



## **Gardens of Stone State Conservation Area Draft Master Plan of Management and the National Geotourism Strategy**

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, geotourism, 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.

### **Proposal**

It is understood from the Gardens of Stone Statement of Management Intent that the new Gardens of Stone State Conservation Area forms a strategic link between Blue Mountains National Park, Wollemi National Park, and the Gardens of Stone National Park. In addition to protecting significant cultural, landscape and other natural values, it is recognised this new conservation area will bring significant economic benefits to Lithgow, and the surrounding region, through investment into the park and creation of new experiences that will attract visitors to the area.

It is noted that the values of this state conservation area are highly dependent on geoheritage values of outstanding international significance and are complemented by significant biodiversity and significant cultural attributes, having regard to the interests of the Wiradjuri and Dharug Aboriginal Peoples.

A diverse range of cultural post European settlement heritage values (particularly underground coal mining) are also represented in the area.

It is noted that proposed visitor facilities include elements to be progressed as a priority include:

- The development of a multi-day walk linking the Gardens of Stone State Conservation Area with Wollemi National Park.
- A Lost City adventure precinct for 'adventure activities'.
- A network of tracks and trails for walking and cycling.

The interest of the AGC in this project has arisen from interest now being shown by the Blue Mountains WHA Institute <https://www.bmwhi.org/>, members of whom has expressed interest in highlighting mining heritage in the Blue Mountains, with the Gardens of Stone State Conservation Area (otherwise known as 'Destination Pagoda') considered as one key element.

The AGC has reviewed reports which describe the key economic elements of the 'Destination Pagoda Project' <https://bit.ly/3QqMJ1O> and <https://bit.ly/3bimjiY>

The recently released **THRIVE 2030 Visitor Economy Strategy (Action 7.5) of the Australian Government** states 'Grow and develop high-quality products and experiences around unique Australian locations and themes, including approaches which integrate sustainable nature tourism with economic opportunities for Traditional Owners, and capitalising on **emerging tourism trends such as geotourism.**' <https://bit.ly/3DzUOeD>

### **Geotourism ('value-add' nature-based tourism)**

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.

Geotourism has been defined as 'tourism which focuses on an area's geology and landscape as the basis for providing visitor engagement, learning and enjoyment', but it is not a niche market. It has links with adventure tourism, cultural tourism, ecotourism, astrotourism, and agritourism, but is not synonymous with any of these forms of tourism, although in broad terms it embraces them all because it is essentially 'place-based.' Geotourism supersedes ecotourism, because the latter is practised in protected areas such as national parks whereas geotourism is undertaken in all areas, including places where primary industry activities are being undertaken, and in areas with Aboriginal land tenure.

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.

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 that geotourism is booming, whereas the development of geotourism in Australia lags many countries' approaches, notwithstanding the fact Australia has taken the initiatives in several areas in development of the concepts underpinning geotourism.

According to the National Geographic Society of the USA, geotourism is:

- Environmentally responsible - committed to conserving resources and maintaining biodiversity.
- Culturally responsible - committed to respecting local sensibilities and building on local heritage.
- Synergistic - bringing together all elements of geographical character to create a travel experience that is richer than the sum of its parts and appealing to visitors with diverse interests.

The landmark 2003 Geotourism study, sponsored by National Geographic and conducted by the Travel Industry Association of America, found that 65 million American households are predisposed to support the principles of geotourism. As the global population of travelers increases and destinations become more globalised and homogenous, these principles are resonating with travelers across the globe.

According to the 2017 report 'Unlocking Our Great Outdoors' of the Tourism and Transport Forum (TTF) <https://bit.ly/2WgeNLb> international visitors to Australia are increasingly engaging in nature-based tourism. In 2016, it was reported that 5.2 million international visitors, or over two-thirds of all the international visitors to Australia, engaged in some form of nature-based tourism. In addition, nature-based tourism attracted 20.1 million domestic overnight visitors in 2016 and 23.6 million domestic day trip visitors. After recording flat growth between 2005 and 2011, nature-based tourist numbers have accelerated in more recent years. This has occurred for all three main categories of tourists – international, overnight domestic and day trippers.

