



Australian Government
Geoscience Australia

Geoscience Australia

Corporate Plan
2023–24

Earth sciences for Australia's future | ga.gov.au



Cover image

Australia's resource boom began over 2 billion years ago in the Pilbara region in Western Australia. Iron-rich sediments were deposited by an ancient ocean's changing oxygen levels due to early photosynthetic life. These rocks are known as banded iron formations. The cover photo is of a banded iron formation from the Hamersleys Ranges and can be found at the National Rock Garden.



Australian Government
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Corporate Plan
covering the period
2023–24 to 2026–27

August 2023

Accessing this report

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Acknowledgement of Country

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.



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Mine Waste Atlas from the Geoscience Australia portal

01 Foreword

Foreword



Dr James Johnson FTSE

Geoscience Australia is the national public-sector geoscience organisation. Commonwealth geoscience has played a vital role since the formation of the Australian Survey Office in 1910; the nation's first national topographic mapping program was driven by the need to defend Australia's people and develop our regional areas. Geoscience Australia came into being in 2001 when the Australian Surveying and Land Information Group (AUSLIG) merged with the Australian Geological Survey Organisation (AGSO). AGSO's predecessor organisation the Bureau of Mineral Resources, Geology and Geophysics (BMR) was established in 1946 and undertook the systematic geological and geophysical mapping of the continent to inform mineral exploration. AUSLIG, formed in 1987 when the Australian Survey Office joined with the Division of National Mapping, provided national geographic information and the provision of satellite imagery to industry and government; work that was started by the Australian Landsat Station in 1979 and was renamed to the Centre for Remote Sensing (ACRES) in 1986.

This work, our history, has allowed us to map the nation's geology and geography to understand our resource endowment and drive new discoveries that continue to underpin our successful economy.

Highlights of our forward plan include:

Through the Positioning Australia program, Geoscience Australia is implementing a national system for reliable and high-accuracy positioning across Australia. Positioning is a critical component of all location-enabled data and technologies, which are increasingly integrated across our economy.

The Exploring for the Future program continues to deliver high quality data and information that improves the understanding of the nation's mineral, energy, and groundwater resource potential. This is driving the next generation of discoveries in Australia that will underpin Australia's path to net zero, attract investment, generate jobs, and secure the resources we need into the future.

As part of the Australian Government's National Critical Minerals Research and Development Hub, Geoscience Australia will undertake research on Australia's future critical minerals needs and supply. The Hub brings together Australia's world-leading research capabilities of Geoscience Australia, CSIRO, and the Australian Nuclear Science and Technology Organisation.

Geoscience Australia will continue to deliver the Data Driven Discoveries program. Geoscience Australia is applying modern analysis techniques to reprocess existing geoscientific information and data and will be collecting new geoscientific data to deepen our knowledge of a key underexplored area of south-west Queensland.

Geoscience Australia has partnered with the Bureau of Meteorology, CSIRO, and the Australian Bureau of Statistics to establish the Australian Climate Service supporting better connection and leveraging of the government's extensive data, information, and capabilities to inform climate and disaster risk management.

The Digital Atlas of Australia brings together, curates and connects trusted national datasets from across government into an interactive, secure, and easy-to-use online platform. Anyone, anywhere will be able to explore, analyse and visualise location-based data on Australia's geography, people, economy, and the environment. Exploring data by location will empower governments, businesses, and communities to make better informed data-driven decisions about planning, infrastructure, and investment at the local, regional, and national level.

Through the Digital Earth Australia program, Geoscience Australia will continue to provide free and open satellite land imaging data and derived information products to support Australian governments to make better decisions on policy, investment, management and operations, and support Australian industry and business to create new capabilities that increase efficiency, productivity, and employment opportunities across the Australian economy.

Geoscience Australia will achieve its outcomes by focusing on science excellence, optimising our data and knowledge, fostering collaboration and strong partnerships, and through a diverse and inclusive workplace.

We continue to deliver data and knowledge of enduring value, and advice that helps government, communities, and industry to address challenges and enhance opportunities facing Australia now and into the future. Respectful engagement and collaboration with all stakeholders, particularly our First Nations Peoples, is something that we continue to do. We are moving towards better understanding and acknowledgement of the experiences and contribution of Australia's First Peoples and their impact on the work we do.

This 2023–24 Corporate Plan sets out how we will achieve our purpose and deliver on the government's priorities. It is designed to propel us to achieve the ten-year targets outlined in our strategic plan, Strategy 2028. I encourage you to look at this strategy to see our vision for the future.

I am pleased to present our corporate plan as required under paragraph 35(1) (b) of the *Public Governance Performance and Accountability Act 2013* (PGPA Act). This is our primary planning document, prepared according to the requirements of the PGPA Act and which aligns directly with our vision for the future, as articulated in Strategy 2028.



Geoscience Australia's extensive collection of open file offshore natural resources data

02

Our Corporate Plan

Our Corporate Plan

Our Corporate Plan 2023–24 explains who we are, what we do, how we do it and where we are going. The structure is reflected in Figure 1 and in keeping with the requirements of the Public Governance, Performance and Accountability Rule 2014, the plan outlines our:

- purpose and vision
- strategic priorities
- key activities
- operating environment
- capability
- cooperative relationships
- governance and risk management
- performance measures.

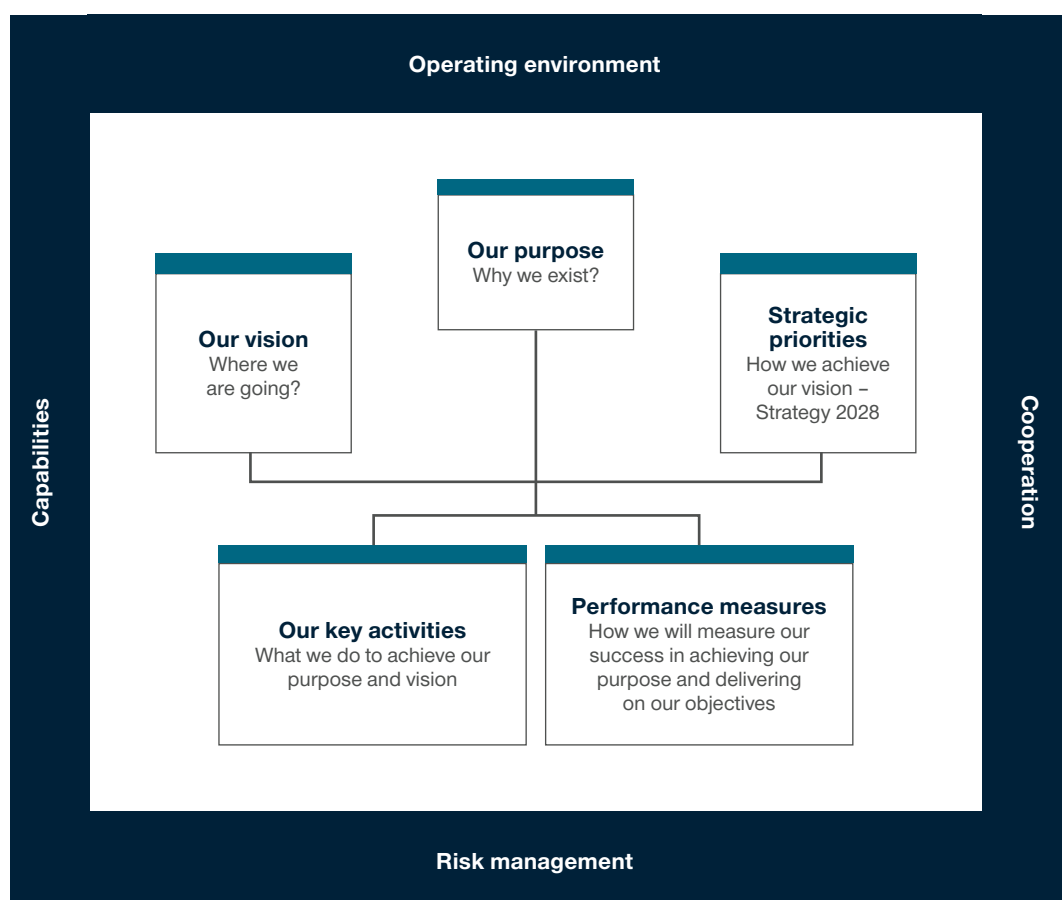


Figure 1 Structure of our Corporate Plan.

Our purpose

Geoscience Australia’s purpose is to be the trusted advisor on Earth science to inform government, community and industry. This contributes to a strong economy, resilient society, and sustainable environment.

For more than 110 years, our purpose has been to be the trusted source of knowledge on the geology and geography of Australia’s island continent, extensive marine jurisdictions and external territories, including in Antarctica.

The value of Geoscience Australia is that we contribute to a safer, more prosperous and well-informed Australia. We deliver the science that supports an expanding knowledge and awareness of our continent, our planet, and its place in the solar system. Working within the context of a broad definition of Earth science to understand and map our planet’s systems, our integrated portfolio of science disciplines extends from the Earth’s core into observation from space.

