# Geoparks – learnings from Australia

Alan Briggs, Ross Dowling and David Newsome

**Abstract**

**Purpose** – *This study aims to provide an overview of the current socio-political geopark situation in Australia and set this into a global context. In addition, the authors consider this information to be useful for all stakeholders involved in geopark research and development. An analysis of constraints is set alongside stakeholder views collected from remote rural Western Australia. The authors also place Australia in a global context in regard to the future of geoparks.*

**Design/methodology/approach** – *Vital contextual information regarding the tourism significance of geoparks is sourced from key literature. The authors analyse and report on the situation surrounding the current lack of enthusiasm for the geopark concept by the federal government and states in Australia. The authors also report positive rural community stakeholder views on geopark development from regional Western Australia.*

**Findings** – *While Australian federal, as well as state governments have yet to accept geoparks, stakeholder research in Western Australia supports the idea of geopark development. Learnings articulated in this viewpoint are relevant to any country pursuing and initiating the geopark concept. The authors posit that global geopark development can become a vital strategy in post-COVID-19 tourism recovery planning.*

**Originality/value** – *Australia currently does not have a United Nations Educational, Scientific and Cultural Organisation (UNESCO)-recognised geopark. Accordingly, the authors present a case for geopark development, while at the same time exploring the socio-political reasons behind the lack of geopark implementation in Australia. The authors consider the future of geoparks in the global context and reiterate the point that geoparks are important for COVID-19 recovery of tourism and in regard to UNESCO's Sustainable Development Goals for 2030.*

**Keywords** *Geoparks, Australia, Stakeholders, Tourism, Post-COVID-19 recovery*

**Paper type** *Research paper*

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## Introduction

Geoparks are unified areas with geological and landscape features of international significance and are managed with a focus on conservation, education and sustainable development outcomes (UNESCO, 2016). Geotourism is the key economic driver for geoparks (Farsani *et al.*, 2011; Ng, 2017). The geopark concept was initially adopted to conserve geological sites in Europe and has since evolved to be much more. Geoparks now adopt a more holistic approach using conservation, education and sustainable development to achieve their goals. They have been demonstrated to foster business growth, create employment and improve community well-being (Dowling and Newsome, 2018; Ng, 2017; Zouros, 2010). China, for example, has employed geoparks as a successful rural poverty-reduction programme (Ng, 2017). In other countries where geoparks are established, mostly in rural areas, permanent and seasonal employment is used to service tourists and visitors (Zouros, 2010).

Despite the global success of geoparks and a highly visible and accessible geodiversity, Australia currently does not have any geoparks (Dowling, 2017; Briggs, 2020). The significance of focussing on Australia's geological heritage as a platform for tourism engagement and development has recently been emphasised by Robinson (2020). In addition, Robinson (2017a, b) has previously articulated the importance of community engagement and provided discussion regarding geopark ideas in eastern Australia, namely, the Etheridge and Warrumbungle proposals, which up to now

have not been realised. More recently, the scope for geopark development in rural Western Australia has been considered from a stakeholder perspective (Briggs, 2020). In addition, Semeniuk *et al.* (2020) describe the prospects for a geopark at a coastal site in Western Australia from a detailed geoheritage point of view. At the same time, Australia has been experiencing rural decline since the inception of corporatisation and mechanisation of farming enterprises across rural areas, leading to declining employment opportunities, reduced and aging populations and young people leaving to seek education and employment in the city (Briggs, 2017). This has led to the reduction of business and government services and impacted the availability of volunteers for community, emergency services and sporting activities. As a countermeasure, rural communities in Australia are currently seeking ways to create employment to reverse these trends.

