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## Australian Geoparks Network Newsletter No. 9 December 2023



News about Geoparks, Geotourism, Geotrails and Geoheritage

### FROM THE CHAIR

<b>195</b>	<b>48</b>	<b>60</b>	<b>1</b>
<b>UNESCO Global Geoparks</b>	<b>Nations</b>	<b>Million Visitors / Year</b>	<b>Network</b>

This is our third newsletter for 2023 and as always, a lot is happening in the world of geoparks, geotourism, geotrails and geoheritage. We start this edition of the Newsletter with a report on the 10th International Conference on UNESCO Global Geoparks which was held near [M'Goun UNESCO Global Geopark](#) in Morocco from 7 - 11 September 2023 with the theme 'UNESCO Global Geoparks Developing Communities'. Pat James, Foundation AGN Board Member was at the Conference and provides an overview of the Conference including the devastating earthquake which occurred in the country during the Conference. At the Conference Waitaki Whitestone Geopark was designated [Waitaki Whitestone UNESCO Global Geopark](#) and in so doing it became the first UNESCO Global Geopark in New Zealand. A brief report about the geopark is provided in this newsletter.

Also included is a report on Geoparks Western Australia's 'Invitation Only' [Geoparks Networking Workshop](#) held on Thursday 21 September in Mandurah, Perth.

Members are encouraged to plan to attend the **8th Asia Pacific Geoparks Network Symposium** being held in Cao Bang UNESCO Global Geopark, northern Vietnam, from 13-15 September 2024. A report is made on a recent delegation of UNESCO Global Geoparks Network experts who visited the Geopark for a 'Field Mission and Meeting' with Cao Bang Provincial People's Committee in preparation for the Symposium.

**Mike Cleeland**, Foundation AGN Board Member, has been in the news recently after making a 'world first' dinosaur discovery at Shack Bay near Inverloch. It is the first time that a skull fragment from a meat-eating dinosaur has been found in Australia and it is also the oldest member of the Megaraptorid family found anywhere in the world. The significance of the finding is that it means that these creatures might have evolved here in Australia and travelled north, not the other way round. Mike is legendary for having discovered a car-sized amphibian *Koolasuchus Cleelandi*, a 125 million year old creature that looks something like a cross between a newt and a crocodile. Found in 1997 the fossil has now been adopted as the state of Victoria's fossil emblem as reported in a previous Newsletter.

**Pat James** takes a trip down memory lane by reporting on his recent visit to Zimbabwe examining Geotourism and Geopark potential there. He completed his geological fieldwork for his PhD in the country in 1972 when it was known as Rhodesia. Whilst in Zimbabwe he was a keynote speaker at the annual *Geological Society of Zimbabwe Summer Symposium*.

We include a note about the **5th Geotourism Festival & International Conference** being held in Indonesia in July 2024. It comprises a 'Pre Event' *Volcanic Youth Camp* hosted by Ijen UGGp, East Java, Indonesia on 1-2 July. This is followed by the 'Main Event', the *5th Geotourism Festival* being held at Rinjani-Lombok UGGp, Lombok, Indonesia from 4-6 July. Finally a 'Post Event' *Workshop on Geotourism* will be hosted by the AGC in Sydney, Australia from 18-19 July. The Geotourism Festival is the initiative of the Indonesian Geoparks Network who we are working with closely as a sister organisation.

Finally, at our Third AGM held on Wednesday 22 November 2023, all of the current Board Members and Executive positions were filled with no changes to the Board. There was one exception with Foundation Board Member **Bram Collins** stepping down to concentrate on other activities. We thank him for his commitment to the AGN Board over the past three years and wish him all the very best for the future.

with us so we can advocate on your behalf to promote geoparks and their benefits in your region. We love geoparks and we think that 2024 will be a big year for the re-introduction of geoparks into Australia.



**Professor Ross Dowling AM**  
**Chair, Australian Geoparks Network**  
**Contact: r.dowling@ecu.edu.au**

## 10th INTERNATIONAL CONFERENCE ON UNESCO GLOBAL GEOPARKS



CEvery two years one of the UNESCO Global Geoparks (UGGp) in the [Global Geoparks Network](#) (GGN) hosts a conference to share and exchange information, experience and knowledge among UNESCO Global Geoparks and professionals. This year's conference was held near [M'Goun UNESCO Global Geopark](#) in Morocco from 7 - 11 September 2023 with the theme 'UNESCO Global Geoparks Developing Communities'. The conference included a Geopark exhibition and a range of different presentations and workshops on the following topics:

1. Geodiversity and biodiversity management: studies, protection and popularization
2. Conservation and valorization of geological heritage sites
3. Education with simplification of scientific knowledge accessible to the general public
4. Sustainable tourism and local development
5. Geoparks and implementation of sustainable development goals
6. Geoparks, tangible and intangible cultural heritage

## 9. Aspiring Geoparks.

Due to a 6.8 earthquake during the Conference parts of the programme had to be adjusted, including the planned field trip to M'Goun UGGp which was cancelled, and the funds donated to support disaster relief efforts. The earthquake was a devastating event for the region and local community and the team's thoughts are with those families affected by this natural disaster. The safety of the participants was the main priority for the Organising Committee and GGN and they provided great support, including support for finding alternative accommodation. UGGps have a crucial role in promoting awareness of geological hazards, including volcanoes, earthquakes and tsunamis, and many help prepare disaster mitigation strategies among local communities. This event showcased the importance of this role within UGGp.

Even under difficult circumstances after the earthquake, the Organising Committee managed to hold the closing ceremony and present the official GGN certificates to new and revalidated UGGps.

### PAT JAMES REPORTS ON THE GLOBAL GEOPARKS CONFERENCE

**Pat James** participated in the *10th International Conference of UNESCO Global Geoparks* in Marrakech, Morocco from 4-11 September 2023. And what an unexpected adventure this proved to be. This was my sixth such UGGp International conference following Belfast, Ireland in 2004; Langkawi, Malaysia, 2007; Osnabrook Germany, 2008; the Dolomites, Italy in 2018; and the 9th zoom-only Conference in Jeju Island, South Korea, in 2020. I soon met up with our small Australian delegation included Dr Young Ng and Mark Williams as we looked forward to this exciting event.

More than 1000 participants came together for the opening ceremony at the 10th GGN Conference in Marrakech and three days of intensive sessions and almost 500 presentations were offered within the grand 'Complex des Habous' Conference Centre. This was a magnificent venue with tall arched columns and mosaic floors and walls and more than a dozen lecture halls and meeting rooms. All of the almost 500 abstracts were posted on the conference website, but unfortunately this has now been taken down.

