

Jack Hills Iron Ore Project

Crosslands Resources



CLIENT:

Crosslands Resources Ltd

LOCATION:

Midwest

SERVICES:

- Baseline assessment and vibration study
- Multi-year non-invasive monitoring of Schedule 1 species
- Stakeholder and specialist consultation

KEY ACHIEVEMENTS:

- 2010 Golden Gecko award recipient
- Custom engineered mobile device to simulate vibration sources with no ground disturbance impacts
- Scientifically robust assessment of the effects of vibration on the species with no impact to populations
- Effective management and monitoring program implemented

In 2010, Phoenix secured for Crosslands Resources a Golden Gecko Award for Excellence in Environmental Management based on a research program undertaken, and subsequent management commitments developed, for an endangered trapdoor spider.

Spiders were known to respond to vibrations from 4WD vehicles in some places of Australia. This observation led to the Department of Environment placing a 200 m exclusion buffer around burrows of the endangered *Idiosoma nigrum* at Jack Hills. The action resulted in a 90% reduction in the client's exploration area, which was mostly located within the target ore zones; a very costly restriction.

Phoenix was commissioned to investigate whether vibrations from exploration activities, such as diamond and RC drill rigs had an effect on spider survival. Phoenix was the first to use fibre optics to observe spiders in their burrows. We then modified a skid-steer loader to be a highly programmable vibration source using a powerful horizontally-opposed materials separating motor attached to a fortified bucket to transfer the load to the ground.

The vibratory 'fingerprint' was then programmed to match various sources in the exploration area. Once programmed the machine was placed near a group of burrows and observers took up positions to look for signs of spider response at various distances out to 100 m.

The study determined that vibration had no immediate impact on spiders and that, statistically, there was no difference between the survival of spiders within and beyond the exploration area. The DEC subsequently lowered the exclusion zone to 50 m, or 25 m if a three year monitoring program was implemented. This outcome has also provided similar benefits to other proponents operating in the region.

Phoenix subsequently developed and implemented a three year monitoring program with biannual visits to monitor several known populations. This program has provided substantial insights into the demography of *I. nigrum* in the Midwest region.



PHOENIX
ENVIRONMENTAL SCIENCES