Atlas of Living Australia Annual Work Plan

2025-2026

Citing this publication

Further information

Executive summary

The Atlas of Living Australia (ALA) annual work plan details the projects and activities planned in a financial year to deliver on the strategic priorities articulated in the ALA Strategy 2025–2030 (https://www.ala.org.au/publications/). The work plan aligns with the annual National Collaborative Research Infrastructure Strategy (NCRIS) planning process. It has been released publicly to provide our stakeholders with greater visibility of ALA priorities and to provide opportunities for collaboration. As this year is a transition year between the existing 2020-25 strategy and the 2025-30 strategy, this workplan is less ambitious than earlier work plans. It also details several multi-year priorities that remain active in this coming year.

First and foremost is the continuation of the ALA UX/UI project, which will prioritise the production release of our new species and global search web capabilities. Related to this, an external review of ALA's spatial services commenced late last year, and this will deliver recommendations that will inform the next phase of the UX/UI project, but with a focus on our mapping tools. In terms of robust platforms and applications, the team will continue the build of the Australian Reference Genome Atlas and further progress the development of our next-generation biodiversity data platform.

Our 2025-30 strategy has affirmed ALA's commitment to improving our partnerships with Indigenous Australians and to ensuring we better bridge the gap between Indigenous biodiversity knowledge and Western science. Partnering with CSIRO's Indigenous Science and Engagement Program, we will lead three new projects with Indigenous language groups and ranger programs.

As a national biodiversity data infrastructure, improving the quality of data provided to users remains a priority, realised through the formation of a data quality working group and enhancements to ALA's taxonomic backbone, which will see a major release in 2025-26.

Introduction

The Atlas of Living Australia (ALA) is a National Collaborative Research Infrastructure Strategy (NCRIS) research infrastructure, hosted by Australia's national science agency, CSIRO, providing users with trusted biodiversity data services. The ALA annually delivers biodiversity data to over 140,000 users from:

- Biodiversity sciences, including ecology and evolutionary biology, taxonomy, and biodiversity research, particularly those in academia and public research agencies.
- Biological collections, including those hosted by State Government, museums, CSIRO and universities.
- Commonwealth and State/Territory governments, particularly in environmental protection, agriculture, and land management.
- Environmental consultants conducting environmental assessments, and other industry users.
- Non-government organisations that manage or are interested in biodiversity, including citizen scientists, Indigenous organisations and community groups.

As the Australian node of the Global Biodiversity Information Facility (GBIF), the ALA ensures Australian biodiversity data are available to support the international science community, providing reciprocal data benefits to Australian users. Beyond its core data function, the ALA also designs, builds and manages cutting-edge biodiversity products and services for its partners. These products and services utilise global biodiversity data standards and ALA expertise to enhance biodiversity data acquisition, management, and delivery.

ALA Strategy 2025–2030

As Australia's national biodiversity data infrastructure, our vision is to deliver trusted biodiversity data to support world-class science and decision-making. The ALA Strategy 2025-30 (https://www.ala.org.au/publications/) responds to a suite of new drivers, including the growth in novel biodiversity monitoring technologies, opportunities around the management of sensitive data, increased cybersecurity risk, and improving how we incorporate the richness of Indigenous biodiversity knowledge into the ALA. The strategy was released in August 2025 and is framed around four strategic priorities:

- Reliable data services
- Robust platforms and applications
- Strong partnerships
- Informed decision-making

Australia's biodiversity data landscape has undergone noticeable changes since the inception of the ALA. This includes a growth in innovative biodiversity monitoring techniques, which drive increased data volumes, including genomic-based surveys; high-resolution imaging from biological collections; and automated monitoring, such as acoustic and camera trap recordings. In parallel, we've seen an increase in biodiversity data generated by Indigenous rangers, such as those targeting improved monitoring across Indigenous Protected Areas, which could lead to new partnership opportunities. Such changes will increase the variety, volume, and velocity of data coming to the ALA, while providing a chance to understand the state of and trends in Australian biodiversity. This workplan details the annual project and activity priorities that the Strategy guides. It is published at the beginning of each financial year to provide our partners with visibility on our priorities and to help identify partnership opportunities.

About the ALA Annual Work Plan

The ALA annual work plan describes the new projects, activities, and major investments planned for each financial year to deliver on the priorities articulated in the ALA strategy. It indicates resources committed (Table 1) and, where appropriate, identifies the ALA lead who can act as a point of contact for external stakeholders.

