

'Implementing Mining Cultural Landscapes through the National Geotourism Strategy' 17 July 2024





Mining heritage within cultural landscapes, clockwise from left: Broken Hill mining memorial pitched atop 'the hill'; New South Wales; the remains of the Hercules haulage line in Rosebery, Tasmania; Pilbara geodiversity and spiritually significant landscapes, Western Australia.

Angus M Robinson, Coordinator Geotourism Australia

What is the Purpose of Geoscience?

- To explore, develop and celebrate the links between geological heritage and all other aspects of natural, cultural and intangible heritages.
- > By studying these issues, geoscientists, along with other scientists and geographers (all 'geo-professionals'), can anticipate earth's future and examine any changes that may need to be made.

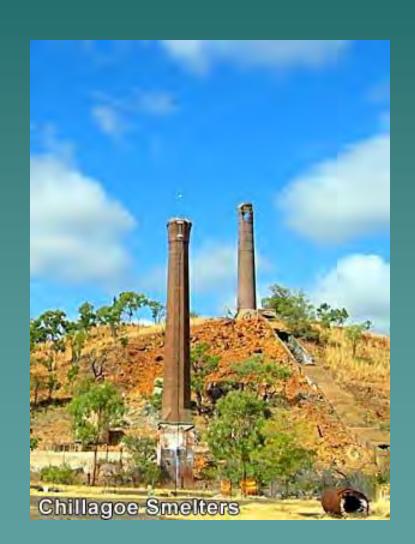


The Australian Geoscience Council Inc (AGC) is the Peak Council of geoscientists in Australia.

Through Geotourism Australia, AGC seeks to raise the profile of Geoscience in the broader Australian community by (amongst other strategies) by

- supporting Geoscience education in primary and secondary schools; and
- educating the community through geotourism and outreach.

'Modern Day Explorers' - 1978 Early Geotourism Insights



Authored a feature article in a new tourism journal describing the 'natural heritage' of the mining area of Chillagoe, FarNQ based on observations as an exploration geologist in the early 1970s.



Today's Agenda

- Understanding ecotourism & geotourism
- The National Geotourism Strategy, Goals 1,2, and 5
- A GeoRegion: Socio-economic benefits of geotourism
- Goal 5 of the NGS focusing on cultural landscapes including those with mining heritage
- Overseas exemplars
- GEOFEST 2024 Sydney Workshop
- Take-Aways

- In Australia, we have embraced the inclusive nature of the geotourism concept and have understood the inter-relationship between natural and cultural heritage elements, but it is not geological tourism.
- By focusing on the geology and geomorphology (i.e., physical geography) as well as the ecology and culture arising from these geological characteristics, it is believed in Australia that geotourism adds considerable content value to traditional nature-based tourism as well as to cultural tourism, inclusive of Aboriginal tourism.



- Geotourism has links with adventure tourism, cultural tourism, ecotourism, wildlife tourism, 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 is undertaken in all areas, including places utilised by people (cultural tourism) and where primary industry activities (i.e., agriculture/agritourism, mining, and forestry) are prevalent, and in areas with Aboriginal land tenure or are subject of cultural interest. It is therefore about the place, regardless of its condition.



Cultural Heritage Benefits of Geotourism

- Holistic Aboriginal Culture elements linked to landscape and astral interpretation ('sky country').
- For Australia, an enhanced understanding of cultural elements of post European settlement.
- Extensive mining heritage.
- Other primary industry and historic cultural elements.



Geotourism - 'Place based and Holistic'

- comprises the following features of both natural and cultural heritage:
- Abiotic non-living aspects such as the sky, climate & geology, landscape and landforms: celebrating GEODIVERSITY.
- Biotic the living parts e.g., flora (plants) and fauna (animals): celebrating BIODIVERSITY.
- Cultural past & present, both Aboriginal and post European settlement (incl. mining), nonliving and built: celebrating HUMAN DIVERSITY.
- Holistic in scope, geotourism is booming globally and a key driver for tourism, particularly in Europe and Asia.

Ecotourism & Geotourism Concepts

- Ecotourism is practised predominantly in protected areas such as national parks whereas geotourism, not ecotourism, is undertaken also in all areas where primary industry activities are being carried out, whereas
- Geotourism is increasingly seen globally as an instrument of regional economic development.

