



Australian Government

Geoscience Australia

Geoscience Australia

Strategy 2028

Earth sciences for Australia's future

Geoscience Australia acknowledges the traditional owners and custodians of Country throughout Australia and acknowledges their continuing connection to land, waters and community. We pay our respects to the people, the cultures and the elders past and present.



Our vision is to be a world-leading organisation informing evidence-based decisions through integrated Earth sciences to secure Australia's future.



Geoscience, the study of our Earth and its systems, touches the life of every Australian.

As the nation's trusted source of information on Australia's Earth sciences, Geoscience Australia empowers decision making by government, communities and industry. The breadth of our work covers the uniqueness of our island continent, our extensive marine jurisdictions and includes our frozen territories in the Antarctic.

We are inclusive, innovative, respectful and collaborative in leading Earth sciences for government, communities and industry. This contributes to a strong economy, a resilient society and a sustainable environment.

For over 110 years Australia's prosperity and safety has been shaped by our knowledge of this dynamic landscape. Commonwealth geoscience has played an important role since the formation of the Australian Survey Office in 1910. For example, the nation's first national topographic mapping program was driven by the need to defend Australia's people and develop our regional areas. In later years, systematic mapping of the nation's geology to understand our resource endowment and drive new discoveries has underpinned our successful economy.

We continue to deliver data of enduring value, and advice that helps government, communities and industry to address challenges and enhance opportunities facing Australia now and into the future. In doing so, we make the commitment to respectfully engage and collaborate with First Nations Australians, acknowledging that they are Australia's original mappers, miners and navigators.

Our work aligns with the National Science and Research Priorities and supports global and domestic

government initiatives. It impacts key areas of society in:

- maximising the value to society from our abundant mineral and energy resources
- strengthening our resilience to natural hazards
- optimising and sustaining our water use
- supporting the sustainable use of our marine environment and jurisdiction
- enabling location-based decisions and actions through best practice digital mapping, Earth observations and precise positioning, and
- curating and presenting our vast data holdings to equip government, communities and industry with geoscience data and information for informed decisions.

We cannot achieve these without an internal commitment to be the best organisation we can be. We will do this by fostering a positive organisational culture, being an employer and partner of choice, continuing to deliver high

quality science, and coming up with smarter, faster ways to access and use our data.

A key part of our strategy involves continuing to develop a diverse and inclusive workplace, including through gender equity; we cannot be groundbreaking and successful if we do not draw from the full pool of human talent. Through investing in and celebrating our people, we support the entire organisation to deliver information and knowledge that will help drive Australia's success.

Our ten-year targets are clear, measurable objectives. In the years out to 2028 we will provide Australia with a new and exciting digital mapping platform, improved positioning and navigation services, analysis-ready Earth observation data for natural resource management, new satellite capabilities, and we will identify new major mineral, energy and groundwater resources. This will contribute to a safer, more prosperous and well-informed Australia.

Dr James Johnson
Chief Executive Officer



Our impacts

We deliver information, advice and services that shape a strong economy, resilient society and sustainable environment.

Our impacts

**Building Australia's
resources wealth**



**Supporting
Australia's
community safety**



**Securing Australia's
water resources**



**Managing Australia's
marine jurisdictions**



**Creating a location-
enabled Australia**



**Enabling an
informed Australia**



**Ensuring a high
performing
organisation**





**Building
Australia's
resources
wealth** to
maximise benefits
from our mineral
and energy
resources, now
and into the
future.

Australia's mineral and energy resources are a major contributor to the nation's wealth, economically and socially; annual export earnings were \$320b¹ in 2020–21. Understanding Australia's available resources is a prerequisite for formulating sound policies on resources and land access.

Australia has a significant advantage in the production of resource commodities over other nations. This advantage stems from the rich and diverse mineral and energy endowment, the high quality regional-scale geoscience information that lowers the risks of exploration, advanced exploration, mining and processing technologies, a skilled workforce, generally favourable physical environments, relatively stable economic conditions, an enabling and robust legislative framework and low sovereign risk.