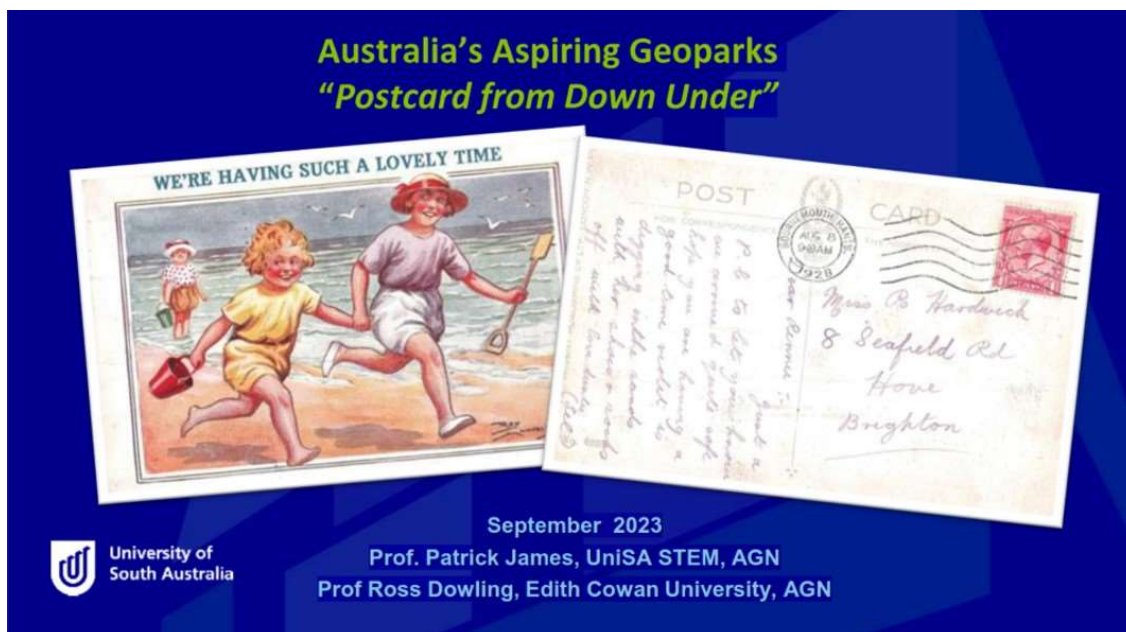
It was wonderful to meet colleagues again from many previous Geopark conferences and visits – mainly in Europe, China and SE Asia. But also, to meet the many new excited groups of more recently established Geopark staff from the UGGp numbers which have steadily grown and almost doubled in the last 10 years, to the current 195 UGGps in 48 countries on all continents, with the addition of Waitaki Whitestone UGGp in New Zealand.



presentations which were included in the program. Sessions included topics on Geodiversity and Biodiversity Management, Geoheritage and Cultural Heritage, Geoconservation, Public Education, Sustainable Development, Climate Change and Natural Disaster Management, plus Cooperation between Geoparks and Aspiring Geoparks. Interestingly, with such a large, full and complex program, the papers were ordered within each session alphabetically by author – a system I had not come across before, but in fact one which worked splendidly. In hindsight of course due to my surname, I was able to make my own presentation but unfortunately (as we shall see) Dr Young and Mark Williams were listed on the last day of proceedings, which of course did not eventuate.



Above: The magnificent *Marrakech Habous Conference Centre* and its adjacent giant dining marquee -- before the earthquake. Following the quake the conference venue moved into this marquee after the earthquake).



Above: Pat's presentation at the Conference on 'Australia's Aspiring Geoparks, 'Postcard from Down Under'.

different sessions, this arrangement, led to me sit through complete sessions with a cornucopia of mostly excellent talks and with some outstanding examples demonstrating the great range and variety of topics, the infectious excitement and enthusiasm of staff presenting these activities, and the high degree of collaboration and cooperation within and between their Geoparks from most countries and continents around the world.

There were too many highlights to report fully or adequately but a few shining examples included the following. Joao Alves presented on behalf of the five Geoparks from Portugal (Terras deCavaleiros, Naturtejo, Azores, Estrela and Arouca UGGps), who have developed a very useful *Code of Conduct and Good Practices* (eg. keep to trails, wear appropriate footwear, respect all signage etc.) for their geoparks which included the sensational 'Paiva Walkways' geotrail in Arouca UGGp, Portugal.

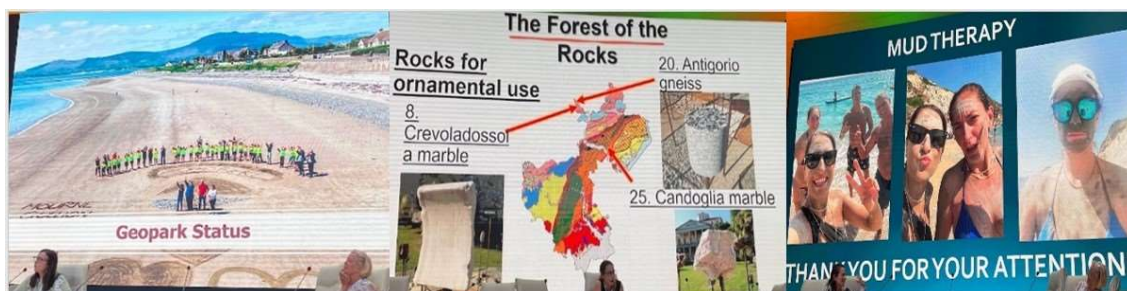
Azmil Bukhariand from the sensational 99 Island Langkawi UGGp, Malaysia, explained their comprehensive 'eco-management' model, which involved a collaborative approach with local communities, government agencies, and NGOs involved – to create a sense of ownership and responsibility among community and to promote sustainable (geo) tourism. Two inspirational talks emphasized the importance of (geo)food tourism in UGGps, with Anna Bergengren (the only Swedish contributor at the conference), describing 'The Flavours of the Table Mountain Landscape' eg. how to explain/interpret what limestones taste like and what local ingredients were sourced from their unique local landscape. Valerija Bozic (Idrija UGGp) described creating the 'Idrija Breakfast' with boxed and UGGp branded local delicacies such as dairy, meat, honey and tea products etc., highlighting local producers designed to promote the 'connection between local food and geological heritage'.



Above: UGGP management strategies and Geofood examples from three UGGps.