Geotourism Delivery Mechanisms

- > Geosites & Mining Heritage Sites
- > Geotrails
- > Geological Time walks and Rock Gardens
- > Geoparks, World Heritage Areas, GeoRegions





Founded in 1945 - 193 member states

UNESCO



United Nations Educational, Scientific and Cultural Organization







World Heritage

Man and the Biosphere

UNESCO Global Geoparks

Australia's UNESCO Sites

Program		Sites
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UNESCO Global Geoparks	UNESCO Global Geoparks	0

There are currently 213 Global UNESCO Global Geoparks in 48 countries, of which 47 are located in China, and one in NZ.

Australia's National Landscapes Programme

Partnership between tourism and conservation that aims to:

- Promote world class, high quality visitor experiences
- Increase the value of tourism to regional economies
- Enhance the role of protected areas in those economies
- > Build support for protecting our natural and cultural assets
- > Engage local communities



A long term strategic approach

'To differentiate Australia's iconic natural and cultural destinations from anything else available in the world'



Australia's 16 National Landscapes



UNESCO GLOBAL GEOPARKS

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



IS A GEOPARK JUST ABOUT GEOLOGY?

No! While a geopark must demonstrate geological heritage of international significance, the purpose of a geopark is to explore, develop and celebrate the links between that geological heritage and all other aspects of the areas natural, cultural and intangible heritages. It is about reconnecting human society at all levels to the planet we all call home and to celebrate how our planet and it's 4,600 million year long history has shaped every aspect of our lives and our societies.



There are currently 213 Global UNESCO Global Geoparks in 48 countries, which 47 are located in China, and one in New Zealand

National Landscapes & UNESCO Global Geoparks

- Had similar goals relating to local development and community engagement as well as education and experiential tourism ('geotourism').
- Both required government approval but with different government stakeholders.
- However, the Australian National Landscape Programme has been formerly disbandoned by its government sponsors, but the iconic landscapes and their communities are still very much in place!



National Geotourism Strategy Goals

- 1. New digital technologies.
- 2. To define an approval pathway for geotourism development.
- 3. To establish a framework for creating high quality geotrails.
- 4. To establish a national listing for geoheritage sites suitable for geotourism.
- 5. To develop geotourism in regional mining and Aboriginal communities.
- 6. To strengthen Australia's international geoscience standing.
- 7. To develop and enhance geoscience interpretation and communication skills.

Goal 1

Technology
Solutions for
Geoheritage
Interpretation
and Protection

- Virtual Tours e.g. GSWA Virtual Tour of the East Pilbara http://www.dmp.wa.gov.au/GSWA-virtual-tours-22666.aspx
- Audio stories and 360-degree dronecaptured footage with augmented reality integrated into a hyper-local mapping platform - Skywalk, Glen Innes, NSW
- Visitor Interpretation Centres supported Augmented Reality and 3D Visualisation
- Smartphone supported tour guide Apps



Australian Geotourism Discovery Portal



This is the platform for discovering GeoRegions, geosites, cultural and mining sites, and geotrails in Australia. You can explore details using maps, as well as reading StoryMaps, articles and watching videos.

Goal 2 Focus:

Defining a
GeoRegion - the
first step
in evaluating its
potential
development
for geotourism

- An area defined by a proponent (which might include a LGA or a RDA having completed an approved tourism Destination Management Plan (DMP).
- And the proponent now wishes to seek agreement from the State/Territory Geological Survey to designate a defined area of particular natural and cultural heritage which highlights outstanding geoheritage features i.e., a GeoRegion

Societal
Benefits of
Developing a
GeoRegion for
Geotourism

- > By celebrating the geological heritage of an identified GeoRegion, 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.
- Geotourism gives local people a sense of pride and strengthens their identification with a GeoRegion.

Employment Benefits of Geotourism

- Through geotourism, can 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 etc.
- Management roles in potential mining parks and geoparks, regional development and LGAs.
- Flow-on employment in tour operations and townships resulting from increased tourism visitation.
- Opportunities for pastoralists to develop 'farm stay' and 'station stay' tourism operations.

Over-riding Socioeconomic Benefits of Geotourism

- ➤ Measurable economic benefits through enhancement of traditional nature-based tourism - additional visitors, direct and regional economic output, household income and wages, and local (including Indigenous) employment.
- Through establishment of a higher level of centralised coordination in areas of product development, travel and hospitality services, tourism promotion/branding.
- ➤ Through its defined mission, community engagement is maximised and measured.



