



Information Bulletin of the Australian Geoscience Council Inc

Geotourism, Geotrails, Geoparks, and GeoRegions A Regional Development Opportunity for Australia

Purpose

This briefing provides background information to assist state and local government agencies in assessing the potential for the development of major geotourism projects (including geoparks) within identified GeoRegions of Australia.

Current Status

The Australian Geoscience Council Inc (AGC) is the Peak Council of geoscientists in Australia. It represents eight major Australian geoscientific societies with a total membership of over 8,000 individuals comprising industry, government, and academic professionals in fields including geology, geophysics, geochemistry, mineral and petroleum exploration, environmental geoscience, hydrogeology, geomorphology, and geological hazards.

A National Geotourism Strategy (NGS) was launched by the AGC on 7th April 2021 following a period of strategic policy development by an appointed Reference Group https://www.agc.org.au/wp-content/uploads/2021/04/AGC_nationalgeotourismstrategy_strategicgoals.pdf

Seven key strategic goals are now being implemented by a series of working groups that will now be directed by a recently appointed Steering Committee which includes Chairman Dr Jon Hronsky OAM, Immediate Past Chairman of the AGC, the seven working party chairs, as well as representatives of three key constituency groups (i.e. , Dr Sandra Close representing the Resources Sector, Haydyn Bromley representing Aboriginal interest, and Dr Peter Mitchell OAM representing environmental sciences and communities.

https://www.agc.org.au/wp-content/uploads/2021/10/AGC_media_release_explanatory_notes_26October_2021.pdf

The NGS is being designed to support the orderly development of major geotourism projects and activities in line with overseas trends and domestic regional development imperatives. The AGC sees the articulation of a strategy with a staged and incremental approach as being essential to ultimately gain government endorsement at all levels. The development of a National Ecotourism Strategy in 1994 and subsequent state/territory-based initiatives is considered as a particularly useful precedent and guide. Of significance internationally is the development of geotourism in Australia that lags many countries' approach, notwithstanding the fact Australia has taken the initiatives in several areas in development of the concepts underpinning geotourism.

The pursuit of geotourism offers the potential for new industries and employment opportunities through the development of major projects within Australia. Also, very significantly from a strategic perspective, the

AGC recognises that the development of geotourism may be one of the best ways to communicate the value of geoscience to the broader Australian community. The AGC considers that this improved profile for geoscience is likely to have a positive impact in other areas of strategic importance, most notably the need for continuing tertiary enrolments in geoscience, that is required to meet Australia's needs for highly qualified geoscience graduates and researchers into the future. It should be noted that recently, the University of Newcastle announced it will no longer be offering a geology major from 2021. This is an outcome of the Australia-wide decline in students choosing to major in geology and opting for other study pathways within environment and science. Geotourism may be an effective way to help reverse this trend by making geoscience a greater part of the lived experience for typical Australians.

AGC recognises that geotourism is a significant emerging and growing global phenomenon. Geotourism has been defined by a key AGC member, the Geological Society of Australia (GSA) as 'tourism which focuses on an area's geology and landscape as the basis for providing visitor engagement, learning and enjoyment'. It has links with adventure tourism, cultural tourism, and ecotourism, but is not synonymous with any of these forms of tourism, although in broad terms it embraces them all (Appendix A).

The pursuit of geotourism offers the potential for new industries and employment opportunities through the development of major projects within Australia.

By way of comparison, the evidence from a 2012 study in Ireland demonstrated that the geotourism and geoheritage sector was considered a major contributor to the Irish economy, with total revenues (visitor expenditures) directly attributable to this sub-sector amounting to over €370 million in 2016, while the sector, directly contributes almost €240 million to Irish economy GVA/GDP. The sector supported 8,767 FTEs on an economy-wide basis, as well as €415 million in GVA and over €660 million in output (Source: An Economic Review of the Irish Geoscience Sector prepared by Indecon International Economic Consultants).

The benefits of geotourism development in Australia are many.

Tourism Industry development benefits in the context of addressing the current COVID-19 pandemic can be realised through the holistic approach of geotourism which enhances the value of traditionally structured, nature-based tourism by generating new product development (i.e., including geology, landscape, flora and fauna, as well as cultural heritage attributes, both Aboriginal and post European settlement).

Employment benefits through the adoption of a strategy to support and promote geotourism include the following, all of which have the potential to significantly improve indigenous employment, and more broadly, regional employment.

- New domestic employment and consulting opportunities for natural/cultural heritage professionals – design of interpretation signage/boards, design of geotrails etc.
- Management roles in geoparks and mining parks, regional development, and local government agencies.
- Flow-on employment in tour operations and townships resulting from increased tourism visitation.
- Opportunities for pastoralists to develop 'farm stay' and 'station stay' tourism operations.

Societal benefits for local communities, particularly in rural and regional Australia, include the following.

- A mechanism for celebrating and raising awareness of mining heritage, past and present.

- An opportunity to enhance community engagement and build value into Environmental, Social, and Governance (ESG) considerations.
- By celebrating geological heritage, and in connection with all other aspects of the area's natural and cultural heritage (and most significantly, Aboriginal heritage), geotourism enhances awareness and understanding of key issues facing society, such as using our Earth's resources sustainably.
- By raising awareness of the importance of the area's geological heritage in society today, geotourism gives local people a sense of pride in their region and strengthens their identification with the area.
- The strategy acknowledges the need to protect the scientific and cultural sensitivity of some geoheritage and geosites, and to ensure protection from geotourism where appropriate.

In summary, the over-riding socio-economic benefits of geotourism are measurable economic outcomes through enhancement of traditional nature-based tourism - additional visitors, direct and regional economic output, household income and wages, and local (including Aboriginal) employment.

This strategy will support the economic benefit by:

- Establishment of a higher level of central coordination in areas of product development, travel and hospitality services, and tourism promotion, with a view to improving the overall visitor experience, consistency of the branding, and ultimately leading to an increase in visitor numbers.
- Maximisation of sustainable development and management of 'over tourism'.
- Establishment of a framework for focus on the 10 UNESCO Topics including culture, education, climate change, geoconservation etc.
- Maximisation of community engagement.

Geotourism can be readily delivered through the development of both 'geotrails' and 'geoparks' within identified GeoRegions.

Looking beyond the COVID-19 pandemic, discernible changes in visitor needs and behaviors are starting to emerge. e.g.

- An increased interest in nature-based activities, evidenced anecdotally from observations in overseas geoparks.
- A shift from large group to small (family) group tours and free and independent travelers (FITs).
- A move to patronising tourist destinations 'close to home'.
- An increased usage and dependence on the internet for purchasing and information gathering purposes.
- A higher level of interest by governments to create employment opportunities and to support regional tourism.

The consideration of well-considered proposals underpinning the NGS is timely and is likely to be well received by governments, the tourism industry, and regional communities across Australia.

<https://www.linkedin.com/pulse/australias-national-geotourism-strategy-angus-m-robinson/>

In this regard, the AGC presented the NGS in a submission to a recent Austrade discussion paper, '*Reimagining the Visitor Economy*'.

Geotrails

A geotrail can deliver geotourism experiences through a journey underpinned by an area's geology and landscape. Geotrails are therefore best constructed around routes currently used by tourists i.e., geotrails should form logical journeys linking accommodation destinations.

Geotrails can comprise roads, walking and biking trails, and disused railway easements. Geotrails should meld the geological heritage features of a region with a cohesive story and should incorporate and package in the biodiversity and cultural components (including mining heritage) of the region through which the geotrail traverses. Geotrails do offer the advantages of having universal appeal, and do not compete with or impact on land management/access issues. They are relatively easy to establish and represent a very cost-effective means of enhancing regional development.

They are also an effective vehicle for promoting broader community interest in Geoscience and recognition of it as one of the four fundamental sciences along with Physics, Chemistry and Biology. As such there are long-term educational and cultural benefits in fostering the appreciation of how our Earth influences landscape, ecology, and our lifestyles.

