Rare Earth Deposits Deck

a Top Trumps-style game

About SoS RARE

SoS RARE, a project supported by the Natural Environmental Research Council UK (NERC) SoS MinErals program, is a large interdisciplinary team carrying out research to better understand Rare Earth Element (REE) deposit types, and ensure REE are responsibly sourced. Research includes developing more efficient and environmentally-friendly ways to process REE deposits, and working on metrics to compare deposit characteristics.

Rare Earth Elements (REE)

The Rare Earth Elements (REE) are ubiquitous in modern technologies, including computers, low energy lighting, energy storage devices and large wind turbines, making their supply vital to our ever growing technological society and the development of a low carbon economy.

The grade (low-high) of each REE element is indicated for each deposit.

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

Notes

The values given for each category are estimates based on the simplification of relevant factors from available sources, and should not be taken as an economic assessment or comment on environmental performance of the deposits or companies. For Information on the allocation of values, please see the accompanying scoring sheet.

NERC SCIENCE OF THE ENVIRONMENT SoS RARE GeoBus

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Rare Earth Deposits - locations

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Rare Earth Deposits Deck - Instructions

Game Play 2 - 6 players

Deal all the cards face down between the players.

Each player holds their cards face up in a pile so that they can see the top one only.

The player to the left of the dealer selects a category and reads out the value of that category on their card.

In turn, each of the other players reads the same value from their top card. The card with the best value in the chosen category wins.

The winning player takes all of the cards and places them to the bottom of their pile, then re-starts the game by choosing a category from the new top card in their hand.

If two or more cards share the top value, all of the cards from that round are placed in the middle and the same player chooses again from the next card.

The winner of that round then takes the cards from the previous round in addition to those he/she has won.

The player with all the cards at the end of the game is the winner.

Variations

Players can look at all of their cards and select the best one from their hand to play each time.

Timed version – whoever has the most cards at the end wins.

Bonus points for collecting all sites from one country/continent.

NERC SCIENCE OF THE ENVIRONMENT SoS RARE GeoBus

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Rare Earth Deposits Deck - Categories

Deposit size

Scored 1 - 10 (highest wins) based on published resource data (amount of estimated REE ore content in the deposit).

Accessibility

Scored 1 - 5 (highest wins) based on the proximity to road, rail, ports for transporting to market.

Radioactivity

Scored 1 - 10 (LOWEST wins) based on the radioactivity of main REE ore present.

Environmental score

Scored 1 – 10 (highest wins) based on environmental democracy index, grade, and implementation of environmental standards.

Production stage

Scored 1 – 4 (highest wins) to reflect the current (2017) progress.
1 = exploration stage; 2 = mine design and planning;
3 = in construction; 4 = in production

Political stability

Scored 1 – 10 (highest wins) based on the 2017 political climate of the country, including government/local attitudes to mining.

Proportion of "rarest" rare earth elements

Scored 1 – 10 (highest wins) to reflect the heavy REEs that are the least abundant in nature (e.g. Dy use in wind turbines).

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NERC SCIENCE OF THE ENVIRONMENT SoS RARE GeoBus

GeoBus

Araxá - Brazil

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	5
Radioactivity	3
Environmental score	5
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus

Araxá - Brazil

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	5
Radioactivity	3
Environmental score	5
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus

Araxá - Brazil

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	5
Radioactivity	3
Environmental score	5
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus

Araxá - Brazil

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	5
Radioactivity	3
Environmental score	5
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	2

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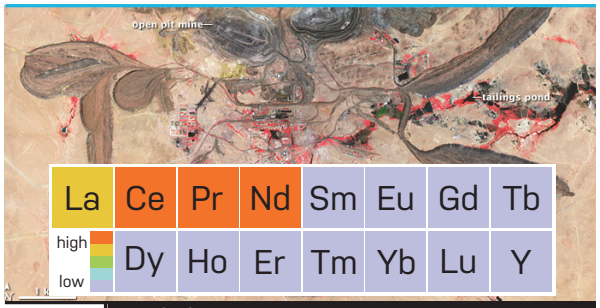
GeoBus

Bayan Obo - China



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

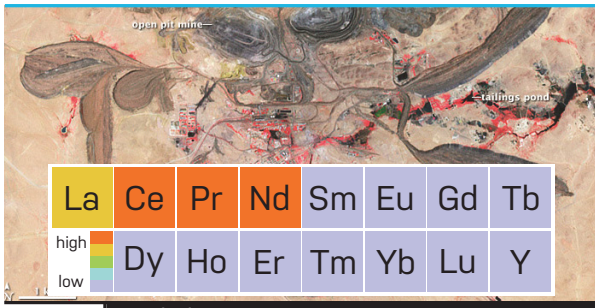
SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	9
Accessibility	5
Radioactivity	2
Environmental score	2
Production stage	4
Political stability	3
Proportion of "rarest" rare earth elements	2

GeoBus

Bayan Obo - China



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high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

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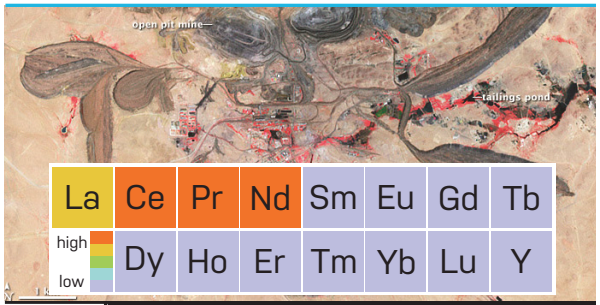
Accessibility	5
Radioactivity	2
Environmental score	2
Production stage	4
Political stability	3
Proportion of "rarest" rare earth elements	2

GeoBus

Bayan Obo - China



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high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

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Environmental score	2
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Proportion of "rarest" rare earth elements	2

GeoBus

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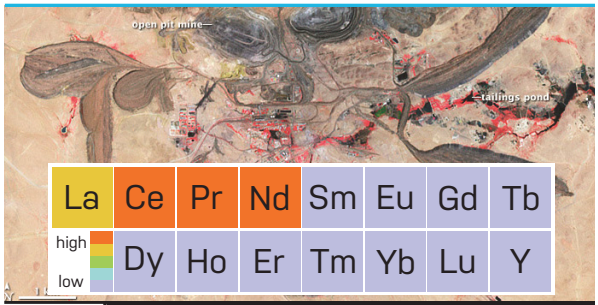

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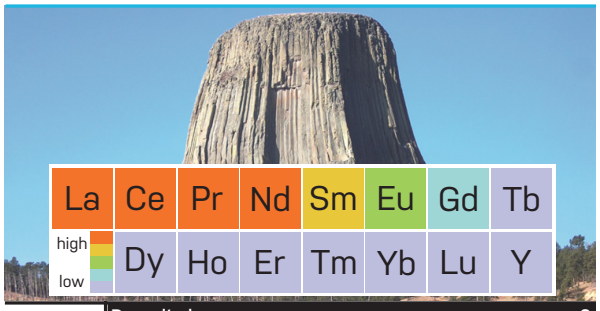
GeoBus

Bear Lodge - USA



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

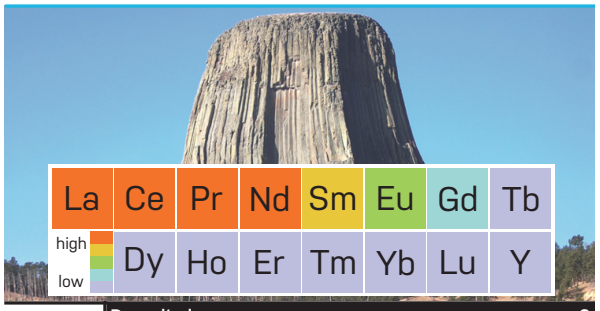
SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	6
Accessibility	3
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus

Bear Lodge - USA



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

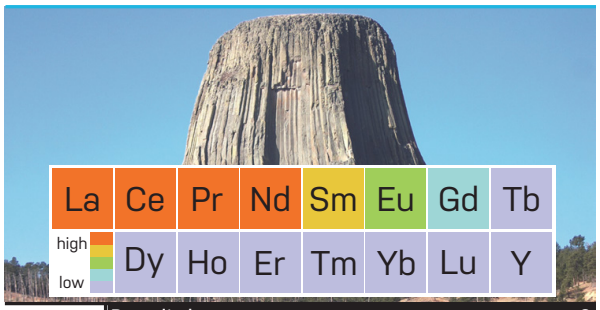
SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	6
Accessibility	3
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus

Bear Lodge - USA



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high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

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Proportion of "rarest" rare earth elements	2

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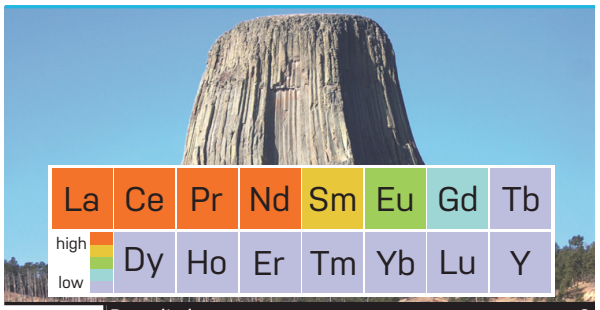

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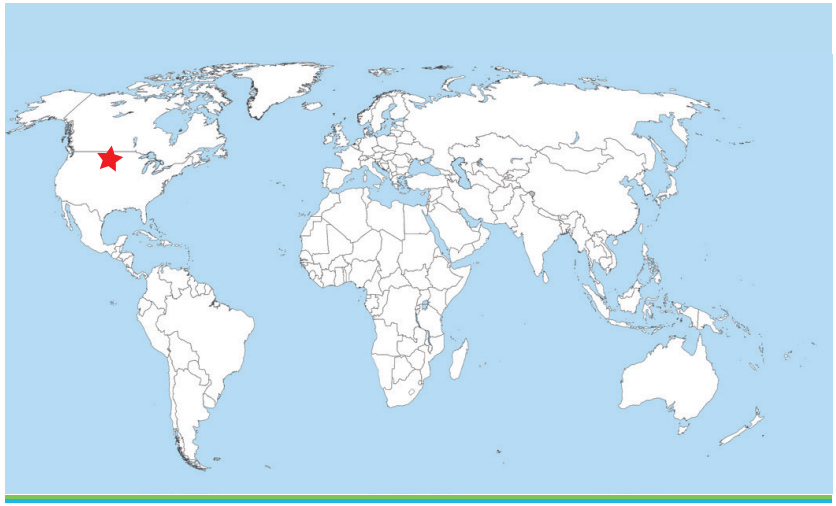
Accessibility	3
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2



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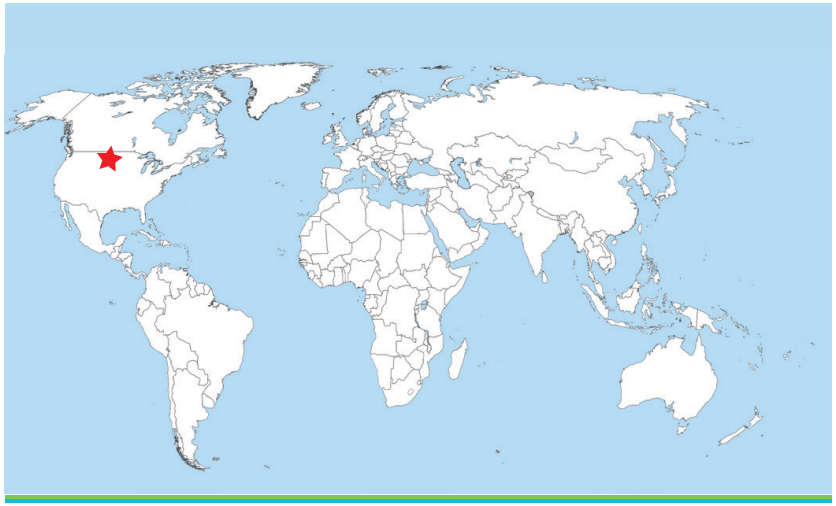

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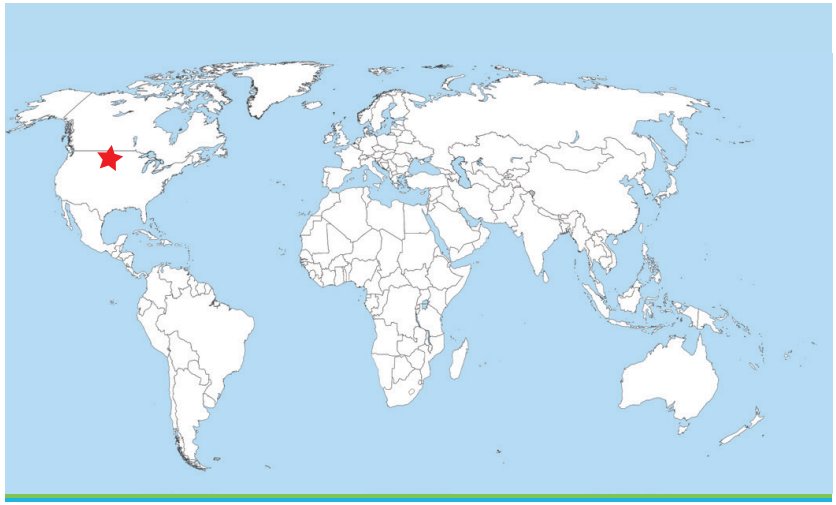

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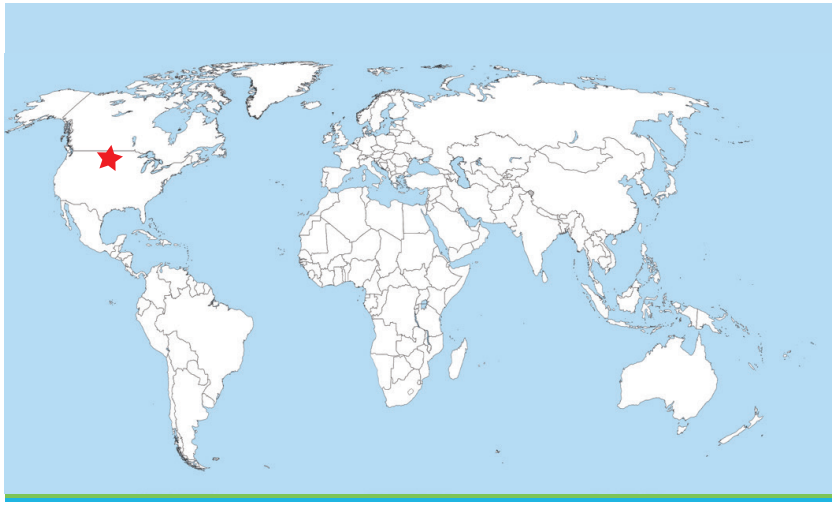

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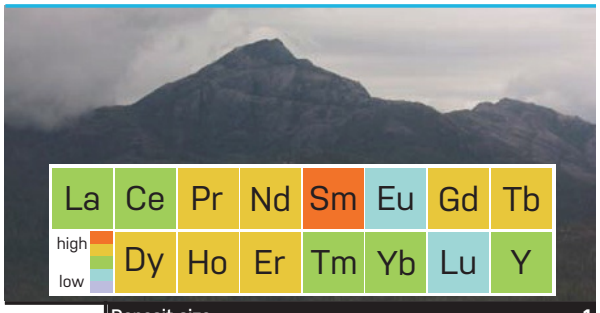
GeoBus Bokan Mountain - USA