Despite the beforementioned international success of geoparks in providing an incentive for business growth and job creation, particularly in rural areas, Australian federal and state governments currently do not fully support the introduction of geoparks. Furthermore, the government's narrow view of geoparks is that they only exist to protect geoheritage and the holistic sustainable development approach, which is being realised internationally, is not fully appreciated in Australia. In 2019, the Australian federal government indicated that it would endorse geoparks on state government recommendations. State governments, however, continue to hold negative perceptions, especially in regard to confusion surrounding the use of the word "park" and implications that there might be constraints on mining and pastoralism through association with a perceived "green focussed" organisation like the United Nations Educational, Scientific and Cultural Organisation (UNESCO).

The aim of this paper, therefore, is to provide an account of the socio-political context that sets Australia in the current global context. Our intention is to add value to the knowledge required in the pursuance of geopark development. Recent case study analysis from rural Western Australia is used to explore reasons why geopark implementation needs to be supported at federal and state government levels. The future significance of Government attitudes to geopark development is advanced in the context of geoparks being a global strategy for economic development and part of the solution in mitigating some of the adverse impacts of the coronavirus pandemic.

## Geoparks in context

There has been an international geopark movement since the late 1990s, which was initiated by geologists concerned about the conservation and protection of geoheritage arising from increasing tourism pressure in Europe (Zouros, 2004). In 2001, UNESCO provided *ad hoc* support to the global geopark concept. The 2004 Global Geopark movement held a conference at UNESCO headquarters in Paris to launch the Global Geopark Network (GGN), bringing together 17 European and eight Chinese Geoparks. By 2020, the number of global geoparks had risen to 169 in 44 participating countries (UNESCO, 2021). Geoparks are on every inhabited continent, except for Australia. Whilst a UNESCO programme, they are supported by not only the GGN but a number of "regional" networks. These are the European Geoparks Network, The Asia Pacific Geoparks Network, Red GeoLAC (the Latin American and Caribbean Geoparks Network) and the African Geoparks Network. In addition, there are a growing number of countries that have established their own country-based geopark networks, e.g. Canada and Japan.

Geoparks are bottom-up, community-based approaches to driving conservation, education and sustainable development. Geoparks are not national parks in the International Union for Conservation of Nature (IUCN) designated sense (IUCN, 2020) and can include both communities and national parks as key features within their boundaries. This provides an opportunity for geoparks to incorporate and utilise already established attractions and infrastructure, as well as facilitate sustainable development around those attractions (European Geoparks Network, 2014).

UNESCO has indicated that geoparks do not impose new legislative implications on their member states where they are established. The only requirement involving legal measures is that geopark management organisations are required by UNESCO to be legally incorporated under a host country's existing relevant legislation (UNESCO, 2017a). However, Australian state and territory

political and administrative entities have a different perception, largely based on their experience with specific international obligations associated with the designation of Man and the Biosphere and World Heritage Areas (Department of Primary Industries, 1999).

Australian states and territories also have a perception that geoparks are *just* about the protection of geoheritage and argue that there are enough legislative measures in place to protect geoheritage (Environment Protection and Heritage Council, 2009). This political view misses the broader holistic educational and sustainable development values of geoparks to society, as discussed in key publications (e.g. Dowling and Newsome, 2006, 2010, 2018; Newsome and Dowling, 2010). Furthermore, China and Europe have successfully adopted geopark programmes as a means of addressing rural poverty and decline (Ecorys and Associates, 2011; Eder and Patzak, 2004; Zouros, 2010).

Geoparks are a holistic and socially constructive concept that contribute to conservation, communities and the economy. They personify sustainable development in action and empower local communities. In this way, they provide communities with an opportunity to develop cohesive partnerships, with the common goal of promoting an area's significant geological processes, features, understanding of periods of time, historical themes linked to geology or outstanding geological beauty. Just as importantly, the development of geoparks driven by geotourism encourages regional investment, creates new businesses and jobs, and generates financial benefits to regional communities (Dowling, 2018).

Given that tourism has been promoted by successive Australian governments as a significant opportunity for re-energising rural areas, we are of the view that it is important for Australia to adopt geoparks to assist in reversing rural decline and in promoting regional tourism.