More traditional geointerpretation included 3D underground mapping and lasers canning of old mine galleries in Greece being developed by Isidoros Kampolis (Lavriotiki UGGp); and Christophe Lansigau (Massif de Bauges UGGp) demonstrated a brilliant new video with mountain building and plate tectonic reconstructions, which later won best prize of the UGGp Film Festival. Other talks emphasized the roles of

There were many more highlights covering topics of Climate Change and Geoeducation, as well as inspirational presentations from the most excited participants coming from UGGps which had just received their UNESCO Global Geopark status (eg. Michelle Boyle - Mourne Gullion UGGp, Lisa Heinz - Waitaki Whitestone UGGp, NZ) and others that were Aspiring UGGp status (eg. Greg Taylor – Trans Manche Aspiring UGGp and Michael Hegarty, Joyce Country Aspiring Geopark Project, Ireland). A large Indonesian delegation (who I met at the *4th Geofestival* in Lombok the previous month) were most enthusiastic about their now 10 UGGps with many more aspiring geopark projects in train.



Above: Mourne Geopark Staff celebrated their UGGp status on a local beach, Sesia UGGp highlighted the 'Forest of Rocks' geointerpretive sculpture whilst Nicolina Bourli described 'mud therapy' as a tool for sustainable geotourism in the Kefalonia UGGp, Greece.

For me the most important messages which came across about UGGps were the obvious enthusiasm of participants and great camaraderie. I recall that typically less than half of the participants have any significant (ie. undergraduate) geological training. Also, the Global, Regional & Local Networks to which they all belong provide fabulous cooperative and collaborative support for each UGGp. These include the many GGN events, eg. 'World Geodiversity Day' every October and 'Geoparks Weeks' at the European Geoparks Network. Many regular conferences, meetings and training workshops (Lesvos UGGp), grant funded activities, collaboration with other related agencies (eg. museums and universities) and most importantly, the sharing of ideas.

Thus after two days of intense talks and discussions, many participants joined the organized tour of the 'Old Marrakech' city centre and market on the afternoon of Friday 8th September. It was a wonderful bustling Moroccan, Arabic, French mix of cultures, languages, architecture, smells, goods, history, colour etc., we all returned to our hotels.





Above: The GGN field trip to central Marrakech Old City and Market Square. Approximately 6 hours later this whole area was devastated by the Marrakech Earthquake.

After an exhausting couple of days, I dozed in my hotel room, watched the French team surprisingly defeat the All Blacks in the World Rugby Cup and fell into a deep sleep, only to be awoken about 30 minutes later by the violent swaying of not just the curtains, but of the walls behind them. This was my first experience of a magnitude 7 quake whose epicentre was only 70 km south of the city. Our hotel was not severely damaged and was evacuated very quickly but I was surprised to see so much plaster debris on the floors. Whilst some participants in central Marrakech had to abandon their hotels, most people in ours brought out beds to sleep around the swimming pool area.



Next morning, supposedly 'Day 3' of presentations, we all returned to the Haboush to find all buildings closed and general shock and chaos. Eventually we were allowed into the enormous dining marquee where the UGGp Organizing and Executive Committees were magnificent and explained to us all decisions which were made carefully but quickly. The lecture halls were closed (with some considerable but mostly superficial damage), so all further talks were cancelled. The upcoming 2-day prepaid field trips to the M'Goun Geopark in the AntiAtlas mountains were cancelled – and all monies donated to the Earthquake Relief Effort, where eventually more than 3000 deaths had occurred near the epicentre.

However, with activity able to continue in the marquee all final speeches, new UGGp Certification Presentations and Revalidations of UGGps went ahead as did the Awards of the *2nd Geopark Field Festival* – Massif de Bauges won with Christophe Lansigau. There was much discussion and sharing of experiences between UGGp groups and





*Left:* The many booths of the Conference Exhibition. *Right:* Thailand's booth.

We all left Marrakech, saddened by the disruption of last day of the conference and the inability to join the planned excursions, but also very concerned for the effect on this beautiful country. Hotels and flights rearranged and other than a much busier than usual airport, there was general agreement that the conference had successfully achieved its aims of continuing to grow and develop the Global Geopark movement.

#### WAITAKI WHITESTONE UNESCO GLOBAL GEOPARK

During the Moroccan Conference Waitaki Whitestone was designated as New Zealand's first [UNESCO Global Geopark](#). This was a special moment for the team and the manager proudly accepted the certificate and trophy on behalf of the [Waitaki Whitestone UGGp](#). The main objective of attending this conference was for the kiwis to network and learn from the experience of other well experienced Geopark professionals. This aim was fulfilled by making many international connections with colleagues from across the world. The team was also able to attend GGN meetings and the General Assembly. It was apparent that there is a drive to move the GGN forward after the pivoting to virtual after the Pandemic.



Above: Waitaki Whitestone UNESCO Global Geopark Trust representatives at their Designation Event during the Conference on 9 September 2023. L-R: Trust Members Mauriri McGlinchey, Helen Jansen (Chair), TK Buchanan, and Geopark Manager, Lisa Heinz.

The Geopark lies on the east coast of the South Island, extending over an area of 7,214 km<sup>2</sup> from the Waitaki Valley to the base of the Southern Alps. The landscapes, rivers and tides of this geopark have enormous cultural significance for the local indigenous people, the Ngāi Tahu whānui. The geopark offers exceptional insights into the history of the Earth's eighth continent, Zealandia, or Te Riu-a-Māui in Maori. The geopark provides evidence of the formation of Zealandia, which broke away from the ancient supercontinent of Gondwana around 80 million years ago. The continent then became submerged under the ocean for millions of years before tectonic forces thrust New Zealand above the waves and the country's current mountain-building phase began. Today, about 94% of Zealandia remains submerged, stretching from east of New Zealand all the way north to New Caledonia.

**Footnote:** Last month the Waitaki Whitestone Geopark Trust elected Rachel Plieger as Chair and TK Buchanan as Deputy Chair. We wish them well in their new roles. In addition the Geopark is currently in the process of appointing a new Geopark Manager with Lisa Heinz moving to Wellington in the new year.

leadership of Dr Alan Briggs, also our AGN Deputy Chair. Geoparks WA has moved forward on a number of fronts and held many meetings with the four geopark projects to progress their establishment in the State. Together with Alan and / or Wendy Dowling I undertook a large number of advocacy meetings with Local, State and Federal politicians as well as government departments. In addition a number of Geoparks WA Members connected the organisation with the Australian Geoparks Network and other allied organisations throughout the year. To that end a huge congratulations and thank you go to Caroline Buck (Wanneroo), Wendy Duncan (Nannup), Sebastian Jones (Binjareb - Peel) and Karen Morrissey OAM (Murchison), for joining the Board of the Australian Geoparks Network. This is much appreciated.