AGC's preferred approach Goal 2 - the 'Exploration Licence'

- Emphasise the concept of identifying GeoRegions not Geoparks in key areas of outstanding geoheritage, with early consultation with Geological Surveys (the GWG) to address their requirements.
- Initially focus on developing geotrails within these GeoRegions to build community, business, State/Territory Government support.



National
Geotourism
Strategy
(NGS)
Goal 2

- Hence the need to define an approval pathway for major geotourism projects, implemented by the AGC in consultation with Australian government agencies THAT HAVE APPROVED THIS STRATEGY.
- > Three approved Pilot GeoRegion Projects now supported by the NGS.
 - * Ku-ring-gai, Sydney, NSW.
 - Murchison, Mid West, WA.
 - Glen Innes Highlands, NSW driven by a LGA approved Tourism DMP



Ku-ring-gai GeoRegion

- Conceived in 2018 by a community group - FOKE and now supported by other community groups.
- > 440 sq kms in area, embracing both national parks and the Northern Beaches of Sydney.
- Supported by NPWS, three Councils, and local MPs.
- > Approved by the GSNSW.
- Major natural and cultural heritage peer-reviewed, review paper published by the Linnean Society of NSW.
- > 50+ sites and six formative geotrails.



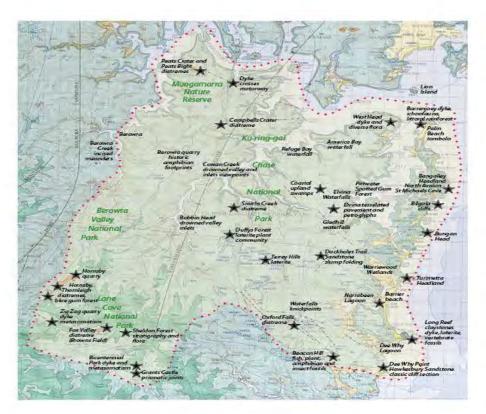


'Ku-ring-gai' GeoRegion sites & trails:

- Cliffs, beaches and lagoons from Long Reef to Barrenjoey.
- Ku-ring-gai Chase National Park.
- Muogamarra Nature Reserve.
- Northern Garigal National Park.
- Eastern Berowra Valley National Park.

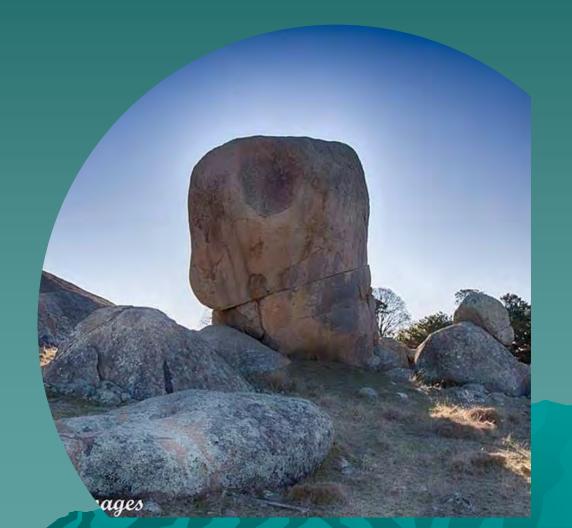
Showcasing:

- Numerous significant geological sites.
- Rare and threatened flora and fauna tied to the geology.
- A human history dictated by the landscape.



- Severn Council area under a geotourism driven tourism DMP and under both regional economic development & DMP plans.
- Case study highlighted in the Austrade THRIVE 2030 strategy.
- Full natural and cultural heritage audit completed.
- Funding approved for various geotrails and a major rail trail.
- >Mining heritage sites included.