As the nation’s trusted advisor, Geoscience Australia invokes the principles of relevance, quality, capability, transparency, collaboration, and communication in the way we undertake our science on behalf of the government, to support the Australian community and industry. This is achieved by:

- acknowledging that First Nations peoples are Australia’s original mappers, miners and navigators and committing to build respectful and meaningful relationships with First Nations peoples and communities.
- retaining core scientific capability in-house, characterised by an adaptable workforce with expertise in science, digital technologies, and data management supported by a high-quality cadre of corporate professionals. This is augmented by proactive engagement with the science community to meet current, changing, and emerging challenges that are more complex than any single individual, team or organisation can achieve.
- providing quality-assured information to the right people in the right timeframe so they can make evidence-based decisions and providing scientific advice to government to meet national and international obligations and priorities.
- committing wherever possible to make our data and associated information (metadata, methods, results, and products) Findable, Accessible, Interoperable, and Reusable (FAIR) and promoting the acquisition, curation, analysis, interpretation, and communication of that data by ourselves and others.

Our vision

Geoscience Australia's vision is:

To be a world-leading organisation, informing evidence-based decisions through integrated Earth science to secure Australia's future.

Geoscience Australia is the custodian for the geoscientific data, products, services, and significant collections that relate to Australia, and which draw upon national, global, and planetary information. Our work aligns with the Government's Science and Research Priorities. We are part of an integrated global effort that collectively maps and characterises Earth's natural systems and, in partnership with other Commonwealth entities, we support international Earth science initiatives and programs within our region.

Science Strategy 2028 provides the framework and guiding principles that underpin our excellence in Earth science. Our geological, spatial, geographical, and marine data collection and analysis are world leading in terms of the dimension, scale and scope, and the analysis-ready state of our publicly accessible information assets is second to none.¹

We continue to serve Australian interests through our leadership and active participation in national and international networks, consortia and advisory bodies. For example, Geoscience Australia is represented on the following committees:

- Government Scientists Group led by Australia's Chief Scientist, Dr Cathy Foley
- National Computational Infrastructure Data Collections Advisory Committee
- National Earth and Environmental Science Facilities Forum
- World Community of Geological Surveys (international)
- One Geology – multi-level representation (international)
- Coordinating committee for Geoscience Programs in East and Southeast Asia (international)

Geoscience Australia proactively seeks to contribute to building a strong economy, resilient society, and sustainable environment by providing technical expertise and an evidence-base to diverse international and domestic initiatives. Across the entity, we support the Australian Government's commitment to international initiatives including the:

- Paris Climate Change Agreement
- United Nations Sustainable Development Goals
- United Nations Sendai Framework for Disaster Risk Reduction
- United Nations Global Geodetic Reference Frame
- 1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972 (the London Protocol).



03

Strategic priorities



Strategic priorities

Strategy 2028 articulates the way in which we are positioned to deliver advice to government and provide publicly accessible data, products and services that support and help shape a strong economy, resilient society, and sustainable environment.

We do this by delivering against our purpose and vision and in collaboration with key partners (see Table 1). As outlined in *Strategy 2028*, our work contributes to six external priority impact areas:

- Building Australia's resources wealth:**
 By mapping and understanding Australia's mineral and energy resources, stimulating mineral exploration investment, advancing clean energy technologies and developing new geoscience approaches and techniques to inform decision making by government, communities and industry.
- Supporting Australia's community safety:**
 Australia's resilience to natural hazards is enhanced by Geoscience Australia's data, products and services which provide hazard, exposure, vulnerability, and impact information which address the vulnerability of built-environment assets and help mitigate the impact and cost of disasters.
- Securing Australia's water resources:** Australia's water management is optimised and sustained by an enhanced understanding of the connection between ground water and surface water systems and the potential impacts of development on water supply and quality, both of which are critical to water security and regional development.
- Managing Australia's marine jurisdictions:**
 Geoscience Australia supports the sustainable use of our marine environment with the mapping of boundaries, coastlines, the sea floor, and its ecosystems, which increases our understanding of marine resources and provides the ability to measure changes over time.
- Creating a location-enabled Australia:**
 By delivering positioning accuracy and Earth observation data and products including digital mapping, and providing integrated tools and products for faster, smarter decision-making.
- Enabling an informed Australia:**
 Geoscience Australia's provides national and international leadership through its advice to government, high quality geoscientific information and physical collections which have enduring value, and which together enable integration of complex data, inform decision making and drive innovation. Our publicly accessible data pitched to all sections of the community builds awareness and assists all Australians to make informed decisions.

Table 1 Example impacts of Geoscience Australia's leadership, collaboration, and science.

International and national initiatives	The difference we make
Exploring for the Future Program Data Driven Discoveries Program Australia Minerals Australia's Critical Minerals Strategy 2023–2030 Future Gas Strategy Critical Minerals Mapping Initiative Australia's National Hydrogen Strategy	Building Australia's Resources Wealth Australia's mineral and energy resources are a major contributor to the nation's economic and social wealth and will be fundamental in Australia achieving net zero emissions by 2050. Geoscience Australia through our precompetitive mineral and energy activities delivers publicly accessible information, maps and tools on Australia's mineral and energy reserves and resources. Our work reduces the technical and investment risks for industry, while also supporting government and community decision-making. Better informed investment decisions strengthen our economy and, enhanced geological understanding also supports sustainable environmental management, including alignment with the <i>Environment Protection and Biodiversity Conservation Act 1999</i> . Each year, we publish Australia's <i>Identified Minerals Resources</i> and <i>Australia's Energy Commodity Resources</i> , which provide a stocktake and identify opportunities for carbon capture and storage and hydrogen production; two key priority technologies that support the transition to net zero emissions by 2050. Geoscience Australia provides the scientific context and evidence base to support government and industry decision-making pertaining to the <i>Offshore Petroleum and Greenhouse Gas Storage Act 2006</i> .

International and national initiatives	The difference we make
Digital Earth Australia Australian Climate Service Australian Disaster Risk Reduction Framework Australia-Pacific Climate Partnership (APCP)	<p>Supporting Australia's community safety</p> <p>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. This includes accounting for the impacts of climate change via the National Carbon Accounting System.</p> <p>Our imagery and data help model fire risk indicators, contribute to weather observations and forecasts, map land cover types, investigate water quality and availability, assess the impact and extent of fires and floods, and contribute to national and international hazard planning, response, and recovery efforts. Through our partnerships with scientific agencies from Pacific Nations, we help build capability and resilience to predict, monitor and manage natural disasters. Geoscience Australia also is a partner in the Australian Climate Service through its collaboration with the Australian Bureau of Statistics, CSIRO, and the Bureau of Meteorology.</p>
National Earthquake Alerts Centre Joint Australian Tsunami Warning Centre (JATWC) United Nations Educational, Scientific and Cultural Organisation (UNESCO) Intergovernmental Oceanographic Commission (IOC) Indian Ocean Tsunami Warning and Mitigation System Comprehensive Nuclear-Test-Ban Treaty	<p>Supporting Australia's community safety</p> <p>Geoscience Australia operates the National Earthquake Alerts Centre to provide 24/7 monitoring, analysis and alerting of earthquakes to support emergency management responses. Our data are a critical input to supporting tsunami warnings for the Indian Ocean, through our partnership with the Bureau of Meteorology as the Joint Australian Tsunami Warning Centre (JATWC).</p> <p>Using seismo-acoustic sensors, we also detect and report on nuclear tests to inform Australia's response to suspected breaches of the Comprehensive Nuclear-Test-Ban Treaty.</p>
Exploring for the Future Program Data Driven Discoveries Program National Environmental Standards National Water Initiative National Groundwater Strategic Framework	<p>Securing Australia's Water Resources</p> <p>In many parts of Australia, groundwater underpins agriculture, the environment, minerals and energy resource development, and the wellbeing of regional communities.</p> <p>Australia is the driest inhabited continent, which makes water use and management a key challenge for government, communities, and industry. Integrating and expanding our knowledge and science products and knowledge regarding groundwater systems across Australia's geological provinces directly supports and promotes responsible water management practices, including alignment with the Environment Protection and Biodiversity Conservation Act and Australia's foreign investment decision frameworks.</p>
AusSeabed General Bathymetric Chart of the Oceans – Nippon Foundation Seabed 2030 Program Marine Resources Initiative Pacific Maritime Boundaries Programme	<p>Managing Australia's marine jurisdictions</p> <p>Geoscience Australia uses satellite data, single and multi-beam sonar systems mounted onto the hulls of survey vessels and airborne laser measurements to develop high resolution data to map the sea floor, depths, and undersea environments in Australian and Antarctic waters. The data supports the definitive map of Earth's seabed and is also used for tsunami modelling, fisheries and environmental management, the determination of maritime boundaries and offshore infrastructure developments including renewable energy and submarine cables. Geoscience Australia collaborates with the international community to assist regional maritime states to develop marine resources and address maritime challenges, including supporting delineation of maritime boundaries.</p>
Positioning Australia Digital Atlas of Australia Australian Geospatial Reference System UN Integrated Geospatial Information Framework Australia New Zealand Foundation Spatial Data Framework Climate and Oceans Support Program in the Pacific	<p>Creating a location-enabled Australia</p> <p>By combining our expertise in operating space geodetic infrastructure across Australia, Antarctica, and the South Pacific with our advanced analytical capabilities we are providing open access to the data, products and services required to support an accurate and reliable national positioning capability. This capability improves access to precise positioning services across Australia and its maritime zones, supports Australian businesses and improves our understanding of Earth system processes. This is a fundamental contribution to the accurate combination and use of spatial data, taking account of the movement of Earth's tectonic plates (approximately 7 cm per year). This service is vital for safe air, land and sea navigation and the sustainable management and development of Earth's resources.</p> <p>Geoscience Australia's positioning services ensure Australia's national foundation spatial data is accurately positioned. The Digital Atlas of Australia brings together, curates and connects this trusted national foundation spatial data for government, businesses, and communities to make better data-driven decisions about planning, infrastructure, and investment at the local, regional, and national level.</p>