In September Geoparks WA conducted a one-day *Geoparks Workshop* in Mandurah hosted by the [Peel Development Commission](#). The 'Invitation Only' Workshop was extended to the four Geopark Projects and gave them all a chance to see what is happening in each others region. Updates included presentations on:

1. The recent designation of the Waitaki Whitestone UNESCO Global Geopark in New Zealand in May
2. The *Australian Earth Sciences Convention* held in Perth in June
3. The *10th International Conference on UNESCO Global Geoparks* held in Marrakech, Morocco
4. An update from the Australian Geoparks Network
5. An update from Geoparks Western Australia.

These were followed by an in-depth discussion on each of the four geopark projects in WA – Murchison, Joondalup-Wanneroo, Binjareb-Peel & Nannup.



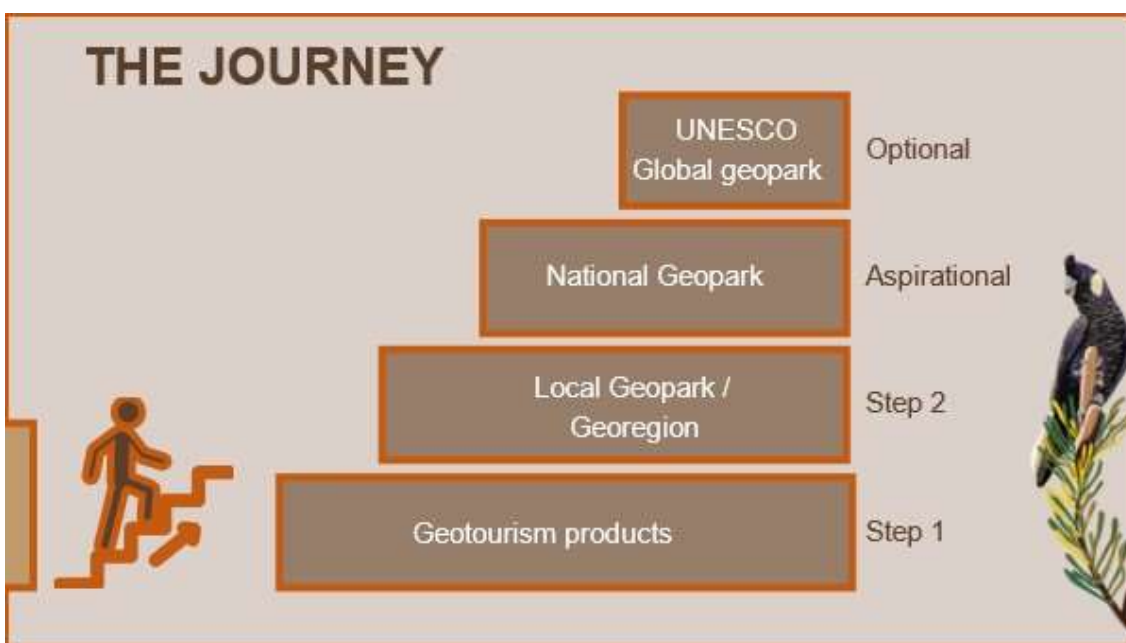




*Upper Left: Caroline Buck - Wanneroo Geopark Project. Upper Right: Wendy Duncan - Nannup Geopark. Lower Left: Jamie Van Jones & Sebastian Jones - Binjareb - Peel Geopark Project. Lower Right: Ross Dowling - Workshop Convenor.*

### WANNEROO - JOONDALUP GEOPARK PROJECT

Caroline Buck, Wanneroo, is leading the development of local assets as a forerunner to the establishment of a geopark. Already a map of potential tourist sites has been put together as well as the Yanchep National Park digital display trail and the Yaberoo Budjara Heritage Trail. Caroline has mapped out their journey towards establishing a geopark in the following steps:

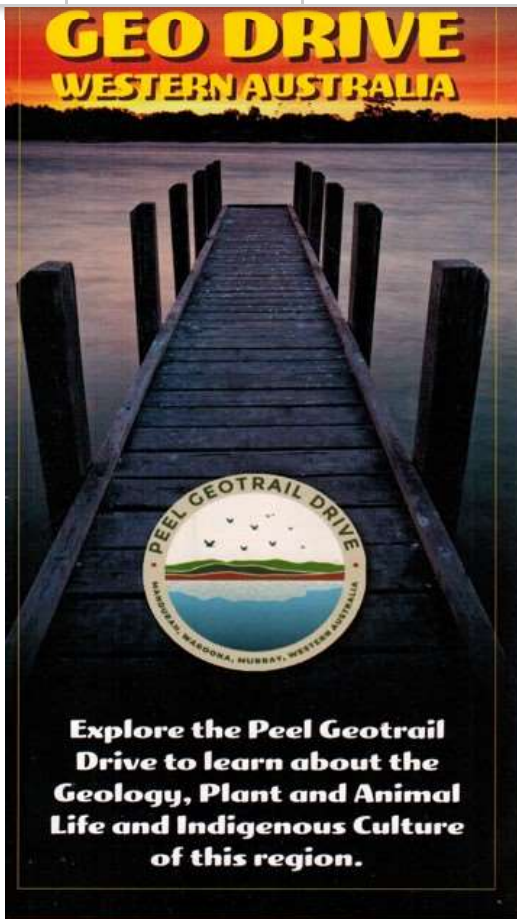


A large group of professional experts, headed by local businessman Mark White, has the Nannup Geopark steaming ahead towards establishment. The geopark is working on being one of the world's first digital geoparks based around a Geopark App and Website. The App will focus on interpretation of the geopark's attractions and activities while the website will provide educational material and be a research hub. It has established an Incorporated Society and has designed a logo encompassing three elements representing the Abiotic, Biotic and Cultural elements of the Nannup environment and geopark. The Geopark Group has recently been awarded \$98,000 by the State Government to further the development of the geopark including the design of a Static Display.



## BINJAREB - PEEL GEOPARK PROJECT

The Binjareb - Peel Aspiring Geopark has been gaining momentum locally under the leadership of **Sebastian (Base) Jones**, a geologist and co-owner of **Salt and Bush Eco Tours**. The Working Group has established a preliminary boundary and potential sites for the geopark covering key geological features as well as key biotic and cultural sites. It has also been actively engaging with local stakeholders to build a baseline of support for the proposed geopark. The Peel Development Commission (PDC) & Geoparks Western Australia have together developed a **Drive Geotrail** in the region. A story about the trail was published in the *PDC's Peel Magazine* in its Spring/Summer 2022 Edition. At the *Australian Earth Sciences Convention* held in Perth from 27-30 June 2023, **Sebastian and Jamie Van Jones** gave a Poster Presentation on the geopark.



