A Mine Closes. Then What?

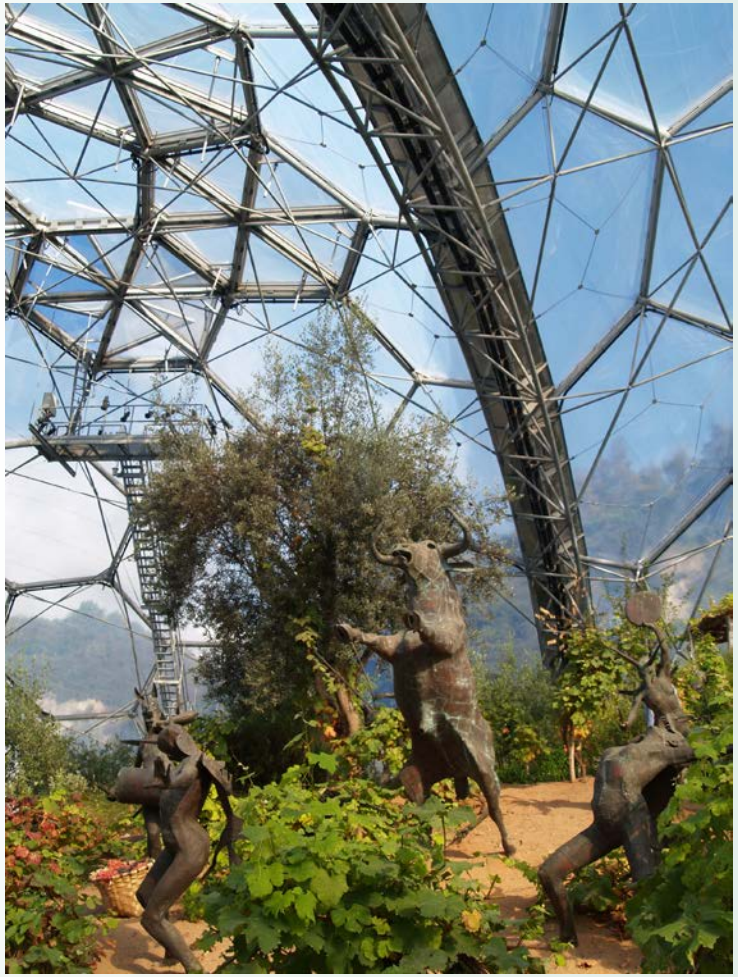
Dr Pete Whitbread-Abrutat

SVEMIN, Skellefteå, 7 October 2014

FUTURE TERRAINS

Overview

- Future Terrains
- Closing Mines
- The Eden Project story
- Other stories
- Mine Transition



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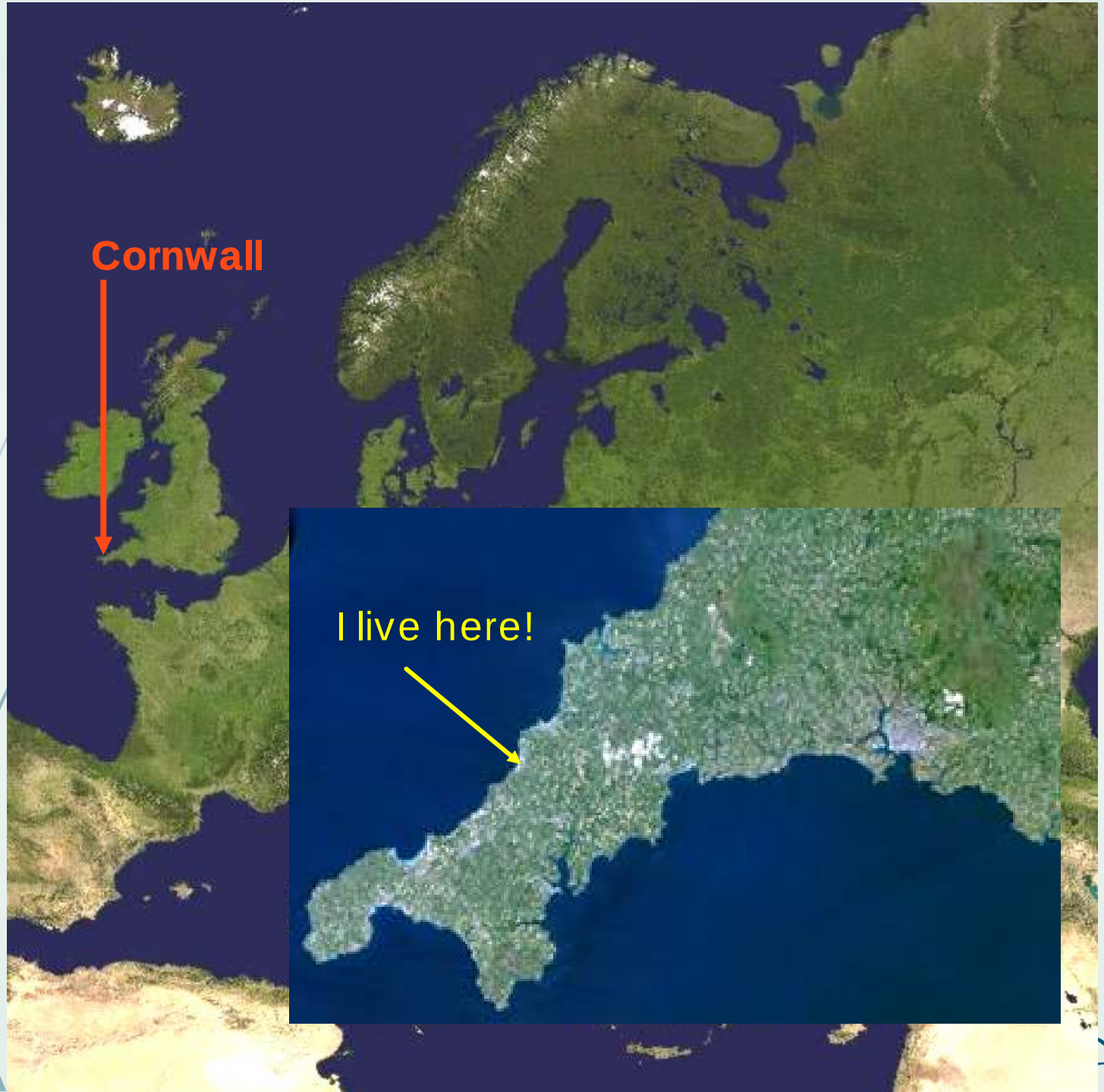

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What is FUTURE TERRAINS ?

A social enterprise with a mission…

…to tackle the challenge of degraded lands by:

- Improving environmental and social performance – reducing impacts, increasing opportunities
- Promoting landscape restoration – rebuilding ecological integrity, enhancing people's lives

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Areas of expertise

Landscape restoration

Mine closure

Environmental & community management

CSR & sustainability

Services

Technical assistance

Building understanding

Research & development

Increasing awareness

www.futureterrains.org

@FutureTerrains

Co-founder and director of Ulex Consulting co-operative; see www.ulexconsulting.co.uk