Glen Innes Highlands GeoRegion



Cultural Landscapes

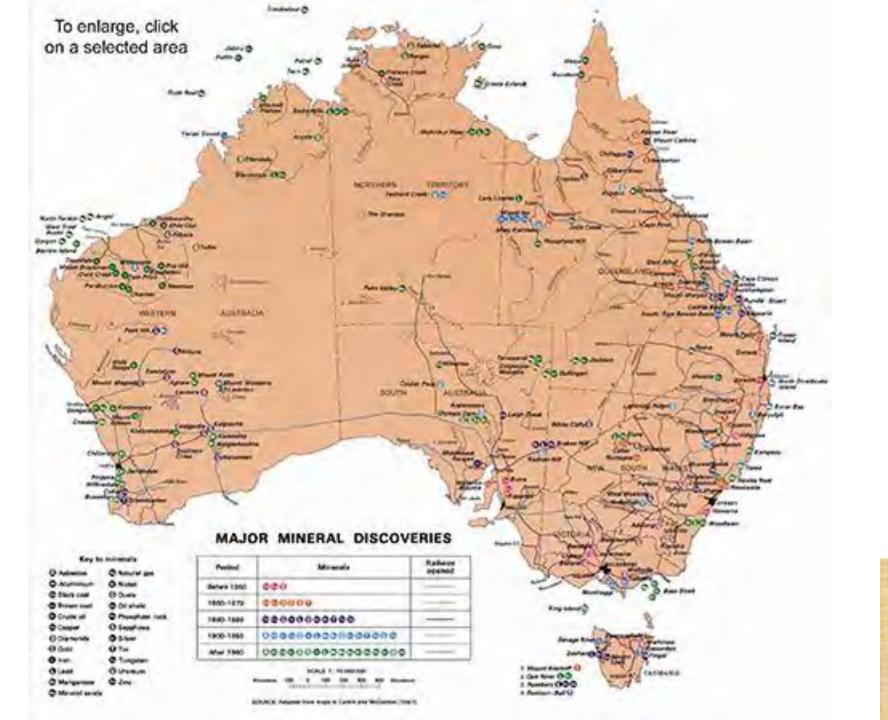
Goal 5

- ➤ Goal 5 identifies opportunities for geotourism in rural and regional Australian post (or active) mining communities, where surfaces are exposed by mining, and their recreational, educational, and cultural values can be realised.
- Goal 5 aims to draw attention to these places, and to the range of activities that could be conducted in these places.

https://www.youtube.com/embed/-KiF28J2n-k

UNDERSTANDING CULTURAL LANDSCAPES

- UNESCO defines cultural landscapes as 'cultural properties that represent the combined work of nature and of man.'
- Mining cultural landscapes refer to areas where the historical and cultural aspects of mining activities have left a lasting imprint on the environment and the resident communities, through
 - Abandoned Mines
 - Mining Towns
 - Industrial Infrastructure, and Transportation Networks
 - Cultural Practices: Mining often shapes and impacts on the culture/practices of communities, including the First Peoples and their custodianship of Country.
 - Environmental Impact
 - Heritage Sites



Australia's
Extensive
Mining
Heritage

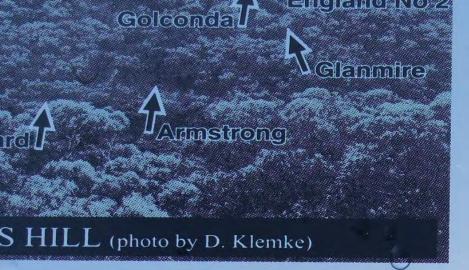
Diversity of Geotourism & Mining Heritage

- Existing and abandoned mining sites/districts
- > Old mining towns e.g., Broken Hill.
- ➤ Historic mining regions e.g., West Coast Tasmania, Herberton and Mt Morgan Qld; Blinman, SA; Kalgoorlie-Boulder, WA.
- Old mine site complexes combining mining, museums, ecological interpretation, history and culture e.g., Hill End, NSW,
- > All underpinned by RICH STORIES.









- remain and stephens
- Meyer's
- 8. Star of Peace
- Paxton and Holman
- 10. Rose of Australia
- 11. Rampant Lion
- Hickson, Creighton, Beard

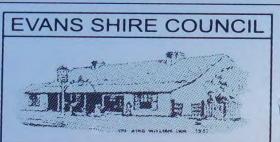
Beyers and Holtermann

(Monte Christo)

- Krohmann 20.
- Golden Crown
- Great Western Undaunted
- Carroll and Beard 23.
- 24. Rapp

This information plaque was sponsored by the following organisations:

Sydney Institute of **Technology** Engineering







Hill End - Tambaroora **Common Trust**



nd Historic Site, NSW - National Parks and Wildlife Service



Blinman Mine Historic Site

History

The Blinman Mine was the largest producing and longest operating mine in the Flinders Ranges. It was named after a shepherd, Robert Blinman, who discovered the outcrop of copper ure in 1859. The Vidramutana Mining Co. purchased the mining leases and commenced mining in September 1862.