## Focal study area and data collection that helped to provide learnings from Australia of relevance for global geopark community

The primary case study area was in the rural central Wheatbelt of Western Australia (Figure 1). The focus was on the local government authorities of Tammin, Kellerberrin, Bruce Rock and Quairading. Additional study areas also included the towns of Morawa, Perenjori and Mukinbudin located in the northern part of the Wheatbelt and Porongorup, located in the southern region. The inclusion of these additional areas was to increase stakeholder representativeness across the entire Wheatbelt agricultural region.

Data were obtained using a mixed-method approach in evaluating stakeholder views on geopark development in the study area. Community forums ($n = 10$) were held with attendees invited through local government authorities (town councils) using posters and local email systems. Stakeholders ($n = 75$) attending the forums were asked to record their views on a questionnaire. The questionnaire was subsequently analysed using SPSS. A further 26 stakeholders were interviewed (22 from Western Australia, three interstate and one international) incorporating a semi-structured method and their views transcribed for analysis using NVivo11 (Briggs, 2017, 2020). Overall, seven perceptions were identified, which can also serve as key learnings derived from an Australian perspective.

## Perceived issues associated with geopark development in Australia

### *Legislative and policy implications regarding the development of a geopark in Western Australia*

Preliminary research findings (Briggs, 2017, 2020) indicate a gap between stakeholder perceptions about geoparks and the federal and state governments' policy position, which currently does not support the establishment of geoparks in Australia. The federal and state governments' position was initiated by the Environmental Protection and Heritage Council due to the erroneous registration practice of the former Kanawinka Global Geopark (see Lewis, 2010) with UNESCO (Environment Protection and Heritage Council, 2009) and, at the time, perceived resource conflicts (Barnett, 2011; Environment Protection and Heritage Council, 2009). There were also perceived conflicts with the existing national parks nomenclature systems regarding the

**Figure 1** Location of community study sites across the Wheatbelt of Western Australia


use of the word "park", and perceptions that UNESCO involvement might lead to future restrictions on land use and create complex management issues. Nevertheless, more recently, rural stakeholders in Western Australia supported geoparks and indicated that they did not see the beforementioned matters as real conflicts (Briggs, 2017).

UNESCO maintains that the Global Geopark programme does not require any changes to a country's laws (UNESCO, 2017a), making it incumbent on host nations to provide the appropriate level of support within its own means, including existing legislation and policies. However, Nikolova and Sinnyovsky (2019) in a review of legal practices in Europe has proposed that legislative changes might provide increased awareness about geoparks, increased collaboration between stakeholders and security of classification for geoparks.

In Australia, legislation at federal and state levels exists for the protection of geoheritage sites; however, as previously mentioned, geoheritage is not the sole focus of geoparks. While stakeholders in rural Western Australia perceived this broader role of geoparks (Briggs, 2020), federal and state governments currently remain inflexible about adopting geoparks as a recognised land designation.

The Australian government policy response of not supporting geoparks might also be guided by previous experience with the implementation of UNESCO's Man and the Biosphere and World Heritage Areas. These programmes required changes to legislation such as the Environmental Protection and Biodiversity Conservation Act (1999) (EPBC Act) and the input of resources for community engagement and development of protected area management plans (Australian Government-Department of Environment and Energy, 2018). The EPBC Act replaced, and was a

significant improvement on, the former World Heritage Properties Conservation Act (1983). This Act operated as a last-resort mechanism for stopping specific actions. By contrast, the EPBC Act ensures protection and improved management for the world heritage values of Australia's World Heritage properties. There are no legislative implications introduced by geoparks, only perceptions of this exist at the relevant administrative levels of Australian state governments.