Closing Mines

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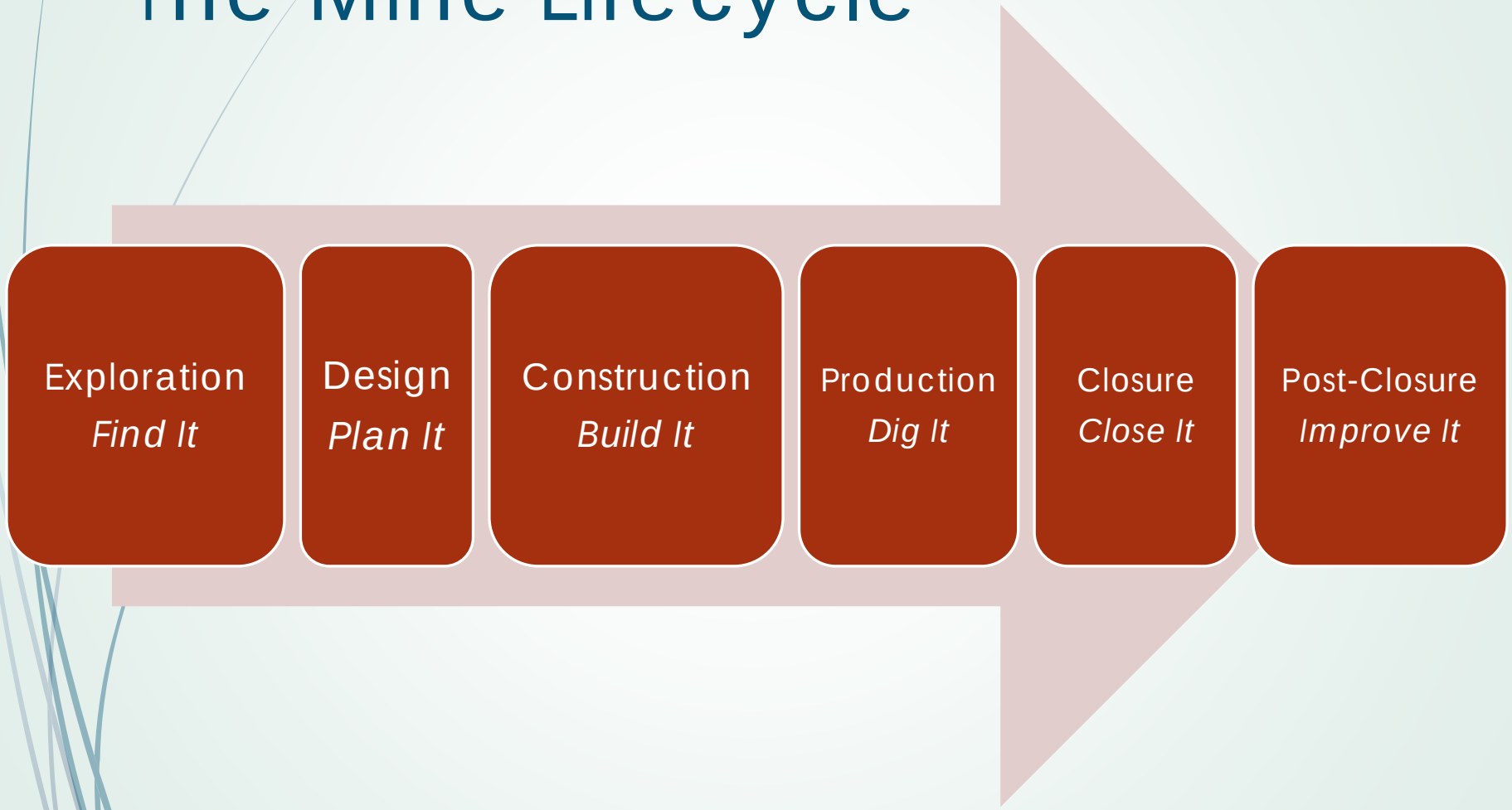
The Mine Lifecycle



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What is Mine Closure?

'The point at which mining operations cease, infrastructure is removed and management of the site is largely limited to monitoring'

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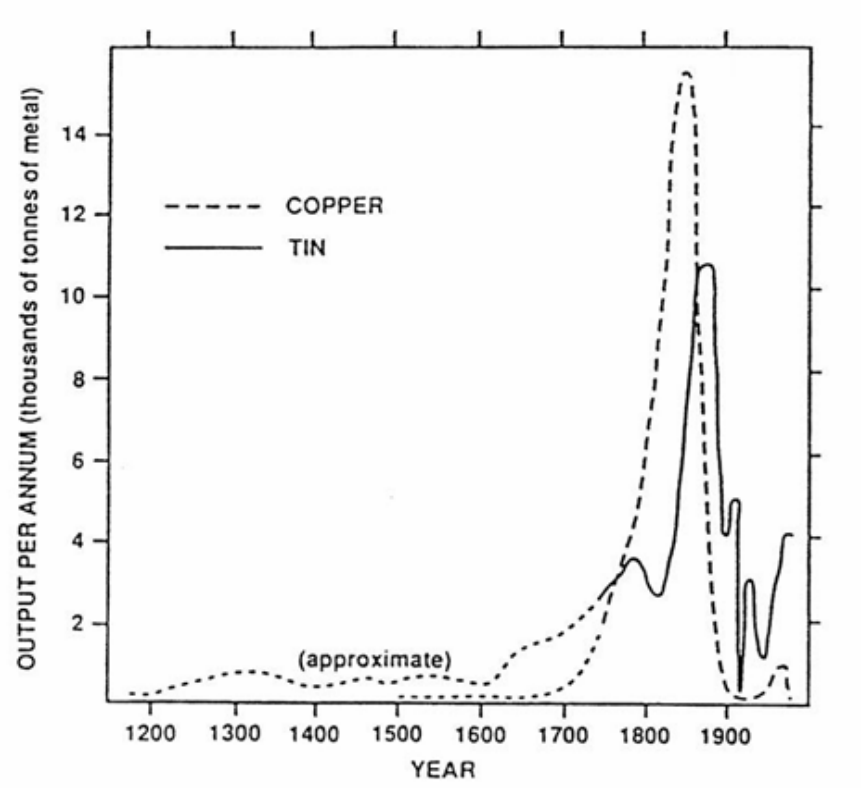
Why Do Mines Close?

- Economics (operating costs, markets, bankruptcy)
- Geology (unexpected conditions, resource depletion)
- Environmental damage
- Politics (including war!)
- Social disruption



Predicting <u>when</u> is the challenge!

Unexpected closure often leads to severe environmental and socio-economic impacts

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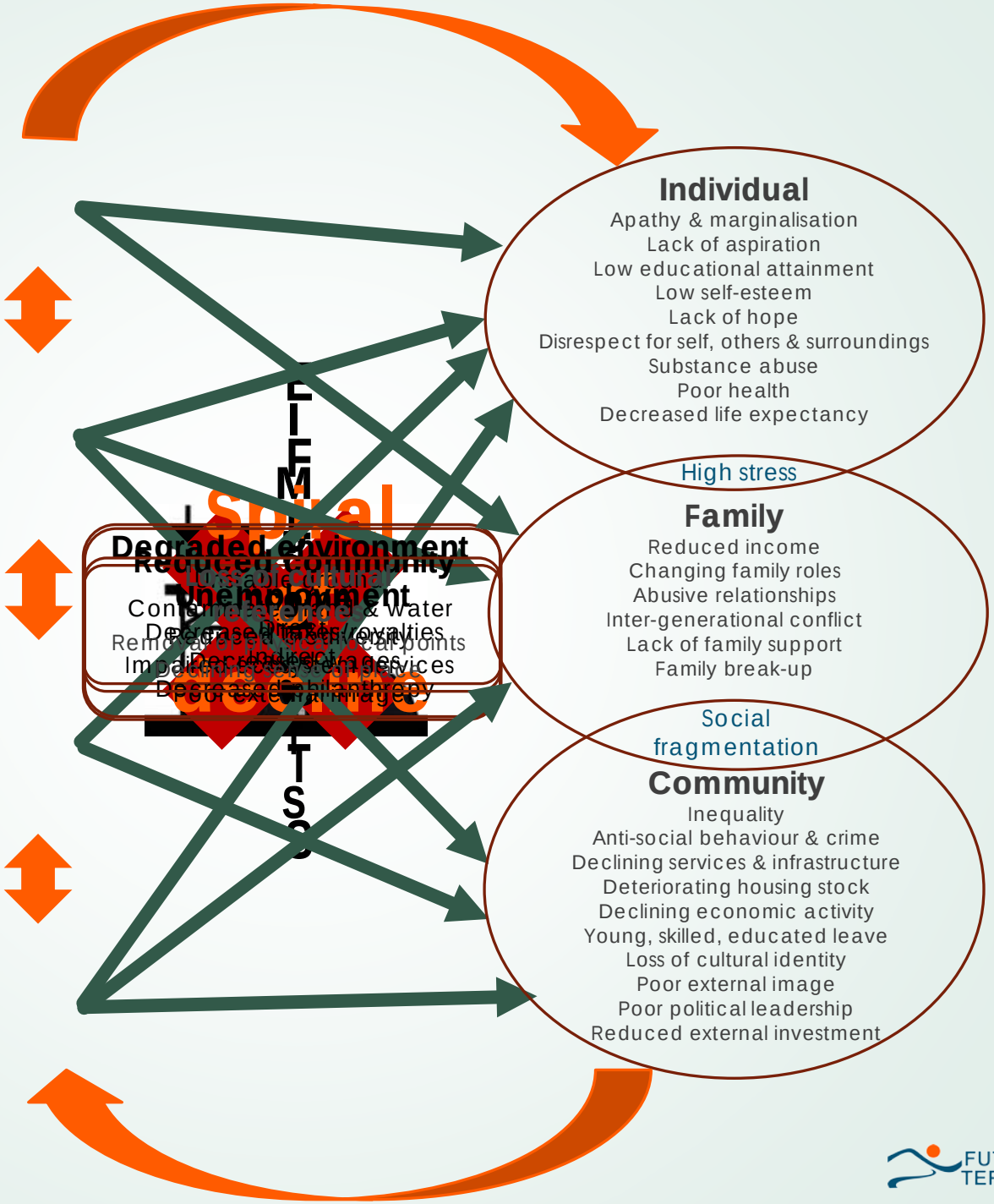