Western Australia's Mid-West Development Commission (MWDC) is working with seven shire councils to establish WA's first major geotourism development to be built on a geotrail model, focused on the Murchison GeoRegion of WA. The MWDC believes that the ancient Murchison geology provides the ideal platform for unique, nature-based tourism experiences of global significance, particularly to the 'experience seeker / dedicated discoverer' market. The Mid West Tourism Development Strategy (2014) concluded that the region's iconic nature-based tourist attractions were not developed to their potential and that its visitor appeal was not fully realised. The Strategy identified geotourism in the Murchison sub region as a potential 'game changing' tourism initiative, with capacity to help the region realise its potential as a major tourism destination.

More information about geotrails is detailed in Appendix B.

Geoparks and GeoRegions

Geotourism attractions are now being developed around the world primarily as a sustainable development tool for the development of local and regional communities. A major vehicle for such development is through the concept of 'geoparks'. A geopark is a unified area with geological heritage of particular significance and where that **heritage is being used to promote the sustainable development of the local communities who live there.**

Unlike World Heritage Areas and national parks, geoparks can embrace both protected and any resource extraction areas, focusing on sustainable development objectives. Geoparks also focus on community engagement and ownership. In Australia, national parks focus generally only on biodiversity and often with insufficient attention given to geological heritage.

UNESCO Global Geoparks are single, **unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education, and sustainable development.** Whilst World Heritage Areas and national parks are created in perpetuity, the status of global geoparks are reviewed by UNESCO every 4 years.

Whilst a geopark must demonstrate geological heritage of particular significance, the purpose of a geopark is to explore, develop and celebrate the links between that geological heritage and all other aspects of the area's natural, cultural, and intangible heritages. It is about reconnecting human society at all levels to the planet we all call home and to celebrate how our planet and its 4,600-million-year long history has shaped every aspect of our lives and our societies. Geoparks are both a regional development concept as well as a branding tool. They achieve these goals through conservation, education and geotourism. **Geoparks can comprise both protected and non-protected areas and enable and celebrate sustainable development of primary industries such as mining, agriculture, and forestry.**

Geoparks can choose to evolve through a series of levels from 'aspiring', 'national', 'regional' (e.g., European or Asia-Pacific Regions) to 'global'. There are now hundreds of geoparks around the world. Support to individual geoparks is offered through the Global Geoparks Network Bureau which is currently representing 169 members from 44 countries. The original target of the Global Geoparks Network is establishing 500 geoparks around the world. The number is growing at a rate of about 10 new global geoparks per year.

On 21st February 2019, the 4th open session of the International Geosciences and Geoparks Programme took place in Paris and determined that the new aspiring geopark applications for the UNESCO Global UNESCO member countries are entitled to nominate a maximum of two applications per year. During 2017, two Pre-Aspiring Global Geopark proposals had been advanced in Australia by local government authorities in Queensland (the Etheridge proposal) and in New South Wales (the Warrumbungle proposal). Under the UNESCO Global Geopark operational guidelines, applications are only accepted annually between 1 October and 30 November. Before any formal application can be made, the proponent of any UNESCO Global Geopark must submit an expression of interest, usually before the 1st of July, via the official channel as defined by the Australian National Commission for UNESCO or government body in charge of relations with UNESCO, involving, if applicable, a 'National Geoparks Committee'.

The Etheridge proposal was suspended because of community resistance to the concept of a geopark (perceived to be a mechanism for environmental protection) and the involvement with UNESCO (an international agency which is perceived to be implementing additional levels of environmental controls and influence). After considering the views of the Geological Survey of NSW (GSNSW), the Warrumbungle project Steering Committee decided to abandon plans to nominate for a UNESCO Global Geopark, and instead, accept the offer of the GSNSW to assist in developing an alternative geotourism strategy for the region.

In 2018, following consultations with the national government geoscience agency, Geoscience Australia, it was recognised that a national approach was needed to better manage major geotourism projects to maximise these indicative benefits and to take account of current perceived government and community group concerns.

Geotourism Projects and the National Geotourism Strategy (NGS)

Currently the AGC is of the view that the establishment of the NGS offers the best means of ensuring an orderly development of geotourism based on having first gained government support and endorsement, recognising that each state and territory has individual needs and priorities. One of the strategic goals being pursued under consideration is that the national geotourism strategy will establish a national set of administrative procedures for 'georegional' assessment to provide for potential geopark nomination at state and national levels and, as approved by governments, at a UNESCO Global Geopark level.

Recommendation for Geopark Proponents

As an interim measure until the NGS is finalised and approved by governments, it is suggested that unless a designated protected area such as a national park is being considered for a UNESCO nomination, any geopark proponent should, in the early stages of geopark assessment, adopt a nomenclature which removes reference to the word 'geopark' and focus instead on communicating the concept of a 'GeoRegion.'

A 'GeoRegion' can be considered a defined area of natural and cultural heritage which highlights outstanding geoheritage features.

This approach offers the opportunity for proponents using the language of 'GeoRegions' to explore various alternative options for geotourism development, including a strong focus on the establishment of geotrails between sites of geological merit as interpretive sites, including robust geoheritage sites, some of which may already have been established as geological 'monuments' or recognised in state or national geoheritage registers. As a first step, a full audit of natural and cultural heritage attributes in the region as well as early discussions with state/territory based Geological Surveys, Planning and Environment agencies, and any other state/territory government agencies responsible for land and resource management is recommended.

More information about Geoparks and GeoRegions is detailed in Appendix C.

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6 December 2021

Attachments to the Information Bulletin

Appendix A Definition and Benefits of Geotourism

In summary, geotourism

- adds considerable content value to traditional nature-based tourism (the primary motivator of travel to Australia) as well as cultural tourism, inclusive of Aboriginal tourism, thus completing the holistic embrace of 'A' (abiotic – landscape and geology) plus 'B' (biotic – flora and fauna) plus 'C' (culture) aspects. It emphasises an approach of increasing interest to protected area managers, particularly given the experience gained from the now discontinued Australian National Landscape programme;
- celebrates geoheritage and promotes awareness of and better understanding of the geosciences - of increasing interest to geological survey organisations;
- contributes to regional development imperatives in areas experiencing social and economic difficulties through increased tourist visitation, particularly from overseas – of increasing interest to local government authorities (LGAs) and state based, regional development commissions and agencies;
- creates professional and career development for geoscientists – of particular interest to the AGC and constituent member societies;
- provides a means of highlighting and promoting public interest in mining heritage – of particular interest to The Australasian Institute of Mining & Metallurgy (The AusIMM), the Australasian Mining History Association and the Australian Institute of Geoscientists;
- provides the means of increasing public access to geological information through a range of new information and communication technology (ICT) driven applications e.g., smartphones, drones, 3D visualisation, augmented/virtual reality etc. – of increasing interest to geological survey organisations and visitor information centres; and
- Engenders an increasing awareness of the importance in geology as a fundamental science that has had and will continue to have major impacts on civilisations.

Geotourism promotes tourism through visits to geological features (geosites), use of 'geotrails' and viewpoints, guided tours, geo-activities (such as geological time trails, fossil walks, rock gardens etc.), and patronage of visitor centres and museums. Geotourism attractions are now being developed around the world primarily as a sustainable development tool for the development of local and regional communities.

In 2013 a 'proof of concept' project promoting geoscience awareness on the Sapphire Coast of New South Wales was launched. GeoTreat, a smartphone-based application, brought to life some 19 geosites forming part of a key 'geojourney' along a section of the coastline south of Narooma and extending into Victoria (a national landscape region known as 'Australia's Coastal Wilderness').

Also, in 2013, Cartoscope Pty Ltd, a NSW tourism publication company with links to the mining and exploration industry, received a TQUAL Grant under the Tourism Quality Projects program. This grant from the Department of Resources, Energy and Tourism supported innovative, sustainable, and high-quality tourism projects and enabled Cartoscope to produce some 100,000 copies of a NSW Geotourism map identifying some 96 sites in NSW which are significant geological sites, museums, or tours. There are short descriptions of the geology with map references and location flags on the map so the sites can be easily found. Both public and school-teacher responses to the geotourism map and the media publicity has been very positive and has well exceeded expectations to the extent that a second edition was published and

launched in 2018, and which received significant sponsorship from the NRMA, the AGC, the Geological Survey of NSW, various professional societies, Geoscience Australia, several Local Government Authorities amongst other sponsors. However, because of the severe impacts of both the 2019/2020 bush fires and the COVID-19 pandemic on regional tourism, Cartoscope has recently ceased trading and will no longer be able to publish any further geotourism maps.