### *Mining conflicts perceived in regard to geopark proposals*

Australian Resource Ministers have a negative perception about the potential influence of geopark status on exploration and mining. However, in the global context, there exist geoparks that have mining heritage and operations within their boundaries. Germany's Global Geopark Terra.vita (curriculum vitae of the Earth) mines anthracite (coal), quartzite, sandstone and clay (Hartling and Meier, 2010). Terra.vita also provides interpretation of its mining history. Other geoparks provide interpretation of remnants from previous mining facilities and mining heritage for visitors such as the Tuscan Mining Geopark, which has previously experienced mining for around 3,000 years, the Sardinian Mining Geopark with an 8,000-year history of mining (UNESCO, 2017b), the Bronze Age mining of copper in the Geopark Erz der Alpen (Ore of the Alps) in Austria (Ore of the Alps Geopark, 2018) and the UNESCO Global Geoparks—Burren and Cliff of Moher, Marble Arch and Fforest Fawr. In some countries, more recent mining closures have left remnant infrastructure for geoheritage interpretation. For example, the Fforest Fawr Geopark displays include examples of former coal, limestone, silica and rottenstone (a fine siliceous powder), mining sites with associated buildings and transport facilities (Ramsay, 2017). The interpretation of mining heritage is potentially attractive to tourism visitors (Dowling, 2021; Dowling *et al.*, 2021). In Western Australia, the existing Kalgoorlie open cut gold mine located east of Perth has established a visitors' viewing platform, which attracts thousands of locals and tourists annually (KCGM, 2018).

In the Brazilian context, during the nomination of Brazil's Iron Quadrangle Geopark as an aspiring geopark (Mantesso-Neto *et al.*, 2010) (also cited in the conference proceedings by Carvahlo and Rodrigues (2009), it was recommended that there should not be a simplistic dichotomy of mining versus no mining. It was recommended that discussion about wider sustainable development and tourism opportunities should take place, alongside existing iron ore mining within the aspiring Iron Quadrangle Geopark boundary. Subsequently the Iron Quadrangle was recognised by the community to be an aspiring global geopark in 2009 and gained formal recognition in 2011 (Ciminelli *et al.*, 2014).

### *Mineral fossicking conflict*

Another perceived conflict relates to fossicking and the collection of geological minerals such as gold nuggets and gems that can be found on the ground or in stream beds. These traditional activities might convey an underlying concern for the resources sector in having areas declared geoparks as this perception might disrupt the activities of travellers wanting to fossick for minerals. While this may appear to be a minor issue within geoparks, it was mentioned at the recent GGN conference in Italy in 2019; specifically, a Canadian experience has meant deferment of the nomination of an aspiring geopark until the issue about fossicking is resolved (Calder, 2018). Notwithstanding the previous discussion, prospecting in areas of some geoparks is permitted under managed conditions. The Naturtejo Global Geopark encourages visitors to learn about early means of prospecting to fossick for gold nuggets in a river (Carvahlo and Rodrigues, 2009). This indicates that conservation and education can be used to inform visitors about mining heritage. Gold fossicking is allowed under licence in Australia, provided that prospectors have obtained approval for access to crown land, pastoral leases and mining concessions (Western Australian Department of Mines, 2018). While this might provoke conflict between fossickers and geopark proponents, following the approach taken using conservation and education by the Naturtejo Global Geopark might provide an opportunity to maintain this activity within a geopark in Australia.

### *Confusion over terminology*

The term geopark was not the original choice. The original terminology proposed to describe a geopark was "reserve"; however, the name was changed to geopark based on a decision made by

the Earth Sciences Division of UNESCO in 1997 (Farsani *et al.*, 2013). As mentioned above, there is also an Australian government perception that the use of the word "park" might lead to confusion among members of the Australian public with existing layers of land category in place (Stansfield, 2013), as also observed in the USA (Bailey and Hill, 2010). Briggs (2017) found that very few people know about geoparks. However, awareness has been changing with recent promotion of the geopark concept. Currently, in Australia, the term geo-region is being used to remove the stigma associated with geoparks. It has been proposed to use this term until such time as geoparks are adopted by the government. However, when the Asia Pacific Geoparks Network was approached about adopting this terminology, it was dismissed as it could lead to brand confusion within UNESCO (Robinson, 2017). Meanwhile, geopark proponents in Australia have continued to use geo-region until such time as areas are nominated as aspiring geoparks to UNESCO.

