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Conservation & Mining – Sustainable Partners or Destructive Twins ?

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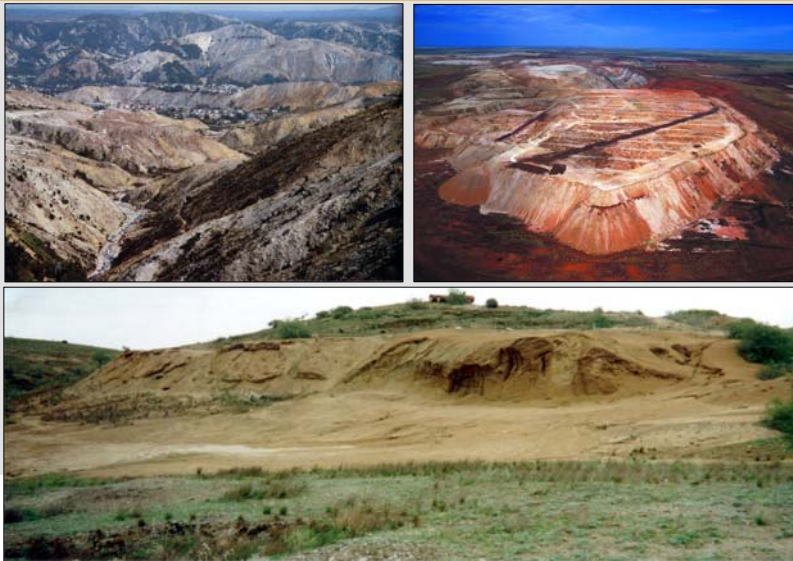


Georgius Agricola (1556) :

“... the strongest argument of the detractors is that the **fields are devastated by mining operations** ... Also they argue that the **woods and groves are cut down**, for there is need of an endless amount of wood for timbers, machines, and the smelting of metals. And when the woods and groves are felled, then are exterminated the beasts and birds, very many of which furnish a pleasant and agreeable food for man. Further, when the ores are washed, **the water which has been used poisons the brooks and streams**, and either destroys the fish or drives them away.

Therefore the inhabitants of these regions, on account of the devastation of their fields, woods, groves, brooks and rivers, find great difficulty in procuring the necessaries of life ... Thus it is said, it is clear to all that **there is greater detriment from mining than the value of the metals which the mining produces.**”

From Tasmania to WA and beyond :



Presentation Overview

- Mining and Conservation – Common Issues
- Understanding Sustainable Mining
- Some Australian Mining Trends
- Case Studies – Ranger U, Waihi Au
- Final Thoughts

Mining vs Conservation #1

- **Age old debate** – “simplified”, comes down to different world views on productive uses & values of land
- **One view** – environmental management allows mining & conservation to co-exist
 - eg. Ranger uranium mine, Kakadu Nat. Park, NT
- **Second view** – mining present major risks unacceptable to conservation values
 - eg. tailings dam failures (Azna collar, Spain, 1998)

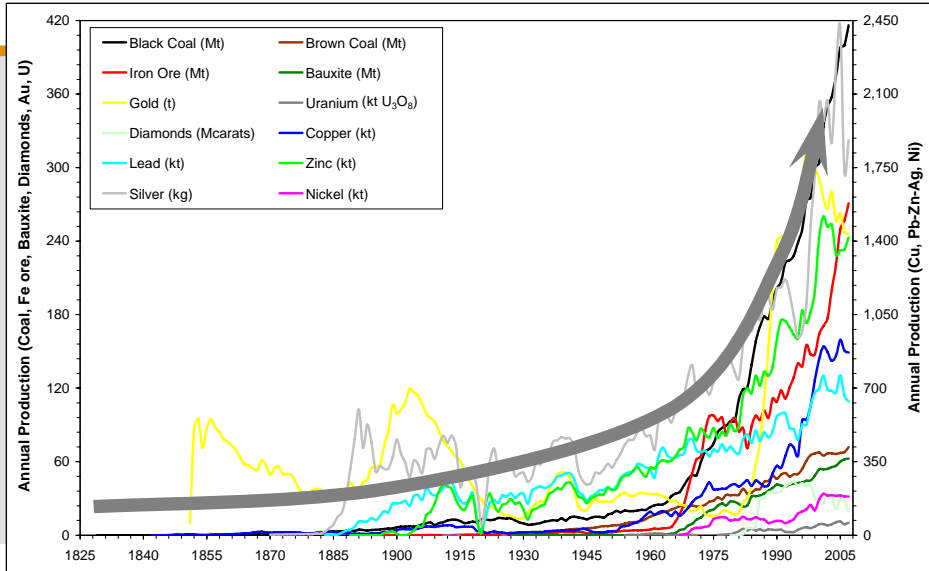
Mining vs Conservation #2

- In reality, it depends remains a set of very complex issues
- Conservation is not always a perfect way to manage some areas
- Mining can leave lasting legacies which require long-term monitoring
- Both sides can cite examples where things have gone 'right' or 'wrong'