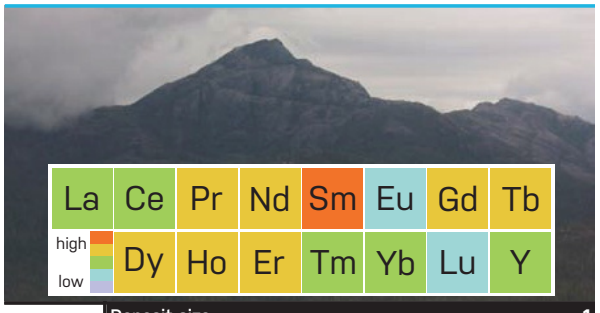
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	6
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	7

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Bokan Mountain - USA



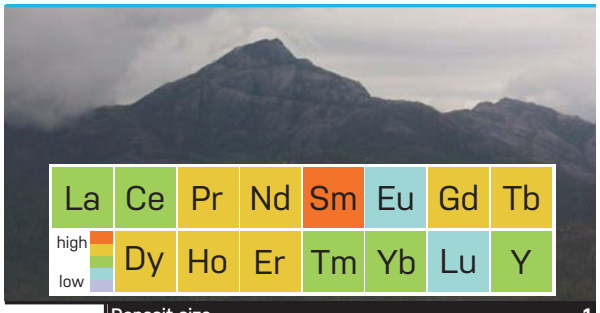
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	6
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	7

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Bokan Mountain - USA



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	6
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	7

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

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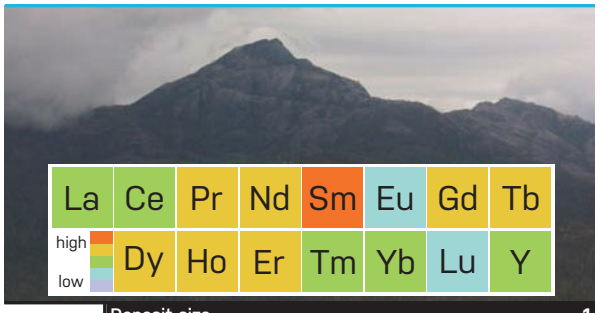
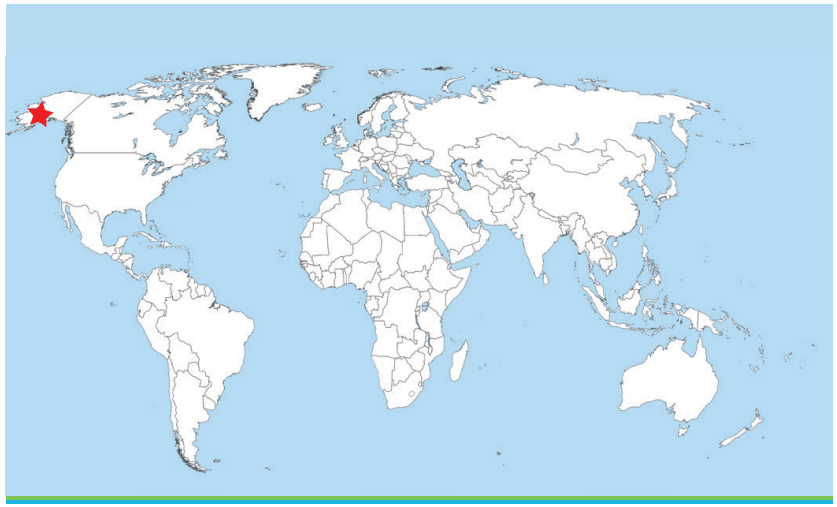


La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

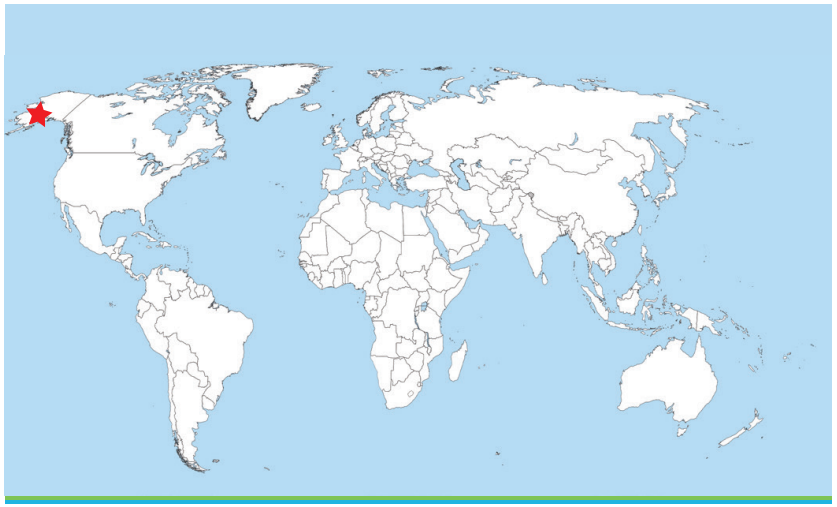
Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	6
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	7

SoS RARE 2022 KAKE

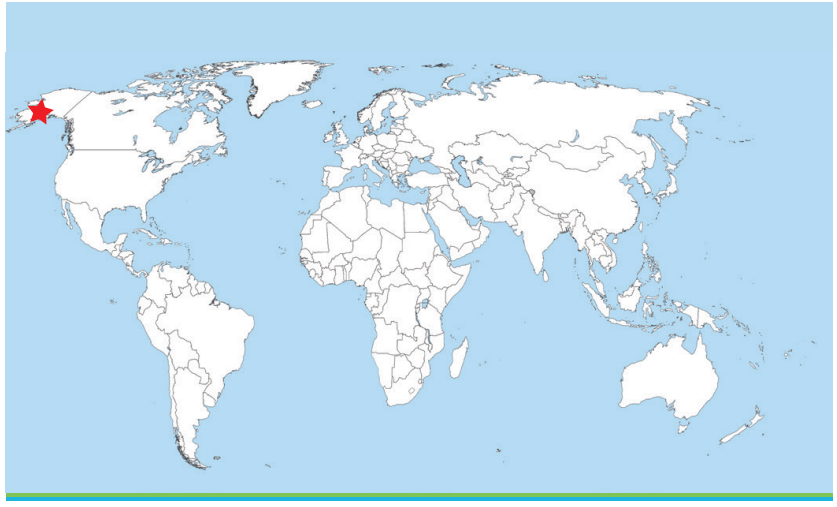
NERC SCIENCE OF THE ENVIRONMENT



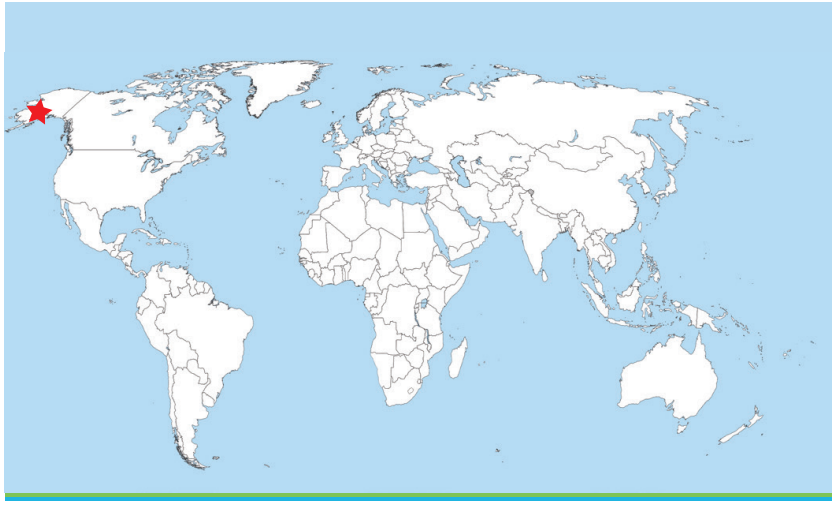
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

