

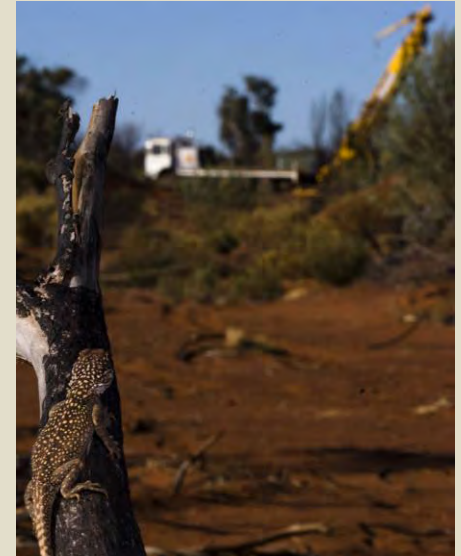
Moles and Mining, a study from the Great Victoria Desert

21 May 08



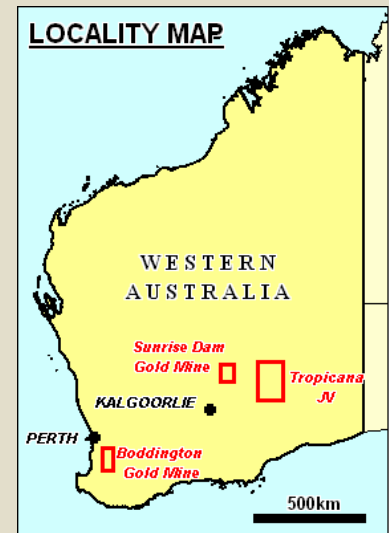
Presentation Content

- Company Overview
- Project Location
- Things to Consider
- Approach used for Tropicana
- Cryptic Species
- Cryptic Species Surveying
– Marsupial Mole
- Key points for the Tropicana Experience



AngloGold Ashanti

- AngloGold Ashanti (AGA) is a global gold producer with 21 operations on four continents
- Operations are a combination of open-cut & underground mines
- In 2007 AGA produced 5.5 million ounces of gold
- AngloGold Ashanti Australia (AGAA) is a wholly-owned subsidiary of AGA
- Two existing projects in Australia:
 - Sunrise Dam Gold Mine (100% owned) and
 - Boddington (33% AGAA) – under construction