This TTF report also highlighted the potential of 16 identified major landscapes developed by Tourism Australia and Parks Australia as the Australia's National Landscapes program, one of which was the Blue Mountains World Heritage Area, which represents a gateway for international tourists to adjacent landscapes of Central West NSW. Many of these landscapes offer the opportunity for particularly younger FITs (increasingly 'digital natives'), eager to combine a geotourism experience obtained through adventurous self-drive tours, by accessing newly developed geotrails as envisaged in the NGS.

The upsurge in domestic tourism experienced during the COVID-19 pandemic in recent years has reinvigorated interest by Australians in exploring the best of what regional and outback Australia has to offer, and the adoption of geotourism-focused product development offers the opportunity to excite first time visitors and importantly to encourage repeat visitation.

### **Geotourism as a driver of place-based regional economic development**

Geotourism is increasingly seen globally as an instrument of regional economic development.

Through its 'place-based' and holistic approach, geotourism:

1. As previously stated, 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.

2. Incorporates other forms of nature-based tourism such as ecotourism, agritourism, and astrotourism, the latter which should preferably focus on how Aboriginal elders have traditionally 'read the stars.'
3. Celebrates geoheritage and promotes awareness of and better understanding of the geosciences, noting that a revised global framework for the application of criterion (viii) of the World Heritage Convention as it applies to World Geological Heritage has recently been released by the IUCN. <https://bit.ly/39Zb4vf>
4. 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 and state based, regional development agencies.
5. Provides a means of highlighting and promoting public interest in mining heritage including coal mining.
6. Provides the means of increasing public access to natural and cultural heritage content through a range of new interactive digital applications on smartphones that enable advanced and innovative ways of experiencing nature.
7. 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.
8. 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, rail trails, skywalks etc.), and patronage of local visitor centres and museums.
9. Encourages attractions to be developed as a sustainable tool for the growth of local and regional communities.
10. Offers the potential for new industries and employment opportunities through the development of major projects within Australia.

The key benefits of geotourism development are also detailed as an attachment to this submission.

### **The National Geotourism Strategy (NGS)**

Launched in April 2021 by the AGC, the NGS is being implemented to support the orderly development of major geotourism projects and activities in line with overseas trends and domestic regional development imperatives.

The NGS has seven strategic goals, all of which are considered highly relevant to the future management of the Gardens of Stone State Conservation Area. These span pathways for identifying and implementing major geotourism projects, to the development of digital platforms to provide information for travellers on geological features within the 'Destination Pagoda.' The Strategy can recognise their significant geoheritage and enable the establishment of new geotrails to embrace what is already proposed in the draft management plan.

Key documents relating to the launch and further development of the NGS can be downloaded.

- NGS Goals <https://bit.ly/34lfCiq>
- Media Release, Launch of the National Geotourism Strategy, 7 April 2021 <https://bit.ly/3HEcyaB>
- Media Release Explanatory Notes and Contact Details for Participating in Working Groups <https://bit.ly/3n6yiT2>
- Media Release, THRIVE 2030, 7th April 2022 <https://bit.ly/3ufYI9w>

The seven strategic goals of the NGS are:

1. Assessment and promotion of new digital technologies to highlight and interpret natural and cultural heritage, 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 a national listing for geoheritage sites 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 geoscience interpretation and communication skills for everyone actively involved in the presentation of geosites, enabling the provision of accurate and thematic information in an accessible manner.

### **NGS Goal 1: Innovation: digital and new products**

In developing the NGS for Australia through **the implementation of Goal 1**, the AGC has recognised that state-based geotourism maps, supplemented by publications, may well be eventually replaced by digital technologies (e.g., 3D visualisation, augmented reality, virtual reality, holograms, and live

streaming using smartphones and drones) and GIS technologies as a cost-effective means of accessing and better communicating geological content for tourists visiting the Conservation Area.

There exists a major challenge to structure digital frameworks which capture and interpret key elements of natural and cultural heritage sourced from a wide range of directories, and which define the holistic nature of geotourism, having regard to the process of digital transformation which is impacting on all industries. The imperative driving this goal will be meeting consumer needs, particularly from international visitors, now increasingly accustomed to the use of digital devices to underpin all aspects of their tourism experience.

Moreover, it is recognised that these technologies provide a means of interpreting geosites (including sites of cultural significance) where measures need to be put in place to protect geological heritage or have regard to Aboriginal cultural sensitivities.

