



**northern minerals**  
(formerly Northern Uranium)

## Exploring High Value REE and Uranium

Investor Road Show – February 2011  
George Bauk – Managing Director

ASX:NTU

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# Company Overview



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## Rare Earth Elements

- High value Heavy Rare Earth projects
- Xenotime mineralisation - simple

## Uranium

- Strategic 11,000km<sup>2</sup> land position
- Unconformity style targets

## Phosphate

- Close to rail and road, growth commodity
- PCF Capital engaged to divest/seek partner

## Quality Management

- Expanded and experienced board/team
- REE expertise, D.Kingsnorth/J.Goulevitch

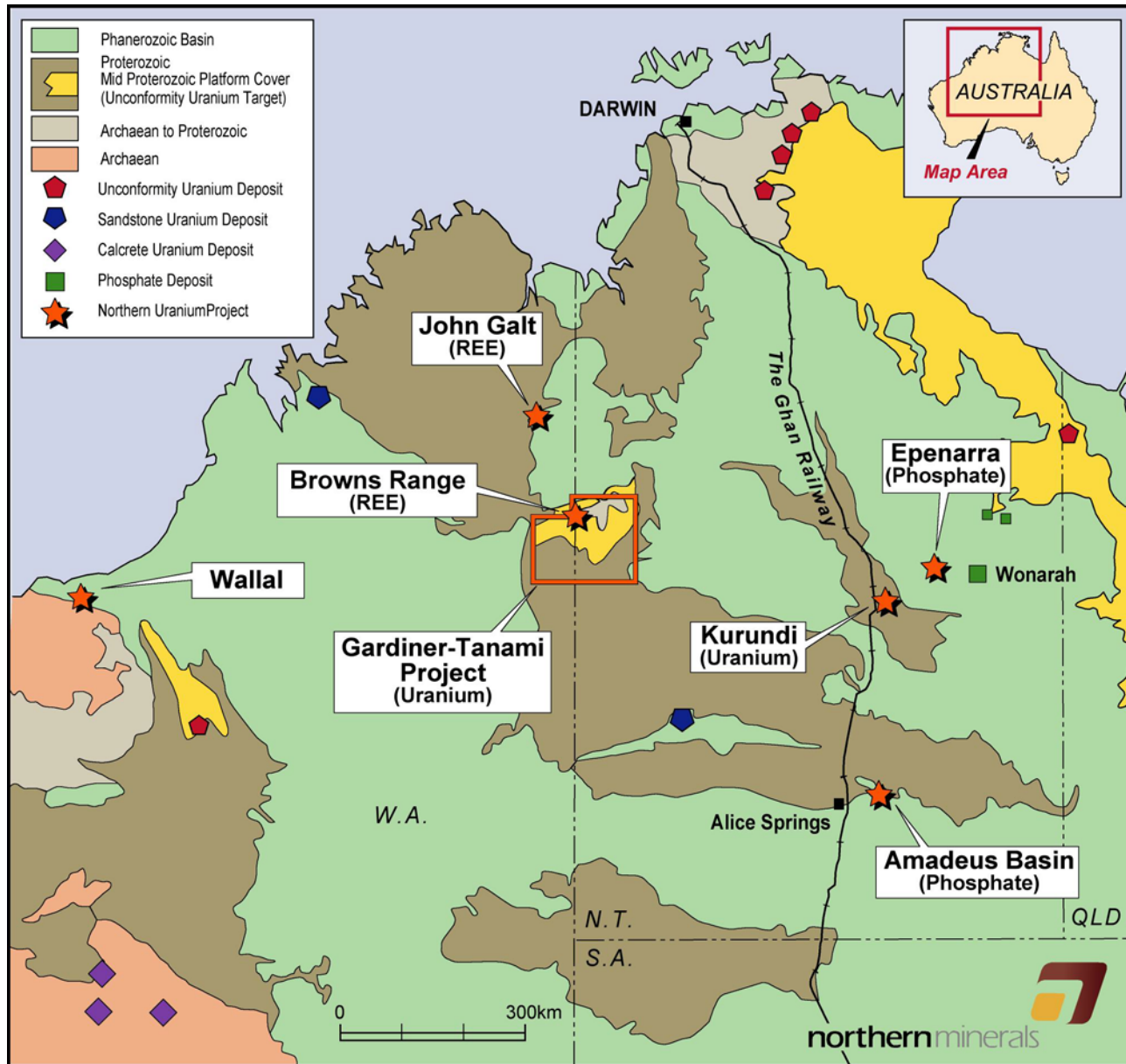
## Funding

- Strong cash position - \$7.5m
- Major exploration program underway

# Diverse "New Energy" Portfolio



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# Capital Structure



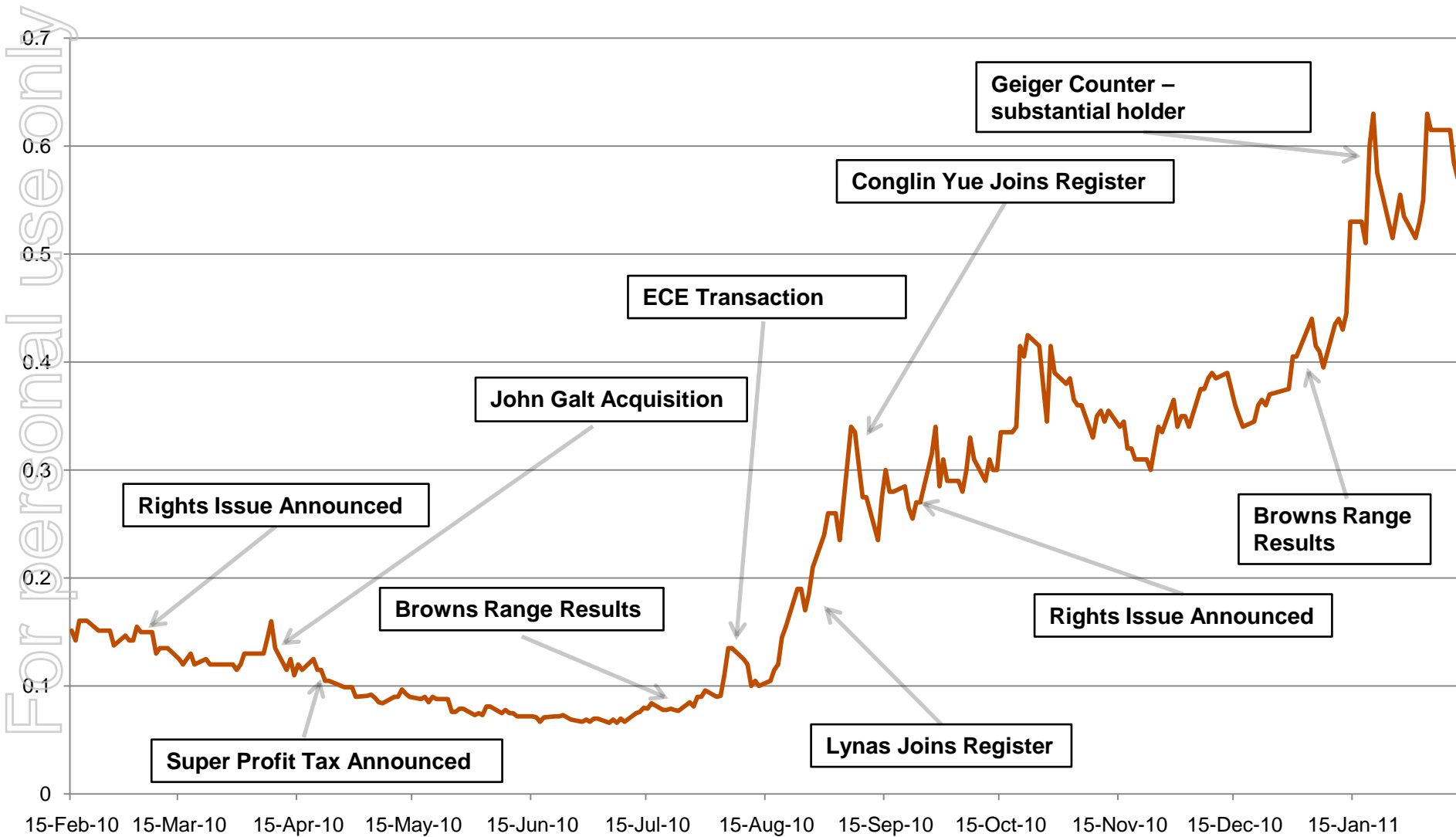
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<b>ASX Codes</b>		
NTU	Ordinary Shares	166.5m*
<b>Listed Options</b>		
NTUOA	\$0.20 expires 30 Sept 2012	12.6m
NTUOB	\$0.15 expires 31 Mar 2012	15.1m
<b>Unlisted Options</b>		
	Various prices and expiry dates	9m
<b>Trading Summary</b>		
	Market Capitalisation (as at 14 Feb 2011 @ \$0.59)	\$98m
	52 week trading range	\$0.063-\$0.685
	Daily Traded Volume (average over 3 months)	1.44m
<b>Balance Sheet</b>		
	Cash (31 Dec 2010)	\$7.5 m

<b>Major Shareholders</b>	
Conglin Yue	17%
Lynas Corporation	8%
Geiger Counter	6%
Board & Management	6%

\*includes 3.1m restricted shares issued under the share plan

# Share Price Chart





# Board & Management



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**Kevin Schultz**  
*Non Executive Chairman*

- Formerly Managing Director – Polaris Metals
- Global industry experience, multi commodity

**George Bauk**  
*Managing Director*

- 20 years mining operation and corporate experience
- Former MD Indago Resources, CFO Arafura, WMC

**Colin McCavana**  
*Non Executive Director*

- Former Managing Director Haddington Resources
- Mine production and operations mgmt experience