'Segue' 2 Sustainable Mining

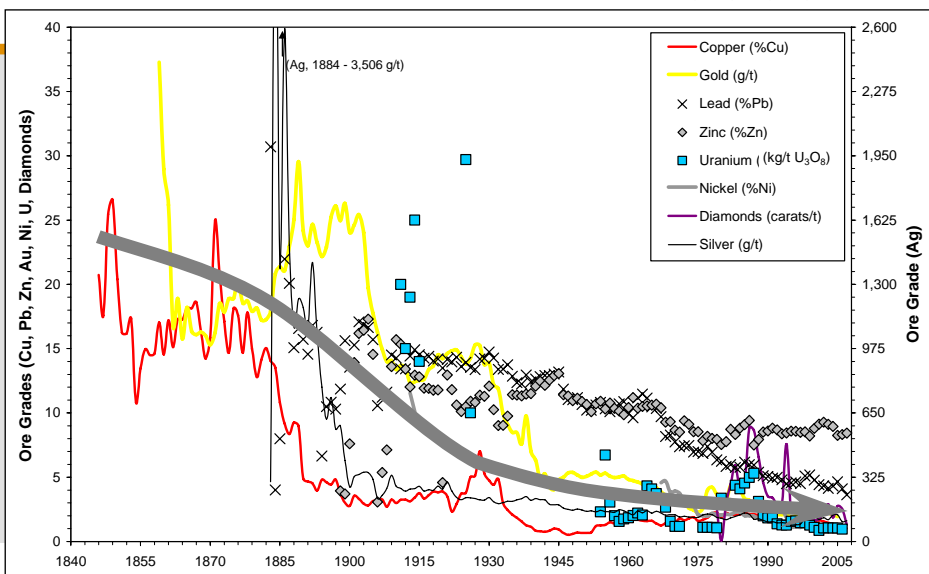
- The global mining industry is facing:
 - declining ore grades
 - maintaining economic resources
 - increasing tailings & waste rock
 - increasing energy, water, chemicals costs & pollution outputs
 - coming of Peak Oil
 - climate change & greenhouse emissions
 - China, India demand & economics ...
 - *etc*

Production Production Production ...



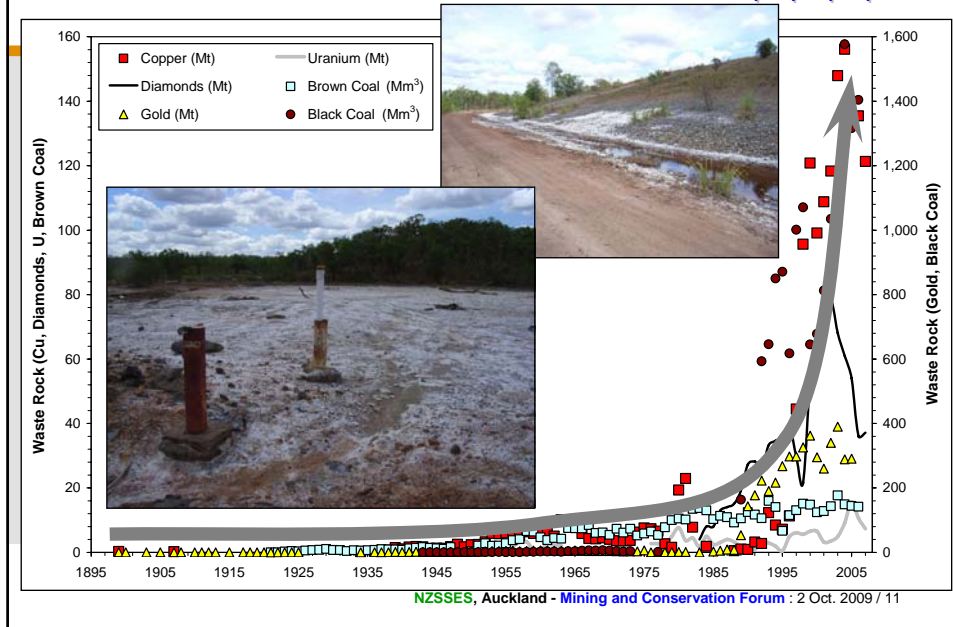
NZSSES, Auckland - Mining and Conservation Forum : 2 Oct. 2009 / 9