More information about what Goal 1 sets out to achieve relating to virtual and augmented reality experiences are explained in the following two video presentations to a recent Earth Sciences (AESC 2021) conference.

- <https://www.youtube.com/watch?v=GzhjHq4XQ7Q&t=5s>
- [https://www.youtube.com/watch?v=KqC\\_r7esrj0](https://www.youtube.com/watch?v=KqC_r7esrj0)

The application of digital tools in recent geotrail development in New South Wales is outlined in the following two video presentations.

- Warrumbungle National Park Geotrails  
<https://www.youtube.com/watch?v=V1oZeqdUg0>
- NSW Geological Survey <https://www.youtube.com/watch?v=Fkdbez3Meh8>

Recent developmental work in support of the Flinders Ranges WHA nomination from South Australia highlights the use of virtual reality <https://ab.co/2TW8Fty>

The following link details an interesting example of a virtual tour from Rottnest Island, Western Australia <https://bit.ly/3HCsjPI>

In another prime geotourism location (the Ku-ring-gai GeoRegion of New South Wales in which the NPWS is an active participant), drone technology has been used to highlight coastal geomorphology and sedimentary rock features <https://www.youtube.com/watch?v=holu30ie8OE>

It is suggested that this approach has significant relevance to the potential interpretation of the pagoda landforms.

### **NGS Goal 3: Delivering geotourism products and experiences through Geotrails**

Geotrails are journeys that offer the advantages of

- relating directly to the tourism experience linking destinations particularly of

- geological or geographical interest;
- having universal appeal, and do not compete with or impact on land management/access issues;
- being easy to establish and representing a cost-effective means of enhancing regional development.
- forming logical journeys linking accommodation destinations where available;
- melding the geological heritage features of a region with a **cohesive story**; and
- incorporating the biodiversity and cultural components (including mining heritage) of the region through which the geotrail traverses.

Geotrails not only link natural landscapes, wilderness, and protected areas, but also include human modified environments like quarries, road sections and urban settings. Geotourism argues that to fully understand and appreciate the environment, visitors firstly learn about the Abiotic (non-living) elements of climate, landscape, geology, and soils, as these determine the distribution of Biotic (living) elements of animals and plants. Both components influence the cultural landscape of how people inhabited the area in the past, as well as how they live there today. These become the key ABC (Abiotic, Biotic, Cultural) elements of geotourism/geotrails, which provides a cohesive approach to interpreting natural areas.

In NSW over recent years, the Geological Survey of New South Wales (GSNSW) has developed in conjunction with Councils, universities, and community groups, three outstanding localised geotrails <https://bit.ly/3OnKFWC>

- the Newcastle Coastal Geotrail linking fourteen geosites along about 10 km of coastal walk from near Newcastle CBD at Nobbys Beach in the north, to **Glenrock State Conservation Area** to the south;
- the **Port Macquarie Coastal Geotrail** covering about 4 km of coastline from Port Macquarie CBD south to the Sea Acres National Park; and
- a series of geotrails of the **Warrumbungle National Park** have recently been captured in a video production of the Department of Regional NSW.  
<https://www.youtube.com/watch?v= V1oZeqdUg0>

These geotrails are supported with smartphone apps as virtual tours and provide a unique and interactive experience for visitors, school groups, and local communities.

- Apple: <https://apple.co/3FaAPUD>
- Android: <https://bit.ly/3kzalNv>

Geotrails 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.

In summary, **Goal 3** of the NGS seeks to establish a framework for creating high quality, sustainable geotrails across Australia. NSW based David Robson is the chair of the working group assigned to implementation of this goal. David is also Chair of the Geotourism Standing Committee of the



Geological Society of Australia and is available to provide advice and guidance about geotrail design and establishment. E: [robodavidf@gmail.com](mailto:robodavidf@gmail.com)

#### **NGS Goal 4: Geodiversity values of the Gardens of Stone State Conservation Area**

The sandstone pagodas forming the Gardens of Stone State Conservation Area are regarded as being of international geoheritage significance as identified by the visiting Chief of Earth Sciences and Geohazard Risk Reduction of UNESCO during a site inspection in 2019.