It is understood that a geotourism map for Tasmania is currently under consideration.

Geotourism Resources can be located at:

- <https://www.gsa.org.au/Public/Geotourism/Public/Geotourism/Geotourism%20and%20Geotrails.aspx?hkey=754eb036-9266-452e-95b8-e135a1db04d1>
- <http://www.leisuresolutions.com.au/index.php/geotourism-industry-groups/>

Appendix B Geotrails

A geotrail can deliver geotourism experiences through a journey linked by an area's geology and landscape as the basis for providing visitor engagement, learning and enjoyment.

At the SEGRA (Sustainable Economic Growth Regional Australia) conference convened in Bathurst in October 2015, the opening presentation by the workshop convenor and GSA Geotourism Standing Committee Chair addressed the development of a formative Red Centre Geotrail of which Uluru is now a global iconic attraction. Dan Cove, formerly Operations Manager of Jenolan Caves explained how geotrails can offer genuine potential for both adding new dimensions to a regional visitor experience and as a tool for encouraging extended travel time within a region. In his presentation, Ian D Lewis, Honorary Director of the Kanawinka Geotrail, illustrated how the geopark promotes rural tourism and landscape care for the many volcanoes, famous caves, and coastline features across the area of Western Victoria and South-Eastern South Australia, encouraging visitors to select from several highway trails through the region via accommodation hubs. Ken Moule, then Chief Executive of Global GBM, showed how the contribution of technology to the tourism experience, opened the way for a new regional imitative 'around map enabled' mobile apps to economically promote attractions and enhance the visitor experience.

Phil Smart, President and Founder, Gondwana Coast Fossil Walk Inc. illustrated how, that in recent years, the geotourism potential of the Ulladulla rock platforms had been developed by his team of volunteers into a successful tourist attraction. His project, including the Brodie Park Geological Time Walk, was awarded in 2016 the best tourist attraction on the NSW South Coast.

In summing up, the workshop convenor said that the concept of geotrails has provided an alternative and attractive approach to nurturing regional development by celebrating geotourism, geological and mining heritage. Geotrails can offer genuine potential by both adding a new dimension to a regional visitor experience and as a tool for encouraging extended travel time within the region.

The development of geotrails was also discussed at the Geotourism Workshop forming part of the Global Eco Conference of Ecotourism Australia held at Rottnest Island in November 2015 and the Geotourism Spotlight Session of SEGRA 2016 held in Albany, Western Australia.

Featured at the 2016 Global Eco conference, the West Coast 'Living Earth' GeoTrail <http://thelivingearth.com.au/west-coast-geotrail/> a co-venture of Mineral Resources Tasmania, Department of State Growth Tasmania, and West Coast Council is currently undergoing continuing development with work being directed at enhancing the quality of the interpretation. This geotrail, connecting the mining centres of Zeehan, Rosebery and Queenstown, currently provides information to enable visitors to understand and appreciate the geological processes and landscapes which are featured throughout the geotrail. Each site has a roadside sign, either a large sign with information and explanations, or a small sign showing the relevant QR Code web-link to the Living Earth website. Tasmania also hosts the 'Created from Chaos' Coastal Geotrail in NW Tasmania <http://www.ourtasmania.com.au/northwest/created-chaos.html> and the Furneaux Geotrail on Flinders Island <http://furneauxgeotrail.flinders.tas.gov.au/>

All the presentations from all SEGRA and Global Eco conferences referred to in this report can be downloaded from <http://www.leisuresolutions.com.au/index.php/geotourism-industry-groups/>

Queensland's 'Dig The Tropic' <http://www.digthetropic.com.au/> is an operating example of a formative geotrail. Dig The Tropic is a themed journey linking the wonders of the Southern Great Barrier Reef with the mysteries of Queensland's Outback. Following the Tropic of Capricorn, visitors can experience a living museum created by ancient events left behind, visiting sites such as the Stone House Museum, Age of Dinosaurs Museum, Lark Quarry, the Sapphire Gemfields, Capricorn Caves, and the Great Barrier Reef.

Active geotrails proposals are continuing to be being implemented or considered by various government agencies and/or university groups in Western Australia (Murchison GeoRegion <https://www.australiasgoldenoutback.com/business/attractions/murchison-georegion-trail>, and John Forrest and Meckering Geotrails), Tasmania (as already identified), Queensland (Brisbane Valley Rail Trail, Dig the Tropics, Boulder Opal), New South Wales <https://www.youtube.com/watch?v=Fkdbez3Meh8> particularly Port Macquarie – now completed <https://resourcesandgeoscience.nsw.gov.au/miners-and-explorers/geoscience-information/geotrails/port-macquarie-geotrail>, the Newcastle Coastal, Warrumbungle National Park <https://www.youtube.com/watch?v=V1oZeqdUg0>, Central Darling River, the Muawintji National Park, and the 'Wonder of Gondwana' geotrails across the Outback/Central West region – all under development), South Australia (various projects including the Brachina Gorge Geotrail), Victoria (Kanawinka/Great Ocean Road area), and Norfolk Island.

In the Northern Territory, there two well defined trans-continental 'road adventures' exist as self-drive geotours. These are the Explorers Way extending from Port Augusta to Darwin, and the Savannah Way which passes East-West from Cairns to Broome through the Gulf Country, Katherine Region, Victoria River District and the Kimberleys. In addition, the Red Centre Way (formative Red Centre Geotrail) is under reconstruction with government funding. A fourth major geotrail is the largely unsealed, 'Gold Rush Way' linking the historic Arltunga and Halls Creek (WA) gold fields via the Tamani region – a known and active gold producing area.

There are also a wide range of smaller, dedicated journeys along walking tracks, old rail easements etc. being deemed suitable for development as geotrails in NSW, Tasmania, Qld, WA, and SA.

NSW's 'Modern Mining Trail' concept <https://www.aussiebucketlist.com.au/item/nsw-modern-mining-trail> represents another formative geotrail example. This is a unique opportunity to travel through Central NSW on the Modern Mining Trail and explore Australia's mining – past, present, and future. The Modern Mining Trail incorporates Parkes, Bland, Orange, and Cobar regions through their Visitor Centres, featuring the following modern mines: Northparkes Mines, Newcrest's Cadia Valley Operations, Peak Gold Mine (Cobar), Peak Hill Open Cut Experience, Barrick Cowal Gold Mine, and Great Cobar Copper Mine. The Modern Mining Trail region is also home to several tourism experiences that have linkages to history of mining and the role

that modern mining plays in communities today. Attractions include the Henry Parkes Centre, the CSIRO Parkes Radio Telescope, Peak Hill Open Cut Gallery and the Big Fish Fossil Hut, Age of Fishes Museum, Canowindra, the Golden Memories Museum in Millthorpe, West Wyalong's Barmedman Mineral Pool, West Wyalong Heritage Museum and the Bland Shire Heritage and Gold Tour, the Great Cobar Heritage Centre and associated Miner's Heritage Park and Heritage Walk.

Goal 3 of the National Geotourism Strategy aims to establish a framework for creating high quality, sustainable geotrails within Australia. One of the NGS working groups has already established an 'Inventory of Geotrails for Australia' documenting a considerable listing of projects where several geosites/geotourism sites can be connected into a journey linking geology and landscape destinations, have universal appeal with safe access, are relatively easy to establish, and represent a very cost-effective means of enhancing regional development.

Appendix C

Geoparks and GeoRegions

'UNESCO Global Geoparks are single, unified geographical areas where sites and landscapes of international geological significance are managed with a holistic concept of protection, education and sustainable development. Their bottom-up approach of combining conservation with sustainable development while involving local communities is becoming increasingly popular.'