**Adrian Griffin**  
*Non Executive Director*

- Specialising in mine management and production
- Managing Director Midwinter Resources

**Robin Wilson**  
*Exploration Manager*

- 20 years exploration experience
- CRA, Woodside, Tanganyika Gold, Troy Resources

**Dudley Kingsnorth**  
*REE Consultant*

- 20+ years experience in the Rare Earth Industry
- MD of IMCOA, Roskill Report REE Editor 2001/04/07



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# Rare Earth Elements





# Rare Earth Elements (REE)



REE includes scandium, yttrium and 15 lanthanides  
Essential for high growth products and increasingly important commodities

Faster / lighter / smaller / more efficient

Uses:

- Electronics and technology – mobiles, TV screens, laptops
- Energy and greenhouse gas reduction – wind turbines, hybrid cars



# REE market – the past 18 months



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## Increasing Demand

Global market grown from 40,000tpa - 125,000tpa in the past 10 years

Demand forecast to grow at ~ 8 – 11% per annum

## Tightening supply

China produces 95% of world's REE, from 70% of world's resources.

In 2010, China takes major step to preserve REE supplies:

Significantly reduces export quotas,

Halts shipments to Japan for political reasons.

## **China declares it has only 15 years of resources of Heavy Rare Earths**

Mt Weld & Mountain Pass to move rapidly to 20,000tpa REO each

# Rare Earth Prices



## Comparison of Average Annual Rare Earths Prices 2007-11

(Notes: 1.Source is *metal pages*© 2. Prices have been rounded)

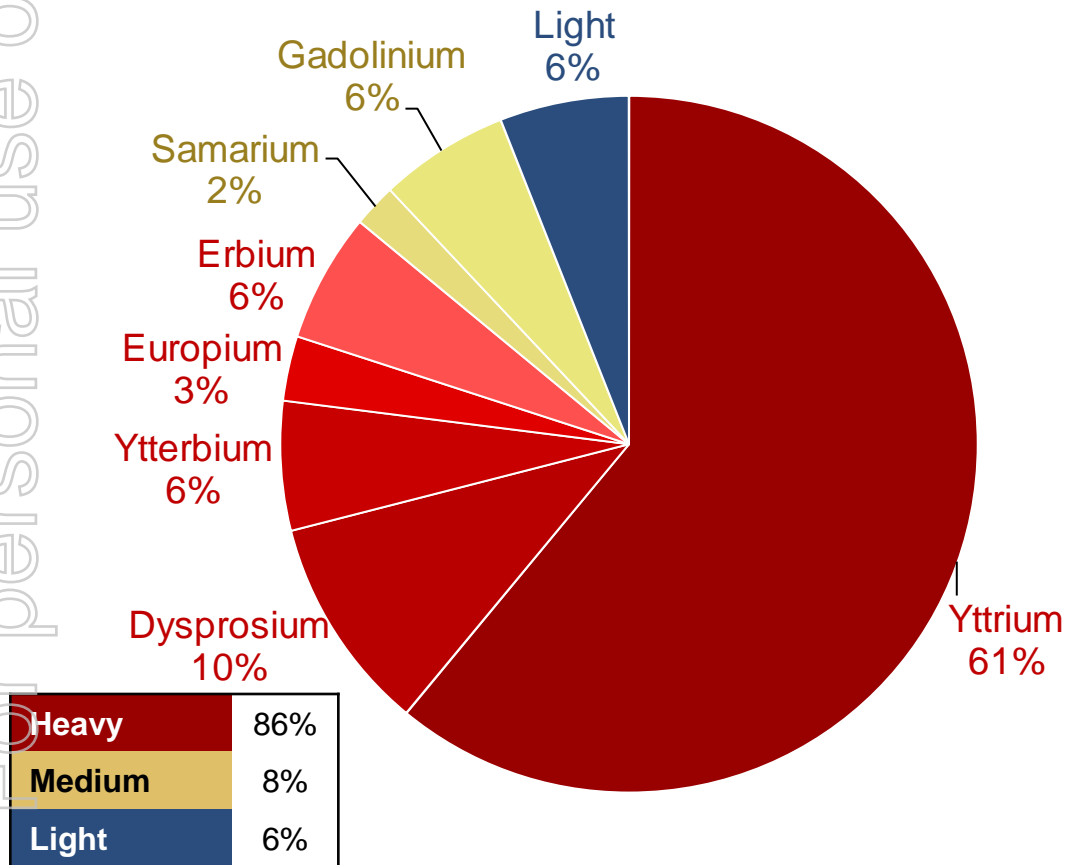
Rare Earth Product	Rare Earths Price US\$/kg FOB China <sup>1,2</sup>							
	2007	2008	2009	1Q2010	2Q 2010	3Q 2010	4Q 2010	14/2/11
Samarium Oxide	\$4.50	\$4.50	\$4.50	\$4.50	\$3.40	\$14.40	\$34.50	\$61
Europium Oxide	\$300	\$475	\$465	\$490	\$530	\$580	\$626	\$630
Gadolinium Oxide	\$10.50	\$9.75	\$6.50	\$7.45	\$8.50	\$30	\$43.70	\$68.50
<b>Dysprosium Oxide</b>	<b>\$85</b>	<b>\$110</b>	<b>\$105</b>	<b>\$140</b>	<b>\$200</b>	<b>\$287</b>	<b>\$295</b>	<b>\$365</b>
Yttrium Oxide	\$6.85	\$15.25	\$13.50	\$12.15	\$12	\$28	\$56.50	\$77.50