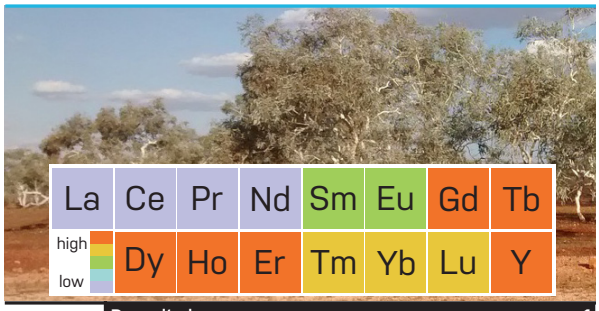


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Browns Range - Australia



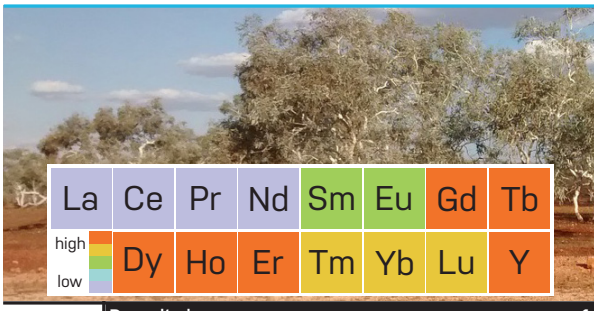
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	4
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	9

GeoBus Browns Range - Australia



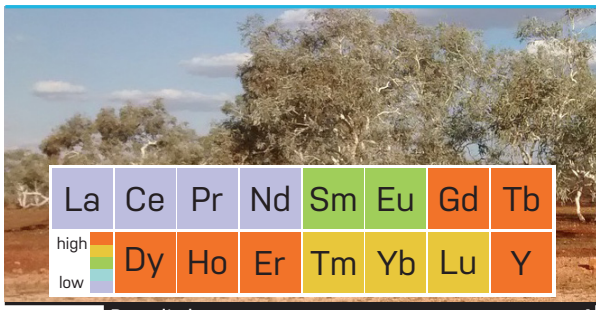
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	4
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	9

GeoBus Browns Range - Australia



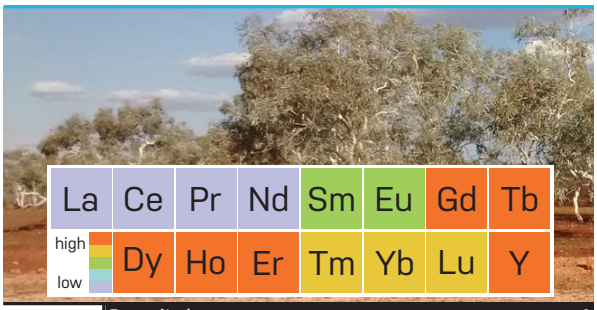
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	4
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	9

GeoBus Browns Range - Australia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	4
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	9

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

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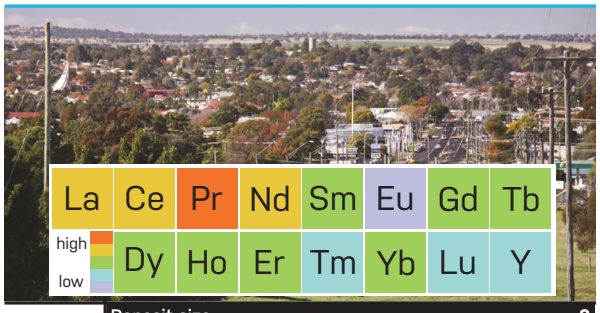
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Dubbo Zirconia - Australia



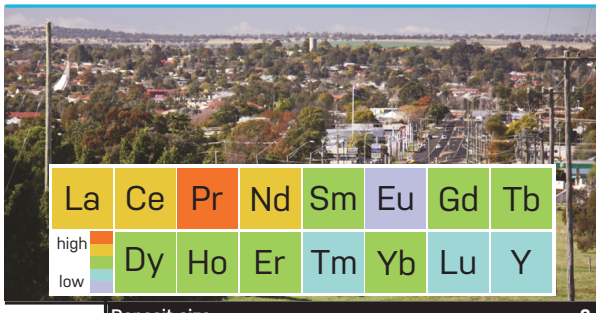
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	4
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	5

GeoBus Dubbo Zirconia - Australia



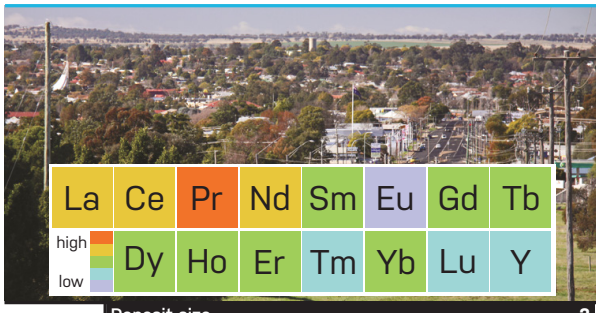
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	4
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	5

GeoBus Dubbo Zirconia - Australia



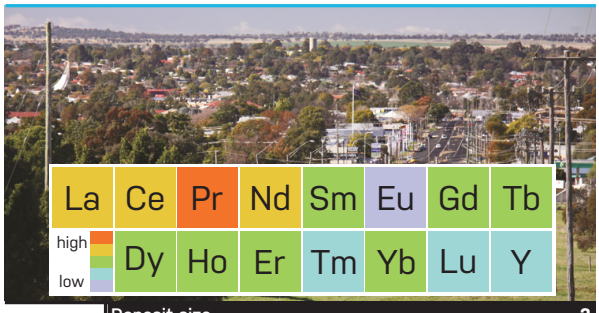
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	4
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	5

GeoBus Dubbo Zirconia - Australia

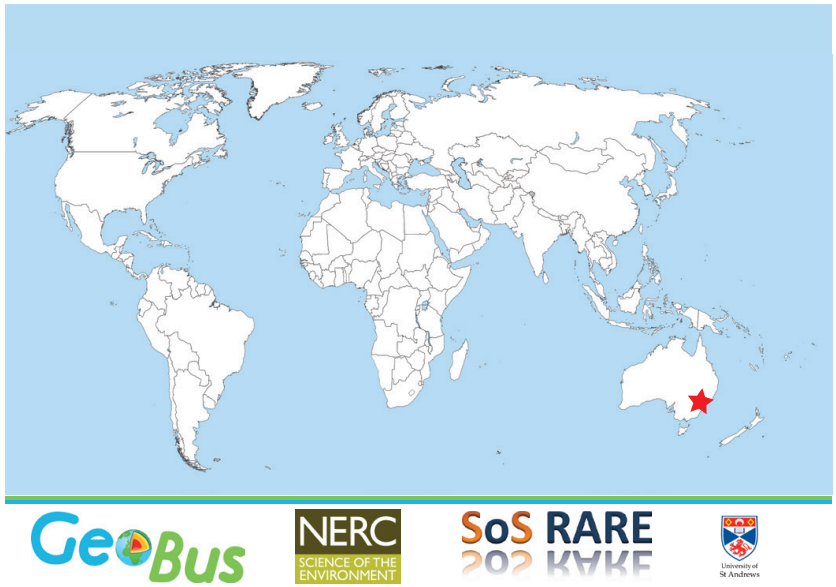


La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

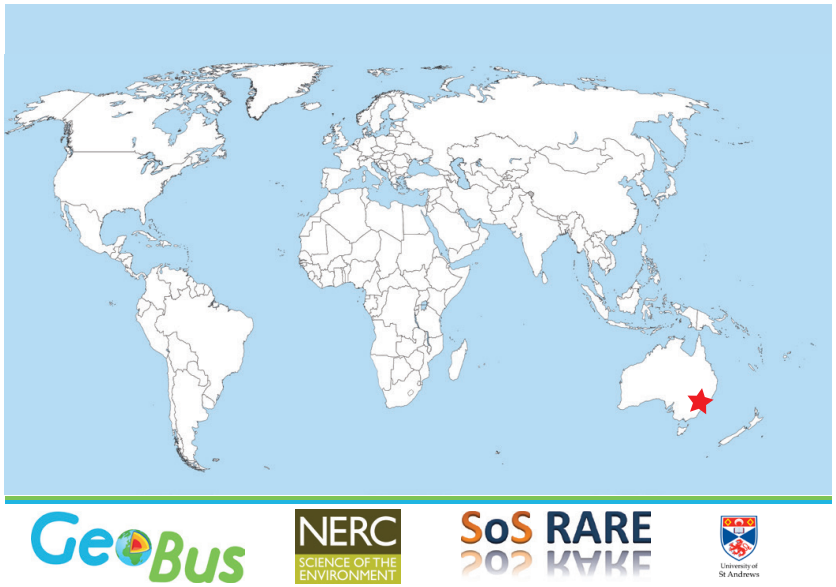
SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	4
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	8
Proportion of "rarest" rare earth elements	5