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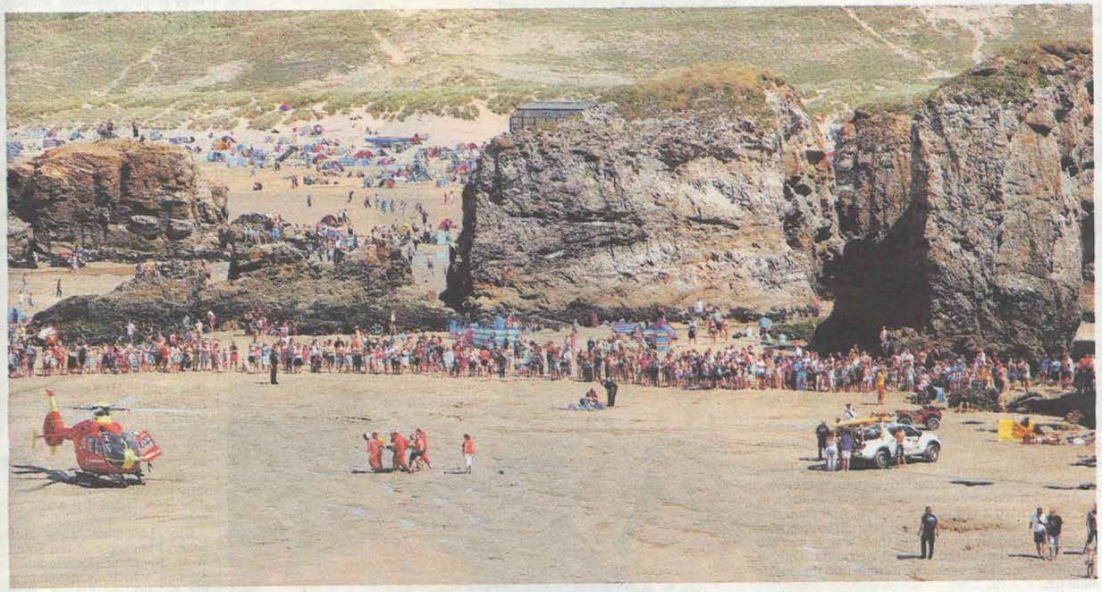
Truro & Mid Cornwall

West Briton

Thursday, August 19, 2010 | Reporting local life since 1810 | www.thisiscornwall.co.uk | 85p



Hundreds watch on helplessly as rescue workers battle to save Eleanor. She was airlifted to Royal Cornwall Hospital but died from her injuries. Photo: Phil Maynard

Community in shock as girl dies after falling into mine

By JOSIE PURCELL
jpurcell@c-dm.co.uk

AN URGENT safety report has been ordered after an 11-year-old girl suffered a fatal fall into a mine shaft on Perranporth Beach.

Eleanor Clarke from Andover, Hampshire, had been enjoying a day at the seaside with her family on Wednesday last week. She fell from a mine entrance exposed at low tide on the western cliff face of Perranporth beach into water at the bottom of a mine shaft.

She died several hours later despite the best efforts of emergency personnel and the public. Some people formed a human chain to try and get her out of the cave.

The community remains in shock at the tragedy.

Perranzabuloe Parish Council chairman Doreen Lawrence said they had asked for an engineer's report on potential signage near the mine entrance and would make a decision on what could or should be done once it had received the findings.

Eleanor's family have described her as having a "witty and mischievous nature" and being "loyal and kind" which all complemented her "adventurous spirit".

In a statement released through the police they said: "Our pain in losing our beautiful daughter Eleanor is impossible to describe. We are struggling to put into words the unique person that she was and how her loss will affect us, her two brothers and all her family.

"Her radiance and sheer joy of life captivated anyone who knew her."

They expressed their gratitude to the people who helped on the beach, the lifeguards, the air ambulance crew, staff at the Royal Cornwall Hospital, and the police.

David Nancarrow, chairman of Perranporth beach committee and a local councillor, witnessed the rescue efforts.

He said: "I saw the lifeguards and helicopter crew giving emergency treatment. Everyone did their absolute best in trying to save her."

Volunteer coastguard teams from St Agnes were also on the scene and RNLI lifeguards from Perran Sands supervised the packed bathing area.

An inquest has been opened and adjourned.

'I fell down same shaft 20 years ago'

FOLLOWING Eleanor's death, the West Briton was contacted by a man who believes he fell down the same mine shaft nearly two decades ago.

Graeme Tidd, 33, from Sheffield, has been so saddened by the news of Eleanor's death that he wants to raise awareness of the dangers.

He said: "My brother and I had been playing on the beach and we thought it would be fun to climb up the cliff and clamber in the entrance.

"I stepped back expecting it to be the back of the cave and just plummeted 30ft down a mine shaft into water.

"My brother ran screaming up the beach for help and I trod water, something I could not have kept up for a long period of time, before lifeguards managed to pull me out."

Mr Tidd now hopes that following this tragedy, and another in 2000 in which a woman in her fifties fell in the same shaft breaking an arm and puncturing a lung, the holes will be filled in or at least grilles put over the entrances.

He said: "I appreciate we don't want to live in a nanny state but the death of this little girl, and other incidents in the same place, shows there is a clear and present danger and the potential for it to happen again."

"Our beautiful daughter," Eléanor Clarke.