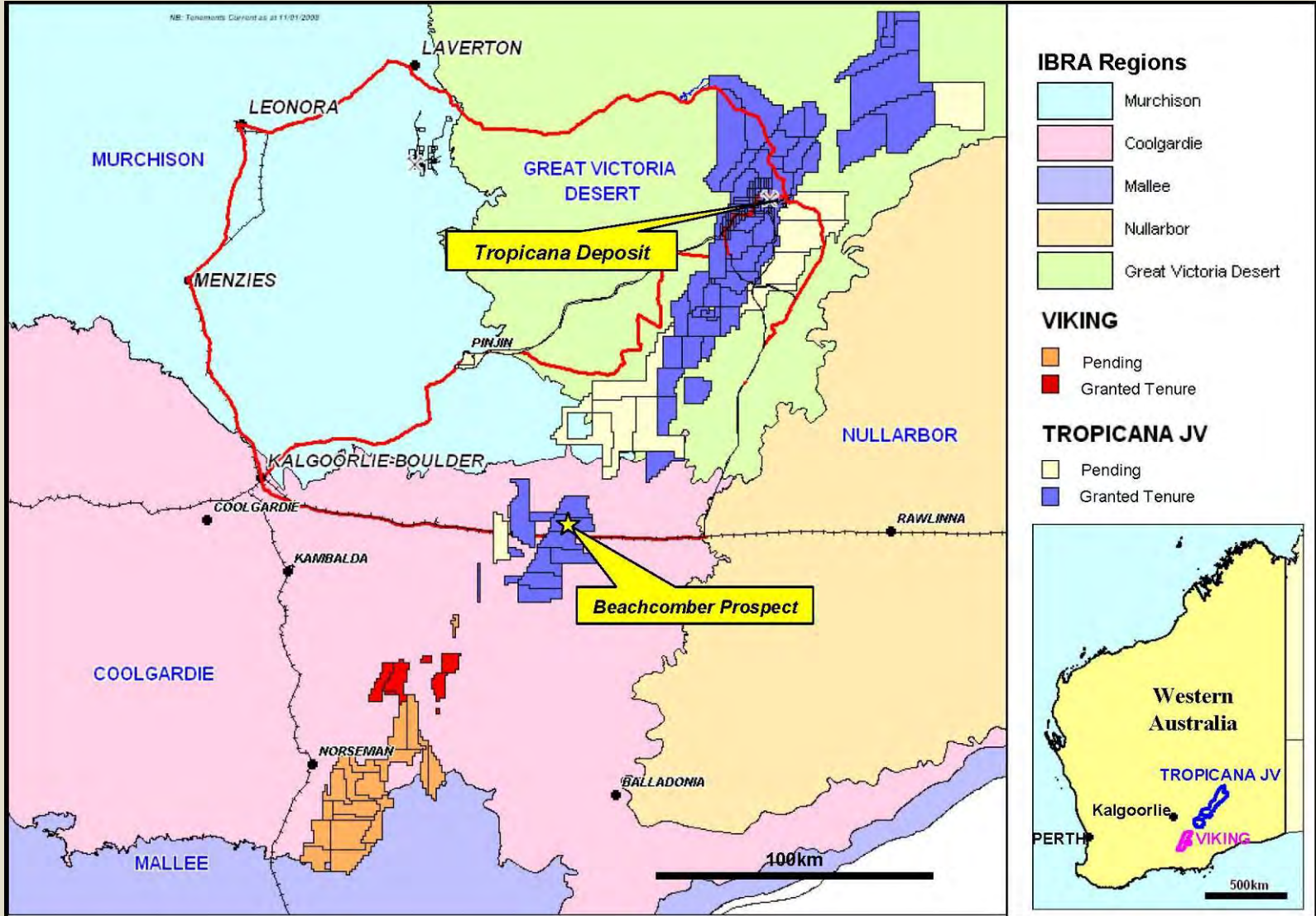


ecologia Environment

- *ecologia* is WA's largest independent environmental consultancy
- Expertise in biological sciences and environmental management fields
- Currently undertaking major fauna, flora and invertebrate investigations for AngloGold Ashanti Australia at Tropicana
- Ongoing major projects throughout WA



Exploration Areas



Tropicana JV

Ownership

- AngloGold Ashanti Australia – 70% & Manager
- Independence Group NL – 30%

History

- Exploration JV commenced in 2002
- Discovery was made in August 2005
- Initial resource estimate of 4Moz
- Most significant new gold discovery in >10 years
- New WA gold deposit in an unexplored belt of >300km x 50km
- Substantial exploration tenure package of 12,500 km²



New projects in new area

- Often limited or no information available on the local environment
- This make designing baseline surveys very challenge as it is important to understand the species known or predicted to occur within the area
- Background information can be obtained not only through government departments or specialist researchers
- Information can also be obtained from NGOs or volunteer groups
- Consultation with government department on flora, fauna or heritage matters should be undertaken by the company and consultants



Survey Considerations

- Survey should be designed to provide adequate information on:
 - common and threatened species
 - demonstrate that new or conservation significant species occur outside the project area
 - habitat requirement of conservation significant species are identified and understood
- In order to obtain this information new survey techniques may need to be used
- Information collection should be a staged approach and start as early as possible in the exploration phase
- A quick and relatively easy way to determine what Threatened species might occur in you area is via EPBC Threatened Species database or via DEC or the WA Museum data search



Approach adopted by AngloGold at Tropicana

- Baseline survey commenced in 2005 with the collection of threatened flora and archaeological surveys
- AGAA regularly liaised with DEC to update them on activities
- Traditional flora and fauna survey commenced in 2006
- Survey have also been undertaken for:
 - Short range endemic Invertebrates
 - Subterranean fauna
- Methodology was developed in consultation with representatives from DEC and the WA Museum
- Traditional survey techniques were initially selected because no cryptic species were thought to occur within the survey area