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



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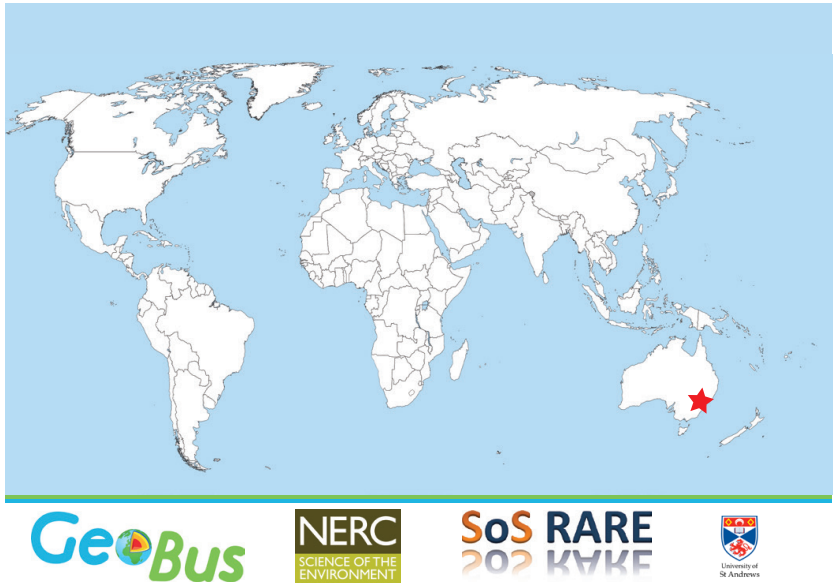
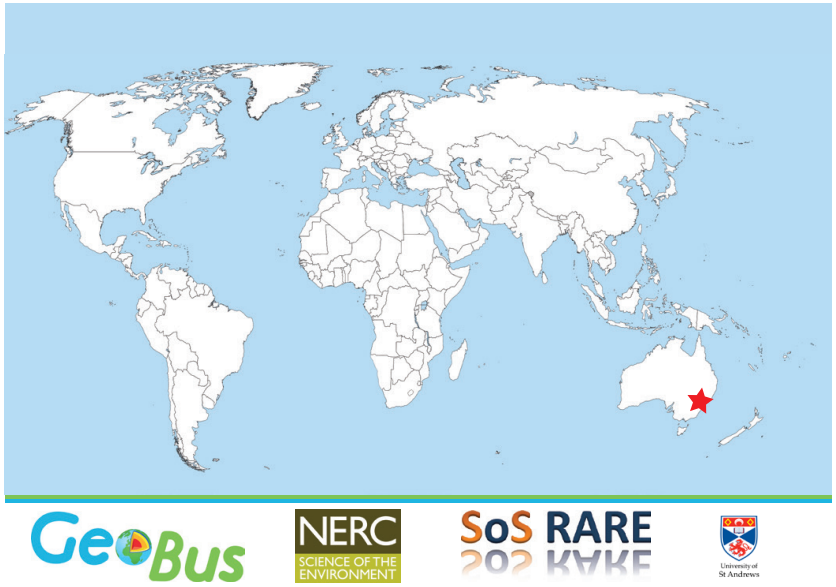


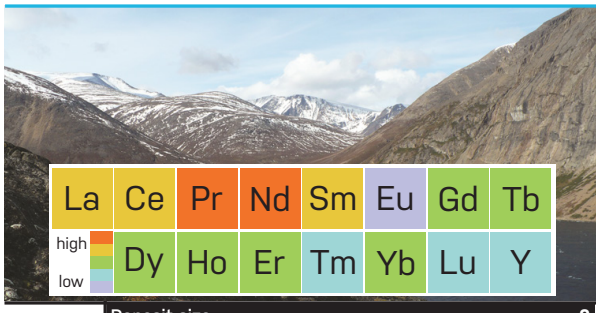
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus

Foxtrot - Canada



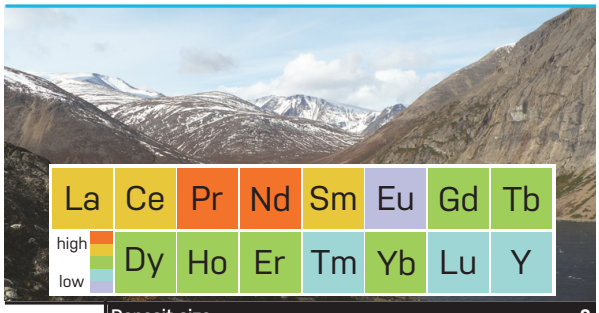
SoS RARE 2021

Deposit size	2
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

GeoBus

Foxtrot - Canada



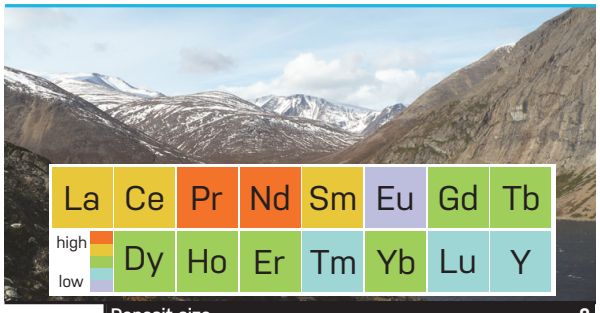
SoS RARE 2021

Deposit size	2
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

GeoBus

Foxtrot - Canada



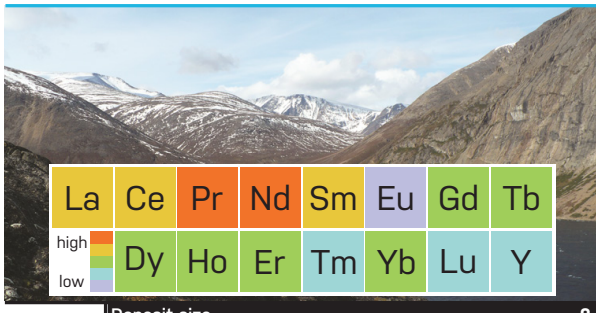
SoS RARE 2021

Deposit size	2
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

GeoBus

Foxtrot - Canada



SoS RARE 2021

Deposit size	2
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

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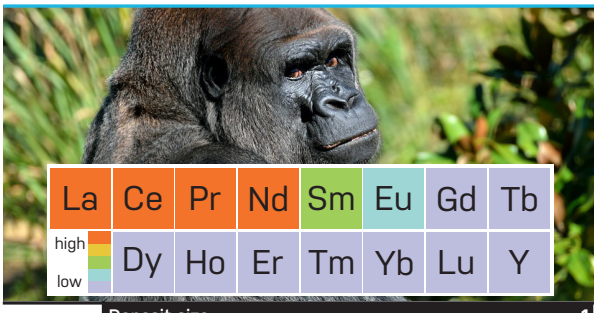
GeoBus