### Bindjareb / Peel Geopark Project Western Australia

Ross Dowling, Sebastian Jones and Jamie Van Jones

**What is a UNESCO Global Geopark?**

UNESCO Global Geoparks are single, unified geographical areas where the outcrops of international geological significance are managed with a holistic concept of protection, education and sustainable development.

These Geoparks are considered to be sustainable development which promotes the recognition and management of both heritage, and the sustainability of the communities.

**What a UNESCO Global Geopark can do for the Bindjareb Peel Region?**

- Regional development
- Community engagement
- Showcase the Traditional Owner Culture
- Recreation
- Bring a range of stakeholders together including Strong History, Conservation, Community to create the region and its sustainable future together. The GEO DRIVE will help visitors to have a better understanding of the landscape. Celebrate the unique heritage of the Bindjareb region.

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UNESCO Global Geoparks - Are An International Movement

195

UNESCO Global Geoparks

48

Nations

60

Millions of visitors/year

1

Network

Australia has no UNESCO Global Geoparks

**Engage Locals to have Pride about where they live.**

Generate Educational opportunities at all levels of education

Economic Growth

**Attract and Drive Visitors and Tourists to understand the place they visit.**

Celebrate the Indigenous Culture and Heritage of the area.

Sustainable Development for all stakeholders

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**Clarification on Geoparks**

- It is not a park or physical boundary
- It is not a national park
- It is not a World Heritage area
- Geoparks do not limit sustainable mining operations
- Can exist alongside National Parks, Reserves, Local Government and Private land tenure
- Geoparks raise awareness of important geological regions and do not restrict access to areas
- Geoparks are not legislated by government, but only supported by government
- Geoparks are not top-down lead projects but community driven

## MURCHISON GEOREGION AND ASPIRING GEOPARK

**Karen Morrissey OAM** has recently taken up the role of Project Officer of the Project Working Group having moved from her original position as Inaugural Chair. Thus she is now directing her energies into establishing a geopark within the georegion. The GeoRegion was launched by Pat Barblett AM in 2020 and has a [website](#), app, and trail booklet. It also has a Governance Structure, a Strategic Plan, a Marketing & Communications Plan, a Geosite Management Plan, and has developed a range of social media platforms - @murchisongeoregion; #ancientlandsbrilliant skies; #murchisongeoregion. At the *Australian Earth Sciences Convention* held in Perth from 27-30 June 2023, Karen gave a presentation on the Murchison GeoRegion in a Geoparks Stream.

**Murchison GeoRegion**  
[https://murchisongeoregion.com]

**Includes Trail Booklet, Signage, Website & App**

**Murchison GeoRegion  
Karen Morrissey**

Community members and stakeholders engaged in a quest of discovery of previously known and new sites based on the ABC of Geotourism

Discovering a shared GeoRegion beyond mere appreciation of the ancient forces & historic landscapes built on gold... and the ancient story in Australia without a word.

Discovering stories going back in time to the 19th century... where the world's first gold rush began.



The **8th Asia Pacific Geoparks Network Symposium** will be held in Cao Bang UNESCO Global Geopark, northern Vietnam, from 13-15 September 2024. On 18th August 2023, the delegation of UNESCO Global Geoparks Network experts had a field mission and meeting with Cao Bang Provincial People's Committee on the preparation of the Symposium in the northern province of Cao Bang in 2024. Cao Bang province believes that hosting the Symposium will be a good opportunity to introduce and promote its potential of tourism, including Non Nuoc Cao Bang UNESCO Global Geopark. The Provincial People's Committee expects the event to open an opportunity for friends as well as domestic and international tourists to learn about the potential, strengths and uniqueness of Cao Bang tourism.

At the meeting, the Cao Bang Provincial Department of Culture, Sports and Tourism shared results on the operation and activities of the **Non Nuoc Cao Bang UNESCO Global Geopark** from 2018 to the present. Mr. Guy Martini, Senior Advisor and Chairman of the UNESCO Global Geopark Council, emphasized that in 2019, Cao Bang successfully organized the international workshop 'Sustainable tourism development through the UNSECO Global Geopark model' with the participation of more than 300 Vietnamese and international delegates.

However, the 8th APGN Symposium is of much greater importance, with between 800-1,000 international delegates expected representing 100 Geoparks from approximately 90 countries from around the world. The Symposium will assist delegates to share knowledge, experiences, and good practices on conservation of geological and cultural heritage values. In addition it will explore the wise use and preservation of geopark heritage; the development of sustainable tourism; the protection of environmental resources; adaptation to climate change; and geopark education. Field trips for delegates will include four tourist routes of NonNuoc Cao Bang UNESCO Global Geopark and introduce geopark products such as traditional craft villages. Mr. Guy Martin will introduce the **5th Tourist Route** connecting Ha Giang Karst Plateau Geopark with Non Nuoc Cao Bang Geopark. This is the most unique route in the world because it is the first route connecting two global geoparks with many heritage values.



Above: Khau Coc Cha Pass- Cao Bang UNESCO Global Geopark's 5th Tourist Route.  
Photo: Hai Nam VOV.

### MIKE CLEELAND DOES IT AGAIN

**Mike Cleeland**, Education Officer, [Bunurong Coast Education](#), Victoria and Foundation AGN Board Member, is a geologist and paleontologist who finds dinosaur footprints on a regular basis. Mike is legendary for having discovered a car-sized amphibian *Koolasuchus Cleelandi*, a 125 million year old creature that looks something like a cross between a newt and a crocodile. Found in 1997 the fossil has now been adopted as the state of [Victoria's fossil emblem](#).

His latest find is a 'world first' dinosaur discovery at Shack Bay near Inverloch. It is the first time that a skull fragment from a meat-eating dinosaur has been found in Australia and it is also the oldest member of the Megaraptorid family found anywhere in the world. The significance of the finding is that it means that these creatures might have evolved here in Australia and travelled north, not the other way round.



It's not everyone interested in looking for fossilised bones that gets their own dinosaur named after them.

But Phillip Island palaeontologist Mike Clelland and Wonthaggi competitor, Lesley Kool OAM, are members of that very exclusive club after discovering a ear-sized amphibian, *Roolassuchus Clelandi*, a 125 million-year-old beast that looks something like a cross between a newt and a crocodile.

