

— AUSTRALIA —

AUSTRALIA



As the sixth-largest country in the world, Australia is the host of eight of the world's 14 recognised terrestrial ecosystems and home to around 7-10% of all Earth's species, of which nearly 50% of plants and terrestrial vertebrates occur nowhere else. Given this, Earth observations are therefore crucial to tackling challenges related to land use, resources management, environmental protection and to support sustainable economic growth in Australia as a mega-biodiverse continent and equally rich marine estate.

As the host of GEO Week 2019, the Australian Government has taken a leading role in bringing together the Earth observation community to advocate for openly shared data to solve global challenges and to bring benefits to our economies and societies.



The Pinnacles Desert, Cervantes, Australia. Photo: Tobias Keller, Unsplash

HIGHLIGHTING THE VALUE OF EARTH OBSERVATIONS

Australia's EO system is complex, diverse, and distributed, comprising world-class EO infrastructure, a highly-skilled workforce, and a suite of cutting-edge products and services. These capabilities underpin Australian business, government, research, and communities' efforts to monitor and manage Australia's vast and biologically diverse terrestrial, aquatic and marine estates while supporting sustainable growth and development at the same time.

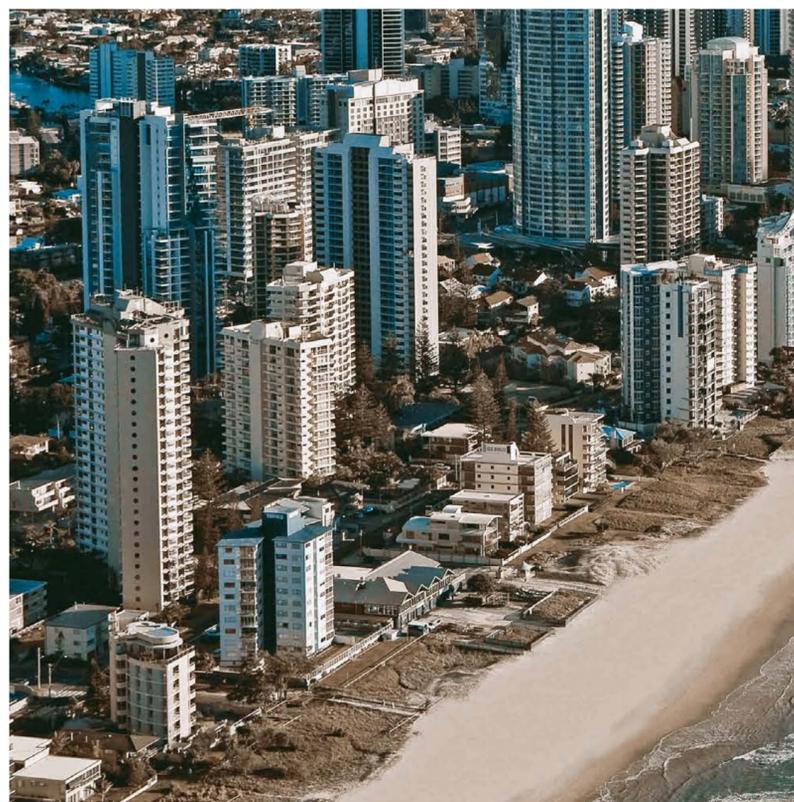
The Australian Government is a strong supporter of Open Science and Open Data. Data collected through government-funded EO systems, including the [Australian Integrated Marine Observing System \(IMOS\)](#) and [Australia's Land Ecosystem Observatory \(TERN\)](#), is made openly available to all. Leveraging off the free and open access to data, Australia has taken an end-user and forward-looking approach to investing in new technologies, such as cloud computing and artificial intelligence to exploit the full value of big EO data. Technological innovations such as the Australian-led Open Data Cube are helping to increase the accessibility of Earth observation information to a greater range of users both nationally (via Digital Earth Australia) and globally.



Uluru & Kata Tjura National Park, Australia Photo: Ondrej Machart, Unsplash

As a member of both of GEO's governance bodies, including the Programme Board and the Executive Committee, Australia is focused on implementing the vision outlined in the [Canberra Declaration](#), including by supporting and engaging with Indigenous People, the Pacific Islands Countries and Territories, and the Commercial Sector.

The Australian Earth Observation community is widely distributed across research and education, government, private industry, and NGOs. While Australia does not currently own any EO satellites, the EO community is active across the entire EO value chain from data collection, storage, through to calibration, validation, processing, analysis, insights and end user products and services.



Gold Coast, Australia Photo: Jordan, Unsplash

Notably, Australia has a strong focus on the “downstream” application of EO data to support the development of derived products and services for government and industry end-users. This aligns well with its focus on open and free data. Australia’s approach has been to make meaningful contributions to GEO’s information, product and services based on its world-class research infrastructure and talented and innovative Australian EO practitioners.