Table 1. Indicative size of activities in the ALA work plan

Full time equivalent staff needed to scope, undertake, and deliver activity	Size
< 1FTE	Small
1–2 FTE	Medium
>2 FTE	Large

The primary objective of the work plan is to provide the ALA Advisory Board, the NCRIS program, and our partners with greater insight into the activities of the ALA and explore potential partnership opportunities. The ALA Advisory Board reviews the work plan in preparation for public release and/or consultation before the start of each financial year in July. This is the first work plan under the ALA's Strategy 2025–2030 for the first year of implementation. Figure 1 shows the relationship between the work plan, the ALA strategy and key timelines leading to public release before the start of each financial year.

Figure 1.0. Relationship between the ALA strategy, NCRIS business planning and the ALA's annual work plan

Operations (business-as-usual) framework

This work plan focuses on the new projects and activities planned for 2025-2026. In parallel, the ALA continues to provide extensive operational support for our systems and users, focusing on its five functions: data, applications, systems, engagement, and science & decision support. These functions are described further in Table 2.

Table 2. Overview of ALA teams and their functions

Team	Overview
Data	The Data Team manages data ingestion into the ALA, including occurrences, events, images, metadata, and species checklists. Data from museums and collections, industry, citizen science and government are standardised and harmonised, and enhanced with authoritative taxonomic and spatial information. The team provides technical support and expertise to ALA data providers to standardise incoming data using Darwin Core to facilitate data delivery, harvest and automation. The team builds and maintains ALA's taxonomic backbone and sensitive data service and keeps national and state-based conservation and sensitive lists up to date. The team is working towards the following: • Broadening the types of data that can be ingested by working with data providers, users, and the local and international informatics communities. This refers to event-based survey data, eDNA, biologging and other biodiversity monitoring techniques. • Refactoring the taxonomic backbone to accurately reflect the source authorities and improve delivery timeframes for updates. • Rewarding data providers for sharing data with the ALA by helping them to manage their data loads, assess data quality and track data usage and impact.

Team   Overview

Applications	The Applications Team leads the design, development, and ongoing support of the Atlas of Living Australia's (ALA) suite of customisable, user-facing applications. These products include BioCollect, MERIT, DigiVol, Profiles, Australia's Virtual Seed Banks (AVSB), and the Australian Reference Genome Atlas (ARGA). With a strong emphasis on collaboration and strategic alignment, the team works closely with external partners and end users to ensure these applications deliver maximum value. By tailoring solutions to meet specific needs, the team helps users achieve their goals while supporting the ALA's broader mission and priorities. As a hub for product delivery and stakeholder engagement, the team plays a pivotal role in managing high-impact relationships and projects. Notable initiatives include: • The creation and ongoing delivery of the MERIT platform for the Commonwealth Government's Department of Climate Change, Energy, the Environment and Water (DCCEEW). • Deployment of BioCollect hubs for the WA Government (IBSA and IMSA), Brisbane City Council, and the NSW ecological restoration community via the NSW Department of Environment and Planning. • Partnering with Bioplatforms Australia and Australian BioCommons to deliver the Australian Reference Genome Atlas (ARGA). Through these efforts, the team ensures that ALA's digital products remain contemporary, responsive and aligned with national environmental and biodiversity priorities.
Systems	The Systems Team is responsible for system operational robustness, security, and system modernisation. They manage and report on the IT risk profile of the ALA, ensuring that operational parameters, security, budget, and technical debt are effectively monitored and addressed. Leveraging internal and external specialist expertise, the team actively contributes innovative techniques and processes that have a significant impact on ALA operations, encompassing system modernisation, cloud architecture, and work prioritisation methods. The team manages key strategic IT provider relationships including with CSIRO's IM&T, Amazon Web Services, and the Australian Research Data Commons (ARDC) Cloud Compute. Additionally, the team manages more than 15 core biodiversity products and systems, and supports new IT projects, directing the implementation of procedures and techniques.