# Browns Range - HREE



## Distribution of Rare Earths\*



## Preliminary tests indicate:

Majority of the rare earths elements in the high value heavy rare earths category

Heavy Rare Earths represents 86%

### Low radioactivity

Uranium: Average 163ppm

Thorium: Average 34ppm

High Metallurgical Recoveries at 89%

\* Based on 16 rock chip samples taken at Browns Range

# Browns Range



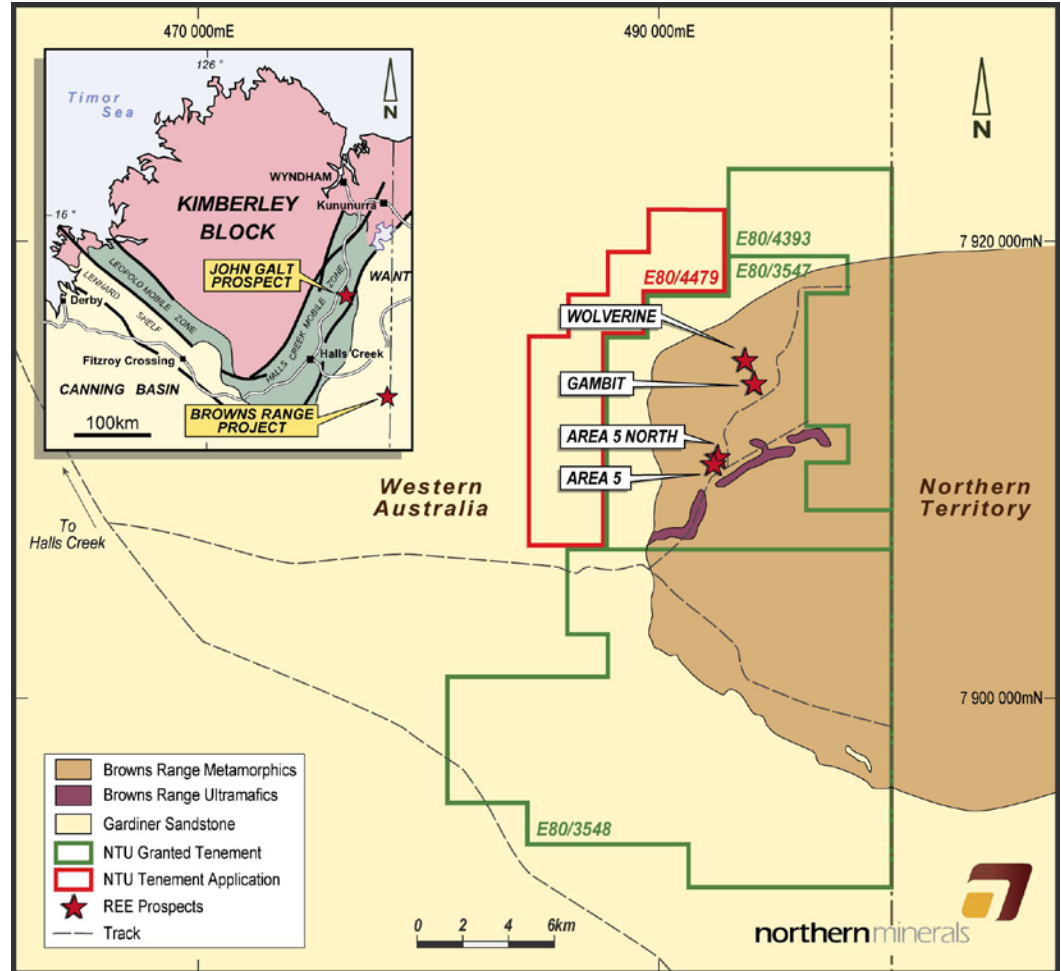
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Significant rare earth discoveries confirmed in 2009

NTU rock chips and mapping identifies four mineralised targets – results up to 8.5% TREE