Gakara - Burundi



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

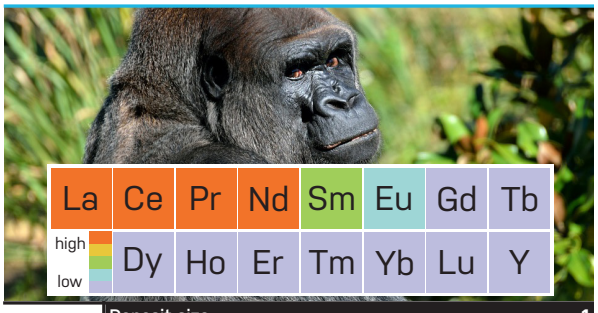
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	2
Environmental score	7
Production stage	4
Political stability	3
Proportion of "rarest" rare earth elements	2

GeoBus

Gakara - Burundi



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

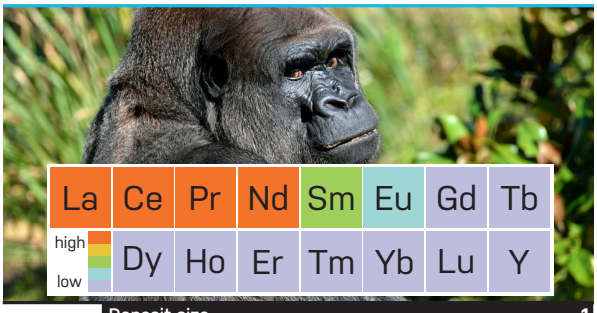
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	2
Environmental score	7
Production stage	4
Political stability	3
Proportion of "rarest" rare earth elements	2

GeoBus

Gakara - Burundi



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
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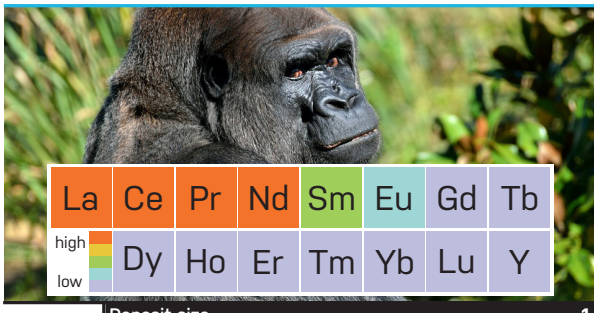
Radioactivity	2
Environmental score	7
Production stage	4
Political stability	3
Proportion of "rarest" rare earth elements	2

GeoBus

Gakara - Burundi



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	2
Radioactivity	2
Environmental score	7
Production stage	4
Political stability	3
Proportion of "rarest" rare earth elements	2

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

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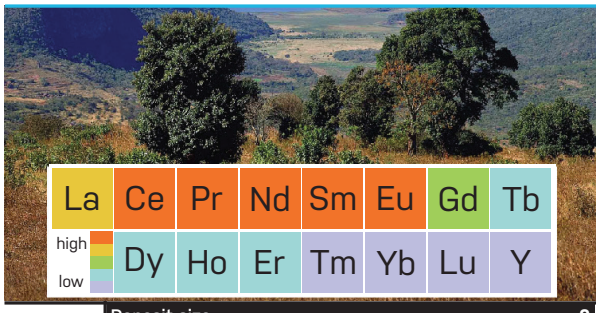
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Glenover - South Africa



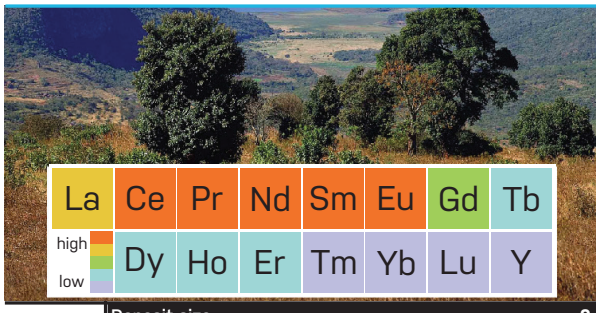
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3

GeoBus Glenover - South Africa



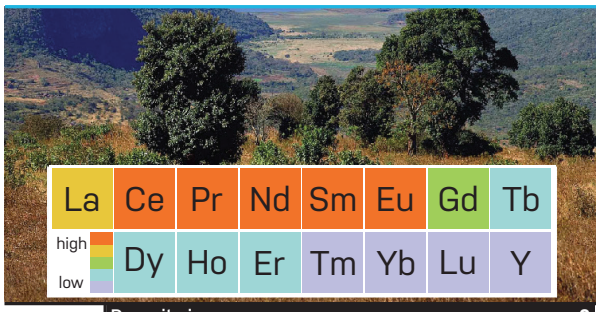
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3

GeoBus Glenover - South Africa



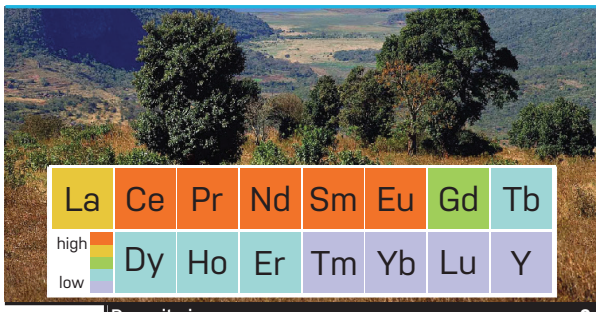
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3

GeoBus Glenover - South Africa



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	3
Environmental score	7
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

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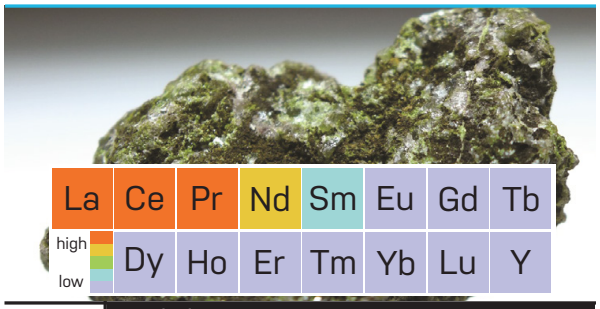
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Kangankunde - Malawi



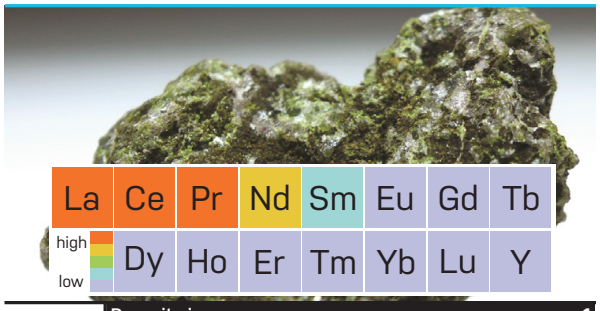
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Kangankunde - Malawi