There were four main periods of nuning activity:

1862-75

A smelting works commenced in 1863, producing rough copper ingets. A steam winding engine was erected in 1871.

1881-85

Reworked by the Corporation of South American Copper Mines Ltd. which exected a steam-powered crashing and concentration plant in 1882.

1888-91

Reworked by the South Australian Mining and Smelting Co. Ltd. which employed up to 80 men.

1903-07

The Tasmanian Copper Co, renovated the mine, and created a new winding engine, power plant and a water-jacketed blast furnace. Up to 300 men were employed during this period. The mine closed in 1907 due to a decline in the grade of are and a drop in copper prices.

Production

200 000 townes of ore yielded to 000 townes of copper metal, 90% of which was produced in the periods 1862-75 and 1903-07. Today this would be valued at about \$30 million.

Officers and any, to prove of the visit continuous are a 100%









Public Mining & Mineral/Fossil Collections and Tourist Mine Sites - Queensland

Queensland Museum

Brisbane

Various <u>research-</u> <u>only</u> state collections

Brisbane

School of Earth & Environmental Sciences, University of Queensland

Ted Elliott
Collection
TerrEstrial
Georgetown

Herberton Mining Museum Herberton

Crystal Caves Atherton Opal Museum

Brisbane

Mount Morgan Historical Museum Mount Morgan

Australian Age of Dinosaurs
Winton

Value of Museum Mineral Collections

"National and local museums can be a valuable source of information from an exploration perspective. If there is a comprehensive collection of minerals and ore suites from former and existing mines, an exploration geologist can quickly view the various styles of mineralisation and ore deposit types".

Douglas J Kirwin
President 2019
Society of Economic Geologists



CONSERVING MINING CULTURAL LANDSCAPES

- Conserving mining cultural landscapes is crucial for understanding the historical development of regions shaped by mining activities. Recognition and protection of these landscapes can occur through various means, including heritage designations.
 - e.g., the proposed World Heritage listings of the Victorian Goldfields and the South Australia's Burra/Moonta Cornish mining areas), mining-centric UNESCO Global Geoparks, mining parks (some 70 in China), as well as interpretation centres and geotrails.
- Developing geotourism in regional mining communities with potential geoheritage and cultural heritage sites is one of the key goals (#5) of the National Geotourism Strategy.

AuslMM Engagement in the Working Group Goal 5

- Heritage Committee, represented by Dr Sandra Close.
- Social and Environment Society, represented by Jillian Durso.
- Geoscience Society, chaired by David Turvey
- Branches with a regional interest, e.g.
 Central Victoria (Victorian Goldfields WHA bid).

and coordinated by Narelle Wolfe with support from Angus M Robinson. Key Issue for the Mining Industry

National Geotourism Strategic Goal 5

- > The acknowledgement of Aboriginal cultural heritage through geotourism practice includes the need to ensure it is appropriately protected.
- This will ensure that the preservation of Aboriginal cultural heritage is as important as that of mining and other aspects of cultural landscapes, thus leading to improving the public perception of mining professionals and the industries in which they work.

THRIVE 2030
Visitor Economy
Strategy and the
National Geotourism
Strategy

'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.'

The Key Role of Geotourism in the Resources Industry



Geotourism plays a key role in gaining community support for both mining development and in defining a way forward in post-mining closure and future land use.

Geotourism, & Mining Heritage Opportunities

- Link through geotrail development, mining heritage into established tourism infrastructure and product offerings. e.g., West Coast Tasmania.
- Develop and promote tourist mines e.g., Develop major national mining parks in national coal fields e.g., Bowen Basin, Qld and the Hunter Valley, NSW.
- Promote museums with mineral collections.

Melding Geotourism, and Mining Heritage

Hunter Valley GeoRegion?

Link through geotrails, mining heritage into established tourism infrastructure and product offerings e.g., Hunter Valley, NSW

➤ Opportunity to develop a GeoRegion, leading to a potential Mining Park.

Proposed Hunter Valley National Mining Park

"A Vision Beyond Mine Site Rehabilitation the largest national mining park in the world to be established to celebrate the significant role that mining has played for Australia's development."



