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

There is an urgent national need for large-scale investment in taxonomy and biodiversity documentation infrastructure. The Australian government has recently committed to achieving zero extinctions within the next decade. To realise this, substantial investment is essential to address the significant national 'taxonomic impediment,' where currently only about 30% of non-marine species have been scientifically described. The current pace of taxonomy cannot match biodiversity loss, placing many species at risk of extinction before they are even documented—known as 'dark' or 'ghost extinctions.' A coordinated approach is urgently required, incorporating significant investment in taxonomy infrastructure, training, and workforce development, coupled with sustained national funding for digitisation and integrated biological collections data infrastructure. Australia's biodiversity collections, stored in museums and herbaria nationwide, form vital national research infrastructure underpinning biodiversity conservation, taxonomy, biosecurity, and environmental management. Current infrastructure—aging physical storage facilities, fragmented data systems, and insufficient workforce capacity—is inadequate for addressing the rapid environmental changes driven by climate change. Modernisation and expansion of these facilities is required to safeguard and continue growing these irreplaceable collections, ensuring robust data availability to guide effective mitigation and conservation measures protecting Australia’s unique fauna and flora into the future. Dedicated national programs to integrate Aboriginal and Torres Strait Islander knowledge into biodiversity research infrastructure are also urgently required. Such programs will ensure Indigenous knowledge meaningfully informs national biodiversity research, enhances conservation outcomes, and respects continuous connections to community, culture, and Country. Over the next 5–10 years, several existing elements of national research infrastructure will become inadequate without significant reinvestment or modernisation. Museum and herbarium specimen storage infrastructure, currently aging and operating at capacity, will struggle to cope with expanding collections and climate-change-related risks such as increased humidity, temperature fluctuations, and extreme weather events. Additionally, legacy collection management systems and biodiversity databases will require upgrades to ensure interoperability with evolving global standards, enabling effective large-scale biodiversity research and conservation management. Finally, Australia faces a critical shortage in taxonomy expertise due to ongoing retirements, limited training opportunities at universities, and growing demands for biodiversity documentation. Immediate investment in taxonomy training programs, dedicated workforce development, and meaningful partnerships—particularly those that integrate Indigenous knowledge systems—is essential to preserve Australia

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

Q33.

Protecting and restoring Australia's environment

Museum collections directly support Australia's National Science and Research Priorities, particularly in: Protecting and restoring Australia's environment Elevating Aboriginal and Torres Strait Islander knowledge systems Building a secure and resilient nation To effectively protect and restore Australia's environment, large-scale investment in museum infrastructure is critical, especially for biodiversity documentation, digitisation, and specimen genomic resources. Current initiatives, such as Bioplatforms Australia, have begun addressing genomic data needs but remain insufficient to meet the demands of Australia's priority species, and lag significantly behind global initiatives aimed at documenting and conserving endemic biodiversity. Additionally, elevating Aboriginal and Torres Strait Islander knowledge systems requires dedicated infrastructure investment for culturally appropriate digitisation and collaborative management of collections. This will ensure Indigenous communities meaningfully shape biodiversity research and conservation practices, reflecting continuous connections to community, culture, and Country. Furthermore, strengthening museum infrastructure directly contributes to building a secure and resilient nation by providing authoritative biodiversity data critical for rapid responses to biosecurity threats and environmental crises. This investment will improve Australia's capacity to proactively protect its unique biodiversity and foster resilience in the face of environmental change.

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.

We recommend the establishment of a dedicated National Collections Infrastructure Program. This initiative would strategically target Australia's critical infrastructure gaps in taxonomy, biodiversity documentation, and conservation. Key elements would include upgrading physical collection storage facilities to safeguard specimens from climate-related risks; expanding genomic, genetic, and molecular research capabilities within museums; and significantly investing in workforce capacity by creating new positions and training programs, including dedicated roles for Indigenous knowledge holders. Medium-term goals would involve comprehensive digitisation of priority collections (type specimens, threatened species, culturally significant objects), substantial growth in the trained taxonomic workforce, and expanded molecular research capabilities. Establishment of this new capability within the next 2–3 years, achieving full operation by 2030, is essential to support Australia's commitment to zero extinctions, address the urgent taxonomic impediment, and enhance national resilience in biodiversity conservation and environmental management.

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
- [x] 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.