City clerk quits

TRURO'S popular city council

Seeking Madge

RUMOURS that Madonna has

Sign of the times

BUSINESS owners in Truro

Beans means lbs

DAWN OLDS, from Truro, who

Clamping ordeal

A TOURIST has said he is out-

Town hall top 30

CHIEF executive of Cornwall

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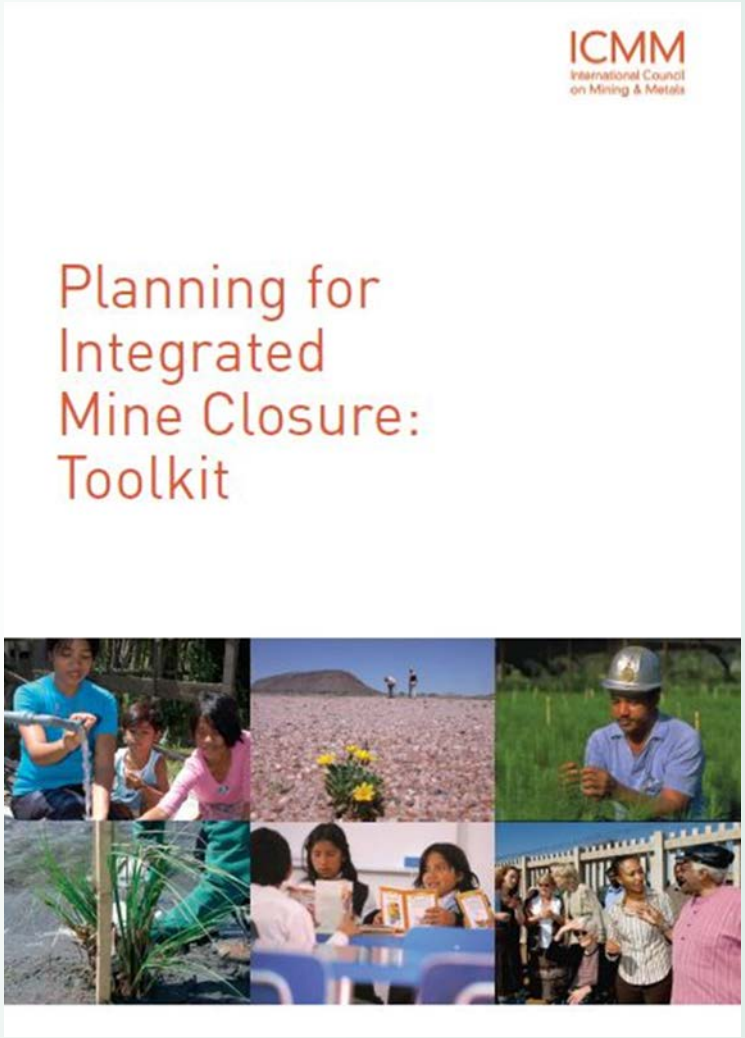
Performance Drivers & Guidance

- **Expectations** of: stakeholders, investors, local communities, wider society
- **National legislation, regulation & guidelines**
- **EU Directives** – EU Mining Waste Directive
- **Corporate standards** – ICMM, in-house
- **International standards & guidelines** – IFC/ WB, Equator Principles, EBRD, etc.
- Ordinary people concerned with their own neighbourhoods! (**Social Licence to Operate**)



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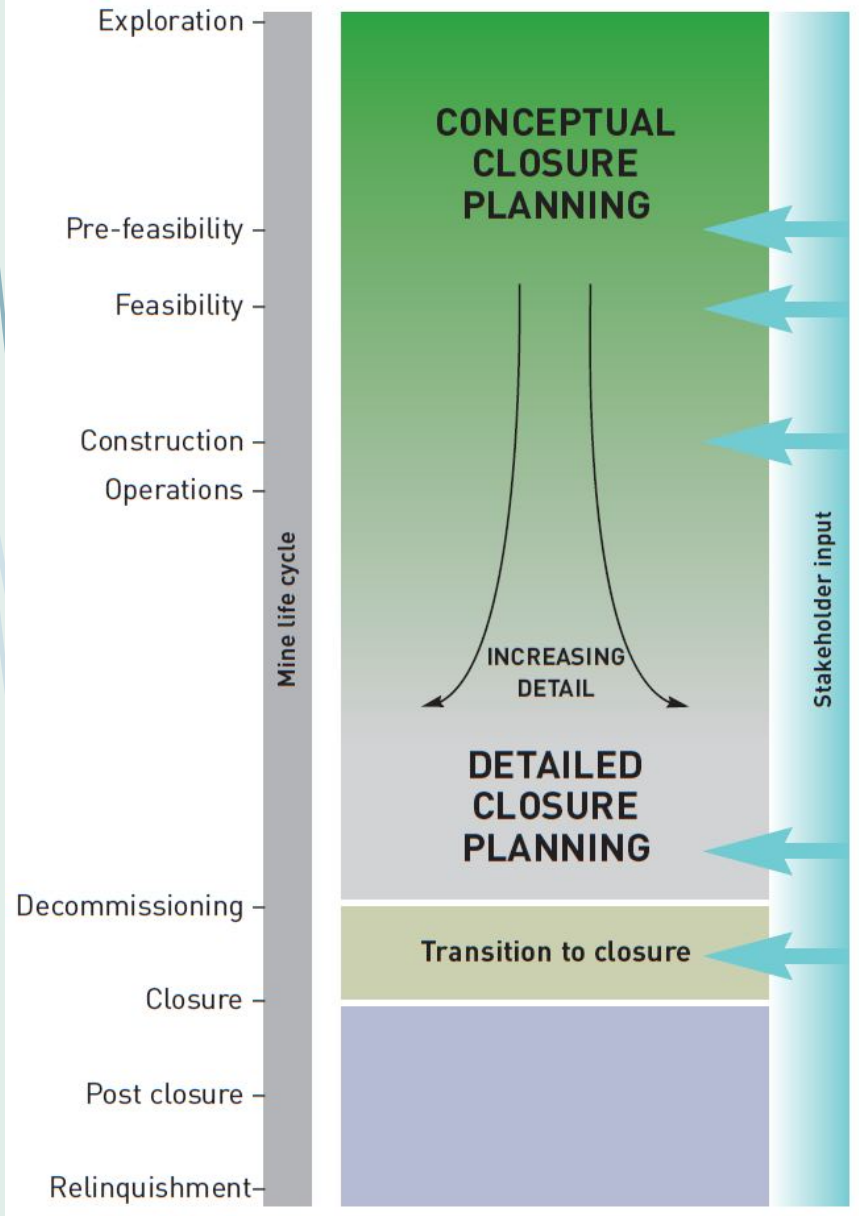
Closure Planning Good Practice



- Start planning early
- Multi-stakeholder process
- Local community participation
- Regularly reviewed & updated
- Progressive restoration
- Early, secure, dedicated finance
- Temporary & premature closure
- Post-closure monitoring
- 'Design and Mine for Closure'
- Collaboration & knowledge-sharing
- Creative approaches
- Enduring benefits