International and national initiatives	The difference we make
<p>Australian Earth Observations from Space Technology Roadmap</p> <p>European Commission Copernicus Program</p> <p>US Geological Survey/NASA Sustainable Land Imaging Program</p> <p>Committee on Earth Observation Satellites</p>	<p>Enabling an informed Australia</p> <p>Geoscience Australia collaborates with the international community to support coordinated and comprehensive observation of the Earth from space, including through the multilateral Committee on Earth Observations. The organisation provides unique data, new science and open-source technology that improves the quality, interoperability, and utility of data from disparate foreign systems.</p> <p>With partners we support Europe’s Copernicus program through a regional data hub, which provides accurate, timely and easily accessible information to users in South-East Asia and the Pacific to improve management of the environment, understand and mitigate the effects of climate change and ensure community safety.</p> <p>We also support the United States Government’s Landsat program to detect changes in land use over time, including through our Alice Springs Ground Station which enables satellite operators to send command and control signals to current and future Landsat satellites as well as satellite spacecraft telemetry information and ‘state of health’ reports.</p>
<p>Exploring for the Future Program</p> <p>Australia’s Critical Minerals Strategy 2023–2030</p> <p>Future Gas Strategy</p> <p>Australia’s National Hydrogen Strategy</p>	<p>Enabling an Informed Australia</p> <p>Geoscientific data and physical collections have enduring value. It is essential that they are curated correctly and are easily accessible by everyone. Data is acquired by Geoscience Australia and submitted and includes analysis from our own and external laboratory services.</p> <p>Geoscience Australia through its national repository provides publicly accessible data, information and physical samples of national significance including samples managed on behalf of the Australian Government in accordance with the Offshore Petroleum and Greenhouse Gas Storage Act.</p>
<p>Digital Earth Australia</p> <p>Digital Earth Africa</p> <p>Digital Earth Antarctica</p>	<p>Enabling an Informed Australia</p> <p>We provide over 30 years of landscape imagery from US (Landsat) and European (Sentinel) satellites. We process and synthesise data to support sustainable environmental management by mapping land cover and blue carbon habitats for example. Our products enable the navigation of complex interrelated environmental data, and enable evidence-based planning and decision making at local, state, and federal government levels.</p> <p>Geoscience Australia is working with the South African National Space Agency to leverage Australian innovations in Earth observation to enable countries across the African continent to address pressing issues of sustainability and conservation. We continue to provide ongoing support and collaboration to build mutual capability.</p>



Mobile laboratory sharing knowledge of Geoscience to the public

04

Key activities

Key activities

In accordance with section 16E of the Public Governance, Performance and Accountability Rule 2014 (PGPA Rule), key activities are those undertaken over the entire period covered by the Corporate Plan, and which enable an entity to achieve its purpose.

At Geoscience Australia we:

- provide geoscientific leadership, knowledge and understanding
- provide quality advice to government and public access to geoscientific data and products
- build and maintain strong relationships with diverse stakeholders
- educate and advocate for Earth science and Science, Technology, Engineering and Mathematics (STEM).

Increase geoscientific knowledge and understanding

Geoscience Australia provides geoscientific leadership that underpins the information and understanding about Earth, the Australian continent, its marine jurisdictions, and Antarctica. We accomplish this by:

Monitoring

- Australia's dynamic urban and rural landscape (including land and vegetation, inland water, coastlines, intertidal zones) through time using satellite land imaging
- Australia's seismicity and geomagnetic field to inform earthquake/tsunami, space weather responses and navigation, as well as analysing natural hazards and the corresponding exposure, vulnerability, and impact of events to Australia's environment and communities
- using geodetic and positioning capabilities, we monitor the horizontal and vertical motion of Australia's landmass and deliver accurate and reliable centimetre positioning services across Australia's land and maritime zones.

Assessing

- Australia's mineral deposits and commodities based on regional geology
- Australia's renewable and non-renewable energy resources as well as geological storage potential of carbon and hydrogen
- the location, quality, and quantity of Australia's groundwater resources at a national and regional scale.

Categorising and mapping

- Australia's geography including cultural (buildings, transport, boundaries), hydrography (lakes, rivers, swamps), relief (mountains, valleys, cliffs) and vegetation (wooded, cleared, orchards)
- Australia's seabed, characterising and mapping for sustainable management of the nation's marine jurisdictions.

Through our applied approach, innovation and integration, our data, products and services are utilised for diverse purposes and decision making.

Provide quality advice to government and public access to geoscientific data and products

We provide expert advice to government underpinned by scientific evidence to support informed policy development and implementation by government and decision making by industry and the community.

Public access to geoscientific data is a key driver of innovation and growth across Australian industries and paves the way for future developments that will support and advance our economy. Geoscience Australia aims to provide its data in accordance with the FAIR Guiding Principles for scientific data management and stewardship; that is, our data is Findable, Accessible, Interoperable and Reusable.

Build and maintain strong relationships with diverse stakeholders

Geoscience Australia delivers on national and international priorities and initiatives through strong partnerships that enable effective integration of geoscientific data, products and services. Successful partnerships and relationships also enable the collation and curation of data from many diverse sources to deliver products and services.

Educate and advocate for Earth science and STEM

Geoscience Australia plays an important role in promoting the relevance of Earth science and STEM. In doing so, we are instrumental in advancing Geoscience Australia's Science Strategy and advocating for gender equity, and diversity and inclusion in STEM. Strategic engagement with science educators, the research community, national and international peak bodies and members of the public, builds the profile of Geoscience Australia, its science, impact and the importance of STEM in all our lives.





Solar panels and wind turbines generating renewable energy

05

Our operating environment



Our operating environment

An uncertain and complex operating environment

The importance of science, research, and innovation for the future prosperity and wellbeing of Australians has never been greater. Geoscience Australia is at the forefront of addressing each of our nation's biggest challenges. We continue to deliver the best possible science and produce smarter, faster ways to solve national and global challenges.

As a party to the United Nations Framework Convention on Climate Change, the Government is committed to transitioning to a net zero economy by 2050. Ongoing access to new and historical geoscientific data and analysis techniques will be key inputs for the successful cross agency collaboration that will underpin the economic transformation whereby Australia, its regions, industries and workers can realise the benefits.

Rising sea levels and changes to marine ecosystems due to climate change and extreme weather events threaten Australia and our Indo-Pacific neighbours. Monitoring and modelling for these impacts, as well as the effect of space weather on electricity grids, navigation and communication systems, are increasingly important. High quality validated and maintained, analysis-ready data is critical for informed hazard prevention, management, and recovery. Geoscientific data, products and services are key elements for effective urban and infrastructure planning, community safety, environmental management, food sustainability and building Australia's resources wealth. Precise positioning information is also a critical component for increasing efficiencies that support lower emissions in industries such as agriculture.

Dynamic geo-political tensions and the impacts of global events including the COVID-19 pandemic highlight the importance of delivering Australia's sovereign capability. The availability of critical minerals for advanced manufacturing and renewable energy sources has implications for Australia's national security, path to net zero emissions and socio-economic resilience. Potential territorial disputes including those relating to maritime borders require timely access to precise location information, whilst regular, detailed stocktakes of our national energy and mineral resources are crucial factors in determining the nature and extent of domestic and foreign investment.

Factors in our global economy such as inflation, higher interest rates and financial sector strains, make accessing reliable, integrated science by government, community, industry, and academia critical for innovation and the reduction of technical and investment risks.



Geoscientist analysing a rock sample with a portable laser induced spectrometer

06

Capability

Capability

Our people

A key part of our corporate strategy involves the continued development of a diverse and inclusive workplace. We recognise that we cannot be successful leaders 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.

In keeping with the National Agreement on Closing the Gap Priority Reform 3, Transforming Government Organisations, and the APS Reform Agenda, Geoscience Australia is committed to improving employment outcomes by increasing First Nations Australian recruitment, retention, and professional development. First Nations recruitment and retention for greater Aboriginal and Torres Strait Islander workforce representation. By enhancing and embedding understandings of First Nations peoples and culture across our organisation, Geoscience Australia aspires to provide an inclusive, respectful, and culturally safe workplace. Our second Innovate Reconciliation Action Plan (Innovate RAP) will commit to actively engaging staff to contribute to reconciliation, within our organisation and across the communities in which we operate.

The capability of our people is underpinned by our shared values which enable the delivery of quality science in accordance with Strategy 2028 and our Science Strategy 2028. At Geoscience Australia, we have a cultural commitment to:

- Collaboration
- Openness
- Accountability
- Respect
- Integrity
- Excellence.

Geoscience Australia's Gender Equity Network with its special interest groups comprising our Pride Network, Women's Network, Parents and Carers and Men's Support and Engagement groups, embodies our commitment to diversity and inclusion. Our shared values and commitment have manifested in Bronze Accreditation and Cygnet Awards from the Science in Australia Gender Equity (SAGE) program; currently the only transformational gender equity, diversity, and inclusion program in Australia. SAGE awards have contributed to Geoscience Australia being acknowledged as an employer and partner of choice.

People capability

Geoscience Australia's ability to adapt to changing or emerging priorities and opportunities relies on our in-house team of scientists and technical experts. The implementation of our Diversity and Inclusion Strategy and promotion of our Employee Value Proposition facilitates talent attraction and retention; and our engagement with educators and school students, via our Education Centre, actively fosters the next generation of geoscientists. As a result, we have assembled extensive scientific expertise that enables us to leverage the value of the work we undertake in space, our oceans, on land and underground. Our combined people capability supports

the integration of Earth science which in turn facilitates innovation to position Australia for a more secure and prosperous future (see Figure 2).