In Australia, over 140 national, state and territory government programmes are dependent on EO from space, with the minimum economic impact of these observations on the Australian economy is approximately \$A5.3 billion per annum (\$US 3.8 billion). These services are also estimated to have created more than 9000 jobs in 2015 and are projected to generate over 15,000 jobs by 2025. There are numerous examples of the economic and societal benefits generated from EO in Australia, across areas such as weather forecasting, onshore and offshore mining, mitigation and management of disasters, such as bushfires and floods, water resource management, design and assessment of conservation areas, insurance assessment, and land use planning.



Twelve Apostles, Princetown, Australia Photo: DDaniel Seßler, Unsplash

Australia advocates for open access to public sector data, aiming to bring forward models where products and services can be developed using public data. Australia is reliant on the international community for satellite data and valued partnerships with GEO and with the Committee on Earth Observation Satellites (CEOS) allow the country to benefit from openly shared data and tools. In return, and as a product of their efforts, the Australian Government aims to support the international EO community with sophisticated validation and calibration approaches to ensure that high-quality Earth observations are trusted sources of data for decision-makers.

For example, at the core of [Digital Earth Australia \(DE Australia\)](#) is a world-class analysis platform for satellite imagery and other Earth observations. DE Australia provides businesses with access to validated, standardized, analysis-ready data, analytic capability, and tools that will allow the industry to innovate to produce new products and services, ultimately helping to enhance businesses and be competitive in global markets.

[Digital Earth Africa](#) (a community activity in the GEO Work Programme) has been developed using the DE Australia model with the aim to support better decision making and action across the African continent.

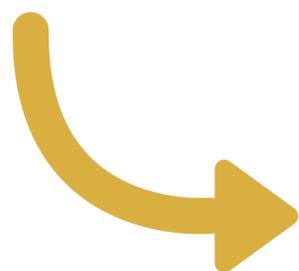
As the host country of [GEO Week 2019](#), the Australian Government welcomed the largest ever gathering of the GEO community to Canberra in November 2019. The Ministerial Summit was hosted by the then Australian Government Minister for Resources and Northern Australia, Matthew Canavan MP. The summit focused on scaling up investments in Earth observations and broadening support for the work of GEO to deliver impact in the areas of economic growth, climate change, disaster resilience, and long-term sustainable development. Highlights in particular include:



High-level endorsement of the GEO [Canberra Declaration](#), an ambitious and forward-looking plan to ensure that open and shared Earth observations bring benefits to all nations and regions.



The first-ever Industry Track at GEO Week 2019, bringing new perspectives from commercial sector partners. This event brought together environmental and economic interests to promote increased investments in EO that deliver a return to the global economy to benefit all.



A dedicated Pacific Island Programme, in recognition that Pacific Islands Countries and Territories represent some of the most vulnerable areas to disasters and a changing climate across the world. GEO welcomed Tonga, its first member from the Pacific, at this event.

SUPPORTING GEO'S ENGAGEMENT PRIORITIES

When it comes to the United Nations 2030 Agenda for Sustainable Development, one of the key international roles of the Australian Government is working to demonstrate to the national statistical and custodian agencies that EO is a critical tool for monitoring progress towards the SDGs. As a current chair of the [CEOS](#) Strategic Implementation Team, through the work of [CSIRO](#) and [Geoscience Australia](#), several SDG indicators have been identified as amenable to the use of EO.

On a national level, the Australian Bureau of Statistics aims to gain a better understanding of what it means to generate official statistics using EO. It has become clear to the EO community that the type of products needed by the national statistical agencies requires consistency and clear methodologies, and EO can play a key role.

Additionally, Australia is a strong supporter of [GEO's Global Agricultural Monitoring Initiative \(GEOGLAM\)](#) with a targeted focus on supporting the measurement of [Rangeland and Pasture Productivity \(RAPP\)](#). In Australia, as for many countries, pasture conditions can be monitored through space-based observation and can complement other agricultural measurements.

In support of the Paris Agreement on Climate Change, Australia has been a long supporter of the [Global Forest Observation Initiative GFOI](#), providing member countries with tools to monitor changes in forests. Australia has been leading on several initiatives in the [UN's Reducing emissions from deforestation and forest degradation \(REDD+\) programme](#) that connects levels of forestation to financial instruments, providing funds to developing countries that choose not to cut down their forests.



ADVANCING THE GEO WORK PROGRAMME

One of the newest additions to the GEO community is the engagement with the commercial sector. With a new category of membership opened last year, Associates from private sector companies are encouraged to join or contribute to GEO. Australia's view is that the commercial sector has much to benefit from GEO's work and vice versa. Working in tandem with these new Associates, GEO will be able to deliver tailored EO products and services for businesses and communities to advance the vision and mission of GEO.

The [GEO Work Programme](#) is a leading force at piloting and prototyping, ensuring the data and methods are publicly and freely available. When it comes to developing sustainable tools with the services to support them, the barriers between public and private sectors should be lowered to ensure that both communities can benefit from each other's work.