### *Perceived conflict between national parks and geoparks*

Stakeholder research reported by Briggs (2017, 2020) found over 70% of questionnaire respondents, and 20 out of 21 interviewees indicated that they did not see a conflict. However, some stakeholders perceived that there might be competition for already scarce financial resources from federal, state and private sectors. While geoparks are community-led, funds are needed to meet planning, development, marketing and reporting requirements. This might give rise to the perception of a conflict over financial resource availability. National parks in Australia, however, are funded by their respective state governments. In the future, resources for geoparks could be derived from different sources, including business, philanthropists and grants.

### *Perceived green veneer of UNESCO*

There was an overwhelming support for geoparks from stakeholders in Western Australia when the fieldwork was undertaken. Subsequent to these findings, in Eastern Australia, there has been some perception that UNESCO Global Geoparks might overly focus on conservation. In 2017, when the Etheridge Shire Council (Queensland, Australia) put forward a proposal to register the entire Council area as a 40,000 sq km geopark, there was resistance from pastoralists (holders of large tracts of land) as they feared restrictions on future agricultural development (Barker, 2017). After interviewing the Geological Society of Australia regarding the impacts of registering as a geopark, the local media reported that there was nothing to fear (Cripps, 2017). However, there remains the possibility that community groups, with a focus on conservation, might use any association with UNESCO to lobby for greater conservation measures within areas designated as geoparks. This is a topic that needs to be explored further, with additional consideration being given to possible impacts on established industries contained within any proposed geopark areas.

While all countries are different, the foregoing considerations from Australia may apply to any aspiring geopark. Canada faced mineral fossicking as a challenge, the aspiring Iron Quadrangle Geopark in Brazil has faced mining issues, while potential geoparks in Portugal have challenges in regard to the possibility of future uranium mining. Identifying such issues in advance of nominating an area as an aspiring geopark can assist in planning for the successful implementation of geoparks.

### *Missed potential of geoparks as marketing opportunities for Australia*

Global Geoparks are linked to the UNESCO brand and attract international attention. This is an opportunity currently being missed by Australian tourism agencies and local authorities. Stakeholders in Western Australia perceived geoparks to be attractors of tourism and tourists, which they considered positive for their communities (Briggs, 2017). Australian governments have not fully considered this lack of marketing opportunity as an outcome of not supporting geoparks. Previously, the Australian federal government launched the Australian National Landscapes Programme (NLP) in 2005, and 16 sites were nominated in a top-down, government-led approach. There was federal government funding for marketing; however, as one stakeholder

mentioned, "who knows about the iconic national landscapes other than the people who proposed them?" Apart from the top-down approach, the mechanisms closely resembled the geopark model where committees with local representation were formed. When government funding was withdrawn, the programme finished through a lack of ongoing support.

## The way forward for Australia

Briggs (2017) has shown that rural communities in Western Australia overall have a positive perception about the geopark concept. Such communities have also recognised that geoparks have the potential to improve their livelihoods through business growth and job creation. Briggs (2020) has also demonstrated that there is a need to provide communities with information about geoparks and establish the resources and knowledge to initiate geoparks in rural areas. Aspiring geopark regions will require the assistance of funded champions employed to initiate their establishment and management. This is particularly important while Australian governments hold non-committal and negative perceptions about geoparks. Conversely, we are of the view that with community support, state governments in Australia can be convinced to adopt a more positive approach to geoparks.