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Kangankunde - Malawi

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2

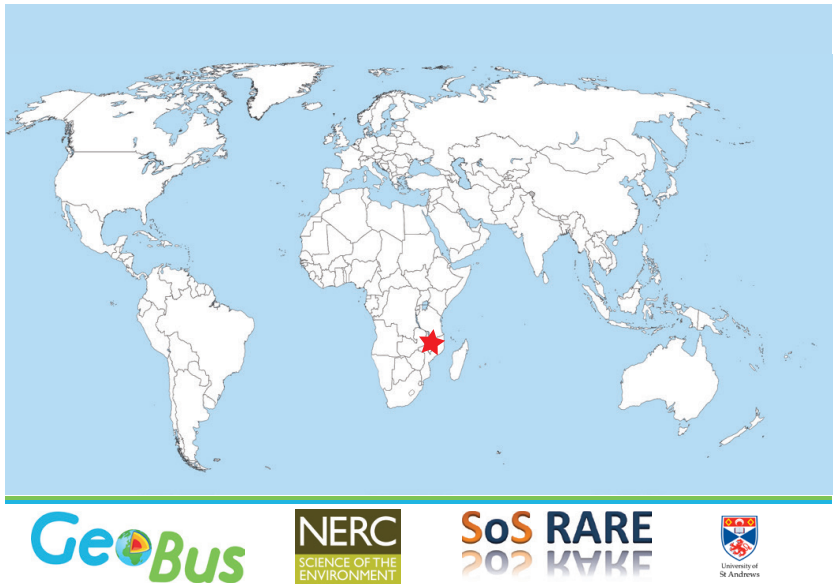
GeoBus Kangankunde - Malawi

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

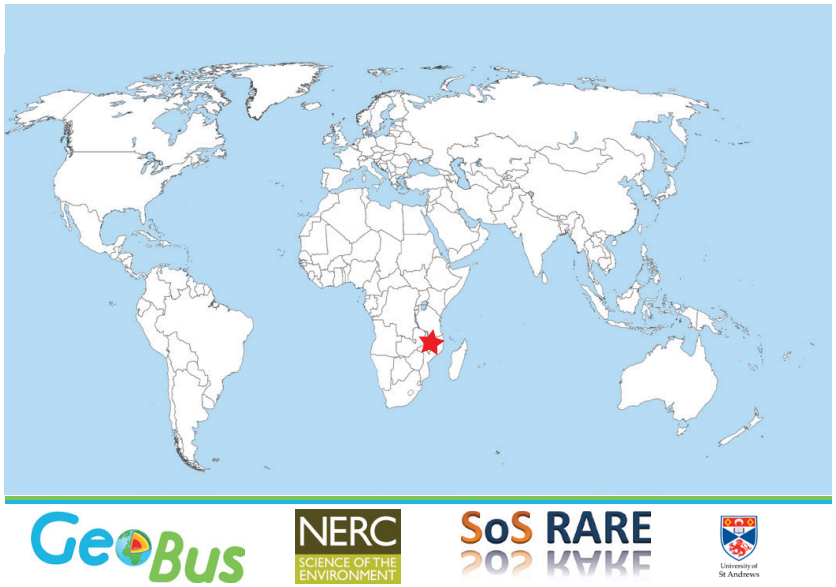
SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

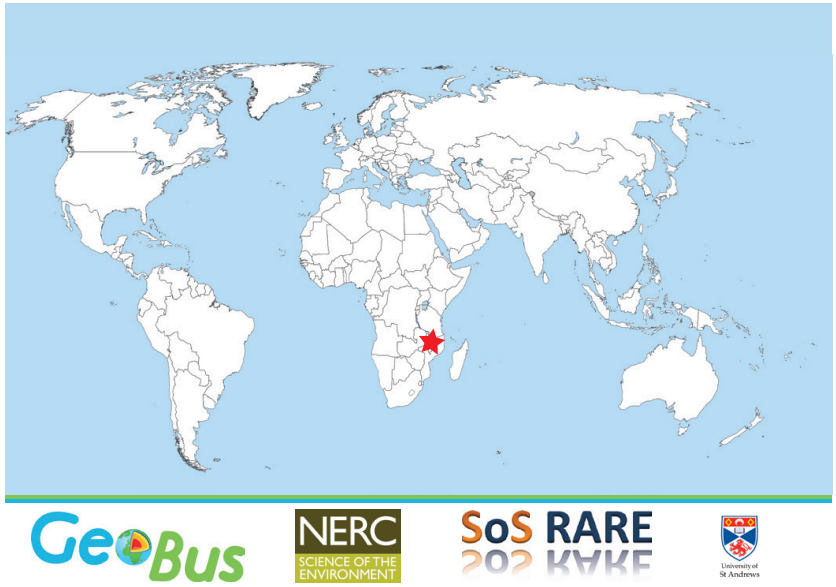
Deposit size	1
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2



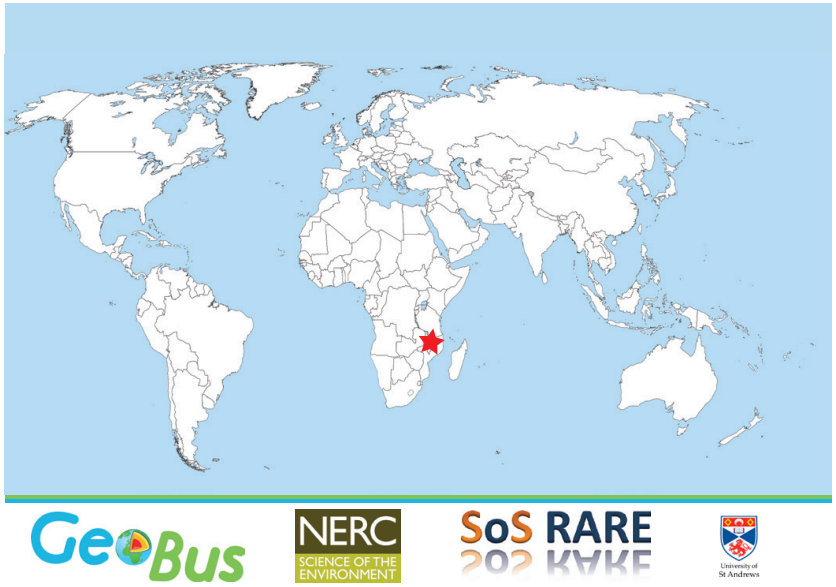
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



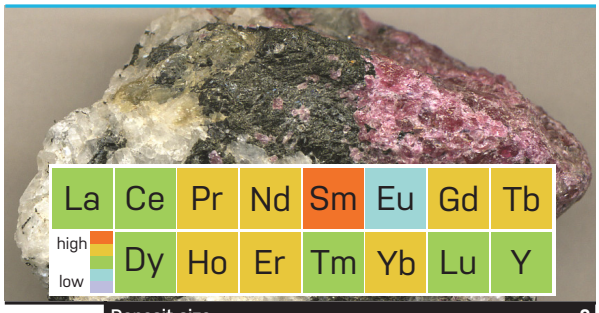
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus

Kipawa - Canada



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

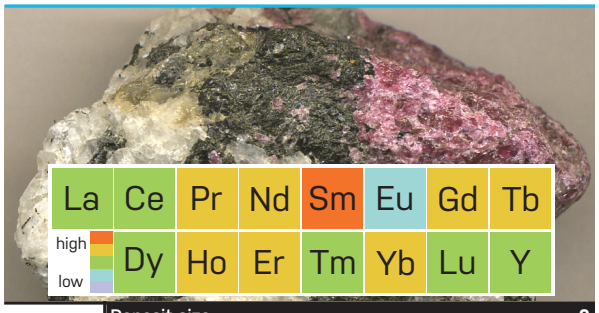
SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	1
Environmental score	3
Production stage	1
Political stability	8
Proportion of "rarest" rare earth elements	6

GeoBus

Kipawa - Canada



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	1
Environmental score	3
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Political stability	8
Proportion of "rarest" rare earth elements	6

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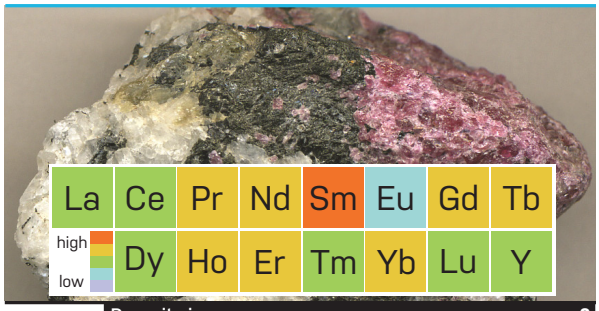
Kipawa - Canada



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

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Proportion of "rarest" rare earth elements	6