Clean liberation of xenotime at a relatively coarse grind – readily recoverable

Over 85% of the Rare Earths are Heavy Rare Earths



# Browns Range – 2010 exploration

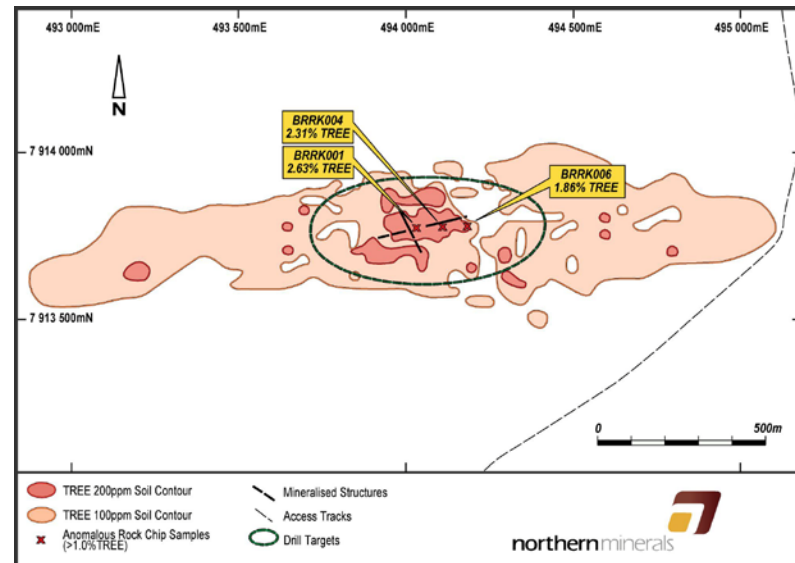
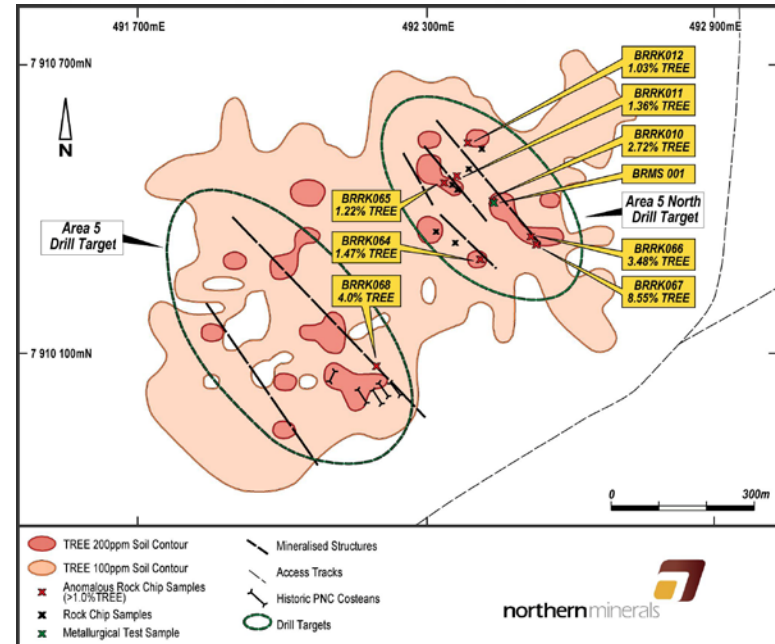


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Rock chips indicates high proportion (>85%) of HREE, and extend target area

Soil sampling highlights extensive HREE geochemical anomalies at Area 5/Area 5 North and Gambit prospects

Metallurgical testing confirms accessibility of xenotime – easy processing







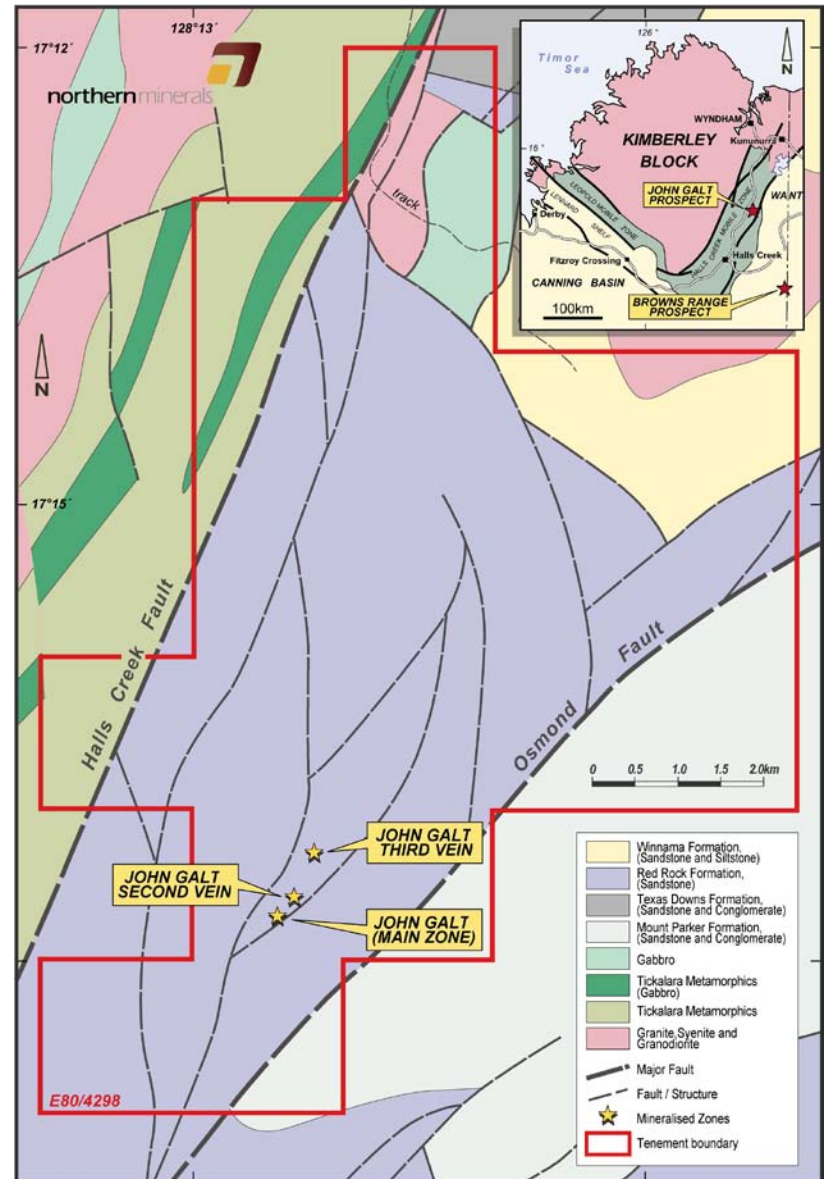
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Exciting REE prospect, acquired in June 2010 – granted December 2010