Our science is enabled by our Corporate Division, which is responsible for core services encompassing corporate strategy, human resources, financial services, information communication technology, digital science support, data management, governance, audit and risk, security (physical, personnel and information), building and facilities management, communications, field work support, data policy and information management.

Geoscience Australia Expertise

<p>Engineers Data, Satellite, Control, Performance, Electrical, Mechanical, Aerospace, Civil, Systems, Software, Cloud, Geospatial, Geomatics, Environmental, Reservoir, Payload and Radio Frequency Engineers</p>
<p>Environmental Scientists Climate Scientist, Climate Change Scientist, Low Carbon Geoscientist, Cross-calibration Scientist, Terrestrial Geoscientist, Soil Scientist, Antarctic Scientist, Environmental Scientist, Ecologist</p>
<p>Marine scientists Oceanographer, Hydrographer, Marine Geomorphologist, Marine Geochemist, Marine Geologist</p>
<p>Chemists Geochemist, Organic, Inorganic and Isotope Chemists</p>
<p>Geologists Regolith, Economic, Planetary, Structural, Earthquake Geologists, Basin Analyst, Stratigrapher, Mineralogist, Petrologist, Sedimentologist, Geochronologist</p>
<p>Other Scientists Palaeontologist, Archaeologist, Anthropologist (Cultural Heritage), Future Technologist</p>
<p>Other Geoscientists Other Geoscientists Palaeontologist, Archaeologist, Basin Analyst, Stratigrapher, Mineralogist, Anthropologist - cultural heritagem, Volcanologist</p>
<p>Technical Specialists 3D Specialist, Laboratory Technician, Quality Manager, Program/Project Manager, Data Administrator, Surveyor, Georegulators, GIS Technician, Remote Sensing Specialist, Physical and Cyber Security experts, Diplomat, Resource Analyst, Electronics Specialist and Field, Mechanical, Electrical, Network and Communications Technicians, Community and Indigenous Outreach Specialist</p>
<p>Mathematicians Spatial, Scientific, Numeric, Computational, Environmental and Hazard Modellers, Statisticians, Data Analyst</p>
<p>Geophysicists Seismologist, Petro-physicist, Electromagnetic Geophysicist, Magnetics Geophysicist, Gravity Geophysicist</p>
<p>Geospatial Scientists Geospatial Analyst, Geospatial Information Scientist</p>
<p>Water Experts Hydro-geochemist, Hydrogeologist</p>
<p>Earth Observation Scientists Geodesist, GNSS Analyst, Meteorologist, Earth Systems Scientist, Atmospheric Scientist, Calibration/Validation Scientist, Application Scientist</p>
<p>Data Asset Managers Data Integration and Migration Manager, Data Governance Manager, Curator, Collections Manager, Librarian</p>
<p>Data Scientists Programmer, Data Analyst, Software Developer, Data Architect, Big Data Scientist</p>
<p>Science Educators Science Teacher, Science Facilitator, Learning Specialist, Education and Outreach Manager, Public Programs and Spaces Specialist, Science Communicators</p>
<p>Communications Specialists Media Advisor, Strategic Communications Advisor, Events Manager, Digital Media Advisor, Graphic Designer, Multimedia Producer, Photographer</p>

Figure 2 Earth science expertise at Geoscience Australia.

Our facilities

Geoscience Australia operates a range of high-tech facilities that are critical for the collection, analysis, integration, and communication of geoscientific information sourced from space, ground-based stations, and field surveys. For example, since the 1970s we have collaborated with the United States to collect data from the Landsat satellites, and we are now one of only three partners in the International Landsat Ground Network. Our automated facility at Alice Springs enables up and down link satellite communications and receives Earth observation data for the entire Australian continent.

The Geoscience Australia Laboratory has recently been upgraded and refurbished, further strengthening its position as a world-class facility delivering high quality sample and mineral separation capabilities and geochronology, organic and isotopic geochemistry analytical activities and management to support internal and collaborative projects across Australia. Our laboratory includes sophisticated preparation and analytical equipment to identify and precisely characterise a range of sample types and sizes. A recent innovation is the design and development of a Mobile Laboratory to enhance fieldwork with portable analytical equipment and support our work in educating and advocating for Earth sciences and STEM in regional and remote communities.

Geoscience Australia installs, runs, and maintains a high-tech network of stations, observatories and cutting-edge equipment for monitoring and reporting on earthquakes, tsunamis, potential nuclear tests, and variations in the Earth's magnetic field. As well as servicing Australia, the Australian Antarctic Territory, and Pacific, Southern and Indian Ocean islands, the networks also support larger international monitoring systems. These facilities include the Australian National Seismograph Network consisting of more than 100 seismic observatories in Australia and offshore territories. Near real-time ground motion data measured at these sites is delivered to the Australian National Earthquake Alerts Centre, and other earthquake monitoring centres internationally, for the purpose of detecting and notifying on potentially damaging earthquakes in our communities. Data collected by this network also underpins Australia's National Seismic Hazard Assessment.

A key element of our work is making space data easy to access. Geoscience Australia operates two uplink and downlink satellite ground stations in collaboration with NASA. These facilities capture data from four global and two regional Earth observation and navigation satellite systems. Another five telescopes relay data that tell us how Earth is positioned in space, whilst also tracking changes to its shape and orientation.

Geoscience Australia operates a range of positioning infrastructure around the country. This includes Very Long Baseline Interferometry, Satellite Laser Ranging,

and Global Navigation Satellite Systems ground infrastructure. When analysed together, data from this ground infrastructure allows us to measure time, the rotation rate and orientation of the Earth, and enables highly accurate and reliable positioning services for all Australians.

Geoscience Australia leads and maintains Australia's National Positioning Infrastructure Capability (NPIC). NPIC provides a unified approach to the management of the nation's positioning infrastructure to ensure consistent, fit-for-purpose data. Through NPIC, Geoscience Australia delivers data from over 700 Continuously Operating Reference Stations (CORS) across Australia, including 200 ground reference stations which make up the Australian Regional Global Navigation Satellite System Network (ARGN) and over 500 CORS from third party networks, as well as analysis products based on the data. NPIC enables the availability of positioning accuracy between 3 to 5 centimetres (from 5 to 10 metres) in areas of Australia with mobile phone coverage, provides direct benefits for industries such as agriculture and enables advances in vehicle automation, navigation, surveying, and construction for example.

In addition, Geoscience Australia cooperatively operates and maintains a network of Continuously Operating Reference Stations (CORS) across the South Pacific. In the South Pacific, the CORS are critical for measuring vertical land motion and changes in absolute sea level, as key inputs into understanding the effects of climate change.

Geoscience Australia leads implementation of the Southern Positioning Augmentation Network, known as SouthPAN, which is the first government-owned Satellite-Based Augmentation System in the Southern Hemisphere. Delivered in partnership with Toitū Te Whenua Land Information New Zealand, the service offers end-users across Australia and its maritime zones open access to positioning data with accuracy down to as little as 10 cm, 50 times more accurate than stand-alone GPS, overcoming gaps in mobile and internet coverage.

We also house one of the world's largest repositories of publicly accessible offshore data, including geophysical survey data, well data and physical samples submitted by the petroleum industry under legislative requirements, and data collected by research projects and marine surveys undertaken by Geoscience Australia or other government research organisations. As part of the National Mineral and Fossil Collection, for which we are custodians, our collection of mineral, meteorite, fossil and rock thin-section specimens remains world-class, with physical and virtual access available for research, geoscientific education, and outreach. The Doc Fisher Library maintains physical and virtual access to the latest publications and research to support Geoscience Australia's cutting-edge science.

Geoscience Australia's Education Centre provides opportunities for educators and school students, as well as members of the public to experience the wonders of the geosciences. Our science educators and communicators have designed and developed compelling online and face to face learning experiences and teaching resources. For many participants, it is their first exposure to Earth science. So successful is this facility, that there is now a two-year waiting list for the sessions that are tailored to the Australian curriculum in science and geography.

Our technology

Geoscience Australia is equipped with a range of highly specialised technology and devices that ensure the accuracy, detail, and reliability of our science and which allow us to validate, integrate and share data from a range of sources. We also use a range of best-practice commercial solutions for storing and managing over 20 PB of data, including several nationally significant data sets on behalf of Australia.

We monitor estuaries and the coastline for tidal ranges, and the condition of mudflats and wetlands using specialised sensors designed to remotely penetrate water. At sea, satellite and sonar technology is used to map and monitor the shape and characteristics of the seafloor and its ecosystems. In house, the Sensitive High Resolution Ion Micro Probe (SHRIMP) measures the age of rocks to inform geological processes to better understand the evolution of the Earth including its mineral and energy resources. SHRIMP data contributes to national-scale datasets to enable informed investment decisions by governments and industry.

Geoscience Australia owns and operates powerful, portable sensors that use cosmic radiation and magnetotelluric² data to map the subsurface. Mapping regions at a time, the AusLAMP³ project has deployed instruments spaced every 50 kilometres to detect and identify surface and sub-surface minerals and water down to great depths.