Geoparks have been established world-wide to create enhanced opportunities for the people who live within their boundaries and foster economic benefits for them, usually through the development of sustainable tourism. Geoparks stimulate economic activity and sustainable development through geotourism (holistic, nature-based, and cultural tourism that focuses on an area's geology and landscape as the platform for providing visitor engagement, learning and enjoyment). By attracting an increasing number of visitors, a geopark fosters local socio-economic development through the promotion of a quality label linked with the local natural and cultural heritage. It encourages the creation of local, innovative enterprises and cottage industries involved in geotourism and geological inspired products.

Geoparks also focus on community engagement and ownership. In Australia, national parks focus generally only on biodiversity and often with insufficient attention given to geological heritage. In essence, geoparks are both a regional development concept as well as a branding tool. They achieve these goals through conservation, education and geotourism. Unlike World Heritage Areas and national parks, geoparks can comprise both protected and non-protected areas and enable and celebrate sustainable development.

Geoparks seek to conserve significant geological features and explore and demonstrate methods for excellence in conservation and geoscientific knowledge. This is accomplished through protected and interpreted geosites, museums, information centres, trails, mine sites, guided tours, school class excursions, popular literature, maps, educational materials and displays, and seminars. Geoparks are capable of being community driven. The geopark concept is an iconic one, applicable across all continents.

The establishment of geoparks should be based on a strong concept, political will with financial long-term support, and professional management structures. Hence, it is essential that, prior to the creation of a geopark, there should be comprehensive and exhaustive discussions with the community, researchers, and government agents to search for a common impetus. Geoparks can bring a new combination of social, economic, and environmental information to the political table.

Geoparks cannot be simply traditionally protected nature areas for teaching and appreciating their geological components with just sustainable development in mind. The geopark's mission is to be something totally new and different. Whilst a UNESCO Global Geopark must demonstrate geological heritage of international significance, the purpose of a geopark (at all levels including national and local) is to explore, develop and celebrate the links between that geological heritage and all other aspects of the area's natural, cultural, and intangible heritages. A geopark uses its geological heritage, in connection with all other aspects of the area's natural and cultural heritage, to enhance awareness and understanding of key issues facing society, such as using our earth's resources sustainably, mitigating the effects of climate change and reducing natural disasters-related risks. Geoparks give local people a sense of pride in their region and strengthen their identification with the area.

'State' based National Geoparks

As an option, State/Territory governments are empowered to approve the designation of identified areas as 'National' Geoparks under their existing statutory framework, because the proposed creation of a 'National' Geopark does not require any protective measures other than those already in existence to provide for both protected and unprotected areas, as appropriate.

As would apply for a UNESCO Global Park, any designated 'National' Geopark would need to be managed by an incorporated entity (local or state government created, community trust, association established under state government legislation etc.)

UNESCO Global Geopark Concept

Geoparks can choose to evolve through a series of levels from 'aspiring', 'national', 'state', 'regional' (e.g., European or Asia-Pacific Regions) to 'global'. There are now hundreds of geoparks around the world. Support to individual geoparks is offered through the Global Geoparks Network Bureau which is currently representing 169 members from 44 countries. The original target of the Global Geoparks Network is establishing 500 geoparks around the world. The number is growing at a rate of about 10 new global geoparks per year.

In China, there are three levels of geoparks: provincial, national, and global geoparks. They are all managed by local county or municipal governments under the direct supervision of the Ministry of Land and Resources. Currently, there are over 320 provincial geoparks (originally labelled as 'scenic areas') in China, among which 200 have already gained national status. With 41 of these now designated as global geoparks (including Hong Kong Geopark) having acquired this status, China manages by far the largest number of global geoparks in the world.

UNESCO member countries are entitled to nominate a maximum of two applications per year. Under the UNESCO Global Geopark operational guidelines, these applications must be made through the official channel of the UNESCO representative in the member country. The New Zealand National Commission for UNESCO has already announced the establishment of a UNESCO Global Geoparks programme in New Zealand and has appointed a Geoparks Expert Advisory Panel to encourage and support New Zealand nominations for UNESCO Global Geopark status. One 'aspiring' global geopark nomination (Waitaki Whitestone) is currently in preparation.

The Global Geopark brand is a voluntary, quality label and while it is not a legislative designation, the key heritage sites within a geopark should be protected under local, regional, or national legislation as appropriate. UNESCO offers support to Global Geoparks on an ad-hoc basis via requests from Member States. Geopark status at any level, including 'global' does not imply restrictions on any economic activity

inside a geopark where that activity complies with local, regional, or national legislation. The focus of geoparks is on promotion and appreciation of geological heritage, geology, and landscapes. These earth heritage sites are part of an integrated concept of protection, education, and sustainable development. Whilst World Heritage Areas are created in perpetuity, the status of global geoparks is reviewed and renewed by UNESCO every four years.

<http://www.unesco.org/new/en/natural-sciences/environment/earth-sciences/global-geoparks>

Even if an area has outstanding, world-famous geological heritage of outstanding universal value, UNESCO has determined that it cannot be a UNESCO Global Geopark unless the area also has a plan for the sustainable development of the people who live within it. To succeed, a UNESCO Global Geopark nomination, lodged by an appropriately incorporated management body, must have the support of local communities. Prior to a nomination being lodged, evidence must be demonstrated of geotourism activities being undertaken by a management authority (e.g., a national park agency) over a period of at least 12 months to establish credibility as a 'defacto geopark'.

There are six Global Geoparks in Europe that are geoparks specifically because of their mining history, and that mining continues in some of these territories. For example, in the Marble Arch Caves Global Geopark (Ireland), there are many quarries – dolomite, limestone, cement factory, and there is active exploration for shale gas, which would need to be extracted by fracking technologies. All these operations are undertaken in compliance with Irish legislation from both jurisdictions in the country. In Gea Norvegica Global Geopark (Norway) are located large larvakite quarries which export polished ornamental stone all over the world. In Magma Global Geopark (Norway) one of their partners is Titania A/S which operates as a mining company extracting ilmenite in Norway for the European titanium pigment industry.

The Muskauer Faltenbogen / Łuk Mużakowa UNESCO Global Geopark comprises parts of the German Federal States of Brandenburg and Saxony as well as of the Polish Lubuskie Province. It has about 80,000 inhabitants living in three rural districts with 19 provincial towns and municipals. The entire area of the Muskauer Faltenbogen / Łuk Mużakowa UNESCO Global Geopark, located across Germany and Poland, is geared to combine the principles of ecology, economy, and social interests. The principle of conservation of nature, cultural areas and of the post-mining landscape go hand in hand with the development of tourism and not only helped locals to enhance their identification with their region but also contributed to economic development. The selling points of the UNESCO Global Geopark are three-fold one of which celebrates the post-mining and cultural landscape inherited from 130 years of resource-based mining development between 1840 and 1970, inclusive of the Lusatia region in East Germany, an open cut lignite coalmining area under transformation. The Latrobe Valley coal mining region in Gippsland Victoria faces similar challenges, but at a much earlier stage of post mine-site development. These are the basis for a comprehensive educational concept which reaches from natural to man-made climate change, use of raw material and later 're-naturalisation' of historical and recent mining districts.

In summary, a geopark achieves its goals through conservation, education, and tourism. It seeks to conserve significant geological features and explore and demonstrate methods for excellence in conservation and geoscientific knowledge. This is accomplished through protected and interpreted geosites, museums, information centres, trails, mine sites, guided tours, school class excursions, popular literature, maps, educational materials and displays, and seminars. Geoparks are capable of being community driven. Geoparks stimulate economic activity and sustainable development through geotourism. By attracting increasing numbers of visitors, a geopark fosters local socio- economic development through the promotion of a quality brand linked with the local natural heritage. It encourages the creation of local enterprises and cottage industries involved in geotourism and geoproducts. The geopark concept is an iconic one, applicable across all continents. The value of the global geopark concept is explained in a journal article

<https://www.geoexpro.com/articles/2017/03/unesco-global-geoparks>

An application area for a UNESCO Global Geopark has no stipulated size but its geographical boundaries must clearly embrace a contained area of land (both protected and non-protected); with private landowners having the option of not allowing geopark activities on their land, should they choose not to participate. An application area can be as large as the boundaries of a local government area.