Australia has visible geology, and iconic landscapes and strongly promotes nature-based tourism, yet it does not have a geopark. It is a missed opportunity to create regional business growth and create employment in declining rural areas. Future Australian tourism and rural areas would benefit from a UNESCO-sanctioned geopark programme.

## The future of geoparks

While we have learnt much from our Australian research, there is much more to consider in regard to the future of geoparks generally. Geoparks have been in existence now for over 20 years, and a number of stages have been identified in their development. During the first stage (1996–2004), there was an attempt to integrate them into the existing UNESCO programmes of World Heritage and Man and the Biosphere. The second stage (2004–2010) saw the independent development of geoparks in Europe and Asia (Dowling, 2011). In the third stage (2011–2015), UNESCO, having eventually achieved its own GGN label, "now strove towards a more equitable distribution of geoparks across the planet" (Du and Girault, 2018, p. 1). Thus, UNESCO now has entered a deliberate strategy of growing geoparks across the planet.

From an original four parks created in the early 2000s, today, there are now 169 UNESCO Global Geoparks with a growth of approximately ten per year. These "global" level geoparks are also supplemented by many hundreds of "national" and "aspiring" level geoparks. Today, there are aspiring geoparks in numerous countries, including Bulgaria (Sinnyovsky *et al.*, 2020), Portugal (Trincão *et al.*, 2018), Italy (Liberatoscioli *et al.*, 2018), Iceland (Ólafsdóttir and Dowling, 2014) and Poland (Figna and Kicińska 2011), to name a few. This interest in geoparks has been reflected in the growth in research about them. Between 2002 and 2020, 848 papers on geoparks were published in the scientific literature, with the greatest number of papers being published in 2018 (104) and 2019 (133) (Herrera-Franco, 2021). A similar finding is apparent when papers on geotourism published between 1984 and 2019 are reviewed and found to have grown dramatically in number in recent years (Herrera-Franco, 2020). This is supported by the results of literature reviews of geotourism undertaken by Dowling and Newsome (2018) and Ólafsdóttir and Tverijonaite (2018).

Whereas geoparks have proven to be highly successful in other parts of the world, especially Europe and Asia, there have been none created in the USA (Bailey and Hill, 2010). Although this situation is changing with a number of aspiring geoparks being established, including the Appalachian Geopark, USA (Burns and Moreira, 2019); the Gold Belt in Colorado (Waite, 2010) and Keweenaw in Michigan (Wikipedia, 2021).

So, what does the future of geoparks look like? Viewed from a global standpoint, the future of geoparks looks assured. UNESCO has three major programmes – Man and the Biosphere, World Heritage and Global Geoparks (Table 1). Whereas the first two programs have been in existence for 50 years, the geoparks concept is 20 years old but only five years as a UNESCO-endorsed programme. Since its adoption by UNESCO, the number of global geoparks has risen dramatically each year, despite the cap on the number of applications from any one country being limited to two per year. At the populated level, every continent now has global geoparks (Table 2). Europe, the original home of geoparks, has the highest number with 88, followed by Asia with 66. The continents of North America, South America and Africa are just starting their geopark journey, but at this stage, Australia has none.

At the country level, it is China that has the most global geoparks (41), followed by Spain (15) then Italy and Japan, with nine each (Table 3). Spain was one of the first, in a group of four, countries to establish a geopark. The Maestrazgo Geopark, located in the province of Teruel, was one of the founding members of the network in the year 2000. In an evaluation and review of Spanish geoparks over the past 20 years, a principal finding was that the early establishment of geoparks has led to greater acceptance of them over time (Orús and Urquí, 2020). Another key element is the richness and diversity of geology in the country, which underpins geological tourist sites. Spain is also one of the most visited countries in the world, with 83.7 million international visitors in 2019

**Table 1** UNESCO global programmes (2021)

| *UNESCO programme* | *Year started* | *Number of sites* | *Countries* |
|---|---|---|---|
| Man and the Biosphere | 1971 | 714 | 129 |
| World Heritage | 1972 | 1121 | 167 |
| Global Geoparks | 2001* | 169 | 44 |