The pair made the discovery between Sun Reno and Inverloch in 1997 with *Roolassuchus Clelandi* since raised to the status of Victoria's fossil emblem.

Now Mike Clelland has done it again with a discovery he made at Shack Bay near Inverloch, an a member of the volunteer organisation with exclusive rights to look for fossils in the Bass Coast. Professor Patricia Vickers-Rich's Dinosaur Dredging group, back in 2007.

But it's only been in recent days, on November 2, with the publication of a research paper, in *Cretaceous Research* by Monash University PhD candidate and palaeontologist Jake Kotevski, that the full impact of the discovery has been revealed.

"It's the first time that a skull fragment from a meat-eating dinosaur has been found in Australia and it's also the oldest member of the *Megaraptorid* family found anywhere in the world," said an excited Mike Clelland this week.

"It's significant because it means that these creatures might have evolved here, in Australia, and ultimately moved north, not the other way around."

Mike said that when he found the fossil, there had been some thoughts that it might be significant, but it took some 16 years in fact, to decide how significant.

Here's what lead author of the research pa-



Local palaeontologist Mike Clelland has made what scientists believe is another world-first dinosaur discovery at Shack Bay near Inverloch.

He goes on to say that the megaraptorids found in what's known as the Wonthaggi - Formation are the oldest world-wide, with this fossilised skull fragment indicating some unique characteristics of the local species, providing "some support in favour of the hypothesis that *Megaraptoridae* had an Australian origin".

This is huge, according to Mike, but there's still a way to go. "It's a significant discovery but what they are saying is that they need to find more bones so they can say for sure if it is a different species."

My understanding of it is Jake hasn't been able to link it with other fragments found in this area or elsewhere, and they are going to need to find a lot more to say for sure."

Professor Pat Rich said it would also take time, and many more fossil

for sure if these types of dinosaurs originated here and spread to the northern hemisphere, rather than the other way around.

"They have a much bigger catalogue than us. We've barely touched the surface. We'll need a lot more evidence before we can be sure about making claims like that."

Professor Rich said. And her Dinosaur Dredging group will be doing just that in February next year when they have a major fossil-hunting project planned for an area near Eagles Nest.

But Mike Rich did say that this type of dinosaur would have been a highly evolved killing machine, and lucky for us, it predated humans by more than 120 million years! According to Jake Kotevski the cranial fragment found by Mike Clelland indicates a megaraptorid-type dinosaur of between 3m and 4m high.

"It's very hard to say off our nose, but a relative from South America has the same basic, more complete, is of a similar size and is roughly 3m."

He also acknowledged that the most exciting (theopall) dinosaurs from Victoria, which are the subject of his PhD, are "undersampled" with only five fossils in all recovered from the Shack Bay area, although *Megaraptorids* are known to be present in many other localities across the state.

The nearly complete frontal and fused parietal fragment, found at Shack Bay by Mike Clelland was prepared by David Parkring using specialist equipment and now resides in the Palaeontology Collection of Museums Victoria in Melbourne.

The South Gippsland Conservation Society, the Dunstons Environment Centre and Mike Clelland conduct regular dinosaur discovery tours during the school holidays. Watch out for upcoming dates <https://www.dunstonsenvironment.org.au/>

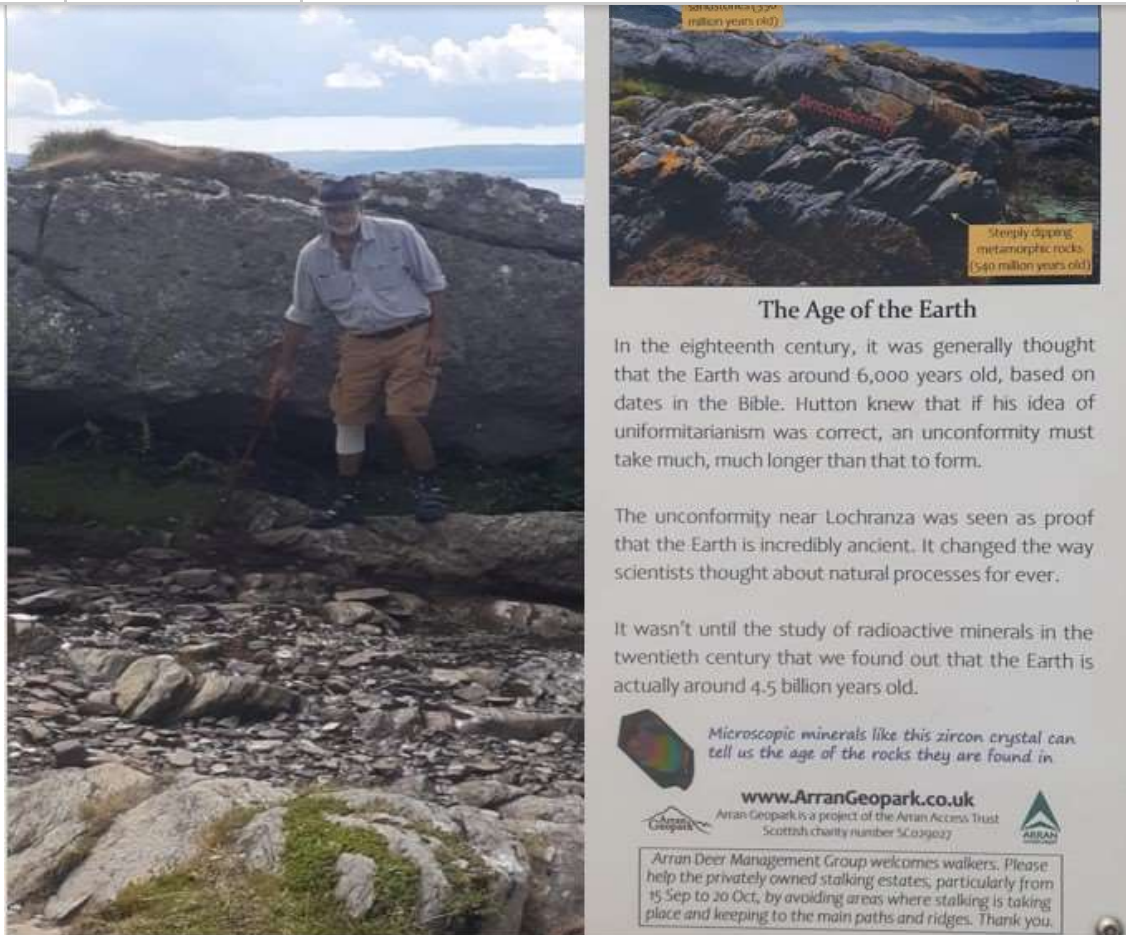


Left: News Item about his latest find written up in the *South Gippsland Sentinel Times* on Tuesday 14 November. Right: Photo of a dinosaur footprint recently taken at Inverloch.