Regional proximity to the Browns Range HREE Project

Similar geology – high value HREE in xenotime mineralisation

Heritage agreement completed



# Rare Earths 2011 Work Program



## **Browns Range**

- Q1 Detailed airborne magnetic and radiometric survey
- Q2 First phase drilling 5,000m
- Q2 Regional soil sampling
- Q3 Second phase of drilling 5,000m

## **John Galt**

- Q1 Aboriginal heritage surveys
- Q2 Detailed airborne magnetic and radiometric survey
- Q2 Geological mapping/soil and rock chip sampling/metallurgical studies
- Q3 First phase drilling program





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# Uranium





# Gardiner-Tanami Project



## Gardiner-Tanami

Large project, multiple uranium targets

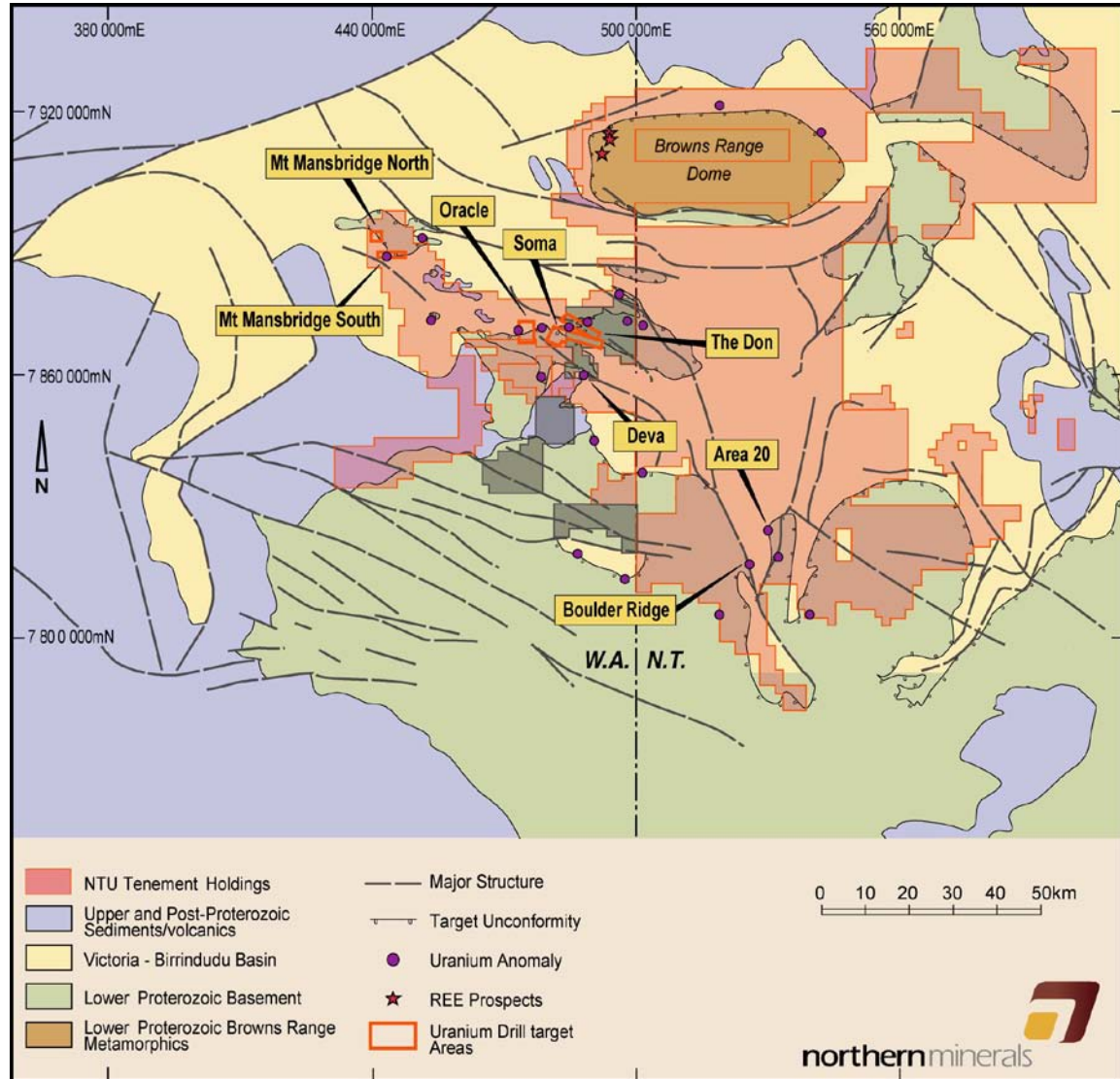
100% ownership

NTU now holds rights for all minerals

## Gardner Range JV

Earning up to 60%

JV with Manhattan (ASX:MHC)



# Gardiner-Tanami Drilling



## Soma

Intersected Gardiner Sandstone / Killi Killi formation

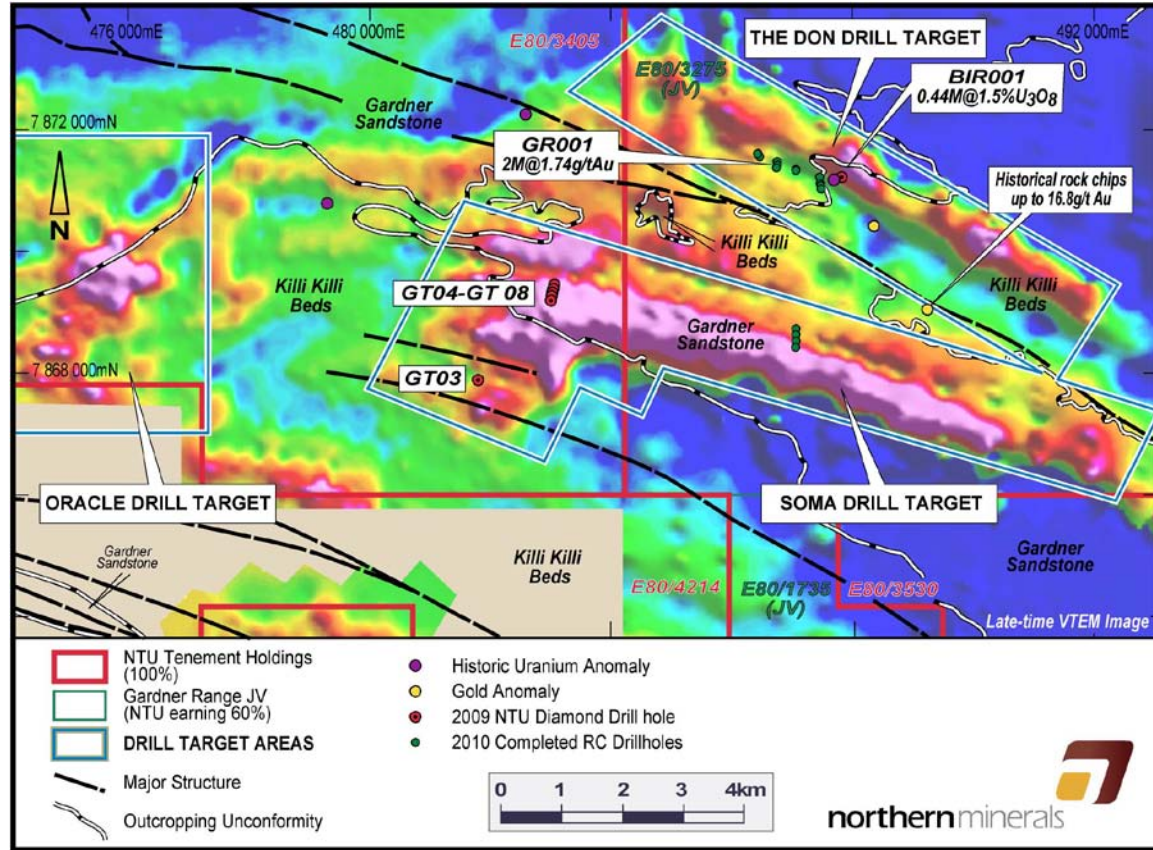
Confirms large (8km) target for high grade unconformity mineralisation