We manage an array of 200 broadband seismic stations spaced around 200 kilometres apart in a grid. These are complemented by 15 semi-permanent high sensitivity broadband seismic stations that together measure the natural vibrations caused by local and distant earthquakes, and waves breaking on the shore. Analysis of this data enables us to model the subsurface geology. Known as AusArray,⁴ this project operates continuously and is the largest of its type in the world. Analysis-ready datasets from AusArray are used in the assessment of resource potential and natural hazards.

Our small fleet of drones are designed to carry devices (payloads) up to 18 kg. Sensors fitted to drones collect high quality images, scans, and data to support Earth observations beyond those visible to the human eye.

These are used for mapping landforms, identifying vegetation, land use and assessing the health of the environment including soil quality and natural hazards.

Geoscience Australia also provides public access to data, products, and services via 52 online portals targeted to the information needs of specific stakeholder groups. Highly technical information is available for use by industry experts, governments, and researchers, whilst separate portals are designed to be accessible for the broader community, including students, and educators to support the understanding and awareness of applied Earth science. Examples of the portals include:

- Australian's Hydrogen Opportunities Tool (AusH2) which provides free access to geoscience data and tools for mapping and understanding the potential and current investment in hydrogen in Australia
- Critical Minerals Mapping Initiative Portal that is a free interactive mapping tool designed to share outputs from the geoscientific collaboration between Geoscience Australia, the Geological Survey of Canada, and the United States Geological Survey for each of these countries
- Exploring for the Future Data Discovery Portal which provides public access to historical as well as new geoscience data and tools acquired and developed during the Exploring for the Future program
- Earthquake Mapping Tool which enables searching and exploring all Australian earthquakes and viewing seismograms of recent Australian and international earthquakes
- Digital Atlas of Australia which enables anyone to explore, analyse and visualise location-based data on Australia's geography, people, economy, and the environment
- Digital Earth Australia, a publicly accessible digital mapping tool which draws on satellite data to provide unprecedented detail about physical changes to the Australian environment.



Geoscience Australia scientist introducing groundwater to remote Indigenous schools

07 Cooperation

Cooperation

Analysis of Geoscience Australia's stakeholders reveals engagement with more than 200 national and international government, industry, and community entities. Cooperation is a key factor for our success, and we engage with our stakeholders through collaborative partnerships (39%), mutual contributions to support national and international initiatives (50%) and via connections (11%), where we proactively network and advocate for Earth science and STEM.

Collaboration

Our engagement and collaboration spans across national and international agencies, First Nations Peoples and communities, and stakeholders for land, air and marine access.

National and international agencies

Geoscience Australia partners with national and international agencies to leverage expertise and resources to deliver ambitious initiatives in our nation's interest. International partners for example, include the United States Geological Survey (USGS), Geological Survey of Canada, National Aeronautics and Space Administration (NASA), Japan Aerospace Exploration Agency (JAXA), the South African National Space Agency (SANSA), the Australia and New Zealand Land Information Council (ANZLIC) and the European Commission via the European Space Agency and the European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT), and the Australian and New Zealand International Ocean Discovery Program Consortium (ANZIC IODP).

As per our Portfolio Budget Statements, we deliver significant Commonwealth programs through specific partnerships with:

- Bureau of Meteorology (BOM) to provide the Joint Australian Tsunami Warning Centre
- Commonwealth Scientific and Industrial Research Organisation (CSIRO), BOM and the Australian Space Agency to progress the Australian Earth Observation from Space Technology Roadmap as part of the Advancing Space: Australian Civil Space Strategy 2019–2028
- Department of Industry, Science and Resources to deliver programs which support science, commercialisation and the sustainable development of the resources sector the growth of innovative, competitive businesses, industries, and regions.
- Australian Climate Service (ACS) to deliver world-leading science, information, and expertise on climate and natural disaster risk.

Engagement with First Nations Australians

We acknowledge and celebrate the richness and diversity of the world's oldest living culture and seek opportunities for authentic engagement with First Nations peoples and communities across Australia. Geoscience Australia's work includes activities across land, sky, and waters to which First Nations peoples have a profound connection, fundamental rights, and intimate knowledge. We are committed to working in partnership with Aboriginal and Torres Strait Islander peoples and communities to understand and integrate cultural heritage, traditional knowledge, and First Nations perspectives to the places we explore.

Geoscience Australia is dedicated to building meaningful relationships, encouraging innovative strategies that support two-way knowledge sharing practices. We commit to collaborative transparent and translational science that proactively engages communities to receive and benefit from the data and associated information we hold. Geoscience Australia works with Aboriginal and Torres Strait Islander peoples on projects relevant and meaningful to them and their Country, strengthening our science and how we conduct it, and enabling First Nations communities to exercise self-determination.

Stakeholders for land, air and marine access

In undertaking our work, we seek to engage respectfully with stakeholders for land, air, and marine access. This includes an undertaking to deliver our science to them in ways that are meaningful and can be used. Geoscience Australia always requires the consent of land holders to access land, and in addition, we commit to working transparently and inclusively with all stakeholders interested in, or affected by, our field activities. Stakeholders comprise farmers, Native Title holders, cultural heritage custodians, national park managers and other land managers. We endeavour to consult at the earliest possible stage in project planning in accordance with the principles of "Free, Prior and Informed Consent" (FPIC). Building trust between Geoscience Australia and land-connected peoples is essential for the continuity and delivery of our work. The enduring success of these relationships is contingent on effective communication, attention to the requirements of individual landholders and managers, land use protocols and management of risks. In this way we minimise the impacts to their activities, heritage, livelihoods, and the environment.

Contribution

Geoscience Australia fosters relationships to enable the integration of data and information that support our economic interests, sustainable development and build community resilience. We share our data, information, and products to facilitate initiatives and receive access to other national and international data sources which support the scale and scope of our products and services. Examples of these mutual relationships include:

- National Emergency Management Agency
- General Bathymetric Chart of the Oceans
- Incorporated Research Institutions for Seismology
- Committee on Earth Observation Satellites
- International Global Navigation Satellite System (GNSS) Service
- State and Territory Geological Surveys
- Virtual Excursions Australia.

Connection

Geoscience Australia works closely with Education Departments, professional associations, tertiary institutions, and community groups to raise awareness and build the profile of opportunities in Earth science and STEM. Included are:

- Australian Science Innovations
- Australian Science Teachers Association
- Australian Geography Teachers Association
- Science and Technology Australia
- Australian Geoscience Council
 - Australasian Institute of Mining and Metallurgy
 - Geological Society of Australia
 - Australian Institute of Geologists
 - Australian Society of Exploration Geophysicists
- Australian Academy of Science
- Australian Academy of Technological Sciences and Engineering
- Petroleum Exploration Society of Australia.



United States Geological Survey delegate visit at Geoscience Australia

08

Governance and risk



Governance and risk

Governance

An appropriate governance structure is central to achieving our purpose and is vital to ensure effective and efficient operating practices. We have a strong governance framework in place to support effective decision-making, transparency, and accountability.

Our committees oversee key areas of our strategy and operations and support the Chief Executive Officer as the Accountable Authority. Our governance committee structure includes the Executive Board and

its sub-committees. Sub-committees address financial management and investment, security, quality science, people and culture, workplace relations, work health and safety and risk management (see Figure 3). Our committee structure provides assurance and oversight of our management responsibilities and supports compliance with legislative, regulatory, financial, and other obligations. This helps the Accountable Authority discharge their oversight and governance obligations.

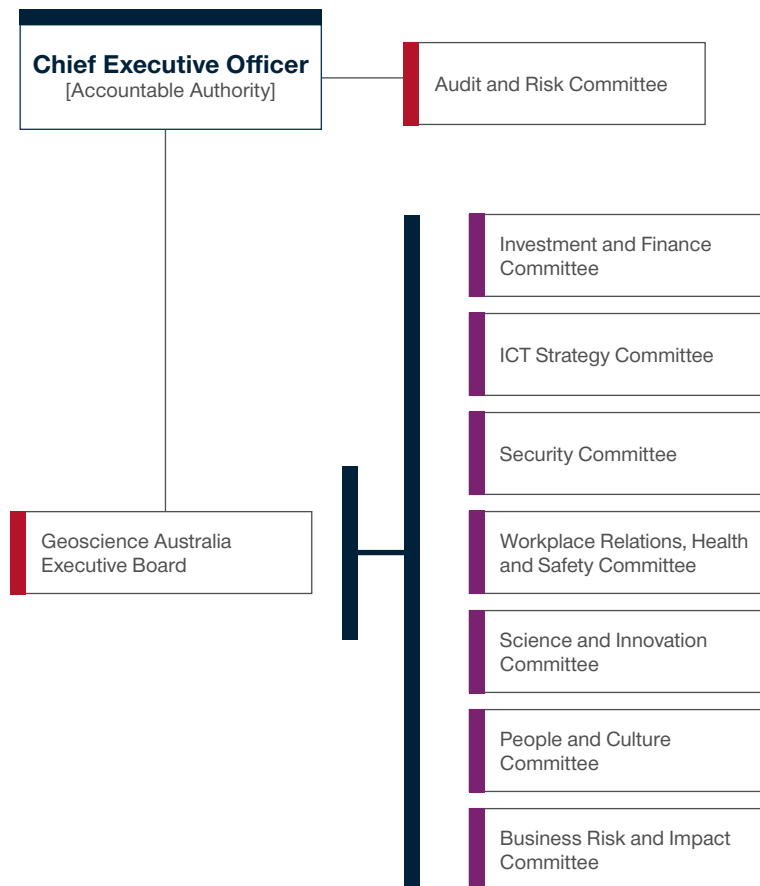


Figure 3 Governance structure.