Geoscience Australia enables the transformation and responsible transition of our resources sector helping shape Australia's future low emissions economy.



- 1** We will map and understand Australia's energy resources, reversing Australia's increasing dependence on oil imports and increasing domestic gas supplies.
- 2** We will stimulate mineral exploration investment, including critical minerals, opening up new producing provinces with over \$100b² worth of mineral endowment.
- 3** We will advance clean energy technologies that underpin Australia's greenhouse gas emission targets.
- 4** We will develop new geoscience approaches and techniques to inform decision making by government, communities and industry.



**Supporting
Australia's
community
safety** to
strengthen our
resilience to
natural hazards.

The impacts of natural disasters on Australia's economy, environment and society are significant and include loss of life, loss of property and infrastructure, disruption to business and disruption to our livelihoods. Our cities and regional centres, and their supporting infrastructure, are expanding as populations grow. This increases our exposure and vulnerability to hazards. The forecast cost of disasters is expected to increase with our growing population and valuable assets, expanding into areas vulnerable to hazards and a changing climate.

To be better prepared, and to make informed decisions to reduce disaster risk, Australia depends on the availability of hazard, exposure, vulnerability and impact information.

Geoscience Australia provides disaster risk information to help Australians understand the consequences of hazard events, which contributes to more resilient communities now and in the future.



- 1** We will deliver authoritative, current and timely national data and advice on our built environment, hazard extents and the exposure of our communities and assets during natural hazard events to support response and recovery.
- 2** We will advance our understanding of Australia's natural hazards and the vulnerability of our built environment to mitigate the impact and cost of disasters.
- 3** We will forecast the possible impact of natural hazards enabling communities to better prepare and build resilience.
- 4** We will provide real-time monitoring, analysis and advice on significant earthquakes, including those causing tsunamis, to help safeguard Australian and Indian Ocean communities.



**Securing
Australia's water
resources** to
optimise and
sustain their use.

Australia is the driest inhabited continent, which makes water use and management a key challenge. In many parts of Australia, groundwater underpins agriculture, the environment, minerals and energy resource development, and the wellbeing of regional communities.

We need to better understand surface and groundwater systems in order to properly manage our water resources. Understanding the connection between groundwater and surface water systems, and reducing the impact of development on groundwater supply and quality are critical to our water security and regional development.

Geoscience Australia supports the fair sharing of Australia's water resources for a strong economy, resilient society and sustainable environment. We will demonstrate national leadership in the application of geoscience to understand groundwater systems to support responsible water management.



- 1** We will collaborate to develop and deliver data, knowledge and advice on surface water and groundwater to inform decision making by government, communities and industry.
- 2** We will develop new technologies and geoscience that identify surface water and new groundwater resources.
- 3** We will deliver a complete map of groundwater systems in Australia's geological provinces to understand the nation's resource potential.
- 4** We will deliver detailed regional groundwater assessments in half of Australia's geological provinces to enable responsible water management practice.



**Managing
Australia's
marine
jurisdictions**
and supporting
sustainable use
of our marine
environment.

Australia's marine jurisdiction is approximately double the size of Australia's land mass and 4 per cent of the world's oceans. With increasing global demand for energy, food and security, activity within our marine jurisdiction is becoming increasingly important to our economy. Effective and efficient management of this precious environment relies on baseline mapping, understanding of marine resources and assets, and the ability to measure change over time.



- 1** We will lead collaboration across government, industry and academia to map and characterise Australia's seabed, enabling the sustainable management of our marine environment and growth of Australia's \$100b³ Blue Economy.
- 2** We will deliver coastal landform data that informs management of the coastal zone, including building resilience to the impacts of a changing climate.
- 3** We will use geoscientific data to define Australia's maritime boundaries to underpin the legal and regulatory framework for our marine jurisdiction.



**Creating a
location-enabled
Australia**
to increase
economic,
environmental
and social
prosperity of
Australia.

Australia has a vast and rich landscape. Geographic data provides the nation with a changing view of the country's landscape through time.