#### ***The link between natural geodiversity and biodiversity values***

Biodiversity is rightly given significant attention in the draft management plan which also recognises that 'the complex rocky landforms of the upland plateau provide a diversity of habitats for plants and animals resulting in rich biodiversity.' It is also worth recognising that the underlying geodiversity of any ecosystem may be as influential upon flora and fauna as the ambient climate and provide a proxy measure for biodiversity. With the Holocene – Anthropocene boundary partly defined by mass extinction and the bulk of biodiversity yet to be subject to taxonomic attention, it has been suggested that geodiversity conservation might provide a useful shortcut towards biodiversity conservation; terrain encompassing either a unique aspect of geodiversity or a geodiversity hotspot would appear likely to be prospective for undescribed species of biodiversity. Conservation biologists are increasingly adopting this outlook.

#### ***Two best practice examples***

Geology has featured strongly in the public recognition of scenic areas in the United States for more than a century and was embodied in the establishment of National Parks Service (NPS) from 1872 onwards. Today the US NPS has an extensive series of web pages under the heading Geology exemplifying the importance of geodiversity for both its intrinsic values and the visitor experience. The US NPS also embrace the concept of geodiversity as nature's stage.

Another noteworthy example is Scotland's Geodiversity Charter. This encourages the promotion and management of geodiversity and better integration of geodiversity into policy and guidance, consistent with the economic, social, cultural, and environmental needs. It presents a vision supported by almost 100 organisations large and small, thereby demonstrating that the promotion and conservation of geodiversity is not merely a niche consideration.

Geodiversity has both intrinsic and utilitarian values that, like biodiversity, may require conservation effort. No longer the 'new kid on the block,' geodiversity conservation is in many parts of the world now considered an essential part of mainstream conservation efforts and reserve management. As part of their best practice guidelines series, IUCN have recently published Guidelines for Geoconservation in Protected and Conserved Areas.

The seminal textbook is 'Geodiversity: valuing and conserving abiotic nature,' which has more recently been supplemented by 'Geoheritage: assessment, protection, and management.' The journal 'Geoheritage' was first published in 2009 and has since been joined by the International Journal of Geoheritage and Parks. Several geoscience journals have also published special issues on the topic, e.g., the Proceedings of the Geologists' Association (2013, vol. 24, issue 4), and the



Australian Journal of Earth Sciences (2019, vol. 63, issue 6).

The substantial effort required to prepare those, and many related publications is indicative of three key land management concerns of interest to the geoscientific professions:

- Geodiversity is significant for a wide range of reasons; ranging from pure geoscientific interest, through provision of ecosystem services including habitat diversity and onwards to a cultural perspective that includes landscape as ancestor and visitor attractions.
- Aspects of geodiversity can be susceptible to degradation because of human disturbance. In many cases such degradation is permanent and irreversible. Only active landforms have any potential for recovery, which may be imperceptibly slow on a human timescale.
- Geodiversity must first be valued to conserve and protect it.

It is therefore suggested that an appropriately comprehensive and effective management plan should follow contemporary reserve management practice and consider the identification, conservation, presentation, and, where necessary, rehabilitation of those elements of geodiversity that may be present within the Gardens of Stone Conservation Area.

The AGC can provide access to the various technical papers that explain the concepts elucidated above.

#### **NGS Goal 5: Developing geotourism in regional mining communities with potential geoheritage and cultural heritage sites**

Of relevance to the management planning process, **Goal 5** focuses on geotourism in areas with opportunities for regional communities. Goal 5 is designed to develop geotourism (especially past and present mining communities) not covered by significant conservation legislative protections, but which are still worthy of recognition and promotion. It unites a cross-section of representatives from mining groups, Aboriginal heritage and tourism groups, conservation, tourism, and academia to explore tourism potential in places containing geodiversity that

1. has been exposed or modified by human activities (especially mining & quarrying), and
2. has significant additional value to people, through cultural history, recreational use, or educational opportunity.