**Note(s)**: *Became a formal UNESCO programme in 2015

**Table 2** UNESCO Global Geoparks by continent (2021)

| *Continent* | *Number* |
|---|---|
| Europe | 88 |
| Asia | 66 |
| North America | 7 |
| South America | 6 |
| Africa | 2 |
| Australia | 0 |
| TOTAL | 169 |

**Table 3** UNESCO Global Geoparks by top ten countries (2021)

| *No.* | *Country* | *Number* |
|---|---|---|
| 1 | China | 41 |
| 2 | Spain | 15 |
| 3 | Italy | 9 |
| 4 | Japan | 9 |
| 5 | UK* | 8 |
| 6 | France | 7 |
| 7 | Germany* | 6 |
| 8 | Greece | 5 |
| 9 | Indonesia | 5 |
| 10 | Portugal | 5 |

**Note(s)**: *Includes transborder geoparks

(Reuters, 2020). Spain has relatively large rural areas where the establishment of geoparks has demonstrated to be an effective regional development vehicle. Finally, Spain has a relatively decentralised administration, which gives power to local governments. This model has allowed a bottom-up approach combined with the flexibility of management bodies so that they can devise their own futures according to their local situations. This has been a real strength in the development of geoparks in Spain (Orús and Urquí, 2020).

In the top ten countries having global geoparks, Europe has seven countries and Asia has three. All of these countries are establishing geoparks as a way to diversify their economies through tourism. Whilst, prior to COVID-19, Australia also had a strong tourism economy (AUD45bn per annum), it is dwarfed by the resources sector which at AUD264bn per annum accounts for almost 70% of Australia's exports. It would seem that there is not such a strong imperative to develop geoparks as exists in other countries that do not have such resource-based income streams.

However, it is anticipated that the global coronavirus pandemic will bring about a change of attitude in relation to developing regional Australia as international travel continues to be impacted by border closures, and Australians are forced to explore their own country in greater ways and numbers than before. These circumstances bring about opportunities for regional development in places such as the Murchison in Western Australia, which established a geo-region in 2020 and is now pursuing an aspiring geopark status (Plates 1 and 2). Other regions in Australia are following suit, including the Joondalup-Wanneroo and Margaret River-Busselton regions in Western Australia. Allied to this interest, the geological resources sector is now showing greater regard to geoparks whilst they seek to broaden their engagement with communities and attempt to highlight their contribution to the economy, often in the case of strong environmental opposition.

**Plate 1** Visitors viewing the granite outcrops at Wooleen Station, Murchison GeoRegion, remote Western Australia. The region has numerous geological attractions and has a goal of ultimately applying for UNESCO Global Geopark status

**Source(s)**: Wendy Dowling

**Plate 2** Orbicular granite in the Murchison GeoRegion, Western Australia. This unusual granitic rock is one of a few orbicular granite localities known worldwide and is amongst the oldest known at 2,700 million years. Because of its spectacular structure, relative rarity and ability to take a high polish, the granite has been quarried to supply blocks and slabs to artisans and monumental masons

**Source(s)**: Ross Dowling

A third factor that could shape the future of geoparks in Australia is over-reliance on mineral resource exports during times of major travel and transport disruptions, such as during the recent coronavirus pandemic. Any loss or reductions in resource business activity between traditional trading partners, as in the case of major exports such as iron ore, could leave some regional areas in Australia looking for alternative and more diverse development opportunities. Since a geopark "begins with geology", such areas could be more readily adapted to tourism (Pforr *et al.*, 2014). Underlying all of the above though is the growing interest in communities around the world to take control of their own destinies. Often geographically far removed from the seat of government and its related decision-making, small rural and remote communities are now looking for ways to foster job creation, strengthen their economies, enhance community well-being and bring about sustainable conservation of their environments. Geoparks are excellent vehicles to achieve all of these goals, so they are being embraced by local groups of people as one way of achieving a better future for their regions.