Engagement	The Engagement Team is responsible for managing priority ALA sector engagement activities, including projects that have a significant external stakeholder component. The team leads partnerships with the biological collection community (museums, herbaria and libraries) and international biodiversity data infrastructures and initiatives, such as the Biodiversity Heritage Library and Biodiversity Information Standards (TDWG). They also support a range of national activities focused on citizen science, biosecurity, and restricted access to species data under the program banner of National Biodiversity Data Initiatives. Internally, the team supports continuous improvement to ALA core functions including the taxonomic backbone, taxonomic name matching and user interface/ user experience. The team also works respectfully and collaboratively with Indigenous communities to deliver the ALA's Indigenous Ecological Knowledge program. Finally, the team has responsibility for managing the ALA's project management framework.
Science & Decision Support	The Science and Decision Support Team provides analysis products and services for internal and external stakeholders. The team focuses on the following priorities: • Improving open, reproducible scientific workflows through improved support for ALA data and services in programming languages such as R and Python. • Providing visualisations, dashboards, models, and reports to deliver insights into the data collections held by the ALA and to highlight their potential ecological applications or interpretations. • Driving stronger linkages between the ALA and the research community through outreach, training, and workshops.

2025–2026 work plan at-a-glance

1 & 2. Reliable Data Services and Robust Platforms & Applications

The ALA continues to address users' needs for managing sensitive data with appropriate access and governance controls. Work will continue in 2025-26 through our leadership of an international task group to create a global standard for the documentation of sensitive species. Our team will continue with its work to rearchitect our Taxonomic Backbone through Stage 2, which will refine higher taxonomic levels and taxonomic groups not dealt with in last year's workplan.

Additional priorities under this pillar include:

- The ALA has completed an initial release of the 'galaxias' suite of R and Python resources to allow researchers to more readily package their biodiversity data into a format suitable for the ALA. The next phase will focus on collaborating with research partners to refine the software and apply it through case studies.

- The ALA has committed to improve data quality. Recognising the challenges of doing this in a federated system, ithas formed an internal data quality working group. This will support the development of improved internal workflows and documentation.

- With the growth in biodiversity data and associated information, including high-resolution imagery and the need to expand ALA capability, our current architecture and systems cannot support this scale. Initial work will commence to develop a next-generation biodiversity data platform to future-proof the ALA.

- The build of the Australian Reference Genome Atlas, in partnership with Bioplatforms Australia, Australian BioCommons and the ARDC, enters its next phase, with a focus on feature enhancements and integration.
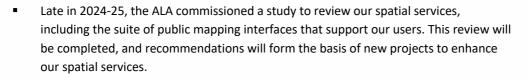
3. Strong Partnerships

ALA's partnerships program will:

- Extend ALA's Indigenous Partnership Program through new Indigenous Ecological Knowledge projects and partner with Indigenous Ranger Groups.

- Formalise our partnership with the International Living Atlases community, continue to partner with GBIF around the development of the GBIF pipelines system, and better integrate collections metadata between the Global Registry of Scientific Collections (GRSciColl) and the ALA collections and datasets (Collectory).

4. Informed decision-making

We will continue to deliver projects to support informed decision-making in response to Australia's growing biodiversity data needs.

- Late in 2024-25, the ALA commissioned a study to review our spatial services, including the suite of public mapping interfaces that support our users. This review will be completed, and recommendations will form the basis of new projects to enhance our spatial services.

- The multi-year UX/UI project will continue into 2025-26 with the planned production release of the new ALA species pages and global search, in addition to implementing our prioritisation frameworks for other enhancements.

Strategic priority 1: Reliable data services

For over a decade, reliable national biodiversity data, available under an open licence, delivered by the ALA, have proven fundamental in supporting applied and foundational science, biodiversity policy, and major conservation programs. Australia's biodiversity data landscape has also evolved; for example, with the growth in citizen science-based biodiversity monitoring, the development of novel biodiversity monitoring technologies, an emerging expectation that biodiversity data are available across remote parts of Australia, and a recognition of the need to realise improvements for under-represented species in the ALA.