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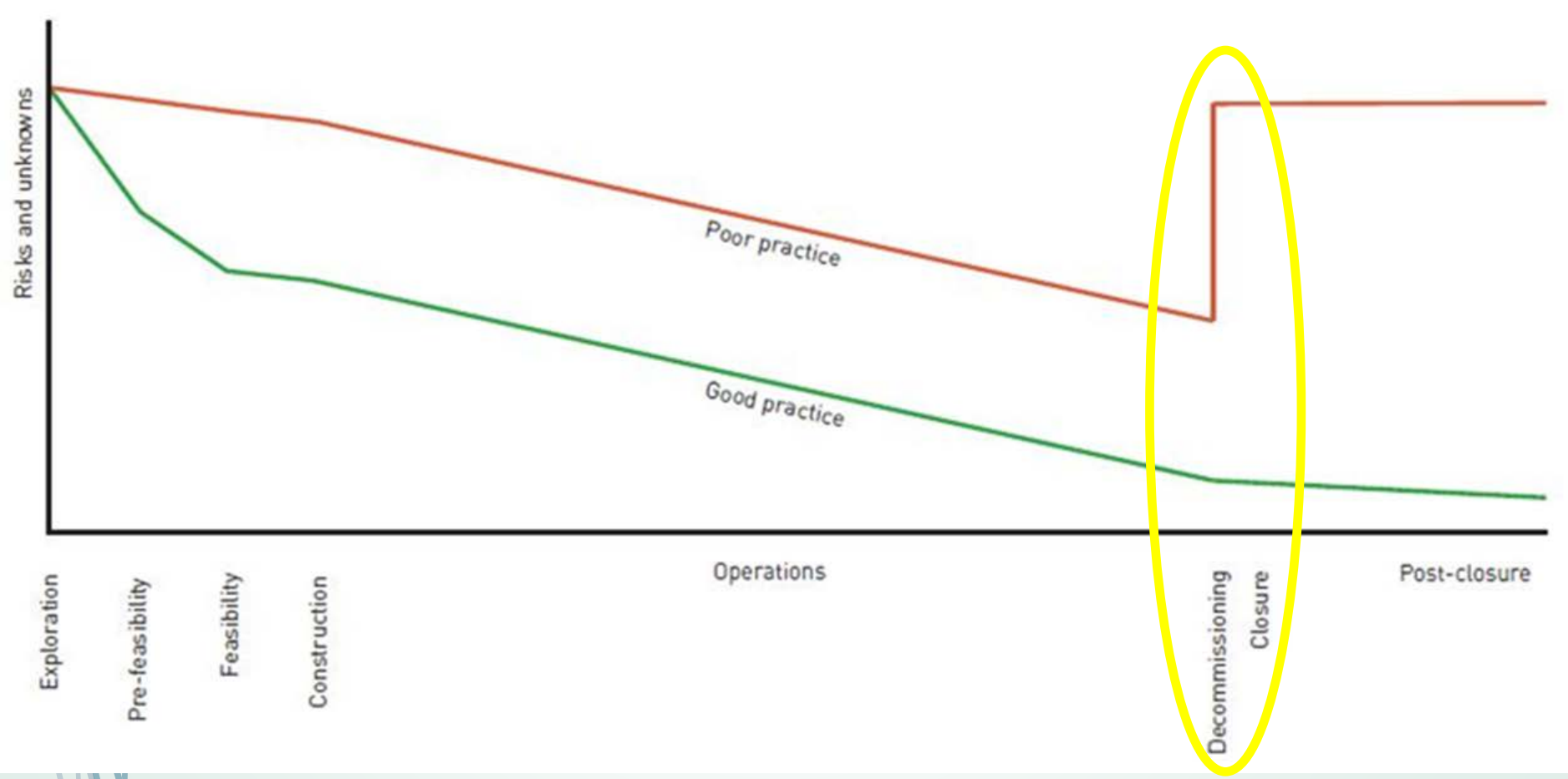
Mine Closure Planning



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The Effects of Mining Don't End When a Mine Closes

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The eden project Story

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Context is everything!

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WHEN THE FISH AND TIN ARE GONE WHAT ARE THE CORNISH BOYS TO DO?

www.cornish-mining.org.uk

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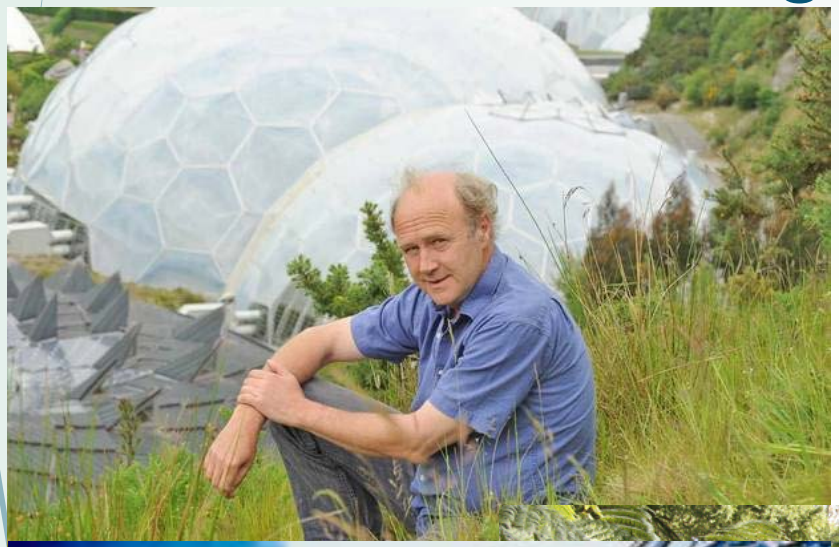
Tim Smit & The Lost Gardens of Heligan



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Development

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‘Blank canvas’ landscape

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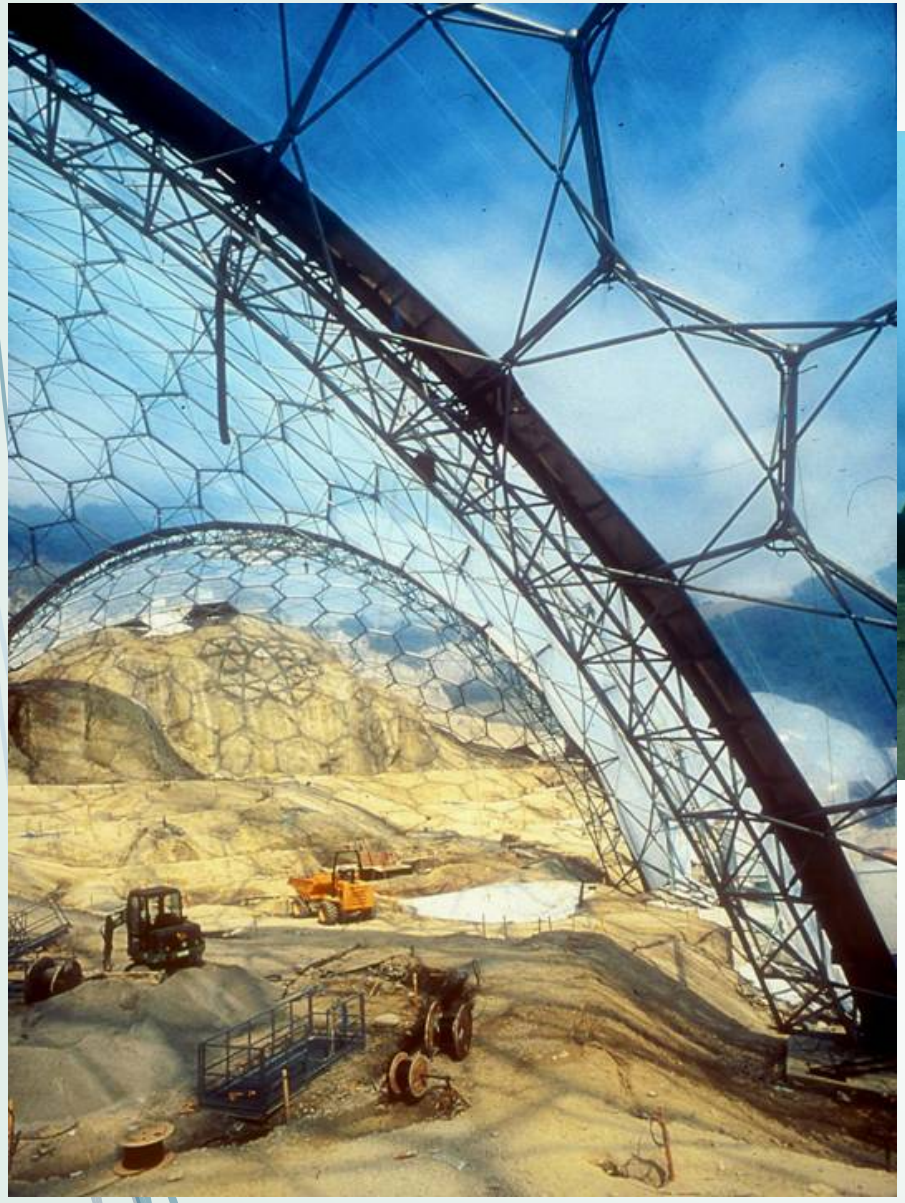