UNESCO approves a global geopark for an initial four year period, at the end of which it is reassessed for revalidation purposes to establish that it has complied with all agreed requirements and the UNESCO Global Geopark Code of Ethics <http://globalgeoparksnetwork.org/wp-content/uploads/2016/07/GLOBAL-GEOPARKS-NETWORK-CODE-OF-ETHICS-final.pdf>

The nomination procedure for UNESCO Global Geoparks requires the completion of a self-assessment document,

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/pdf/EN_UGGEvaluation_DocA_Self-evaluation_FINAL_12Feb2016_PR.xls

and the completion of a comprehensive application dossier

http://www.unesco.org/new/fileadmin/MULTIMEDIA/HQ/SC/images/Application_dossier_UGG_15Dec_2016.pdf

By raising awareness of the importance of the area's geological heritage in history and society today, UNESCO Global Geoparks provides local people with a sense of pride in their region and strengthens their identification with the area. The creation of innovative local enterprises, new jobs and high-quality training courses is stimulated as new sources of revenue are generated through geotourism, while the geological resources of the area are protected.

History of Geopark Development in Australia

1. The Kanawinka UNESCO Global Geopark Impasse

Whilst the concept of geotourism was first discussed in Australia in 1996 at an annual conference of the Geological Society of Australia, Australia's first geopark, Kanawinka, was declared in 2008 and announced in Australia at the Inaugural Global Geotourism Conference in Fremantle, Western Australia, in August 2008. The Kanawinka Geopark (26,910 square kilometres in area) featured recent volcanism extending from the Naracoorte Caves in South Australia into the Portland (Victoria) shoreline and north as far as Penola and Mount Hamilton. It represented the sixth largest volcanic plain in the world with 374 eruption points. The geopark was located across the two Australian states of Victoria and South Australia and was contained within eight Shire Council areas.

However, the Kanawinka Global Geopark was unable to gain State and Australian Government approval which would have enabled UNESCO to assign 'global geopark' status on an ongoing basis. This situation was reaffirmed when Australian Government Ministers for the Environment and Heritage Council (EPHC) met in November 2009. This Council decided that after consultation with Resource Management Ministers, whilst Australian governments support geological heritage, they had significant concerns with the application of the UNESCO Geoparks concept in Australia, especially without government endorsement. It was decided that existing mechanisms are considered sufficient to protect geoheritage in Australia. The Council requested that the Australian Government advise UNESCO that Australia would not recognise the Kanawinka Geopark because of the deficient UNESCO process in declaring it. Council also requested the Australian Government ask UNESCO to take no further action to recognise any future proposals for Australian members of the Global Geoparks Network, or to further progress Geoparks initiatives within Australia, including that

for the Kanawinka Geopark, unless the formal agreement of the Australian Government has first been provided. In 2012, UNESCO had no other choice but to withdraw Global Geopark designation for Kanawinka.

The former Kamaaina UNESCO Global Geopark has now been repackaged as a geotrail. Two local government authorities (Mount Gambier and Southern Grampians) have agreed to provide limited logistic support for a continuing geotrail arrangement and with added support of local community groups.

2. Overcoming Barriers to Geopark Development in Australia

In reflecting on the Kanawinka experience, back in 2008, the concept of global geoparks was clearly not supported by government planning and tourism agencies; the concept did not fit at all well into the prevailing public land management arrangements administered by government agencies.

Moreover, the concept was not embraced or understood by the geological professions, hence there was no constituency support that could be translated into political lobbying. As far as the tourism industry was concerned, geotourism was simply written off as a 'niche' interest area for those visitors interested in geology. Even ecotourism (as part of the nature-based tourism mix) was still a relatively young history with less than 20 years of development in Australia.

State/Territory Government Geological Survey organisations were also not supportive of geopark development and geotourism generally, with concerns about impact on access to land for exploration and mining, irrespective of UNESCO assurances that geopark development did not impact on these activities.

In response to these developments, a geoparks representative body (known as Geoparks WA Inc). was established in 2018 with the principal object of 'supporting and promoting the development of geoparks, geotourism and geotrails in Western Australia'. Originally established in 2008, the Australian Geoparks Network was formally launched in April 2021 to provide some national focus to this objective.

3. Geological Community Engagement: The Geological Society of Australia and the Australian Geoscience Council (AGC)

Largely in response to the Kanawinka experience, but also in recognition of overseas developments in geotourism and geoparks, the Governing Council of the Geological Society of Australia (GSA) decided in 2011 to establish a formal Geotourism Sub Committee of its Geological Heritage Standing Committee. Later in early 2015, Council established a separate Standing Committee focusing solely on geotourism <http://bit.ly/2irGlem>, and over the following 12 months, arrangements were put in place to provide linkages with two other key AGC members with significant geological membership – the Australian Institute of Geoscientists and The AusIMM, the latter society having subsequently provided strong support for the concept of geotourism and geoparks in its draft Australian Heritage Strategy of the Australian Government.

As a further development, in 2016, the AGC decided to appoint the then Chair of GSA's Geotourism Standing Committee as its official expert spokesperson on geotourism.

The Geotourism Standing Committee has since moved to establish state/territory-based subcommittees with groups already established in South Australia, Tasmania, and New South Wales, and under consideration in Western Australia. The GSA has also been active in promoting interest in geotourism symposia at various biennial Australian Earth Science Conventions and the 34th International Geological Congress held in Brisbane, Queensland in 2012.

In November 2018, following discussions held at the AGC Conference in October and in pursuit of its inclusion as a Geoscience advocacy opportunity under the current AGC 2015-2020 Strategic Plan, the AGC established a coordinating role with the objective of developing a national geotourism strategy under the umbrella of the AGC Advocacy Sub-committee. To accommodate the orderly development of major geotourism projects and activities in line with overseas trends and domestic regional development imperatives, the AGC saw the development of a national strategy, to be developed as a staged, incremental approach, as being essential to gain government endorsement at all levels.

4. Engagement with Government Geological Survey Organisations

During 2016, the Geotourism Standing Committee commenced a dialogue with the then Chief Government Geologists Committee (now known as the Geoscience Working Group - GWG), a body representing all the state and territory geological surveys as well as the national Geoscience Australia agency. This dialogue was focused on explaining the principles of geotourism and delivery mechanisms such as UNESCO Global Geoparks and geotrails. In July 2017, this body responded to the Standing Committee, noting the following operating trends in Australia relevant to geotourism development.

- The considerable interest in promoting geoheritage for public information and increased tourism revenue in regional Australia.
- The significant efforts by individual State/Territory Geological Surveys and Geoscience Australia in promoting geoheritage by publishing books, pamphlets, GIS-based apps, erecting explanatory signage etc. describing sites and geotrails.
- Collaboration between State/Territory Geological Surveys, 'parks and wildlife' agencies, member-based geoscience organisations, tourism bodies, and local governments or regional authorities in their jurisdictions to increase awareness of geo-and mining heritage generally and geoheritage sites, geotrails and areas.
- Many geoheritage sites are contained within and protected by conservation reserves and some State/Territory Geological Surveys have established small geoheritage reserves to further protect important sites.

As a preliminary step in considering a national geotourism strategy, consultations with GWG members were resumed in early 2019 to discuss the abovementioned views in the context of considering a range of discussion topics that might underpin the foundation of any national strategy. These discussion topics embraced the following issues and now form the basis for the formulation by the AGC of strategic goals underpinning the NGS (launched in April 2021) as follows.