- Native flora and fauna habitat conservation all connected through corridors;
- 'Soft adventure' recreation.
- Coal mining heritage sites, geosites and geotrails.
- Areas set aside for renewable energy generation (solar arrays, wind farms, biomass production) embracing light industrial sites and 'value adding' manufacturing.

 Engagement with the six strategic hubs of the Strategic Aboriginal Culture and Enterprise Scheme of the Wonnarua Nation Aboriginal Corporation.

Melding Geotourism & Mining Heritage Overseas Exemplars

- China has some 70 national mining parks, notably the Changyu Dongtian National Mineral Mountain Park.
- A major tourism attraction in Taiwan -Jinguashi Gold Ecological Park.
- Baia Mare Geological Mining Park, Romania.
- Geological & Mining Park, Sardinia, Italy.
- Lusatia rehabilitated coal mining region, Brandenburg State, Germany.
- Black Country UNESCO Global Geopark in the UK.



Black Country UNESCO Global Geopark, UK Mining Heritage













Finding Higher Value Productive Post Mining Land Use







Scars from the Past



Restore & Return Environmental Value Focus



Higher Value Land Use







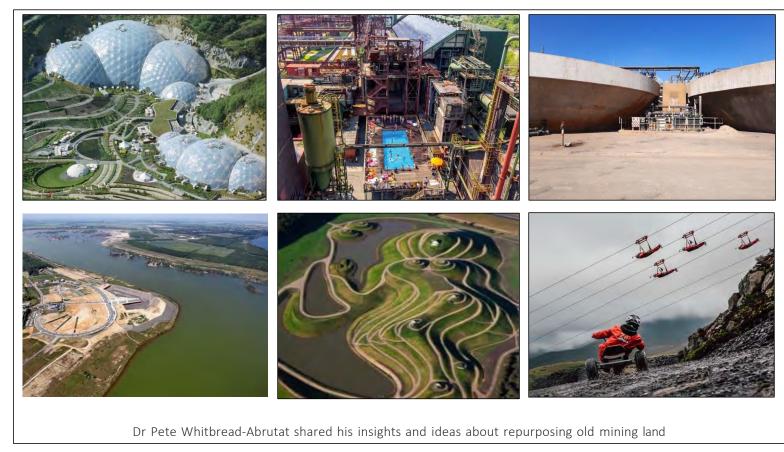
enviroMETS – an independent, industry-led not-for-profit company – an actor for change

Mission: To find and implement innovative and sustainable repurposing, recommercialising, and remediation solutions to ensure mining affected land is more valuable and usable to both its current, and future custodians.

International Repurposing

Creates Societal Value





Successful Repurposing Projects Require:

- Visionary leadership
- Engaging communications
- Beneficial knowledge

- Practical research
- Creative ideas
- Cultural connections

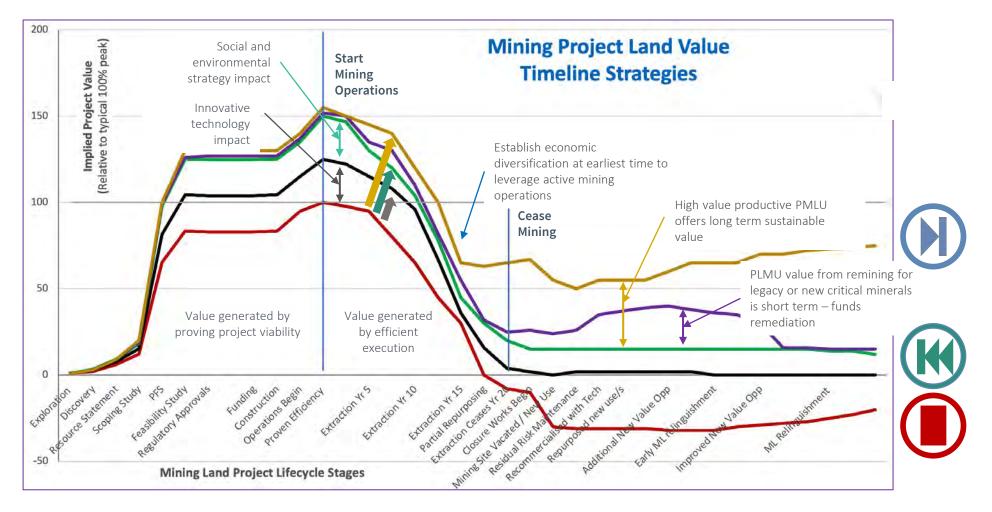
Source: Allan Morton, enviroMETS (Qld)