Follow up drilling in 2011

## The Don

Failed to replicate historic uranium results

Encouraging gold intersections - 2m @ 1.74ppm Au



ORACLE, SOMA AND THE DON DRILL TARGETS. GEOLOGY AND TENEMENTS OVER VTEM IMAGE



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# Phosphate





# Phosphate Projects



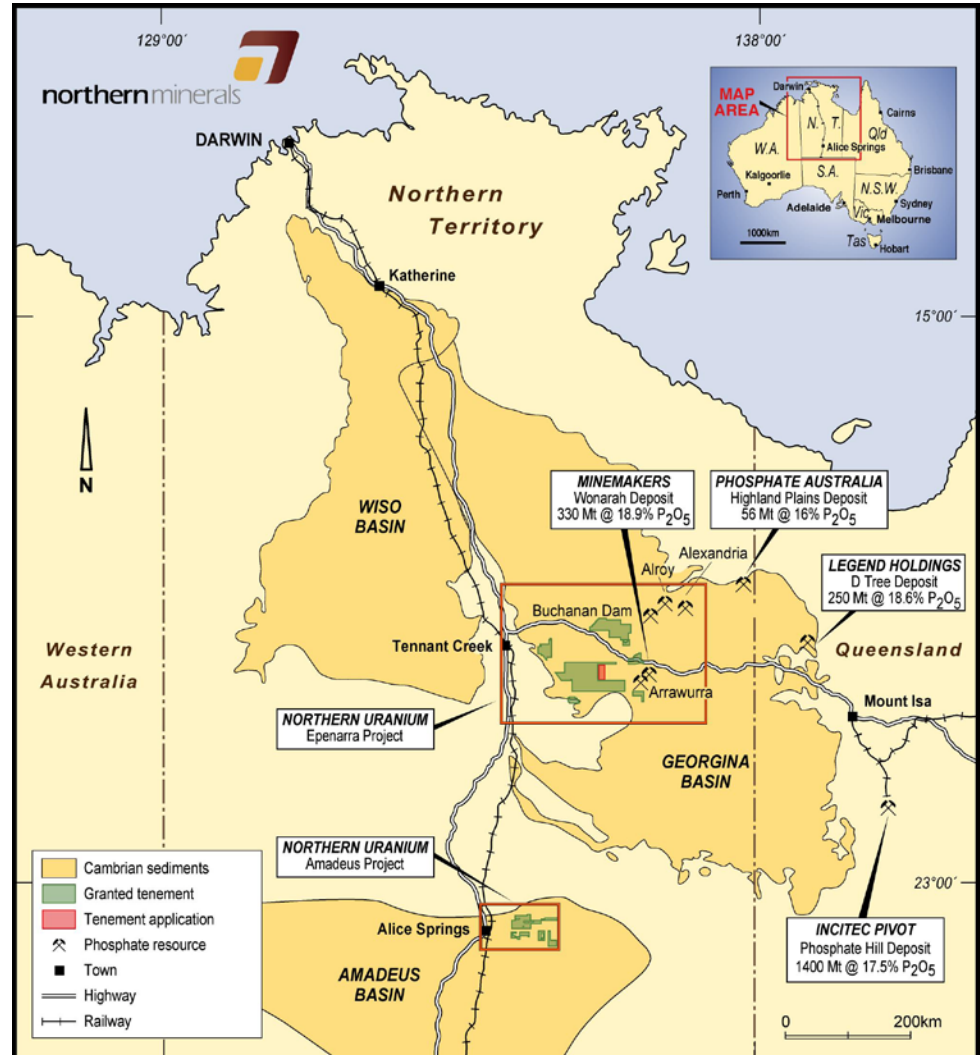
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Phosphate – strong growth forecast with increasing population and food demand

Well located portfolio in close proximity to existing phosphate deposits and infrastructure

Projects in prospective Georgina and Amadeus Basins

PCF Capital engaged to divest and/or seek JV partner





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# Summary





# Value Proposition



## Rare Earths

Prospective High Value HREE projects

Xenotime mineralisation – amenable to processing

## Uranium

Highly prospective high grade unconformity-related targets

11,000km<sup>2</sup> with 30km of drill target areas to date

## Phosphate

Strategic location, near to infrastructure and existing phosphate projects

## People and Partners

Expanded management and geological team – specific experience with uranium and rare earths

Highly experienced Rare Earth experts, Dudley Kingsnorth and John Goulevitch



# 2011 – The Year Ahead



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**Q1**

Rebranded to Northern Minerals  
Commence airborne geophysics at Browns Range

**Q2**

Commence airborne geophysics at John Galt  
5,000m planned for REE drilling at Browns Range  
Finalise Deed of Exploration for NT tenements with T/Os  
On ground exploration at John Galt including soils/rock chip sampling

**Q3**

5,000m follow up planned for REE drilling at Browns Range  
Regional Browns Range HREE exploration  
5,000m planned for Gardiner Tanami Uranium Project  
Commence John Galt drilling and metallurgical test work

**Q4**

Ongoing exploration at Browns Range and John Galt  
Review Gardiner Tanami Project area for other minerals

# For more information



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