Approach adopted by AngloGold at Tropicana

- Prior to commencing the second round of work in 2007 further input was obtained from DEC
- 2007 discussion determined that a number of cryptic species could occur in the region
- A review of the EPBC Matters of National Significances also determined that a number of list species potentially occurred in the area
- To develop the most appropriate survey technique for each species Specialist consultants were approached



Survey methods

- Traditional methods of trapping include pitfall traps, Elliott traps, cage traps, funnel traps, bat detector
- Trap lines designed to capture most terrestrial vertebrate species
- Cryptic or trap-shy species are rarely trapped using conventional methods
- Opportunistic methods supplement systematic trapping
- Hand foraging, spotlighting, road cruising (nocturnal)
- Bird surveys
- Gain *detailed* understanding of local fauna in a wide variety of habitats throughout the state...



Cryptic Species

- BUT there will always be species that can be missed using these techniques
- Malleefowl (Vulnerable): thicker *Acacia* scrub in mulga patches - require transect searches through thick habitat to find mounds
- Sandhill Dunnart (Endangered): mature spinifex on sand dunes - require VERY large pitfall traps
- Grey Falcon (Schedule 4): large home range, generally inconspicuous – require knowledge of likely habitat for breeding & feeding



Cryptic Species

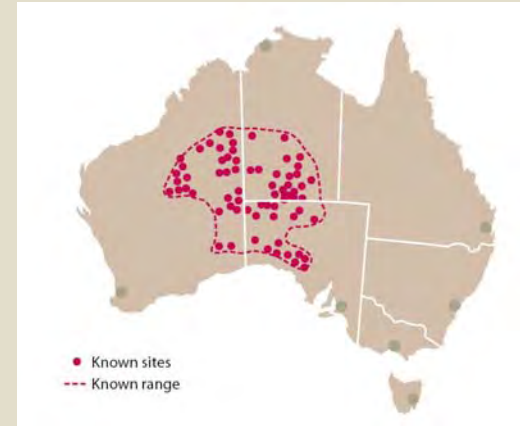
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- **Southern Marsupial Mole (Endangered)**



Threatened Species Surveying

Southern Marsupial Mole

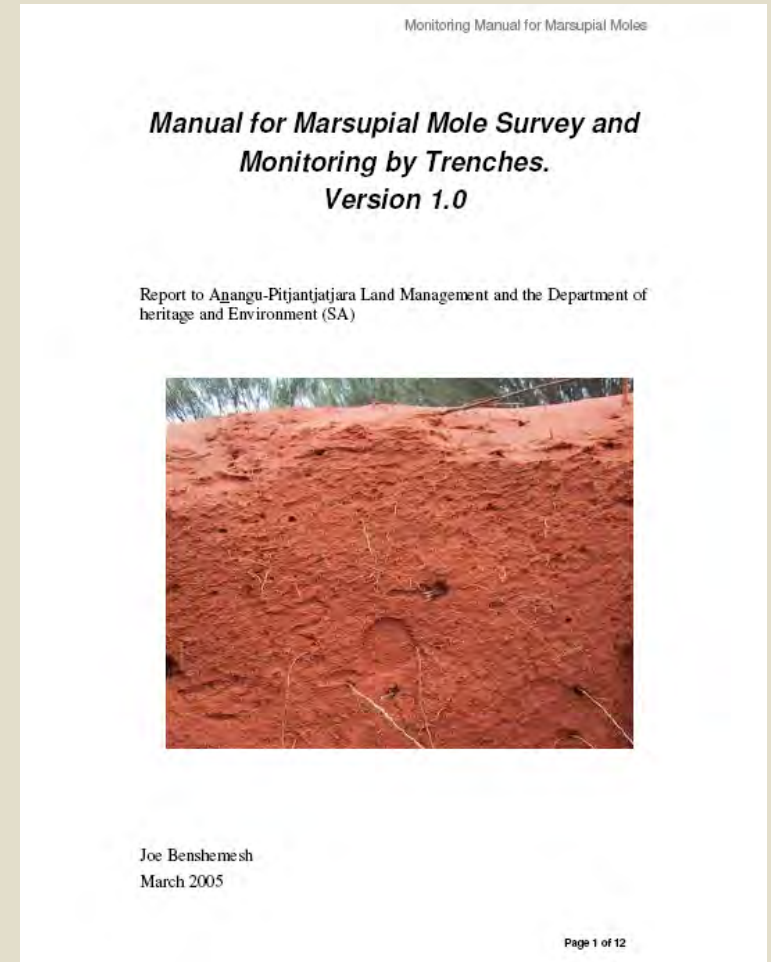
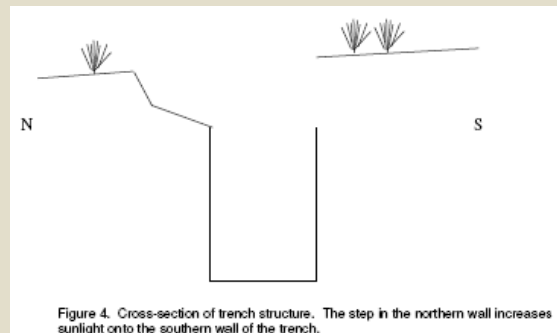
- Entirely adapted for life underground
- Spends most time 20 – 60 cm below the surface
- Inhabits sandy country: dunes, mounds and open sandy plains
- Prefers dune crests and slopes over swales and flats
- Tunnels are not hollow – backfilled as the animal moves through
- Persist for several years