Soil

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Funding the charity

To date:

Public sources	£110 million
(inc. Millennium Commission	£56 million)
Commercial debt	£20 million
Own funds, donations, etc.	£10 million
Total	£140 million

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Approach

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More than just a garden…

- Environmental education charity & social enterprise
- Entertaining education and engagement
- Experimental approach to SD
- Engine for economic regeneration
- Synergy through partnerships
- Symbol of positive change

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Putting people at the heart of the environment…

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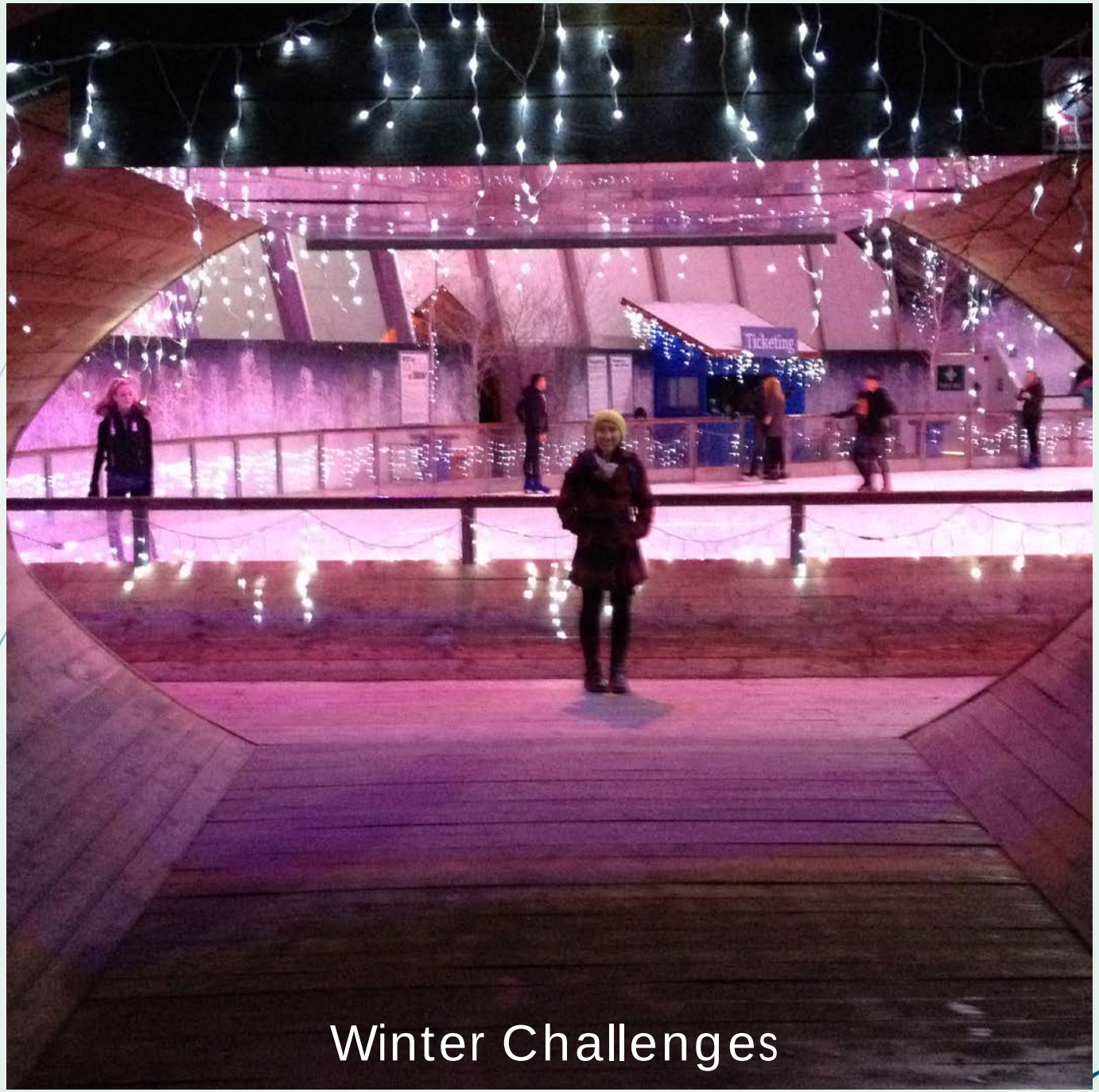
TROPIC TRADER
TROPIC TRADER



Winter Challenges

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LIVE 8: Africa Calling. 2 July 2005

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Impacts

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Some achievements since 2001

42,000 school children in 2013;
600,000 since opening

375 FTE direct jobs;
~2,000 indirect

28,000 FE/HE students

£1.2 billion into
local economy

16 million visitors

80% of catering supplies
sourced locally

100% biodiesel

Raised profile
of Cornwall nationally & overseas

85,000 tonnes of
artificial soil

14% ↓ in C emissions in 2012-13;
32% ↓ in C footprint since 2007/8

>50% of waste recycled

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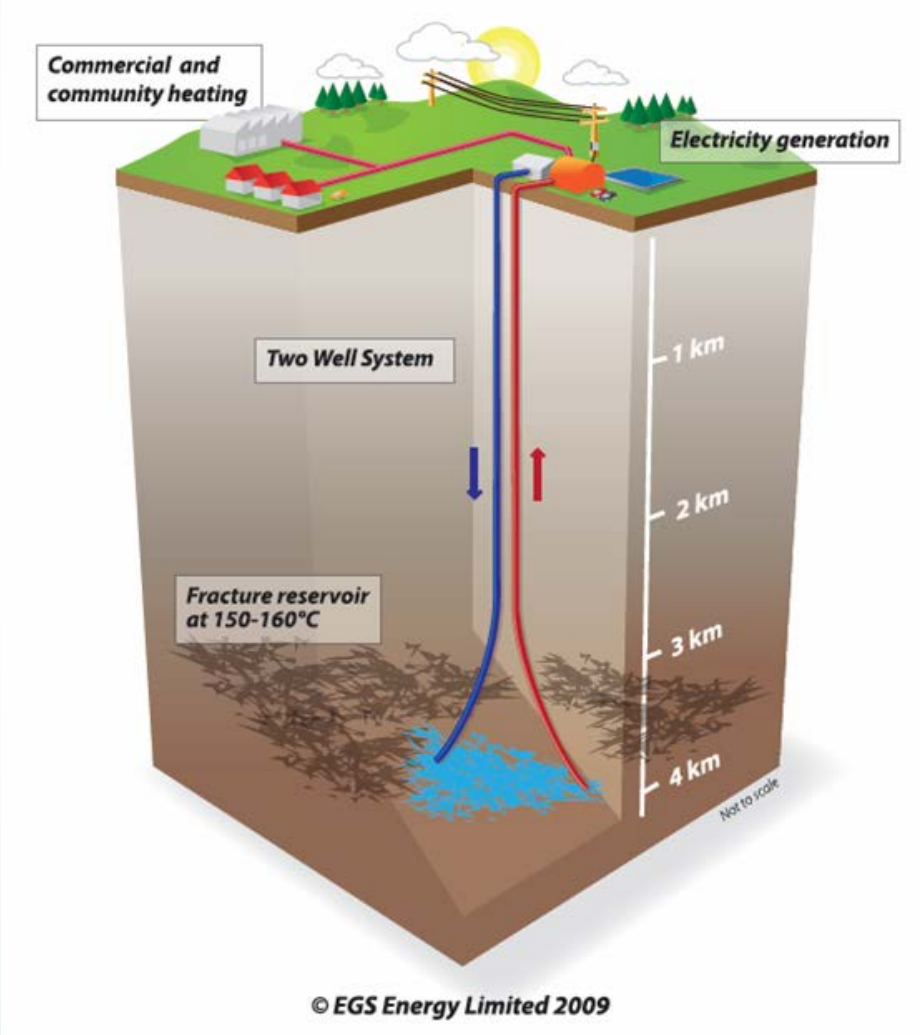
Some Eden Project Projects...

the big lunch
an eden project

BIG LUNCH EXTRAS
an eden project



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From a 160-year old china clay pit...