1. Assessment and promotion of new digital technologies to deliver and interpret for the traveler or visitor, quality natural and cultural heritage content, highlighting geology and landscape.
2. To define an approval pathway for major geotourism projects.
3. To establish a framework for creating high quality, sustainable geotrails.
4. To establish national criteria for geoheritage listings suitable for geotourism.
5. To develop geotourism in regional mining communities with potential geoheritage and cultural heritage sites.
6. To strengthen Australia's international geoscience standing through geotourism excellence.
7. To develop and enhance the geoscience interpretation and communication skills of everyone actively involved in the presentation of geosites, enabling the provision of accurate and thematic information in an accessible manner.

In early 2021, the AGC established seven working groups with membership primarily sourced from within the Reference Group membership to undertake the implementation of these seven strategic goals.

The AGC's NGS has recently been presented to the GWG that has expressed in-principle support for the goals of the Strategy with a desire to be kept aware of the progress of strategy implementation and for assisting with promotion of the Strategy where it falls within a jurisdiction's mandate to do so, noting that the level of commitment to any geotourism activity will by necessity vary between jurisdictions, and approval or endorsement of strategies by GWG cannot be binding on individual jurisdictions.

The GWG has also nominated a representative for a new National Geoparks Committee, that is planned to emerge as an important outcome of the NGS implementation process, involving a current working group charged with the job of determining an approval pathway for major geotourism projects. The goal of the National Geoparks Committee is to ensure the development of a policy framework that ensures that any Aspiring UNESCO Global Geopark nomination is based on an identified GeoRegion that embraces geosites where sites and landscapes of international geological significance can be managed with a holistic concept of protection, education, and sustainable development. Whilst a GWG member will have a key role on the new National Geoparks Committee, technical advice will also be sought from respective jurisdictions on geological matters where appropriate.

It is hoped that the realisation of Goal 2 of the NGS can now lead to an agreed pathway for consideration of and approval by governments at all levels.

The AGC has now appointed a Steering Committee comprising the chairs of the seven working groups and representatives of three sectoral groups (resources, aboriginal interests, and environment sciences/communities) to oversee the implementation of the NGS.

5. Engagement with the Tourism Industry through Ecotourism Australia Ltd and FACET.

Progress has also been made in gaining some support from the nature-based tourism operators. The peak nature-based tourism industry association, Ecotourism Australia Ltd (EA) established in November 2013 a new industry grouping, the Geotourism Forum, to advocate and nurture the development and growth of geotourism recognising that it is sustainable tourism with a primary focus on experiencing the earth's geological features in a way that fosters environmental and cultural understanding, appreciation, and conservation, and is locally beneficial. The purpose of the Geotourism Forum is to advise EA of how best geotourism can be advanced and nurtured having regard to the EA's interest in inspiring environmentally sustainable and culturally responsible tourism.

In late 2014, EA communicated with the Hon Greg Hunt MP, the then Australian Government Minister for Environment in response to his expressed need to understand better how a coordinated review of the opportunities that could be achieved through Australia embracing the concept of geotourism and the introduction of geoparks, as well as advice that could assist government in the delineation and assessment of geopark proposals. The Minister subsequently advised EA that, after reviewing the national policy UNESCO's Global Geopark Network, he was 'positively disposed' towards Australia joining this initiative subject to several funding conditions. The Minister also indicated that he needed to consider how best to progress Australia's involvement in this initiative having sought the views of state and territory environment ministers and the Australian Local Government Association. It should be noted that Minister Hunt no longer has portfolio responsibility for matters relating to geopark development.

The Geotourism Forum co-convened with the GSA Geotourism Standing Committee, a major geotourism workshop as part of the 2015 Global Eco conference held at Rottnest Island, Western Australia, at the 2016

Global Eco Conference held in Hobart, with another workshop held in Adelaide in 2017, and ensured several presentations on geotourism at the 2019 Global Eco conference held in Cairns in 2019. Geotourism will also be featured at the 2020 Global Eco conference to be held in Margaret River, WA later this year.

At the opening address to Global Eco 2018, Adelaide, in November 2018, the Hon Ian Hunter MLC, then SA Minister for Sustainability, Environment & Conservation, stated that “geotourism is (also) an emerging market that South Australia is especially well placed to cater for, with megafauna fossils at the World Heritage Naracoorte Caves, evidence of the world’s earliest animals in the Flinders Ranges, and stunning geological formations in parks like the Gawler Ranges, Vulkathunha-Gammon Ranges, and the ice-age gem of Hallett Cove right on Adelaide’s doorstep.”

In May 2018, in association with Geoparks WA, the Forum Advocating Cultural and Eco-tourism Inc (FACET) convened an International Workshop in Perth that focused on the business of geotourism and geoparks.

Dialogue has also commenced with various RTOs (e.g., Central Highlands Development Corporation, Qld) and with various LTOs as required, and it is anticipated that this interaction will intensify as the National Geotourism Strategy evolves.

6. Engagement with Local Government/ Regional Development Agencies through SEGRA

Geotourism has been featured at annual conferences of ‘Sustainable Economic Growth Regional Australia’ (SEGRA) since 2012; with the GSA Geotourism Standing Committee and the EA Geotourism Forum convening the inaugural geotourism workshop at the 2014 conference at Alice Springs in the Northern Territory. SEGRA 2015 was held in Bathurst, New South Wales, an event which saw the genesis of the Etheridge and Warrumbungle global geopark proposals. SEGRA 2016 was convened in Albany, Western Australia, at SEGRA 2017 in Port Augusta in South Australia, and at SEGRA 2018 in Mackay, North Queensland. In August 2019, SEGRA was held at Barooga in the NSW Riverina and arrangements were made by the GSA for the Geotourism Spotlight Session to be coordinated by the Geological Survey of NSW with a focus on ‘public geoscience’ outreach, of which geotourism is a key component. In 2021, SEGRA has convened in Boulder-Kalbar featuring a keynote address by NGS Chairman, Dr Jon Hronsky OAM <https://bit.ly/3EuPZCT>

7. Pre-Aspiring UNESCO Global Geopark Proposals in Australia

Pre-Aspiring UNESCO Global Geopark proposals have been to date those projects in Australia deemed to have undergone assessment to obtain community and government support prior to any application being lodged with UNESCO.

The process of developing a Pre-Aspiring UNESCO Global Geopark involves an ‘on ground’ assessment of the feasibility of any proposal brought forward by any grouping including government agencies. With compelling regional development imperatives in mind, two such proposals, the Etheridge region of Far North Queensland (some 40,000 square kilometres in area) embracing the entire Shire of Etheridge; and the Warrumbungle region embracing three Local Government Areas - Warrumbungle, Gilgandra, and Coonamble located in Northwest NSW (some 27,000 square kilometres in area) have been subject to intensive assessment during 2017, following advice submitted to the Secretary General of the Australian National Commission of UNESCO advising that the ‘pre-aspiring’ nomination process had commenced. Progress achieved for these projects was reported to the 7th Global Geoparks Network Conference held in the United Kingdom in September 2016 and at the 5th Asia Pacific Network Symposium held in China in September 2017.

Etheridge Pre-Aspiring UNESCO Global Geopark Proposal

For the Etheridge proposal, a highly knowledgeable Geoscience and Mineral Reference Group has undertaken a considerable amount of work in defining the international significance of this region located west of the Atherton Tablelands in Far North Queensland, identifying some 20 key geosites in addition to the existing tourism attractions of Undara Lava Tubes, Cobbold Gorge, and the Talaroo Hot Springs area managed by the Ewamian Aboriginal Corporation. In addition, the reference group has developed a sophisticated GIS map of the region with smartphone connectivity, as well as excellent geological content for the proposed Savannahlander rail geotrail. A heritage specialist has also generated a fascinating overview of the mining heritage of the region.

These events have contributed to a fascinating diversity of geology, mineral resources, and landscapes, which influenced the lives and customs of Aboriginal people and patterns of European settlement.

The assessment process included consultation with all key stakeholders (e.g., aboriginal communities, national parks, tourism resorts etc.) undertaking individual self- assessments; consultation with key State Government agencies; and community consultation including information bulletins, public meetings involving Shire Councillors. The assessment identified the following natural and cultural assets.

