academy's 2020 statement proposing a 'Biodiversity BOM'. It is also an open question as to what a robust, tested, reliable and appropriate national environmental prediction system would cost to construct. We doubt that achieving a single system of such complexity would be achievable within any reasonable bounds of NCRIS budget and timeframes.

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Finally, the discussion paper makes no reference to how it will balance the three fundamental dimensions of environmental modelling: accuracy, precision, and realism. Each of these dimensions must be incorporated so that the results are usable by decision makers. It would be more useful to develop a "national system for environmental analytics": a system by which environmental analytics developed at any scale and in any local context could be shared, subject to collective improvement and directed to users.

If you would like to discuss any aspect of this submission, please contact me on helene.marsh@jcu.edu.au.

Yours sincerely

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