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… to a 170-year old china clay pit

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Other Stories…

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Juruti Bauxite Mine, Amazon, Brazil

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Sustainable Juruti

Issues:

- Transformational mine in rural Amazonia
- 700 Mt bauxite reserves over 70 year mine life
- 250,000 ha concession
- Population pressure
- Changed livelihoods
- Forest & rivers affected

Planning transformation:

- Sustainable Juruti Council
- Sustainability indicators
- Sustainable Juruti Fund

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A Non-Mining Example…

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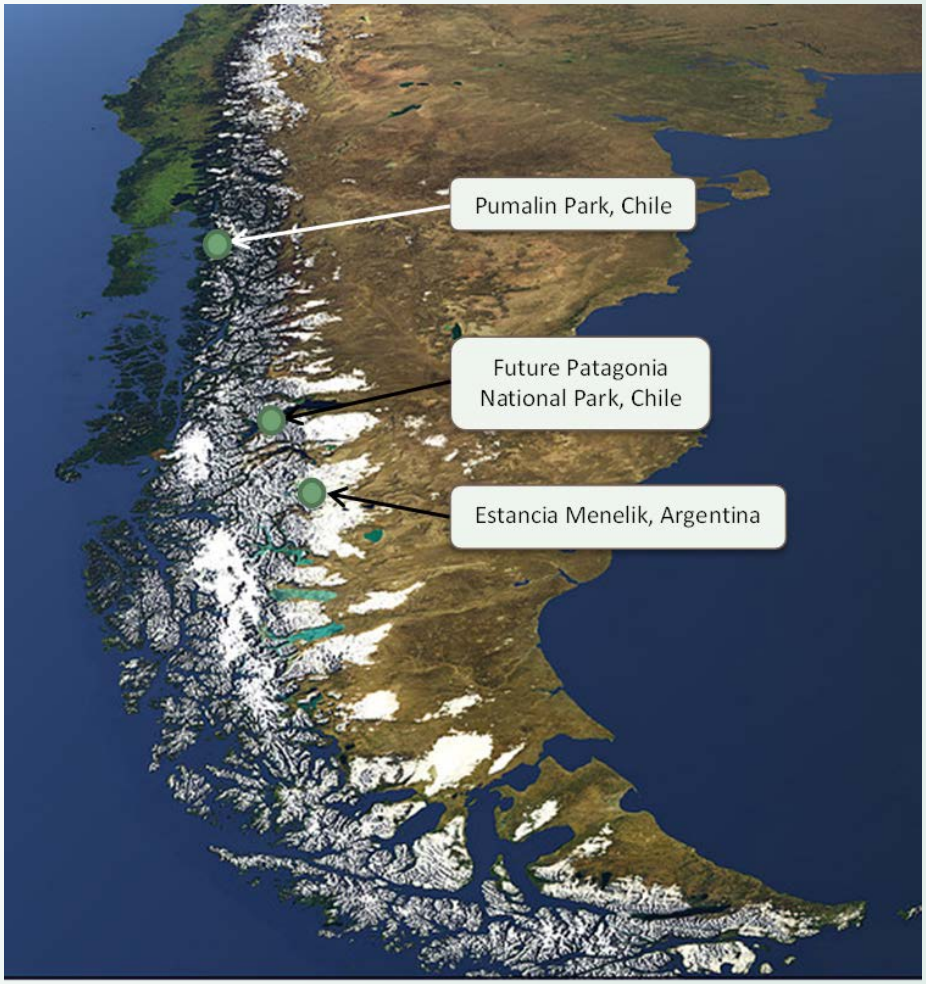
Farmland restoration, Patagonia, Chile



Issues:

- Difficult terrain & climate
- Logging & agriculture
- Pressure for development

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Pumalin Park, Chile

Fundo Vodadohue

- Covers 3,250 km^2
- Created incrementally over 20 yrs
- Farm acquisition & restoration
- Bespoke multi-use, organic farms
- Local sourcing
- Working with local communities
- Sensitive tourism
- Currently conserving 1 million hectares of Patagonia

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Not Mine Closure, but Mine Transition

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Researching Mine Transition

- Personal experience
- Investigate all kinds of mines all over the world
- Investigate other types of land-use projects
- Explore a range of interests and motivations
- Scratch below the surface
- Bottom-up <u>and</u> top-down
- Overcoming barriers
- Creating a step change

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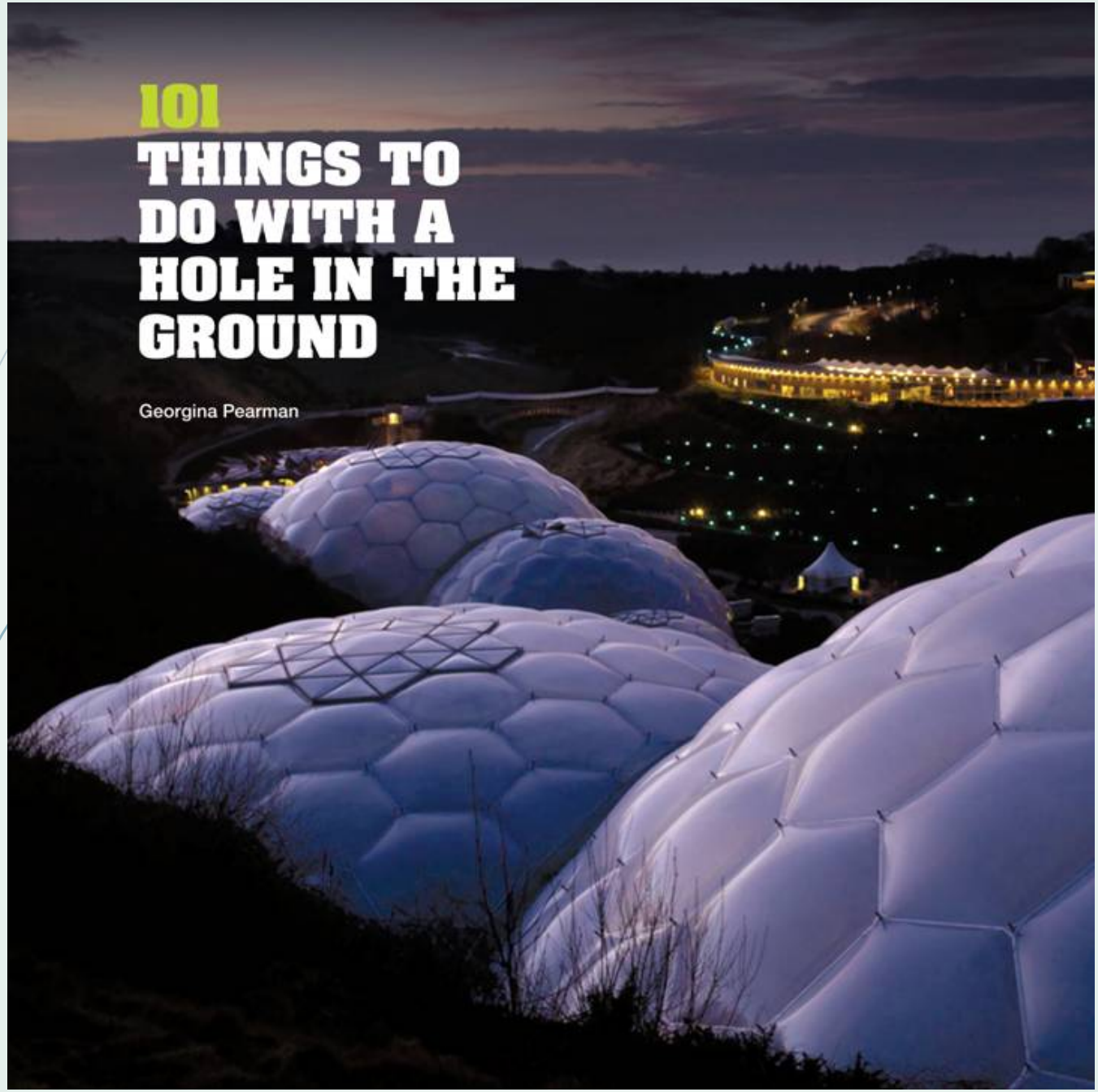