- Geosites – In abundance with some 20 key geosites readily accessible to the public. Two geological events of Cainozoic age now feature as iconic geotourism attractions in the region, the most significant of which is the Undara Lava Tube system truly unique in the world based on consideration of age, preservation, and lineal extent, as well as the geomorphological expressions within flat-lying sediments at Cobbold Gorge. Both landforms, as well as the other Proterozoic and Paleozoic landforms in the area proposed for the Global Geopark, have resulted in a diverse range of landforms with unique biodiversity characteristics including a rich assemblage of birdlife.
- ‘Geo villages’ – Four small townships, all with community engaged geosites (including agate, sapphire and gold fields); key established ecotourism resorts of Undara and Cobbold Gorge; and the indigenous Talaroo Hot Springs development.
- Geotrails – The Lava Tubes, Gems and Gorges Geotrail of the Savannah Way (Figure 6) with connections to nearby mining heritage locations.
- National Parks – Undara Volcanic Park and four other park areas.
- TerrEstrial Mineral/Fossil Museum– the most significant mineral museum in Queensland.
- Many heritage mining sites, and small gold mining operations underscores Etheridge’s status of one Australia’s most diversified mineralised areas.

The geological (and natural and cultural heritage) assessment proved the easy part of the process. A relatively short 12-month period allowed for the assessment and nomination completion process, a decision which proved to be far too short to gain full community support.

Whilst National Parks managers, indigenous groups, and residents of townships were very supportive, because they understand the economic benefits of tourism, agricultural and small-scale mining groups as well as gemstone fossickers were not supportive, with a vigorous program implemented to dissuade Council from finalising the application. It was believed that the establishment of a Global Geopark upset the status quo. Issues raised were essentially fears of UNESCO control, more environmental regulation, and increased levels of tourism. The labels of ‘UNESCO’, ‘Geopark’, ‘Ecotourism’ etc. raised a range of concerns and fears.

Moreover, landholders, essentially graziers with long-term pastoral leases, feared that the proposed UNESCO affiliation would result in further regulation and restrictions curbing current and future activities

and potentially leading to a World Heritage Listing. Many considered that the large area of the application across the whole Shire which included large land tracts which were considered unlikely to be of interest for tourism. The use of the term 'geopark' which was interpreted by many to imply some form of existing or potential environmental protection (aligned to an expanded, national parks network). There were also fears that the UNESCO branding will generate a response by the State Government to impose an additional layer of environmental protection, even though UNESCO Global Geopark status does not imply restrictions on any economic activity within a UNESCO Global Geopark where that activity complies with indigenous, local, regional and/or national legislation. These fears were also shared by some elements of the mining industry involved in small scale mining operations.

Facing strong opposition, the proponent Etheridge Shire Council, decided not to proceed with the UNESCO Global Geopark application, and instead to establish a stakeholder Geotourism Advisory Committee chaired by the mayor to advance geotourism using the natural and cultural assets that have so far been identified. An Alternative Geotourism Development Strategy for the Etheridge 'Scenic Area' has now been approved by Etheridge Shire Council which is committed to developing tourism along with agriculture and mining as the three-fold basis of their forward regional development planning. <https://bit.ly/38UZVb3>

The Strategy which captures the aspirations of the pre-existing 'Unearth Etheridge' tourism strategy, providing additional natural and cultural heritage content; and through collaboration with other adjacent Local Government Agencies, establishment of strong geotrail linkages with geotourism attractions outside of the Shire. This alternative approach focused on developing an expansive principal focus on key geotourism areas within the Shire of Etheridge but to create linkages with key attractions outside the Shire utilising dedicated geotrails.

Emulating a program being undertaken in the United Kingdom, it is proposed that a 'geo village' approach be adopted for the Shire of Etheridge, thus enabling individual townships to take unique ownership of any activity e.g., community operated museum which has a natural or cultural heritage characteristic. Two of the small townships (Mt Surprise and Forsayth) have strong associations with agates and gems, and another (Einasleigh) has strong mining industry heritage. The main township, Georgetown, is the location of the TerrEstrial Centre mineral and fossil museum which might benefit from even a higher level of community involvement and the recently established Peace Monument has already made its mark.

Warrumbungle Pre-Aspiring UNESCO Global Geopark

In New South Wales, the Warrumbungle proposal focused on the Warrumbungle National Park, which was already included on Australia's National Heritage List, a fact which would seemingly pre-qualify the area as being of international geological significance. Regional Development Australia (RDA) Orana, the Warrumbungle, Gilgandra and Coonamble Shire Councils, the NSW National Parks and Wildlife Service, the Sidings Springs Observatory, and local indigenous communities were identified as key stakeholders by a project Steering Committee chaired by the Mayor of Warrumbungle Shire Council.

This heritage listed Park extends over a rugged mountainous area of sandstone plateaux and ridges and many prominent trachyte spires, domes, and bluffs. The 233 square kilometres of the park is part of the Warrumbungle Mountains, an eroded volcano of about 13-17 million years in age. In addition to its monumental scenery, the Park contains a varied complex of important plant and animal communities. In July 2016, the Park was the first within Australia to be certified as a Dark Sky Park by the International Dark Sky Association.

The remainder of the Shire areas include pastoral areas as well as native bushland such as parts of the iconic Pilliga Forest. In this instance, however, there is concern within State Government that the establishment of

any designation with some form of nominal 'park' status would result in land use conflicts with interests which are anti-development in nature. The Geological Survey of NSW (GSNSW) had strongly argued that the geopark be contained only within the Warrumbungle National Park. The Department of Planning and Environment has also flagged that they would like to see a comprehensive study undertaken to establish the economic benefits of the project to be weighed up with any political risk. Although there was firm support emerging from the State Government agency - Destination NSW that a creation of a UNESCO global geopark will substantially enhance tourism visitation to the region, at its meeting in April 2018, and after considering further the views of the GSNSW, the project Steering Committee decided to abandon plans to nominate for a UNESCO Global Geopark, and instead, accept the offer of the GSNSW to assist in developing an alternative geotourism strategy for the region that would include the establishment of a geotrail strategy, e.g., <https://www.youtube.com/watch?v= V1oZeqdUg0>

8. Conclusions Relating to Local Community Engagement for Geopark Development

Lessons have been learnt from the experience in advancing these two 'pre-aspiring' global geopark proposals. The following conclusions are offered.

1. More focus and time need to be applied to communicating the 'geo-regional' nature of geoparks. Whilst the promise of UNESCO branding offers the potential for economic benefit, it is a brand that can be seen by landholders as conveying overseas control and more environmental regulation.
2. More work is needed to overcome perceived fears about the detrimental impact of geoparks on other existing land users such as miners and other primary industry stakeholders.
3. Geopark proposals must be supported by State Government Geological Survey organisations to the extent that these organisations are prepared to commit professional geological service when it is realised that geoparks can contribute to community outreach programs of government.
4. Far more time must be allowed to gain community engagement/support to ensure geopark sustainability.

9. Agreed Key Factors for UNESCO Global Geopark Development in Australia

It is now understood that the following factors are essential requirements that need to be met to achieve Australian Government support for an Aspiring UNESCO Global Geopark nomination.

1. Geopark development needs to be state/local government agency supported.
2. A high level of community (including other land-user) engagement is essential to meet UNESCO requirements.
3. The key driver of geopark development must be focused on regional development – i.e., jobs and growth and demonstrate economic benefit to offset perceived political risk.
4. **The approval of State/Territory Government Geological Surveys for individual projects is an absolute necessity.** The development of the NGS is being structured to provide the mechanism for governments to evaluate and hopefully approve major geotourism project proposals.
5. Australian Government approval for UNESCO nomination may well be achieved if state/territory government endorsement and funding is clearly established.

10. Pilot 'GeoRegion' Projects

The AGC considers that two major geotourism projects, the Ku-ring-gai and Murchison 'GeoRegion' Projects, represent ideal pilot studies from which a national set of administrative procedures for geoparks and regional geotrains can be developed.