Thus, the element of sustainability is a core element driving worldwide interest in geoparks (Henriques and Brilha, 2017). As a UNESCO programme, Global Geoparks form part of the push to implement UNESCO's Sustainable Development Goals (SDGs), which were established in 2015 by the United Nations General Assembly and which are intended to be achieved by the year 2030 (https://en.unesco.org/sustainabledevelopmentgoals). Geoparks especially set out to address goals on ending poverty (1), quality education (4), gender equality (5), decent work and economic growth (8), sustainable cities and communities (11), responsible consumption and production (12), climate action (13) and partnerships for the goals (17) (UNESCO, 2015). However, a recent study on the contribution of South American Global Geoparks to the SDGs found that they provided the

greatest benefits to Goals 5, 8, 11 and 17 (set by UNESCO) but also to reduced inequalities (Goal 10) and life on land (Goal 15) (Rosardo-Gonzalez *et al.*, 2020).

Finally, with more than half of the world's population still living in COVID-19 lockdown, UNESCO Global Geoparks are now being branded as "Territories of Resilience" (www.visitgeoparks.org/territoriesofresilience). Resilience is a fundamental concept that is intrinsic to the global geopark concept, in that it recognises the capability of communities and territories to cope with significant adversity such as the current pandemic but also in the case of natural and human-made disasters. Geoparks are viewed as sustainable development territories with resilience fully embedded into their institutional, social, economic and environmental dimensions. The fundamental keys are embedded in culture, local identity, education and social cohesion. An additional emerging benefit of geoparks is their contribution to the promotion of healthy lifestyles by fostering well-being and health through active enjoyment of natural environments (Gabriel *et al.*, 2018).

A resilient territory not only tries to respond to disruption and crisis by trying to bring the system back into balance, but also it develops solutions that bring a system into a new state that is capable of dealing with present and future challenges. Thus, geoparks are developing new approaches to our relationship with nature and remain, in times of crisis, via dynamic and living territories. This then is an excellent concept to embrace and will help geoparks secure a stronger place in continents, countries and communities going forward.

## Concluding remarks

Over a decade ago, geoparks were described as being a "totally new and different entity", allowing us "to feel space, to think time, and by so doing to set the present within a past-future continuum". It was described as affording a "different approach to, and relationship with, nature, requiring new forms of management deploying an overall reflection on the holistic and symbolic meaning of geological heritage" (Martini, 2009, p. 90). Today, they are still an innovative vehicle to achieving sustainable regional development. In a recent editorial in this journal, it was suggested that "micro trends" are the small forces behind any "big changes" for the future (Yeoman, 2020). One of these trends that will shape the future of tourism is the expansion of geoparks across the world. This is evidenced by a number of defining factors, including:

1. UNESCO's deliberate strategy of growing geoparks across the planet;
2. The rapidly growing scientific literature on the subject;
3. The interest now shown in establishing geoparks by communities in Australia and the USA;
4. The goal of many countries to include the development of geoparks as a strategy for economic development;
5. The current view of geoparks as *Territories of Resilience* being an antidote to the adverse impacts of the coronavirus pandemic;
6. The view that geoparks adds another development vehicle for countries wanting to build their tourism export potential;
7. The employment of geoparks as a strategy to implement UNESCO's SDGs for 2030; and
8. The ways in which local communities and regions have embraced the establishment of geoparks as a tool to generate jobs and economic benefits, social well-being and regional conservation.

Taken together, it is clear that geoparks will continue to grow rapidly around the world at the level of aspiring, national and global geopark development. Thus, it is predicted that over the next decade, the number of UNESCO Global Geoparks will grow from 169 in 44 countries to over 300 in 90 countries. Australian state governments need to recognise and embrace geoparks to assist the creation of rural businesses and job creation.

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