Title	Description	Lead	Size	Strategic action
Restricted Access Species Data (RASD) Framework	A task group, called the Sensitive Species Extension task group, has been established using the Biodiversity Information Standards (TDWG) processes and as part of the Darwin Core Maintenance Group. This task group aims to create a standard for documentation of sensitive species and has a goal to deliver a specification by December 2025.	Slatyer, Laity	Large	1.2 2.3 3.4
Taxonomic Backbone Re-architecture	Stage 1 of the taxonomy project reconciled vascular flora and fauna taxonomy, removing and correcting over 40,000 scientific names. Stage 2 continues to progress and aims to refine the higher taxonomic levels (e.g. kingdom, phylum) and taxonomy of other taxonomic groups not already dealt with in stage 1. The taxonomy project continues to work closely with the Australian Biological Resources, Catalogue of Life, and the Australian Biological Resources Study to develop names-matching improvements. Stage 2 improvements will be made to processes aroundthe ongoing build of the taxonomic backbone to improve the ability of the ALA to regularly update taxonomy.	Slatyer, Sherrin	Large	1.3 3.1 3.4

Streamlining Data Provision	The Science Decision and Support Team has completed an initial release of the 'galaxias' suite of R and Python packages; a collection of tools to help researchers to prepare Darwin Core Archives for publication via the ALA or similar infrastructures. In stage 2 of this process we will collaborate with early adopters to improve the software's reliability, coverage and ease-of-use, and promote the ALA as the infrastructure of choice for sharing Australian biodiversity information.	Newman, Westgate	Small	1.1 1.5
Data Quality	Following the formation of our Data Quality Working Group, the ALA will review and prioritise data quality problems that impact users. Staff from several teams will collaborate to document and prioritise long-standing data quality issues, and to identify the gaps in systems or knowledge required to address those problems. We will also systematically work to improve our internal workflows and documentation to enable more effective processing and use of biodiversity data.	Newman, Buyan	Medium	1.2
Innovative Biodiversity Data Streams	The ALA is planning to engage with and mobilise biodiversity data generated by four different communities of practice covering: camera trap data, acoustic monitoring, eDNA and biologging. Camera trap data is being aggregated and standardised via the recently established Wildlife Observatory of Australia (WildObs) project supported by Australia's ecosystem monitoring network, TERN; the Queensland Cyber Infrastructure Foundation, QCIF; and the ARDC. The project is leveraging the ALA's functionality to publicly share verified images and metadata generated by large-scale surveys to support AI/ML methods and biodiversity research. Subsequently the ALA provides the underlying infrastructure for the WildObs Tagged Image Repository. In the past year we've established a process with WildObs for transforming Camera Trap Data Package (Camtrap DP) data into event-	Newman	Large	1.1 1.5

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based Darwin Core and harvesting online images.In the next year we expect more datasets to be made available, and artefacts developed to deliver tagged images into AI/ML models.

In a similar fashion partners at the Australian Acoustic Observatory (A2O) have been collecting acoustic data across Australian biomes for many years. This is publicly available, and they are working with us to set up a workflow for capturing verified occurrences in their system and publishing to the ALA. This will begin this year and will also support affiliated acoustic projects to publish data to the ALA and GBIF.

Species detection using eDNA methodologies is also growing exponentially, both internationally and nationally. GBIF have begun an extended program of work to mobilise such data.The ALA will work with CSIRO teams who have been involved with these efforts to establish minimum standards and manage user expectations around the publication of this data via our networks. The ALA has a coordination role in the establishment of the GBIF Oceania Metabarcoding Toolkit and will encourage adoption of the tool to publish data in the Pacific region.

The ALA recently decommissioned the ZoaTrack platform, used for publishing biologging data, and is working on a program of data rescue. This will republish data from hundreds of animal tracking studies in the ALA and GBIF that had previously been published on ZoaTrack.

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Strategic priority 2: Robust Platforms and Applications

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Thousands of users across research, government, industry, and community sectors use either data within the ALA and/or ALA services to contribute, mobilise, access, and analyse biological information. Beyond just data provision to the central ALA database, ALA infrastructure also supports our stakeholders to mobilise and manage their data. The ALA's evolution into one of the world's foremost biodiversity infrastructures, supporting a growth of 10 million biodiversity occurrence records annually, requires regular review and system redesign to deliver robust data services into the future. This includes both the 'soft' enablers, such as how we interact with users and respond to user requests, and technical system upgrades to support the increasing volume, variety and velocity of data expected from new biodiversity data streams. New data streams challenging the ALA infrastructure will come from camera traps, eDNA, eco acoustics, and increasingly higher-resolution images.