Risk oversight and management

We articulate our appetite for engaging with risk by acknowledging that certain activities conducted by Geoscience Australia are inherently risky and that it is neither possible nor desirable to eliminate all risks if we are to undertake the science needed to enhance our data, products, and services. With land, air, and marine operations, involving regional and remote locations, we need to engage with risk and manage it as best we can to achieve our purpose.

Geoscience Australia is committed to achieving and maintaining strong processes that align with the Commonwealth Risk Management Policy (2023) and section 16 of the Public Governance, Performance and Accountability Act. These include a positive risk culture

and strong governance including the designated risk management role of Program Boards.

Geoscience Australia’s continuous improvement approach to risk management is evidenced by our 2022–23 review of enterprise risk management. Findings, together with recent policy guidance provide the foundation for revisions to our Enterprise Risk Management Framework, Risk Management Policy, and risk management artefacts, which will be completed in this financial year.

The figure below illustrates the way in which risk is identified and managed in keeping with the entity’s risk appetite and with reference to the threat to our purpose, vision, and strategic priorities.



Figure 4 Key elements of risk management at Geoscience Australia.

Enterprise risk management

Key risks are those that may prevent or inhibit us from achieving our purpose and strategic priorities. The table below outlines our enterprise risks and how we manage each one.

Table 2 Key enterprise risks, pressures, consequences, and management strategies.

Key Risks	Consequences	Management strategies
<p>Geoscience Australia's funding and resourcing does not support delivery of mandated functions.</p> <p>Pressures: <i>Non-ongoing government revenue for new ongoing functions, increasing costs year on year due to macroeconomic factors; ageing assets and increasing costs associated with replenishment and sustainment</i></p>	<ul style="list-style-type: none"> • Our ability to attract and retain staff is diminished. • We are unable to respond to emerging and changing priorities due to base capability erosion. • We cannot deliver the scale and scope of data, products, and services to meet Government, industry, and community expectations. • Our trusted, reliable, and impartial science reputation is compromised. • Our delivery of Government commitments is compromised. 	<ul style="list-style-type: none"> • We continue to nurture, maintain and leverage strong collaborative partnerships for mutual benefit and efficiency. • We prioritise our science and our 'value add' to ensure delivery of critical data, products, and services. • We are increasing efficiency and effectiveness by moving to outcomes-based performance reporting that demonstrates the impact of our data, products and services to government, industry, and the community. • We have budget governance and oversight through the Investment and Finance Committee to ensure resources are focused on efficient spending to support priority outcomes for Government. • We have robust program and project management processes in place to align resources with areas of greatest priority and assist with workforce capability development.
<p>Geoscience Australia is not able to attract, develop and retain a skilled, diverse, and innovative workforce.</p> <p>Pressures: <i>Competition for limited STEM graduates and professionals, private sector wages and conditions, resourcing limitations due to non-ongoing funding</i></p>	<ul style="list-style-type: none"> • We do not have the capability or capacity to achieve our purpose or meet changing and emerging priorities. • There is a reduced scope and scale of deliverables. • There is staff burnout, high turnover due to compounding workloads. • We have limited ability to engage peer to peer with our stakeholders and deliver outcomes. • We have limited ability to innovate, extend and communicate our science proposition. • We have limited ability to engage the community on Earth science, including promotion of STEM. 	<ul style="list-style-type: none"> • Our business planning and budgeting processes support strategic workforce planning, including career progression, succession planning and wellbeing. • Program and project-level workforce planning strategies are developed for all programs. • We are investigating options for early career entry programs (e.g. internships, cadetships, and post-doctoral candidates), in addition to the graduate program. • We are investigating an undergraduate placement program and have strategic relationships with universities, researchers, professional bodies, and other publicly funded research agencies to promote opportunities with Geoscience Australia. • We are promoting STEM, Diversity and Inclusion and First Nations outreach to raise the profile of Geoscience Australia as an employer of choice. • We are developing a clear and attractive employee value proposition including highlighting the scope of our Earth science professionals, the variety of work and mobility options to build capacity and capability. • We commit to the implementation of our strategies which ensure we create a diverse, equitable and inclusive workplace and culture where our people thrive.

Key Risks	Consequences	Management strategies
<p>Geoscience Australia does not appropriately acquire, preserve, protect, store, and disseminate digital and physical information assets.</p> <p>Pressures: <i>Technology obsolescence, extensive physical records and collections, demand for integration of historical records, competing higher priorities for new, additional geoscientific information assets, increasing sophistication of cyber threats; lack of sovereign or alternative sources of critical data including observations; complete dependence on a small number of foreign data providers for key data</i></p>	<ul style="list-style-type: none"> • Our information assets are not easily findable, accessible, interoperable, and re-usable resulting in limited value to stakeholders from taxpayer investment. • The security and integrity of our data, products and services is compromised resulting in the loss of irreplaceable national assets and inhibiting business operations. • The trust placed in Geoscience Australia's data and digital assets is compromised. • We are not regarded as effective custodians of information assets. • Our long-term records of change are interrupted with no option to fill gaps. • There is an interruption or lack of access to critical foreign data sources, such as satellite and imaging and global navigation satellite system data. • We are not compliant with Commonwealth legislation. 	<ul style="list-style-type: none"> • We are increasing maturity in keeping with the Archives Act 1983, the Commonwealth Risk Management Policy, and the Protective Security Policy Framework. • We are enhancing data and digital governance processes, policies, and forums. • We undertake internal compliance audits. • Our ICT (Information and Communications Technology) Strategy Committee provides timely recommendations to support risk informed decisions for measured, appropriate upgrades and hardware replenishment for our current and anticipated needs. • We develop partnerships with international and domestic (States and Territories) agencies to secure access to critical data and information. • We engage domestically and internationally on data policy development and implementation, including through standards. • There is a continuous review and improvement to our incident management, business continuity and recovery plans. • We are planning for staged digitisation of physical records and collections including leveraging the goodwill of our volunteers including Emeritus volunteers. • Physical assets are appropriated stored by experts to ensure conservation and preservation in keeping with our function as an archive and custodian of working collections. • We regularly maintain our failover and backup systems.
<p>Geoscience Australia's assets are damaged, degraded or destroyed and/or our ability to deliver services is limited by natural disasters and/or extreme weather events.</p> <p>Pressures: <i>Changing weather and climate patterns increase the vulnerability of fixed assets or field operations, ongoing requirement for remote maintenance and fieldwork in event prone locations</i></p>	<ul style="list-style-type: none"> • There is an interrupted or lost ability to deliver reliable data streams to meet national and international agreements. • Our data sets are incomplete due to interruptions in services without failover and backup systems. • Communities do not have adequate warning of impending natural disasters. • Our access to equipment, facilities and land is impacted. 	<ul style="list-style-type: none"> • We have strategic, risk-based planning for location, operation and maintenance of assets and infrastructure. • There is regular maintenance of data collection/receiving assets and monitoring of structural security. • There is prudent planning and risk management of international and domestic fieldwork, business travel and engagement, including communication protocols.

Key Risks	Consequences	Management strategies
<p>Geoscience Australia fails to maintain trust in our programs, data, products, and services.</p> <p>Pressures: <i>Resourcing and time constraints inhibit the delivery of comprehensive, robust data, products and services that exemplify the science principles underpinning excellence, increasing sophistication of cyber threats</i></p>	<ul style="list-style-type: none"> • Our credibility, relevance and value to our stakeholders is diminished such that we are no longer the preferred partner or the acknowledged source of truth. • Investment, planning and management decisions by governments and industry are less informed in the short term. • Stakeholders seek alternative, and possibly less trustworthy, options for geoscience data, information, and advice. • There are sustainability risks to the entity. • There are workforce resourcing, retention, and morale issues. • Australia is less equipped to deliver its international obligations relevant to geoscience, affecting long-standing partnerships that influence beneficial strategies, standards, and data supply chain access. • There is a loss of trust and relevance with government due to non-delivery on government commitments and policy objectives. 	<ul style="list-style-type: none"> • The Science Strategy 2028 is communicated and embedded to ensure advice and information are scientifically sound and of the highest quality. • There are regular audits, independent assurance reviews and evaluations to assure excellence in the way we do science and manage our programs/projects. • We routinely manage risks through a revised risk management framework. • We have robust program and project management processes in place to quality assure deliverables and enable on time, on budget delivery. • We continue to enhance monitoring and evaluation and benefits realisation, especially for major programs. • We routinely plan and execute effective communications campaigns, especially for major programs. • Our business plans and risk management include key performance and risk indicators to mitigate against threats. • Our cyber security requirements are built into all new and existing system designs. • Our regular maintenance and shadow systems mitigate against interruptions to accessibility and services. • We have regular training in identification, reporting and management of security threats. • The development and delivery of strategic stakeholder engagement plans mitigate potential misalignment with stakeholder expectations and uphold engagement protocols.
<p>Our activities or lack of appropriate action cause an avoidable workplace health and safety incident, environmental damage or harm to communities or cultural heritage.</p> <p>Pressures: <i>Need to undertake fieldwork and maintenance in remote locations in Australia and overseas to fulfil business as usual, changing, and emerging priorities, concerns around land tenure, increasing likelihood of natural disasters and extreme weather events due to climate change, security threats</i></p>	<ul style="list-style-type: none"> • There is significant injury or death of staff and/or community member. • There is non-compliance with Commonwealth legislation. • Individuals and/or the entity are held to account and exposed to adverse action. • There is reputational damage. • The Commonwealth is responsible for compensation. 	<ul style="list-style-type: none"> • We are increasing maturity in keeping with the Commonwealth Risk Management Policy, Protective Security Policy Framework and <i>Work Health and Safety Act 2011</i>. • There is an ongoing development of our risk culture including leveraging learnings from 'near misses.' • There is a continuous review and improvement to Workplace Health and Safety and fieldwork risk management and staff training. • Our stakeholder engagement plans include access and cultural protocols for engagement and two-way communication with diverse property owners and communities including Traditional Owners and Custodians. • We undertake respectful and regular engagement with landowners. • We enhance cultural safety through ongoing cultural awareness programs, participation in Jawun secondments and our commitment to the development of a second Innovate RAP. • We are developing an Enterprise Risk Register with comprehensive controls (policies, procedures, safe work method statements, standard operating procedures) supports consistent risk management and better practice.