Mike was in Scotland over the winter and recently had the opportunity of exploring the [Arran Geopark](#). The Geopark is an Aspiring UNESCO Global Geopark and is currently working towards achieving accreditation from UNESCO. He was fortunate to meet Director Stuart Blake and in a friendly discussion he made the point that accreditation of a Global Geopark is influenced not only by the merits of the geological features within an area, but also by other points of interest. These could include cultural and archaeological sites of significance, ecological issues and processes, and the way in which the regional geology relates to modern outcomes. Examples could include the selection of particular rock types for tool making by early hominids, and the influence of underlying rock on soil structure and fertility. One of several highlights within the Geopark is the Hutton Unconformity, where Scottish geologist James Hutton, while on a trip to the [Isle of Arran](#) in 1787, found his first example of an unconformity to the north of Newton Point near [Lochranza](#).

**Footnote:** Wendy & I will be catching up with Mike on Phillip Island, Victoria, on Tuesday 9 January 2024 when we visit the island on the cruise ship *Seabourn Odyssey*. Mike is leader of one of the day field trips for the cruise ship as well as a night tour of the famous [Phillip Island Penguin Parade](#) in the evening, which is part of the largest Little Penguin colony in the world..





Above: Mike on location in Arran. *Left*: The unconformity is not immediately obvious to the untrained eye and it is a measure of Hutton's capability that he was able to recognise it for what it was. *Right*: An informative signboard at the geosite.

## ZIMBABWE'S GEOPARK POTENTIAL

**Pat James** reports from his trip to Africa prior to the Global Geoparks Conference held in Morocco in September. Following the completion of my geological fieldwork and PhD on the Structure of the Northern Margin of the Limpopo Belt in Rhodesia in 1972, there was just never the opportunity to return to this part of Africa which, as has been widely recorded, has changed dramatically in political and economic terms over the subsequent 51 years. However, having committed to attend the Global Geoparks Network conference in Marrakech the opportunity to do so arose and I was fortunate enough to be invited as a keynote speaker to the annual Geological Society of Zimbabwe (GSZ) 2023 Summer Symposium in early September this year.

I was welcomed by GSZ Committee members Andrew du Toit (chair), Tony Martin, Tim Broderick and Houda Bouammar, who also provided excellent and much welcomed accommodation during my 10-day visit. Obviously, I was very keen to revisit to my field mapping area, which had stretched from the Archaean granite batholiths and greenstone belts of the Zimbabwe Craton around Masvingo (formerly Fort Victoria)

excellent exploration geologist Brian Mapingere, the current treasurer of the GSZ, as a guide. So, over three days I was able to revisit many key sites across the area using an excellent field workshop guide (from 2013) produced by Prof Tom Blenkinsop, who did much subsequent mapping in the area whilst working at the University of Harare many years after my own largely reconnaissance study.

As well as enjoying revisits to key former geological sites and contacts around the area (of more than 3000km<sup>2</sup>), I had in mind the opportunity to see if any of these sites or areas might provide the potential for future geotourism, and in fact this was evidently the case. This allowed me to scope out three possible Geotrails, which might hopefully kindle the interest in investigating potential for further geotrails and possible Geopark developments in Zimbabwe.

A key site in the area was the Great Zimbabwe National Monument (previously known to me as the Zimbabwe 'Ruins'). Sited adjacent to Lake Mtirikwi and constructed from 2600Maganites and on top of domed inselbergs of the Zimbabwe Batholith, it is a well-known UNESCO World Heritage site, a magnificent and complex fortress and provides evidence of sophisticated and ancient construction by its former African tribal owners. With an excellent museum, well-marked and constructed paths and limited and mostly cultural interpretation, this location would provide not only an array of interesting walking geotrails, but also the key Geoheritage site to any possible more extensive geosite, geotrail or geopark development, including the following more extensive potential geotrail.



*Left:* The Manager of the Great Zimbabwe Hotel, hoping for more tourists to return after difficult COVID years; *Centre:* Statement of Significance of the Great Zimbabwe Monument; *Right:* possible walking geotrails to the summit.

Together with Brian's enthusiasm and excellent local knowledge, we scoped out such a potential and beautiful geotrail around the large, dammed Lake Mtirikwi. This was formerly named Lake Kyle and there was indeed evidence in terms of an old and



might make up such a Lakeview Geotrail. These included the Zimbabwe Monument as a starting point; a well-hidden but incredibly valuable 'Bushmen Paintings' geosite; one or two magnificent viewpoints over the lake and its many and gloriously exotic islands; monolithic granite Tors, Koppies and Balanced Boulders on the higher inselberg summits; the interesting dam wall expansion and addition of a key hydro-power station and finally the startlingly stark ranges of greenstone belt metasedimentary conglomerates and grits, which many years ago I had tramped in search of 'finite strain' markers. Unfortunately, an excellent former site in the Shagashi River just south of Masvingo which had previously exposed magnificent greenstone pillowed basalts, was now heavily polluted, eutrophicated and overgrown by weed infestations.



Clockwise from top left – sensational early morning view west over Lake Mtrikwi; former sign of the Lake Kyle Scenic Drive; Sliding Rock; site of the new hydroelectric power station; corn planted ready for the coming rains.

Finally, we scoped out a much larger potential geotrail, driving south on the main track/road to the Renco Gold mine with excellent geosites occurring across the summit Bornhardts of the Zimbabwe Batholith; the complex grey gneisses (possibly >3BY) to the south, intruded by the spectacular porphyritic and Potassic Reza Suite granite Koppies; mylonites superbly exposed at the north marginal thrust of the Limpopo Mobile Belt and then the Renco Gold mine itself. The return loop through the Ngundu Junction communication hub, passed by the new and enormous Tokwe River Dam (another key hydro-power site) and then back across the North Marginal Zone Thrust, more spectacular Reza granites and back into the greenstone belt metasediments of the Masvingo Greenstone Belt.



geoparks would include the poor state of many of the roads, the challenging social and economic environment of the country, plus the paucity of tourists. However, with the Victoria Falls area already well known as an iconic (geo)site in Zimbabwe, geotourism could well provide an impetus for growth and development especially for tourists travelling north from the South African border.