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Making the Transition

Governance

- Ensures long-term project viability
- Monitoring & evaluation to ensure quality & wise spending

Participation

- Greater participation, better ideas, greater ownership
- Not engaging should not be an option, but is not always easy

Sustainability

- How to convert finite mineral wealth into long-term community benefits – nexus reached at closure
- Community development – progressive restoration for people

The Oil in the Machine

- Cross-cutting themes, essential to success in every project
- Enable adaptability, resilience & delivery

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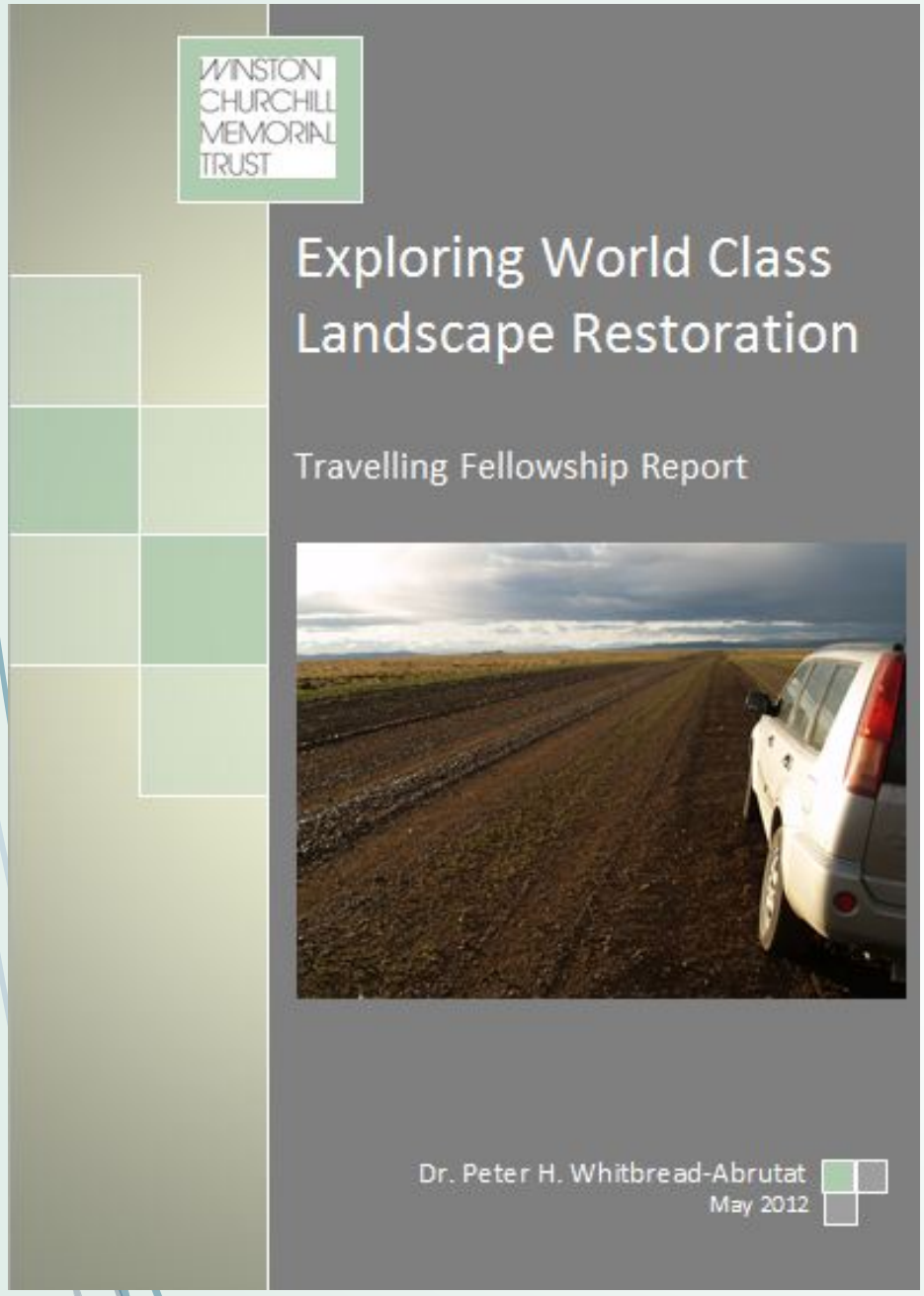
Common Lessons

Governance	Participation	Sustainability	*The Oil in the Machine*
Controlling the land	Local communities	Empowerment	Leadership
Funding	**Constituency building**	Capacity building	Communication
Project goals	Changing perceptions	**Scaling**	Collaboration
Institutional barriers		Alien species	**Knowledge**
Policy & legislation		Reinventing the wheel	Creativity & beauty
			Culture



Report available from

www.futureterrains.org

See also MC2013 paper:

Lessons for the Mining Industry from Non-Mining Landscape Restoration Projects

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Conclusions

- A mine can catalyse development of a sustainable society beyond closure
- A process of 'transition' rather than 'closure' engrains long term, inclusive, forward thinking
- Design, build and manage the mine with this in mind
- Ideas can be generated by anyone, not just mining companies
- Requires imagination, creativity, 'unusual suspects'
- Think beyond the mine site – its environs, services, supply chains, local community assets

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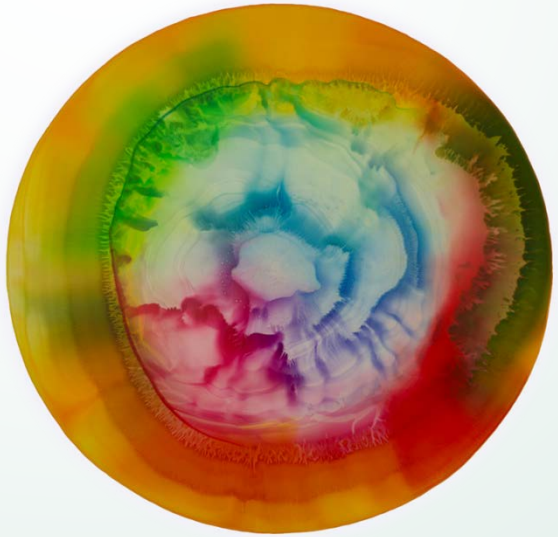
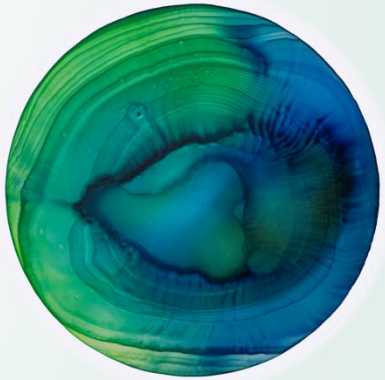
A mine and its people can only ever be a chapter in the narrative of a landscape. It is incumbent on those connected with the mining industry to ensure that the end of a mine signals the start of a new chapter and not the end of the story





AMD Art by John Sabraw

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Thanks for listening!

pabrutat@futureterrains.org

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