Trends in Ore Grades ... ↓ ↓ ↓ ↓



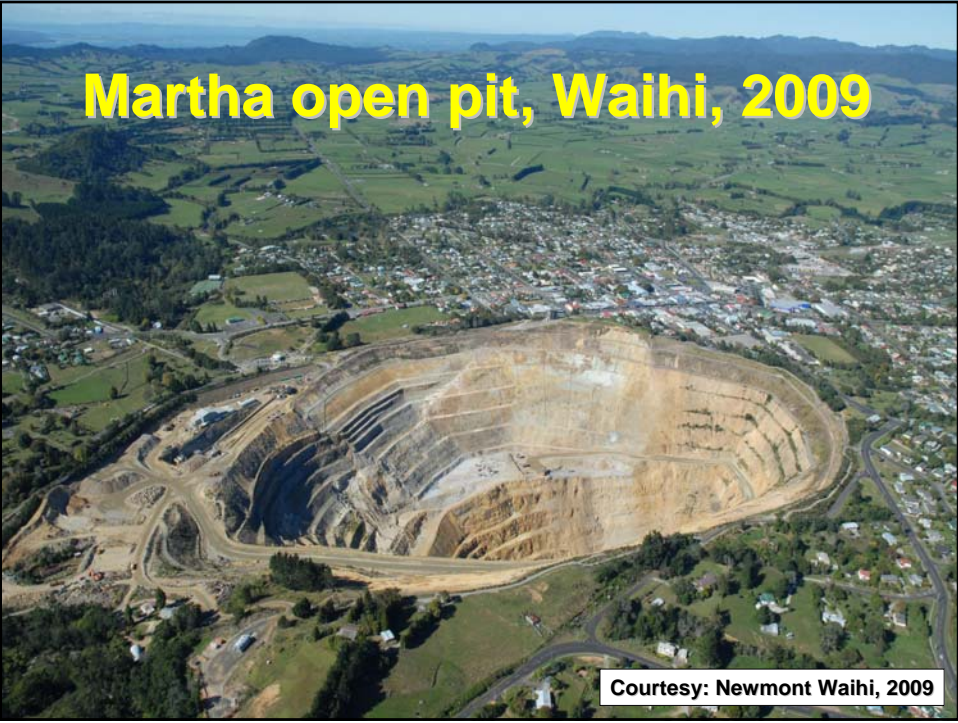
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Trends in Waste Volumes ... ↑ ↑ ↑ ↑



Waihi Region, Coromandel Peninsula

- Major gold mining centre for 74 years (1878-1952)
- With the global 1980s gold boom, gold mining re-started, but as an open pit mine adjacent to Waihi town (now also u/g)
- Major problems with dust, noise, subsidence (mainly old workings), conflict b/w closure-continuing
- Golden Cross closed but monitoring ongoing ...

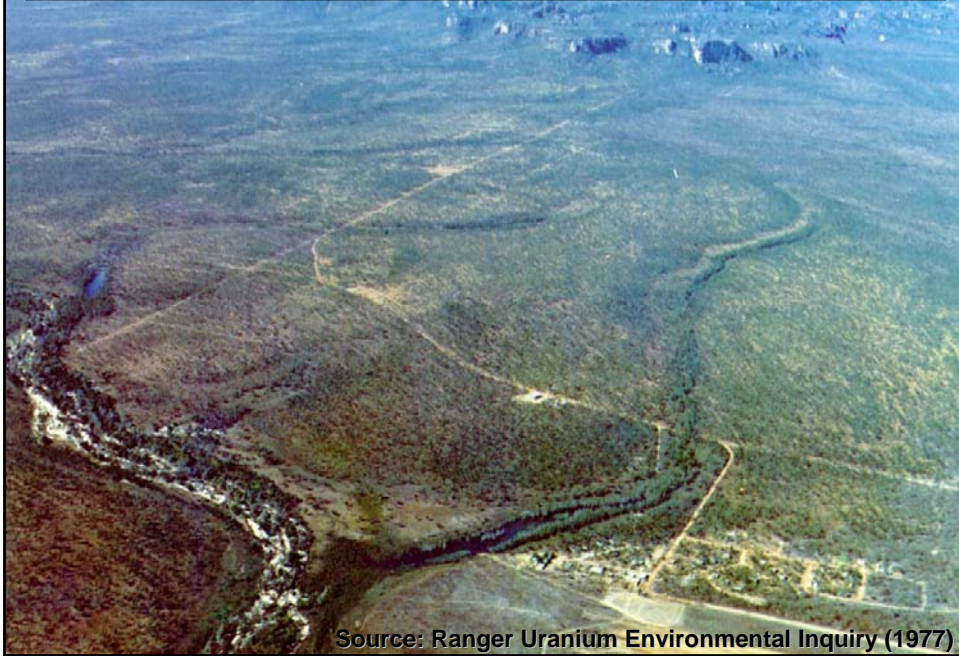




Ranger uranium mine, KNP, NT

- Discovered in late 1969, the Ranger uranium project has always been very controversial – *and remains so.*
- Complex case of uranium mining on indigenous land, surrounded by world-heritage listed Kakadu National Park
- Cited by industry as a major example of mining & conservation co-existing
- Reality is far from ideal ...

Ranger Uranium Mine, Kakadu National Park, Northern Australia



Source: Ranger Uranium Environmental Inquiry (1977)

Ranger Uranium Mine, Kakadu National Park, Northern Australia



Concluding Thoughts

- Managing land use for mining and/or conservation is always complex
- Conservation presents its own challenges
- Mining presents major risks
- Is there net social, economic and environmental benefit ?
- *Always a matter of political perspective!*

Acknowledgements

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- For further research on 'sustainable mining', please contact me 😊