‘Ku-ring-gai GeoRegion’, Sydney, New South Wales

The Friends of Ku-ring-gai Environment Inc (FOKE), a community organisation, has initiated a project with the objective of making a positive contribution to conservation based in and around Ku-ring-gai Chase National Park, located on the northern outskirts of Sydney (and within the area forming part of the former Sydney Harbour National Landscape), by seeking recognition of the very significant natural and cultural heritage values as exemplified by a wide range of geosites which exist in this GeoRegion. This is not unprecedented in New South Wales as other geosites and geotrails have similarly been recognised at Port Macquarie, Newcastle, Warrumbungle National Park, Central Darling River region and Mutawintji National Park. Future branding of this GeoRegion as a UNESCO Global Geopark as has been achieved in over 44 countries is also a future possibility.

Having conferred with a range of experts on the geology, geomorphology, and related natural and cultural heritage values of Ku-ring-Gai Chase National Park, it was decided to investigate further particularly the special geoheritage values which exist in the proximity to the Ku-ring-gai Chase National Park area. These geoheritage values (both geomorphological and geological) form the platform for the development of the other natural heritage attributes as well as demonstrating the close relationship between landscape and human activity over many thousands of years. The Geological Survey of New South Wales has advised that, while concerned that appropriate steps will need to be taken by three LGAs and the NSW National Parks and Wildlife Service to ensure that visitor impacts are properly managed, the Survey has no objection to any proposal to develop this GeoRegion embracing some 250 square kilometres in area as an Aspiring UNESCO Global Geopark.

‘Murchison GeoRegion’ Project, Western Australia

Inspired by participation in a SEGRA 2014 conference, Western Australia’s Mid-West Development Commission (MWDC) is working with seven LGAs to establish WA’s first major geotourism development to be built on a geotrail model, focused on the extensive Murchison GeoRegion of WA, located some 550 kilometres north of Perth. The MWDC believes that the ancient Murchison geology provides the ideal platform for unique, nature-based tourism experiences of global significance, particularly to the ‘experience seeker / dedicated discoverer’ market. The Mid West Tourism Development Strategy (2014) concluded that the region’s iconic nature-based tourist attractions were not developed to their potential and that its visitor appeal was not fully realised. The Strategy identified geotourism in the Murchison sub region as a potential ‘game changing’ tourism initiative, with capacity to help the region realise its potential as a major tourism destination, with the potential of being nominated as an Aspiring UNESCO Global Geopark.

Proposed ‘Glen Innes GeoRegion’, New South Wales

Within the framework of the National Geotourism Strategy (NGS) and as a significant first for Australia, the Glen Innes Severn Council (in the New England Region of Northern NSW) has recently approved a comprehensive Tourism Destination Management Plan <https://lnkd.in/g5yk5aNu> that has embraced ‘geotourism as a holistic approach to featuring natural and cultural heritage into the relevant customer experiences.’ The Plan also proposes the development of various trails including a rail trail, all with potential development as geotrails.

In addition, the Council has decided to investigate the potential of the Glen Innes Highlands being developed as an outstanding GeoRegion and to review the NGS, with the intention of approaching the Australian Geoscience Council to conduct an audit of this proposition, with early input anticipated from the Geological Survey of NSW and from other geoscientists with local knowledge and experience.

The Council also sees the medium-term potential of this proposed GeoRegion being considered as a potential Aspiring UNESCO Global Geopark nomination, given the diversity of the Region's substantive cultural attributes including its rich mining heritage.

Appendix D

Engagement with the former Australia's National Landscapes Programme

Several of the Geotourism Standing Committee's members have been actively involved in and have championed Australia's National Landscapes (ANL) Programme because of the opportunity to promote geotourism concepts. The Programme was the first time the tourism sector, nature conservation managers and tourism advocacy organisations had worked closely together to present Australia's top nature tourism experiences. The Programme facilitated coordinated tourism planning and management and provided a focus for international marketing. The Programme was delivered 'bottom up', with coordinating bodies for each ANL made up of land managers, regional tourism bodies and local government. The system was 'blind' to land tenure boundaries and in that sense, resembled the geopark structure. Three of the ANLs straddled state borders, demonstrating a unique level of cooperative management.

Australia's National Landscapes Programme included the following regions: Australian Alps (New South Wales/Victoria), Australia's Green Cauldron (New South Wales/SE Queensland border region), Great Barrier Reef and Wet Tropics area (Queensland), Australia's Red Centre and Australia's Timeless North (Northern Territory), Australia's Coastal Wilderness (New South Wales/Victoria), the Flinders Ranges and Kangaroo Island (South Australia), the Great Ocean Road (Victoria), the Greater Blue Mountains and Sydney Harbour (New South Wales), the Kimberley, Ningaloo-Shark Bay and Great South West Edge (Western Australia), and Tasmania's Island Heritage.

Unfortunately, in 2014, the two key participating Australian Government agencies advised that they had stepped back from a central coordination role and would instead encourage local steering committees and the tourism industry to further advance this concept. However, in 2017 the peak tourism industry lobby group, the Tourism and Transport Forum Australia, has released a white paper extolling the virtues of the ANL programme, a move that can only assist in promoting the development of geotourism.

Detailed information (including Experiential Development Strategy Plans) for these landscapes can be sighted at <https://www.ecotourism.org.au/hub/?hub=National+Landscapes+Materials>

Appendix E

Strengthening Australia's International Geoscience Standing through Geotourism Excellence (Goal 6 of the National Geotourism Strategy)

Using geotourism to strengthen Australia's international geoscience standing and enhance its influence for the long-term benefits of Australian geoscientists through the establishment of sister park, sister museum/rock garden, sister geological and mining heritage sites relationships, particularly with China and countries in the Asia-Pacific region (specifically China, Taiwan, South Korea, Japan, Vietnam, Thailand, Malaysia, PNG and South Pacific nations etc.) , has been identified as a hitherto unrealised opportunity. This imperative is also relevant for countries that enjoy 'Gondwana age' geological relationships with Australia, specifically New Zealand, and nations within South America, Africa, the Indian Subcontinent, and the Arabian Peninsula.

In June 2016 a Memorandum of Cooperation between the Geological Society of Australia and the Geological Society of China was executed. This Memorandum of Cooperation seeks to promote better understanding and closer cooperation between the two associations for the promotion and advancement of geotourism. At this stage, it is proposed that any co-operation agreement could embrace areas of activity which could include.

- growing and enhancing the level of best practice 'nature-based' tourism in both China and Australia;
- progressing protection, conservation, and presentation of the geoheritage of natural and mixed protected areas, geoparks (in China), national parks and reserves (in Australia); Australian National Landscapes and areas on the World Heritage List (as defined in the World Heritage Convention 1972) areas (both countries);
- exploring opportunities to promote ecotourism and geotourism;
- raising the profile of China and Australia as world- leading 'nature-based' tourism destinations;
- exploring other co-operative projects such as participation in conferences; and
- fostering the development of 'sister park' relationships between China and Australia.

On 9th December 2017, a historic Memorandum of Cooperation embracing a 'sister park' arrangement was signed between the Zhijiangdong Cave UNESCO Global Geopark and the Jenolan Karst Conservation Reserve. The then Reserve's Administrator, also a member of the GSA Geotourism Standing Committee, executed this agreement during his visit to the spectacular karst landscape in Guizhou Province in south-west China. The Reserve looks forward to sharing information and management practices, receiving delegations and greater numbers of visitors from China, and negotiating possible staff exchanges. It is realised that several Chinese UNESCO Global Geoparks are now keen to develop 'sister park' arrangements with key scenic landscape regions in Australia.

The AGC has now been introduced to the Indonesian Association of Geologists (IAGI) through the auspices of The AusIMM. The IAGI has a competency standard for geotourism guides that are recognised by the Indonesian Government and have trained a lot of geotourism guides. Indonesia currently has five UNESCO Global Geoparks as well as many national geoparks plus hundreds of geoheritage listed sites that have fostered the development of geotourism. Goal 6 of the NGS provides for the potential for engagement with other countries in the Asia Pacific Region with strong interests in geotourism and geopark development.