09

Measuring our performance



Measuring our performance

Geoscience Australia is undertaking a stepped change approach to strengthen our performance measurement in keeping with the requirements of the *Public Governance Performance and Accountability Rule 2014*. This transformation involves the development of streamlined outcomes-based measures aligned with key activities and which demonstrate the extent to which we have achieved our purpose. We are committed to measuring and reporting on the impact that we make, to demonstrate our value and accountability to our minister, the government, the parliament, and the Australian public.

Whilst the following tables acknowledge key activities, performance measures continue to be mapped to our strategic priorities. Our 2023–24 performance story will be based on the performance measures detailed below with

the analysis also addressing our progress towards decadal targets identified in Strategy 2028. Our performance measures reflect significant outputs and our efficiency and effectiveness over time using quantitative and qualitative data sources.

Previously, Geoscience Australia used 42 measures to understand performance. These measures have been revised and aggregated resulting in 24 measures that provide greater insight into the impact of our work. Changes to this year's performance measures are mostly language modifications, however footnotes clarify significant changes to facilitate comparisons between reporting periods.

Building Australia's resources wealth

Table 3 Measuring performance for Strategic Priority 1.

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
1.1 Number of mineral and energy exploration companies utilising Geoscience Australia's precompetitive ⁵ data and knowledge ⁶ to inform investment decisions in new tenements. ⁷	Evidences the relevance and impact of our precompetitive data and knowledge to support new exploration in Australia and grow Australia's resource sector.	≥60 exploration companies invest in a minimum of 60 new tenements ⁸	≥60 exploration companies invest in a minimum of 60 new tenements	≥60 exploration companies invest in a minimum of 60 new tenements	≥60 exploration companies invest in a minimum of 60 new tenements	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Effectiveness measure
1.2 Number of downloads of updated precompetitive data and information. ⁹	Indicates the ongoing relevance and demand for annually updated precompetitive data and information.	≥63,000 downloads	≥63,000 downloads	≥63,000 downloads	≥63,000 downloads	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Effectiveness measure
1.3 Percentage of advice to government provided within legislative and/or agreed timeframes in relation to matters relevant to Minerals, Energy and Groundwater. ¹⁰	Demonstrates our ability to work cooperatively and efficiently with key Commonwealth entities and respond in a timely fashion.	100%	100%	100%	100%	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Effectiveness/ Proxy Efficiency measure

Supporting Australia's community safety

Table 4 Performance measures for Strategic Priority 2.

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
2.1 Percentage of time the Digital Earth Australia Hotspots system is available. ¹¹	Indicates availability of national bushfire monitoring system to identify potential fire locations with possible threats to communities and property.	95%	95%	95%	95%	KA2: Quality advice and public access Quantitative Effectiveness measure
2.2 Response time for activation of the International Disaster Charter or the Copernicus Emergency Management Service from time of request.	Indicates efficiency of our management so that Emergency Services have rapid access to satellite imagery and information products to assist with space and major disasters.	≤72 hours	≤72 hours	≤72 hours	≤72 hours	KA2: Quality advice and public access Quantitative Proxy Efficiency measure
2.3 Percentage availability of time-critical earthquake monitoring systems. ¹²	Evidence of Geoscience Australia's ability to provide real-time monitoring, analysis and advice on significant earthquakes and potential tsunami generating earthquakes to help safeguard Australian and Indo-Pacific communities and support hazard decision making.	100% ¹³	100%	100%	100%	KA1: Enhance knowledge and understanding KA2: Quality advice and public access KA3: Build and maintain strong relationships Quantitative Effectiveness/ Proxy Efficiency measure ¹⁴

Securing Australia’s water resources

Table 5 Performance measures for Strategic Priority 3.

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
3.1 Number of downloads per annum of updated data, interpretations and reports that characterise Australia’s major hydrogeological regions. ¹⁵	Indicates the demand for new data, interpretations, and reports to support sustainable management of Australia’s groundwater.	≥25,000 downloads	≥25,000 downloads	≥25,000 downloads	≥25,000 downloads	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Effectiveness measure
3.2 Count of advice and products about water used to inform decisions by government and industry stakeholders. ^{16, 17}	Indicates relevance, capability, and significance of Geoscience Australia’s water experts to provide advice to government and pertinent information to Industry to enable informed decision making.	≥10 ¹⁸	≥10	≥10	≥10	KA2: Quality advice and public access Quantitative Output measure

Managing Australia’s marine jurisdictions

Table 6 Performance measures for Strategic Priority 4.

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
4.1 Count of advice requests about maritime boundaries used to inform decisions by government.	Demonstrates relevance and trust in Geoscience Australia’s maritime boundary information and expertise acknowledged by government, community, and industry stakeholders.	≥10 requests for advice from government per year	≥10 requests for advice from government per year	≥10 requests for advice from government per year	≥10 requests for advice from government per year	KA1: Enhance knowledge and understanding KA2: Quality advice and public access KA3: Build and maintain strong relationships Quantitative Effectiveness measure
4.2 Number of new datasets and products published that map and characterise Australia’s seabed. ¹⁹	Indicates availability and accessibility of Geoscience Australia’s trusted seabed data and information as the evidence-base to enable informed decisions on the sustainable use of Australia’s oceans and support growth of the ocean economy.	≥30 per year ²⁰	≥30 per year	≥30 per year	≥30 per year	KA1: Enhance knowledge and understanding KA2: Quality advice and public access KA3: Build and maintain strong relationships Quantitative Output measure
4.3 Demonstration of digital information to inform decisions on the sustainable use of Australia’s oceans, through a case study of the use of Australian Maritime Spatial Information System (AMSIS) to support the public consultation process for the declaration of offshore wind areas by the Department of Climate Change, Energy, the Environment and Water (DCCEE). ²¹	Geoscience Australia delivers the Australian Maritime Spatial Information System (AMSIS), the Australian Government’s digital platform for accessing and visualising official information relevant to marine planning, including existing use, rights, restrictions, and responsibilities. Access to official information on Australia’s maritime boundaries and legislated zones underpins all Australian Government offshore administration, planning, and enforcement.	Not applicable	Not applicable	Not applicable	Not applicable	KA1: Enhance knowledge and understanding KA2: Quality advice and public access KA3: Build and maintain strong relationships Qualitative Effectiveness measure

Creating a location-enabled Australia

Table 7 Performance measures for Strategic Priority 5.

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
5.1 Data captured and delivered for all scheduled satellite passes over the Alice Springs Ground Station. ²²	Location provides whole of continent satellite data and enables command and control signals, satellite spacecraft telemetry information and 'state of health' reports for Landsat satellites.	≥98%	≥98%	≥98%	≥98%	KA1: Enhance knowledge and understanding KA2: Quality advice and public access KA3: Build and maintain strong relationship Quantitative Effectiveness measure
5.2 Availability of Landsat Analysis Ready Data following receipt of Level 1 data and ancillary data.	Indicates timeliness and availability of analysis ready data.	Available within 24 hours 95% of time	Available within 24 hours 95% of time	Available within 24 hours 95% of time	Available within 24 hours 95% of time	KA1: Enhance knowledge and understanding KA3: Build and maintain strong relationships Quantitative Efficiency measure
5.3 Percentage of annual satellite data products produced updated and published within six ²³ weeks of receipt of input data. ²⁴	Indicates efficiency of data processing, validation, and integration.	100%	100%	100%	100%	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Efficiency measure
5.4 Percentage data delivered to international data centres in accordance with national and international geodetic standards for analysis and archiving. ²⁵	Indicates effectiveness and consistent quality of internationally shared data.	100% ²⁶	100%	100%	100%	KA2: Quality advice and public access KA3: Build and maintain strong relationships Quantitative Effectiveness measure
5.5 Availability of positioning services for precise positioning ²⁷ as percentage of time). ²⁸	Indicates availability of GNSS data streams and analysis products that deliver real-time precise positioning correction services.	95% availability ²⁹	95% availability	95% availability	95% availability	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Effectiveness measure

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
5.6 Number of updated national foundation location datasets, coordinated through the Digital Atlas of Australia and other program partnerships. ³⁰	Demonstrates continuous improvement, expansion and investment in the national foundation location data themes that underpin better location data-driven decision making for government, industry, and the community.	25 new or updated location data products each year	25 new or updated location data products each year	25 new or updated location data products each year	25 new or updated location data products each year	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative Effectiveness measure
5.7 Percentage increase in the number of individual active users of key ³¹ digital platforms. ³²	Demonstrates increasing findability and accessibility of national foundation location data and integrated applied location data initiatives to support a strong economy, resilient society, and sustainable environment.	10% annual increase	10% annual increase	10% annual increase	10% annual increase	KA2: Quality advice and public access KA3: Build and maintain strong relationships Quantitative Effectiveness measure
5.8 Number of new or updated Antarctic datasets and products published. ³³	Supports Australia’s national interests in Antarctica ³⁴ with improved understanding of the physical Antarctic environment.	5 new data products or updates each year	5 new data products or updates each year	5 new data products or updates each year	5 new data products or updates each year	KA1: Enhance knowledge and understanding KA2: Quality advice and public access Quantitative ³⁵ Output measure

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Table 8 Performance measures for Strategic Priority 6.