Geoscience data and information are a significant national resource with significant enduring value for the Australian community. Knowing when and where events and activities occur is essential for government, communities, industry and researchers to make decisions and improve economic, environmental and social outcomes for Australia.

Geoscience Australia provides national leadership that strengthens location-based decision making through the integration of digital mapping, Earth observations and precise positioning science, data and capabilities.



- 1** We will deliver positioning accuracy of 10 cm across Australia, and enable 3–5 cm accuracy in areas with mobile phone coverage, adding at least \$6.2b⁴ to the Australian economy over the next 30 years.
- 2** We will deliver a satellite data platform that supports best-practice Government decisions, helps Australian businesses to use Earth observations data and underpins the contribution of over \$5b⁵ annually to the Australian economy.
- 3** We will grow the Australian space industry through our first national space mission, operating Australian satellites that monitor lands and coasts, supporting our economy and strengthening international partnerships.
- 4** We will undertake geoscientific programs in Antarctica in our national interests.
- 5** We will support Australia's digital economy by delivering new digital mapping capabilities that integrate data on Australia's geography, society and environment.



**Enabling
an informed
Australia** to
equip government,
communities
and industry with
geoscience data
and information to
make decisions
for our nation.

Geoscientific data and physical collections have enduring value. It is essential that these data and collections are curated correctly, and can be easily understood and accessed by everyone. Data are acquired from platforms including satellites, observatories and laboratory instruments. Data and samples can be integrated to build models of our continent, our Antarctic and island territories and surrounding oceans.

Geoscience Australia delivers world-class, trusted data and platforms and expertise to support high-impact geoscience, transparent evidence-based decisions and social licence to operate.

Geoscience Australia also maintains efforts to maximise Australians' understanding of our geoscientific information and our contribution to their livelihoods. We disseminate geoscientific knowledge in our public outreach programs to ensure that all Australians can better understand the contribution of Earth science and our work to their community.



- 1** We will build and operate national infrastructure to measure and monitor our environment, making data openly accessible to inform evidence-based decisions.
- 2** We will be the custodian of authoritative geoscientific data, knowledge, and physical collections for the benefit of all Australians.
- 3** We will ensure future generations are informed in science, technology, engineering and mathematics by equipping them with Earth science knowledge and resources.
- 4** We will provide national and international leadership in geoscientific and open data to accelerate findable, accessible, interoperable and reusable (FAIR) data across all areas of Earth science.



Ensuring a high performing organisation supporting sustainability, innovation and diversity for the successful delivery of our strategic objectives.

Since 2001, Geoscience Australia has been the nation's trusted adviser on the geological and geographical history of Australia.

The changes we study and monitor happen very slowly and are etched in sediment layers and core samples. However, the community we serve and operate within evolves at a much faster pace, one Geoscience Australia is responsive to.

We are proud to be an employer of choice within the scientific and public service community.

Our work is underpinned by a fair, equitable, and transparent approach; one that values diversity and talent and is unrestricted by gender, cultural background, or sexuality.

Geoscience Australia recognises the ongoing knowledge held by First Nations Australians—the original Earth scientists of these lands and waters.

We stand on our integrity every day, shaped by the values of the Australian Public Service.



- 1** We will be an employer of choice because we value our people, their diversity and our commitment to being inclusive, respectful and innovative.
- 2** We will lead a sustainable organisation that is efficient, adaptive and resilient.
- 3** We will respectfully collaborate and engage with stakeholders, including First Nations Australians, to enhance our value to communities, government and industry.
- 4** We will adopt innovative technologies and ways of working to enhance organisational capability.
- 5** We will strengthen our reputation through leadership, delivery on our commitments and communicating our value.



Our contributions

Our strategy aligns with and supports global and domestic initiatives.



Paris Climate Agreement

We provide an evidence-base for assessing the impact of climate change, especially in regards to the National Carbon Accounting System.

United Nations—Sendai Framework for Disaster Risk Reduction

We provide disaster risk information that informs decisions on disaster preparation and response.

United Nations—Sustainable Development Goals (SDGs)

We provide information that supports the monitoring of progress against the Sustainable Development Goals.