This goal recognises that there are a range of landscapes in regional Australia that contain either Aboriginal and/or European settlement value, which do not fit into more 'traditional' narratives of geotourism in unmodified or protected areas. Mining landscapes, both past and present, possess important educational values and offer interesting aesthetics and experiences that could be of considerable interest to tourists. Geotourism opportunities could also arise from the consequences

of potential mine closure, most of it currently oriented to environmental remediation (make safe, stable, and non-polluting), which has educational value, and highlights system support values associated with remediation. There is scope to include the preservation of mining heritage in situ or nearby built (e.g., buildings, workings, and equipment), and non-built (e.g., mining and personnel records), with the geotourism or geoheritage potential being accepted as the rationale for conserving these assets as important cultural heritage assets for new product development.

The AGC notes that one of the mining related strategies stated in the management plan is to ‘develop and implement environmental management plans to minimise impacts on park values arising from mining activities, monitoring, mining infrastructure and mining decommissioning/rehabilitation works, and to collaborate with mine operators to develop decommissioning schedules for mine and supporting infrastructure’. There is scope to include the preservation of mining heritage in situ with the geotourism or geoheritage potential being accepted as the rationale for conserving these assets as important cultural heritage assets for new geotourism product development. In this context establishing the relationship between the underlying coal mining activity and the nearby Lithgow State Mine Heritage Park would fall within the remit of Goal 5.

Regarding the protection of the integrity of the pagoda outcrops, the AGC is aware that arrangements will no doubt need to be finalised between the Department of Regional NSW and the mining company using mechanisms available through coal lease conditions. However, within the remit of **Goal 7**, there is expertise being developed to enhance geoscience interpretation (also in respect of the underground mining processes being deployed) and communication skills for natural and cultural heritage professionals engaged in geotourism.

Aboriginal cultural elements and landscapes cut across widely accepted, post-settlement landforms and landmarks, and have values specific to various groups and individuals. Therefore, there is potential to incorporate and/or communicate (with permission or via collaboration) creation stories and narratives of landscapes and features through geotourism. In this context, there is an opportunity to see a greater emphasis put on the connection across geotourism, geoheritage and the cultural heritage of Aboriginal peoples and the potential for future collaborations. In this context, Goal 5 seeks to embed the Aboriginal experience into the overall visitor experience, thus improving business capability and awareness. And Goal 7 works to assist tour guides and presenters deliver accurate and thematic information in an accessible manner.

### ***Building partnerships to achieve resilience, sustainability, and social license***

The Goal 5 Working Group has produced a reference document. This proposes a set of unifying terminology describing the various elements and activities that could be included in geotourism experiences, the agencies and stakeholders required to collaborate to achieve the initiatives in this strategy, and examples of Australian and International geotourism activities that approach what is desired to be achieved through this goal.

The Working Group includes representatives of three communities of the peak mining professional industry group, The AusIMM. The three communities represented are the Heritage Committee as well as the Social and Environment and Geoscience Societies. Members of this group are available to provide any advice relating to the Gardens of Stone State Conservation Area.

Sustainable development is a core element of geotourism (which incorporates ecotourism) and through any future establishment of UNESCO Global Geoparks in Australia. It is understood that these approved geographical areas are sites and landscapes of international geological significance which 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 recognised as a core characteristic of global tourism.

## **Recommendation**

It is recommended **that the management planning process for the Gardens of Stone State Conservation Area consider embracing the concept of geotourism through engagement with the NGS and the THRIVE 2030 Visitor Economy Strategy of the Australian Government.** Geotourism provides the framework to leverage more elements of nature-based tourism (i.e., offer new experiences **through the development of geotrails**) whilst enabling the region's communities to diversify their local economies, leverage their abundant natural resources, increase international and domestic visitation, and become a driver of regional and local socio-economic prosperity.

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## **Attachment**

### **Key Benefits of Geotourism Development**

The benefits of geotourism development in Australia are many including:

- 1. 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).
- 2. 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 Aboriginal 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.
  - Management roles in geoparks and mining parks, regional development, and local government agencies supporting the visitor economy.
  - Direct employment opportunities in tour operations resulting from increased tourism visitation.
  - Opportunities for pastoralists and farmers to value-add and diversify by developing 'farm stay' tourism experiences.
  - Creating indirect multiplier effects across other industries to service the additional visitation.
- 3. 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 NGS acknowledges the need to protect the scientific and cultural sensitivity of some geoheritage and geosites, and to ensure protection from geotourism where appropriate.
- Education opportunities and early employment experience for school-age children who are more sensitive to protecting and nurturing our environment.

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