Title	Description	Lead	Size	Strategic action
Next Generation Biodiversity Data Platform	Building on the momentum of the Cloud-Uplift Program, the 2025–26 work plan initiates ALA's journey toward its **Next Generation Platform**: a secure, scalable, and intelligent digital ecosystem built for the AI/ML era and the challenges of rapidly expanding biodiversity data. Designed to accommodate growing data volumes, new data types, and increasing data velocity, this year's focus is on laying the foundations that will progressively transform the ALA's infrastructure, consolidate services, and develop the capabilities needed to fully leverage AI/ML for biodiversity data delivery and insights. **Key initiatives include:** **1. AI/ML Capability Building:** Developing team skills to design and implement custom AI/ML models for biodiversity data and enabling these models to run at scale on modern cloud-native platforms. This includes creating well-structured API's and data, enhanced training environments, and experimentation pipelines that support both	Sathya Moorthy	Large	2.1

innovation and production-grade model deployment. *[2.5]*

2. Cloud-Native Container Orchestration: Architecting the core workloads to run on a Kubernetes-based orchestration environment with automated scaling and self-healing, supported by Infrastructure as Code to ensure consistency, repeatability, and efficiency. *[2.1]*

3. Service Consolidation: Streamlining fragmented services and infrastructure to improve maintainability, reduce duplication, and optimise resource usage. *[2.2]*

4. Serverless Portals: Transitioning front-end portals to serverless frameworks with a user-friendly UI, to accelerate development cycles, enhance scalability, and reduce operational overhead *[2.1]*

5. Re-engineering Legacy Applications: Rewriting and modernising legacy biodiversity applications to align with contemporary standards and support future integration with AI/ML workflows. *[2.1]*

6. Next-Gen Search: Establishing a consolidated and modernised search infrastructure, optimised for scalability, performance, and reliability through Kubernetes-based infrastructure. *[2.1]*

7. Zero Trust Security: Embedding a Zero Trust framework across the platform to safeguard biodiversity data assets, enforce identity-based access, and strengthen the ALA's overall cyber resilience. *[2.4]*

Through these initiatives, the ALA embarks on a **multi-year** path toward a secure and scalable digital ecosystem, one capable of harnessing AI/ML and supporting the next wave of biodiversity data services in a rapidly evolving data landscape.

Australian Reference	The Australian Reference Genome Atlas (ARGA) is a central platform for discovering	Hall	Large	1.1

Genome Atlas (ARGA)	genomic data from Australian species. Genomic data are vital for informing Australia's environmental and biodiversity management strategies, including threatened species conservation, biosecurity, and pest incursion responses.	3.2 3.5 4.1 4.2

Currently, much of this data is stored across various international online repositories, making it increasingly difficult to locate and access. Researchers face growing challenges due to complex data deposition processes, concerns around data sovereignty, and shifting geopolitical landscapes—all of which are disrupting established global genomic data practices.

In partnership with Australian BioCommons and Bioplatforms Australia, and with support from the Australian Research Data Commons (ARDC), the ALA is enhancing ARGA's genomic capabilities and integrating them into its operational IT environment. This includes the delivery of data indexing services, recently realised through the launch of the Genome Tracker. The ALA continues to develop streamlined access points for packaged genomic data, enabling easier use through analytical and search tools, and providing a user-friendly interface to navigate the complexities of genomic data.

Strategic priority 3: Strong Partnerships

Partnerships are fundamental to our work as a National Collaborative Research Infrastructure Strategy (NCRIS) capability. The ALA will adopt a sectoral approach to engaging with new partners, complementing our core function of supporting Australia's science and innovation system. Priority sectors include government, industry (particularly environmental assessment), biological collections, ecosystem sciences, citizen science and biosecurity. We will support them with biodiversity data, data standards and platform development, training and capacity building, and, where possible, by establishing data partnerships to allow them to contribute biodiversity data.