LHP2: Deliberate strategies for sustainable economic transition

THREE DELIBERATE STRATEGIES

Legend

- High Value Productive Sustainable PMLU
- Remining for legacy and critical minerals
- Low Value Social and environmental
- Efficiency Value Gain via Technical Innovation
- Typical Mine Life Value Cycle Base Case
- State / Regional
 Development from
 innovative PMLU.
 Enabling regulation
 provides early support
 for economic
 transformation activities



Note:

- Developed from original concept provided by **HATCH**
- Utilizes 'Residual Risk' elements from QTC

Establish Better Regulatory Pathways for PMLU

NEW ENABLING REGULATIONS

Economic Transformation

- Pursue positive environment outcomes
- Social licence
- Expand the land value chain
- Innovation in land uses
- Accelerate economic transformation
- Foster new industries
- Remining to remediate
- Improve regional livability
- **GEOTOURISM**

Mining needs to reframe the overall post mining value discussion

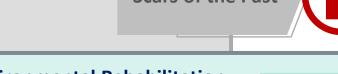
Mining Resource Extraction Outcome

In past has led to mining lands unused or abandoned, impacting communities

Mining Resource Acts

From 1860's Manage responsible mining practices to make the best use of state resources

Scars of the Past



Environmental Rehabilitation Outcome

Focus on the rehabilitation to premining low value state.

Environmental Protection Acts

From 1970s
Provides environmental authority and regulatory oversight of mining impact on the environment.

Plus (in Queensland)

The Coordinator-General The Mine Rehabilitation Commissioner

Regional Economic

Development Outcome

Outcome

Deploying high value, productive PMLU opportunities that support local communities. Provide certainty.

??? Acts

To provide secure responsible economic development and livable communities.



Economic

Transformation





QLD Pilot Sites Finding New Value



Aquaculture

- Barramundi
- Crustaceans
- Asparagopsis (cattle feed to reduce methane)
- Micro / macro algae Biofuels

Agriculture

- New crops Quinoa
- Drought & Salt Tolerant Grasses
- Decarbonisation

Renewable Energy

- Compressed underground gas
- Energy hubs

Tourism

- Underground facilities
- Adventure activities
- Geotourism destinations



















Collaborations offer Extensive Capabilities



Source: Allan Morton, enviroMETS (Qld)



Take-Aways for Geotourism in Mining Cutural Landscapes

- Goal 5 of the National Geotourism Strategy, where it is applied for mining activity, can be developed through collaboration amongst local organisations wishing to celebrate cultural landscapes.
- Aboriginal cultural elements and landscapes cut across widely accepted, post-settlement landforms and landmarks, and have values specific to various groups and individuals.
- Geotourism can provide a framework for celebrating mining heritage over the life of mine sites and beyond, benefiting mining communities and regional development.
- A real opportunity for establishing GeoRegions embracing existing mining communities.

2024 SYDNEY WORKSHOP

VOLCANO AS A WORLD CLASS

SUSTAINABLE GEOTOURISM DESTINATION

EVENT OPENS TO GEOSCIENTISTS, ENVIRONMENTAL PROFESSIONALS, EDUCATORS, STUDENTS, TOURISM PLANNERS/MANAGERS/OPERATORS.

MAIN TOPICS

 SUSTAINABLE TOURISM AND REGIONAL DEVELOPMENT

 ECONOMIC BENEFITS AND SUSTAINABLE DEVELOPMENT OF GEOPARKS

 CHALLENGES OF GEOTOURISM AND GEOPARK **OPERATION**

 DIGITAL TECHNOLOGY APPLICATION IN **VOLCANIC GEOTOURISM**

LOCATION

FIELD TRIPS

FEATURING

SPEAKERS FROM

AUSTRALIA,

INDONESIA &

NEW ZEALAND

BLUE MOUNTAINS KU-RING-GAI GEOREGION SOUTH COAST VOLCANICS & A SPECIAL SESSION ON WILDLIFE TOURISM

THE UNIVERSITY OF SYDNEY Camperdown **Darlington Campus**

REGISTRATION CLOSES ON

17TH JUNE 2024

18-19TH JULY

2024

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http://www.agc.org.au/geoscience-in-australia/geotourism/ Australian Geoscience Council

https://www.youtube.com/embed/-KiF28J2n-k