

Please note: the substantive content of the 2026 NRI Roadmap Survey begins at Question 20 (with prior questions dealing with administrative and other information).

As such all submissions that are published include the responses submitted from Question 20 onwards only.

Q20.

Part 2: Research themes

2.1 NRI comprises the assets, facilities and associated expertise to support leading-edge research and innovation in Australia and is accessible to publicly and privately funded users across Australia and internationally. We are seeking your input on possible directions for future national-level investment - i.e., where the requirements are of such scale and importance that national-level collaboration and coordination are essential.

The [2021 Roadmap](#) used a challenge framework to support NRI planning and investment. With this in mind, consider likely future research trends in the next 5 - 10 years, and with respect to one or more of the 8 challenge areas identified in the 2021 Roadmap as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or not at sufficient scale and
- describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities.

Q21.

Resources Technology and Critical Minerals Processing

Q22.

Food and Beverage

Q23.
Medical Products

Q24.
Defence

Q25.
Recycling and Clean Energy

Q26.
Space

Q27.
Environment and Climate

(1) Addressing the joint biodiversity and climate crises requires solutions that can be implemented in the changed future conditions of the biosphere. A renewed focus on near-term ecological forecasting would provide the inflection point for shifting from using past data to understand the state and trends in the environment to a forward-looking knowledge base that can inform actions and decision makers. The use of 'near-term' recognises an appropriate window to use an iterative learning process of predict, test, then update model before predicting again. The near-term is also the temporal window to for decision makers to account and for managers to understand the outcomes of their actions. The critical research infrastructure requirements to support ecological forecasting include trusted monitoring data on the state and trends of biodiversity across Australia as provided by Terrestrial Ecosystem Research Network. Further investment is also needed to develop and refine models of how Australian ecosystems work (function), how they are changing (state and trends), and why (the causes of the changes, including interactions among drivers and threats). Such data and models are called for after each extreme environmental impacts such as the 2019-2020 black summer bushfires, or the cyclones and floods of 2025 in Queensland and northern New South Wales. To ensure that this knowledge about ecosystem function is translated to the necessary communities managing landscapes and seascapes we need skilled researchers working collaboratively with end-users of forecasts. (2) While the technological aspects of forecasting can borrow strength from efforts elsewhere, Australia needs to grow the capacity for diverse teams of First Nations peoples and knowledge holders, ecologists, social scientists and data scientists to work together. This needs a dedicated funding investment for collaboration and synthesis that privileges the time and wisdom of First Nations peoples, without expecting them to be available without compensation for their time and contributions. (3) We also need ongoing investment in the development of standards for describing, archiving and accessing data at scale such as provided by the Australian Research Data Commons. A critical need is to ensure that Australia has secure and ENDURING archive of valuable biodiversity data to meet the current and future needs of national and international reporting and compliance. (4) Australia needs ongoing local investment in Artificial Intelligence (AI) models trained to identify species in camera trap images and calls in acoustic recordings. Current efforts rely too heavily on overseas models that misidentify Australian species and are at risk of degradation or becoming unavailable to Australian researchers in the current geopolitical turmoil. (5) There is currently insufficient knowledge about the dryland ecosystems and how they contribute to ecosystem processes at landscape scale.

Q28.

Frontier Technologies and Modern Manufacturing

Q29.

2.2 The 2024 statement of National Science and Research Priorities (NSRPs) includes outcomes linked to each priority to assist in identifying critical research needed in the next 5 to 10 years.

Consider the priority statements and, with respect to one or more of the 5 priority areas as listed below:

- describe emerging research directions and the associated critical research infrastructure requirements that are either not currently available at all, or
- not at sufficient scale and describe current national infrastructure requirements that you anticipate will no longer fit the definition of NRI in 5-10 years.

Do not limit your commentary to NCRIS funded capabilities, and where relevant, refer to the underpinning outcomes and research identified in the NSRPs document.

Q30.

Transitioning to a net zero future

Q31.

Supporting healthy and thriving communities

Q32.

Elevating Aboriginal and Torres Strait Islanders knowledge systems

Australian needs targeted funding for collaboration and synthesis and translation of knowledge systems. Current funding sources are not well suited to support elevating Aboriginal and Torres Strait Islanders knowledge systems. Co-design and right-way science approaches take time to build trusting relationships, and most schemes typically have short funding window (3 years). The online application platforms do not recognise the needs of people in remote communities that are not always connected to the internet or who do not operate via email addresses.

Q33.

Protecting and restoring Australia's environment

Q34.

Building a secure and resilient nation

Q35.

2.3 The case for a new NRI capability, or enhancements to existing capabilities, typically emerges through advocacy from research communities clustering around rigorously identified needs and goals. Such a concept could respond to a requirement for novel or expanded capacity within a domain, or across domains, and must be such that it could only be made available with national-level investment.

If you have identified such a requirement, briefly describe the need, the proposed infrastructure capability, the medium-term goals, impacted research communities, and the timeframe over which you advocate its establishment. Your response can include links to relevant existing reports.

Australia needs investment in research collaboration infrastructure similar to the National Science Foundation in the US which has funded the highly impactful National Center for Ecological Analysis and Synthesis (NCEAS) for many years.

Q36.

Part 3: Industry perspectives

This section is seeking input specifically from industry-based respondents. Other respondents can skip this section.

Recommendation 6 of the [2021 Roadmap](#) related to improvements in industry engagement with NRI. To complement work on this topic that has occurred since then, we are seeking additional advice on NRI requirements as perceived by current or potential industry-based users.

Q37.

3.1 Have you (or your organisation) interreacted with or used Australia's NRI?

☒ Yes

☐ No

Q38.

3.2 If so, please briefly outline the NRI capabilities you (or your organisation) have interacted with or used. Do not limit your response to NCRIS capabilities.

Q39.

3.3 Please indicate your (one or more) primary reasons for interacting with NRI:

☒ For expertise or advice

☒ Access to research resources or products

☐ Access to equipment for research

☐ Access to equipment for operational reasons

☐ Help in translating research

☒ Access to data

☐ Support for clinical trials

☐ Other (please specify)

Q40.

3.4 If you answered no, please indicate your (one or more) primary reasons:

This question was not displayed to the respondent.

Q41.

Part 4: Other comments

4.1 Please elaborate on any of your above responses or add any other comments relevant to the development of the 2026 Roadmap. Your response can include reference or links to existing reports that you recommend be considered during the 2026 Roadmap development process.

Q49.

4.2 Optional Document Attachment.

Note: Our strong preference is that answers are provided against the relevant questions in the survey. However, this file upload option is available for submissions in file format, where needed. Please ensure the document includes your name or organisation.