Performance measure	Why this matters	Targets				Key Activity, Data type, Category of measure
		2023–24	2024–25	2025–26	2026–27	
6.1 Percentage increase in the number of researchers, academics, undergraduate students, government, and industry representatives engaging with Geoscience Australia. ³⁶	Evidence of effectiveness of engagement and relevance of Geoscience Australia's expertise and information assets.	5% increase on baseline	5% increase on previous year	5% increase on previous year	5% increase on previous year	KA1: Enhance knowledge and understanding KA3: Build and maintain strong relationships KA4: Advocacy for Earth science and STEM Quantitative Effectiveness measure
6.2 Percentage increase in the number of educators, students, members of the community engaging with Geoscience Australia either face to face or virtually. ³⁷	Evidence of effectiveness of stakeholder engagement and outreach to promote geosciences and STEM.	5% increase on baseline	5% increase on previous year	5% increase on previous year	5% increase on previous year	KA3: Build and maintain strong relationships KA4: Advocacy for Earth science and STEM Quantitative Effectiveness measure
6.3 Case study of the Graduate program and the Graduates' contribution to the promotion of Earth science and STEM. ³⁸	Exemplifies effectiveness of Graduate contribution to the promotion of Earth science and STEM.	Not applicable	Not applicable	Not applicable	Not applicable	KA4: Advocacy for Earth science and STEM Qualitative Effectiveness measure
6.4 Percentage of publicly accessible data, information, and physical samples available in accordance with the Offshore Petroleum and Greenhouse Gas Storage Act 2006 and Resource Management and Administration Regulations 2011. ³⁹	Indicates role of Geoscience Australia in helping ensure industry compliance.	98%	98%	98%	98%	KA2: Quality advice and public access Quantitative Efficiency measure
6.5 Percentage increase in the number of engaged user interactions with our digital products and services. ⁴⁰	Evidence of meaningful usage of our digital products and services, which is indicative of the relevance, findability, accessibility of our data, information, products, and services and underpins the impact of Geoscience Australia.	2% increase on baseline ⁴¹	2% increase on previous year	2% increase on previous year	2% increase on previous year	KA2: Quality advice and public access Quantitative Effectiveness measure

Notes

1. 'Information assets' include digital and physical records, data, products and artefacts.
2. In magnetotelluric surveys, instruments measure changes of the Earth's magnetic and electric fields to understand the conductivity of underground terrains to support categorisation and mapping of the sub-surface from depths ranging from 100m to hundreds of kilometres.
3. AusLAMP is the Australian Lithosphere Architecture Magnetotelluric Program.
4. AusArray is the Australian Passive Seismic Array Project which is a collaboration between government and academia.
5. This data represents Government provided information about the broad geology of a region which is then used by private explorers to select areas for more intensive exploration.
6. Previous measure for number of tenements has changed to the number of exploration companies utilising our data and products to make investment decisions involving new tenements. This change shifts the focus onto the impact of our data.
7. A tenement is a licence, permit or lease providing rights to explore for and/or extract resources under the surface of an area of land.
8. More than one exploration company may undertake intensive exploration in a new tenement.
9. 10 previous measures which counted publications, assessments, reports and precompetitive data have been amalgamated and downloads are counted to indicate the appeal, relevance and awareness of this information.
10. This measure represents changes to the language of the 2022–23 measure: Authoritative information and technical advice on Australia's resource potential and the sector's activities are provided in accordance with Australian Government policy frameworks and legislative timeframes. The target has increased from 95% to 100% in recognition that Geoscience Australia strives for excellence in service delivery.
11. This measure and the measure were targets for the former measure: Geoscience Australia's capability is routinely used in decision-making to be better prepared for, respond to and recover from consequences of natural hazards.
12. Minor change to the language of the performance measure with no change to the intention of the measure.
13. Target increased from 90% to 100% to support measurement of Geoscience Australia's service reliability and effective partnerships with the Bureau of Meteorology to deliver the Joint Australian Tsunami Warning Centre.
14. The qualitative case study has been removed for 2023–24, with opportunities to be revisited in 2024–25.
15. This measure aggregates 2 previous measures regarding the publication of new information regarding ground water assessments and systems.
16. The measure differs from the previous measure due to changes to the language of: 'Products, advice and services are utilised and support governments and businesses.
17. The case study intended to address effective decisions, management of environmental assets and better use of surface water resources has been removed due to identified difficulties attributing the role of Geoscience Australia to decisions taken by other entities.
18. This target replaces the previous count of 10 examples where groundwater datasets, products and advice supporting government in water management decisions to align with the measure that calls out both government and industry stakeholders.
19. This measure replaces the previous measure which focused only on bathymetry datasets released via the AusSeabed Marine Data portal' and captures instead all of the data, products and services provided by Geoscience Australia to map and characterise the seabed.
20. The previous target of 10 new bathymetry datasets released via the AusSeabed Marine Data portal has been replaced and increased to more accurately represent the scale and scope of datasets and products that map and characterise Australia's seabed. The increase is also indicative of Geoscience Australia's ambition to contribute to national and international initiatives identified in this Corporate Plan (see section 2.2).
21. This case study aggregates two previous measures: the case study 'Geoscience Australia's Georegulation and marine geoscience capabilities are used in government and business decision-making' and 'Accessibility of maritime boundaries' information to support marine planning and administration. It is evaluative in nature, designed to illustrate the merits of AMSIS to support marine planning and decision-making.
22. This is a new measure noting the criticality of the Alice Springs facility for continental Earth observation and our partnership with NASA. The measure replaces 'Location enabled information generated through Geoscience Australia programs can be consumed by decision-makers and is open published and discoverable.'
23. The timeframe for data processing and release has changed from four to six weeks due to the increasing complexity of annual satellite data products for production, update and publication, in addition to the range of data sources which require validation.
24. This measure represents changes to the language of: 'Derivative satellite data products that are fit for purpose, fully operational to government and business uses and collaborators'. The previous target was "Annual satellite data, products are updated and published within one month of receipt of all required input data.
25. This measure is an amendment to a previous measure 'Authoritative trusted position data services' to improve clarity on the authoritative data services, and enable quantitative rather than qualitative measurement.
26. This target is indicative of Geoscience Australia's commitment to quality science, as per the Science Strategy 2028.
27. This measure replaces a three granular measures: 'Operate the infrastructure and systems to enable 3-5cm accurate positioning services in areas with mobile phone coverage'; 'Build the infrastructure and systems to deliver trusted and 10cm accuracy positioning service across Australia and its maritime zones'; Platforms, tools and processes that empower government and business users and collaborators to use and extend satellite data and products are highly available'. This measure captures the effectiveness of the positioning infrastructure and systems developed and operated under the former granular measures, including Geoscience Australia's Global Navigation Satellite System Data Centre and its commitment to a network of continuously operating GNSS reference stations across the Asia Pacific Region and the Satellite-Based Augmentation System, SouthPAN.
28. This target is consistent with all three of the former granular performance measures.
29. This target is consistent with all three of the former granular performance measures.
30. This measure replaces 'Build and operate the Digital Atlas of Australia including the National Map'. The public-facing Beta version of the Digital Atlas of Australia went live on 30 June 2023.
31. These platforms include including the Digital Atlas of Australia, the Australian Exposure Information Platform (AEIP), and Geoscience Australia's international awarding winning Elevation Information System (ELVIS). With key platforms licensed under Creative Commons, there is no financial commitment or limit to the amount of data accessed.
32. This measure reframes 'Geoscience Australia's capability and national spatial leadership mechanisms provide value to business and government' with a focus on the findability and accessibility and all key spatial information data, information and products.
33. This measure represents a changes to the language of: 'The Australian Antarctic Territory is progressively mapped and characterised' with the target quantifying the increased knowledge availability of datasets and products.
34. As outlined in the Australian Antarctic Strategy and 20 Year Action Plan.
35. Note: There is no longer a qualitative case study for this strategic priority area.
36. This is a new measure to address a previous gap in our performance story regarding Geoscience Australia's significant collaboration, cooperation and connection with researchers, academics, undergraduate students, government and industry representatives.
37. This measure consolidates eight previous targets associated with the measure: 'Engage and develop new resources for schools and educators including through school visits to Geoscience Australia's Education Centre, outreach activities and virtual classrooms' and 'Strengthen Australia's Earth science literacy and engagement with national geoscience information and collections'.
38. This is a new measure, intended to complement the performance narrative in relation to measures 6.1 and 6.2.
39. This measure represents changes to the language of: 'Compliance with the *Offshore Petroleum and Greenhouse Gas Storage Act 2006*' to capture the importance of Geoscience Australia's role as data custodian for National Offshore Petroleum Titles Administrator and responsibility for the timely, authorised release of data, information and physical samples.
40. This measure represents a changes to the language of: 'Increased positive engagement of users with our products and services' and seeks to leverage more sophisticated data analytics.
41. This target quantifies the previous target of 'Increase in positive engagement metrics'.

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