United Nations—Global Geodetic Reference Frame

We operate space tracking infrastructure across Australia, Antarctica and the South Pacific, and undertake analysis to support the maintenance of the Reference Frame which underpins precise positioning.

Australia New Zealand Foundation Spatial Data Framework & United Nations—Integrated Geospatial Information Framework

We coordinate programs to provide easy access to reliable datasets for national and international decision-making.

National Resources Statement

We provide Commonwealth leadership and precompetitive information, mapping and predictive tools in partnership with state and territory governments to support new resource investment in Australia.

Offshore Petroleum and Greenhouse Gas Storage Act 2006

We store and deliver exploration data, samples and geoscience to support acreage release in Commonwealth waters for responsible development of Australia’s offshore energy potential and emission reduction.

Environment Protection and Biodiversity Conservation Act 1999

We provide independent advice on groundwater management and mineral, critical mineral, energy and renewable developments in Australia’s marine and onshore jurisdiction.

National Radioactive Waste Management Act 2012

We provide independent advice supporting the establishment of a facility to responsibly manage Australia’s radioactive waste material.

Explore further

A full collection of these initiatives is available online.





Our commitments

We are committed to building a strong and resilient organisation through our scientific excellence, our data and digital capabilities, our support from stakeholders and our inclusive and positive organisational culture.



To achieve our targets, we must focus on making Geoscience Australia the strongest, most resilient organisation it can be. We will do this through focusing on science excellence, making the most of our data, ensuring we have supportive stakeholders and by enhancing our inclusive and positive organisational culture.

Pursuing science excellence

We will deliver relevant, collaborative, quality, transparent and communicated science with a view to sustain our scientific capability in achieving our Science Strategy.

We will maintain thorough knowledge of Earth systems and the science of Australia's lands and waters.

We will collaborate internally and externally to improve the quality of our science.

We will provide national and international geoscience leadership.

We will provide authoritative and independent advice to government.

Making the most of our data

We will improve data management systems and standards to ensure our substantial data and physical collections are available to all to address geoscience challenges.

Under our Digital Strategy, we will use high performance computing and

innovative digital techniques to solve geoscience problems.

We will establish contemporary, well-documented, repeatable data processing techniques with new methods to help us clearly express uncertainty.

We will deliver quality data to a broader cross-section of society through modern data platforms, as outlined in our Data Strategy.

Ensuring supportive stakeholders

We will maintain a focus on the needs of our stakeholders.

We will seek to engage with potential new stakeholders.

We will respectfully engage and collaborate with First Nations Australians.

We will raise the profile of Geoscience Australia with a broader cross-section of society.

We will enhance our reputation with all stakeholders as an essential and trusted source of geoscientific data and advice for the Australian Government.

Enhancing positive organisational culture

In line with our Diversity and Inclusion Strategy, we will become a SAGE Silver accredited organisation, committed to advancing the careers of women, trans- and gender-diverse individuals, including achieving equity in decision-making forums. We will be an employer of choice, a place of psychological safety free from discrimination, harassment and bullying, with a workforce that continues to embrace diversity, inclusion and support of all individuals.

We will encourage our people to be their best and most creative selves.

In line with our Security Strategy, we will create a secure organisation, committed to protecting our people, property, information and reputation while enabling a dynamic business.



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Footnotes

1. Page 9 fold out: Resources and Energy Quarterly, March 2019.
2. Page 9: Based on historic production and current resources in known producing areas.
3. Page 15: National Marine Science Plan 2015–2025 (pg 7, <https://www.marinescience.net.au/wp-content/uploads/2018/06/National-Marine-Science-Plan.pdf>).
4. Page 17: Ernst & Young (EY), SBAS Test-bed Demonstrator Trial, Economic Benefits Report, 2019.
5. Page 17: ACIL Allen. The Value of Earth Observations from Space to Australia, 2015.

Images

1. Page 10–11: Image courtesy of New South Wales SES
2. Page 24: Image courtesy of the Minerals Council of Australia.