After my excellent reintroduction to Zimbabwe field geology and the potential for geotourism development, I presented a talk entitled *Geotourism, Geotrails and Geoparks – golden opportunities for sustainable social and economic development* to the GSZ Summer Symposium. This emphasized the relatively recent global growth of geotourism especially related to UGGps and the lack of such current activity (thus creating an opportunity) in Africa, and also possibly a game-changer for Zimbabwe tourism. I also enjoyed many of the other talks at the symposium, which were more related to traditional geological exploration topics. These included of course the importance of gold exploration and exploitation to the Zimbabwe economy (Brian Mapingere, Lithium Africa), including more recent difficulties in providing permits (Exclusive Prospecting Orders or EPOs) by the Director of the Zimbabwe Geological Survey (Forbes Mugumba); copper exploration in the Limpopo Belt (Linda Iaccheri, U Wits); but also less traditional but currently attractive exploration for Rare Earth Element (REEs) (Maideyi Meck, U Zimbabwe). New exploration methods were also highlighted, including Machine Learning Geophysical Models (Tenyears Gumede, KnowledgeFactory), 3D VR & AR Mine Modelling (Steven Duma, Leapfrog) and using drones in exploration (Vimbayi Matarirano, Scoutaerial Africa), see <http://www.geologicalsociety.org.zw/news/summer-symposium-2023>.



*Left:* The GSZ Summer Symposium. *Centre:* Brian Mapingere and Pat at the GSZ Summer Symposium. *Right:* Members of the GSZ gather for the Dorowa Excursion.

The symposium finished with a two-day trip to the Alkali Ring Complexes and their associated mines and quarries at Dorowa and Shawa SE of Harare. After a very early start and a 220 km drive about 40 participants in 10 4WD vehicles assembled at the Dorowa Mine. Here I was overwhelmed with the concept and terminology of Carbonatite Intrusions (very new to me), and their enigmatic origins which were,

lithologies such as Fenite, Ijolite, Jacupirangite, Juvite, Melteigite and Beforsite brought back memories of second year undergraduate petrology classes. How these might be interpreted for potential geotourists would indeed be a challenge, but the uniqueness and importance of the assemblages and their economic orebodies of phosphate (for fertilizer) from Dorowa and Vermiculite (for soil aeration and moisture retention) from Shawa, lead me to suggest that these most unusual Alkali Ring Complexes might also provide future sites for geotourism developments. See <http://www.geologicalsociety.org.zw/news/trip-dorowa-and-shawa-alkali-ring-complexes>

In my opinion, the potential for further Geopark development by the African UNESCO Geoparks Network (AUGGN), particularly in Zimbabwe, to add to the current M'Goun (Morocco) and Ngorongoro (Tanzania) African Global Geoparks, is significant. I cannot thank my many new friends and colleagues from the GSZ (Anthony, Tony, Tim, Houda, Brian and many others who I hope to keep in communication with) enough for their support and enthusiasm for their wonderful country. I hope that in future I may be able to help them achieve some of these much-needed geotourism-based aspirations.



*Left:* Inspecting a carbonatite dyke at Dorowa Mine, and  
*Right:* Vermiculite excavations at SAMREC Mine, Shawa.

### THE 5th GEOTOURISM FESTIVAL AND INTERNATIONAL CONFERENCE INDONESIA AND AUSTRALIA, JULY 2024

The *5th Geotourism Festival and International Conference* will be held in July 2024. It comprises a *Volcanic Youth Camp 'Pre Event'* hosted by Ijen UGGp, East Java, Indonesia on 1-2 July. This is followed by the 'Main Event', the *5th Geotourism Festival* being held at Rinjani-Lombok UGGp, Lombok, Indonesia, from 4-6 July. Finally a 'Post Event' *Geotourism Workshop* will be hosted by the AGC in Sydney, Australia from 18-19 July. The Festival is the initiative of the Indonesian Geoparks Network and further information can be gained from its Chair, Farid Mohamed (farid2905@gmail.com).

**MARK YOUR CALENDAR**

## The 5<sup>th</sup> Geotourism Festival & International Conference

**July 2024**

Indonesia (Ijen UGGP - Rinjani-Lombok UGGP) - Australia (Sydney)

**“Volcano as a World Class Sustainable Geotourism Destination”**

Pre Event	Main Event	Post Event
Hosted by: Ijen UGGP - Indonesia <b>VOLCANIC YOUTH CAMP</b> - Youth Camp - Excursion - Literacy Program for Schools - Writing Class  1-2 July 2024	Hosted by: Rinjani-Lombok UGGP Indonesia - International conference - Scientific Class Session - Geo Day (Coloring competition, writing competition) - Cultural Event - Geofair - Field trip - Sunset Jazz  4-6 July 2024	Hosted by: Australian Geoscience Council <b>WORKSHOP ON GEOTOURISM FRAMEWORK STRATEGY DEVELOPMENT</b> - Workshop - Field trip  18-19 July 2024

### 2020

**Geotourism Festival**

- Fully online
- More than 800 participants
- The 1<sup>st</sup> online international geotourism event
- Form of a resilience of a geopark to a disaster (Covid-19)

### 2021

**Geotourism Festival & International Conference**

- Hybrid event (online:offline = 25:75)
- More than 500 participants
- Form of a resilience of a geopark to a disaster (Covid-19)
- Publish the 1st International Journal for geotourism in Indonesia

### 2022

**The 4<sup>th</sup> Geotourism Festival & International Conference**

- A new geotourism working group was formed
- Hybrid event (online:offline = 10:90)
- More than 750 participants
- 3<sup>rd</sup> year of Geotourism Journal
- 4 joint-projects in geotourism

### 2023

**The 3<sup>rd</sup> Geotourism Festival & International Conference**

- Hybrid event (online:offline = 50:50)
- More than 500 participants
- Form of a resilience of a geopark to a disaster (Covid-19)
- 2<sup>nd</sup> year of International Journal of geotourism
- Form a new Forum for sea turtle conservation
- 100 local community got a legal business number

### 2024

**The 5<sup>th</sup> Geotourism Festival & International Conference**

- Cross country event
- Target: framework to develop a geotourism for participants country/ regional areas
- Sustainable event -> legacy for UGGP network

## End of Newsletter

Well that’s it from the Australian Geoparks Network. We are excited by the increased community interest in re-establishing geoparks in Australia and the AGN is committed to seeing the return of UNESCO Global Geoparks here.



# AUSTRALIAN GEO PARKS NETWORK

Mentoring & Promoting Geoparks



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