Threatened Species Surveying

Southern Marsupial Mole

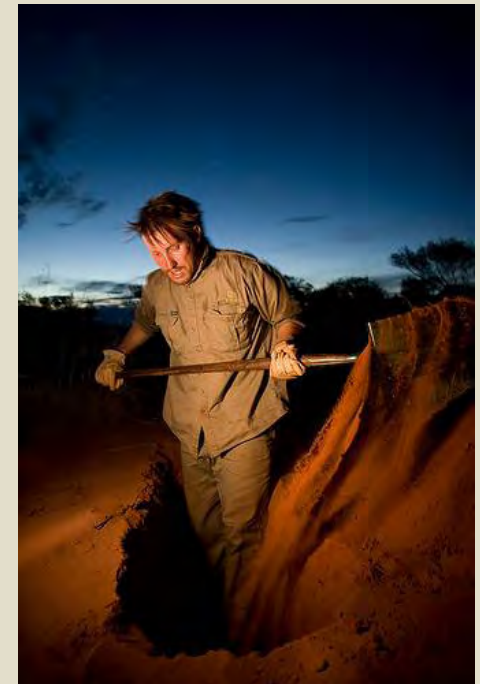
- Marsupial Mole Monitoring Manual – Dr Joe Benshemesh
- Template for methods used to survey for marsupial moles
- Trench 80 cm deep x 120 cm long x 60 cm wide



Threatened Species Surveying

Southern Marsupial Mole

- *ecologia* have conducted several surveys for Southern Marsupial Mole associated with Tropicana JV activities
- Aim to correlate evidence of mole presence with vegetation, sand colour, substrate softness, landform
- Evidence of moles has been found in most areas where substrate is soft to 80 cm, independent of other factors
- Appear to favour dune crests and sides, as literature suggests



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Key thing we have learnt

- Mining Company should play an active role in the development of baseline surveys
- Company must understand their obligations and responsibilities under the relevant legislation (POWs may not be all you need)
- Don't leave the liaison with agencies solely to the responsibility of consultant – you know your activities and project best
- Consultant and Company reps must work closely to ensure everybody is aware of the potential impact of results
- Must consider threatened flora and fauna issues when selecting survey techniques
- Obtain input from Threatened Species Specialist when designing alternative survey techniques to ensure stakeholder acceptance
- Beware of sandy areas - you never know what lives there...

AngloGold Ashanti and ecologia thank you for listening