Title	Description	Lead	Size	Strategic action
Indigenous Partnerships Program	As a national biodiversity data infrastructure, the ALA recognises the importance of Indigenous knowledge and science as a complement to Western science. The ALA continues to strengthen its commitment to Indigenous knowledge through the Indigenous Partnerships Program (IPP). In the next year, we will continue to work on projects around language and species descriptive information in the Indigenous Ecological Knowledge (IEK) project. We will collaborate with communities to successfully deliver three CSIRO Indigenous Research Grant projects. Successful projects are with Yawuru (Kimberley area, WA), Ngunnawal (Canberra) and Martu Ngurra (Pilbara, WA).	Seers, Wallis, Raisbeck-Brown, Slatyer, Zerger	Medium	1.4 3.5 4.4
Environmental Biosecurity Program	In recent years the ALA has established new strategic collaborations across the biosecurity sector. This includes identifying critical data and infrastructure opportunities, and actively working to share and integrate our knowledge, technology, and data with stakeholders across the sector. To support national biosecurity efforts, the ALA delivers its flagship Biosecurity Alerts Service, which connects invasive species data with	Turley	Medium	1.3 2.3 3.1 3.3 3.5 4.3

	biosecurity managers across Australia. Over the coming year, we will continue to enhance this service while deepening our collaboration with the sector to ensure data in the ALA is more seamlessly integrated into biosecurity operations nationwide.			
International Engagement	The ALA will continue its commitment to support the Living Atlases (LA) community. The ALA will schedule quarterly written communications tailored to the LA community with relevant updates on major activities and software releases. The ALA will have representation in the newly re-established LA community management committee.	Newman Molina Wallis	Medium	3.4
	The ALA will also work with the LA community to transfer ownership of the codebases for products that we no longer support but are still used by the community.			
	To be fully prepared for the implementation of the Darwin Core Data Package, led by GBIF, the ALA will continue working with the LA community and GBIF in the development of the GBIF pipelines system for data ingestion. The ALA will also continue reviewing and testing the Data Core Data Package proposal, as well developing extensions such as the Restricted Access Species Data package.			
	The ALA will integrate collections metadata between GRSciColl and ALA Collectory to remove inconsistencies and seek to adopt the former to host Australian collections and institutions metadata in order to have an up-to-date application, reduce maintenance and have a single source of truth for users.			
	As the Regional Representative for Oceania, the ALA Node Manager will continue to participate in the GBIF Nodes Steering Group, attending the biannual Global Nodes Training and Meeting, and Governing Board meetings. Preparations are underway for a 2026 Oceania Regional			

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meeting. Nodes Training will focus on the new Darwin Core Data Package and the eDNA Metabarcoding Toolkit. GBIF is focused on establishing an international position as a major data partner for reporting to the Convention for Biological Diversity on targets and is supporting all nodes to connect with initiatives at a national level.

Strategic priority 4: Informed decision-making

Alongside our people, the ALA's strength is the breadth of its biodiversity products and services, available not only online but also, and increasingly, programmatically through application programming interfaces (APIs). Data provided to the ALA are rich and complex as they integrate species occurrence data, species descriptions, high-resolution imagery, spatial data, and genomic data. Navigating this richness can be challenging for users, and the ALA commits to improving the user experience and software interfaces across ALA products and services to deliver a more seamless user experience. We will adopt a user-centred, data-driven approach to deliver improvements. The ALA will deliver analytics-ready data streams and supporting tools by partnering with biodiversity analysis and modelling communities to ensure data are fit for purpose. We will enhance our popular Galah suite of technologies and grow our ALA Labs capability to support future research and decision-making needs.

Title	Description	Lead	Size	Strategic action
User experience/ User interface (UX/UI) Upgrade	Through 2023-25, the ALA worked on the establishment of a UX practice to improve user interface, usability and quality of information presented in our applications. The practice provides a governance framework and a set of operational guides. This work has seen the development of new designs for an improved set of species pages, home page and ALA search pages. Work to incorporate the new designs into the public facing websites of the ALA will be undertaken in 2025-26. The UX practice will action the operational guides to measure the impact of any new designs released. The UX practice has also developed a prioritisation framework that will be used to plan the next set of applications or services that need to be redesigned	Molina	Large	4.1

| **Support national scale environmental reporting** | The ALA has a critical role to play in articulating the extent of knowledge on Australia's biodiversity, and providing that information as clearly and openly as possible for use by researchers, industry, and government. The ALA will continue to expand our methods for summarising and explaining our data holdings and develop new tools to increase their utility for a range of audiences. | Balasubramaniam, Westgate | Small | 4.2 4.3 |
| **Spatial services review** | The ALA has commissioned an external review into our spatial systems, focussing on how they store, retrieve and present information to users. Once the conclusions of that review are delivered, we will seek to improve our systems in line with any recommendations. | Westgate | Small | 4.1 4.3 |