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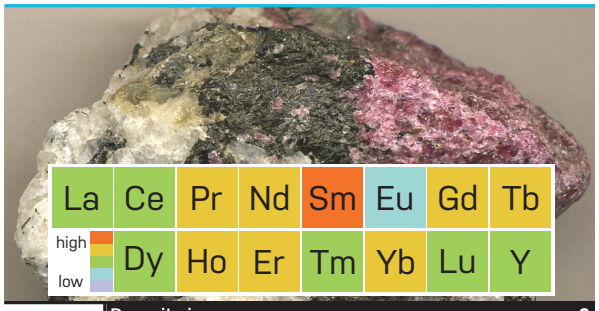
Kipawa - Canada



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	1
Environmental score	3
Production stage	1
Political stability	8
Proportion of "rarest" rare earth elements	6

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

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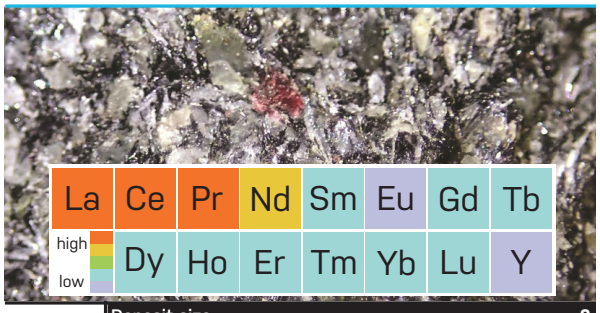
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Kvanefjeld - Greenland

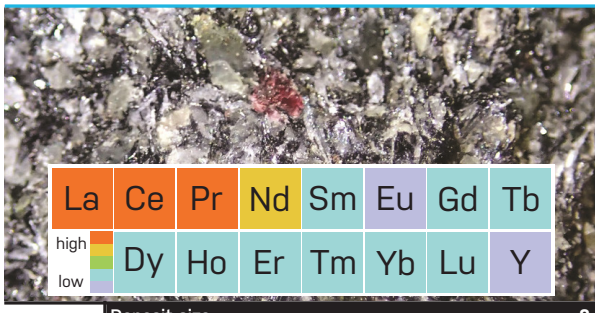


SoS RARE 2012 KVAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	2
Radioactivity	5
Environmental score	3
Production stage	2
Political stability	7
Proportion of "rarest" rare earth elements	4

GeoBus Kvanefjeld - Greenland

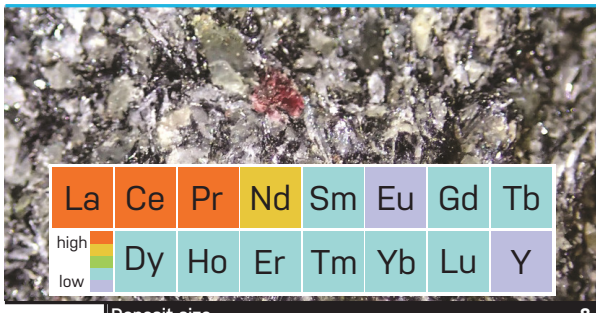


SoS RARE 2012 KVAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	2
Radioactivity	5
Environmental score	3
Production stage	2
Political stability	7
Proportion of "rarest" rare earth elements	4

GeoBus Kvanefjeld - Greenland

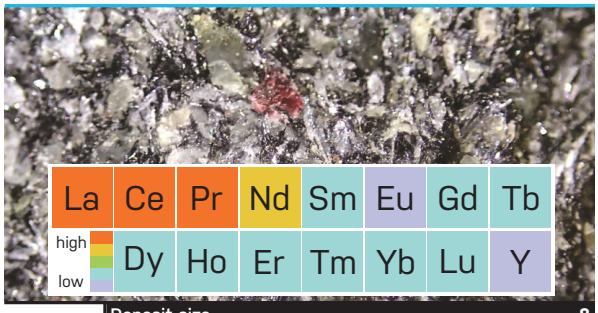


SoS RARE 2012 KVAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	2
Radioactivity	5
Environmental score	3
Production stage	2
Political stability	7
Proportion of "rarest" rare earth elements	4

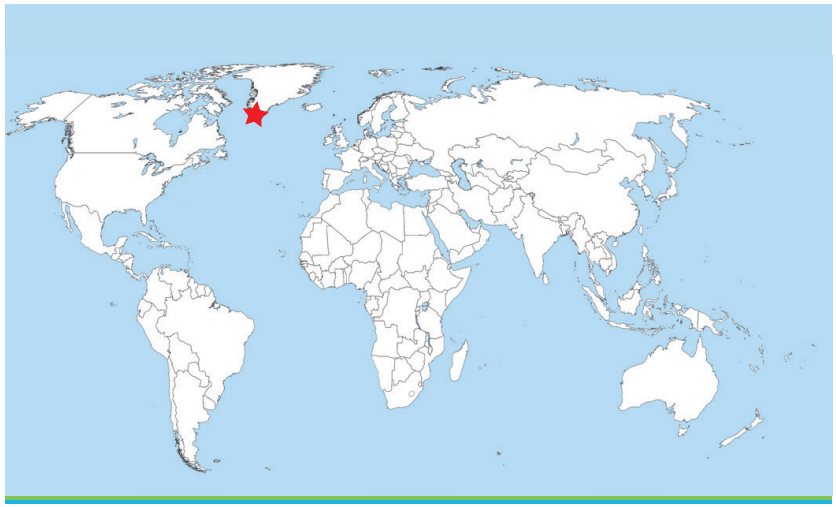
GeoBus Kvanefjeld - Greenland



SoS RARE 2012 KVAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	2
Radioactivity	5
Environmental score	3
Production stage	2
Political stability	7
Proportion of "rarest" rare earth elements	4



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

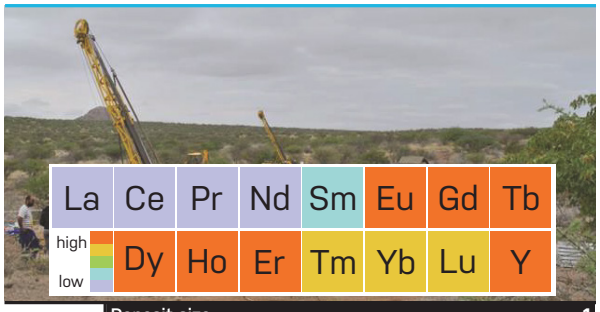
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus

Lofdal - Namibia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

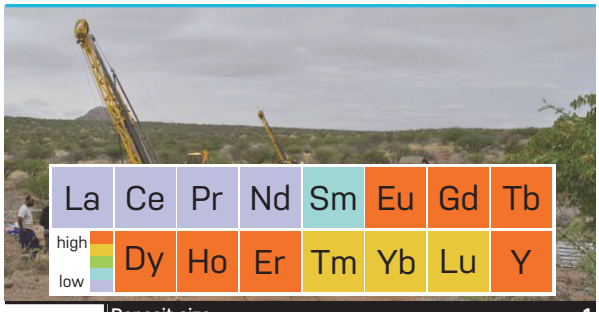
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	1
Political stability	6
Proportion of "rarest" rare earth elements	9

GeoBus

Lofdal - Namibia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

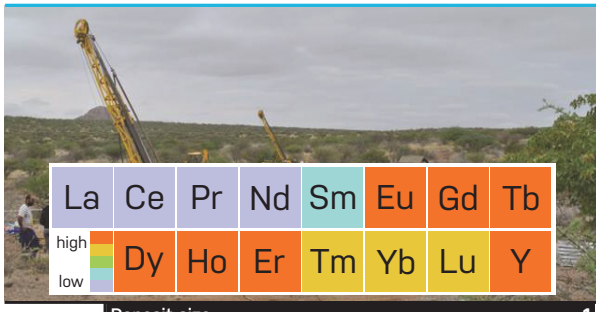
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	1
Political stability	6
Proportion of "rarest" rare earth elements	9

GeoBus

Lofdal - Namibia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

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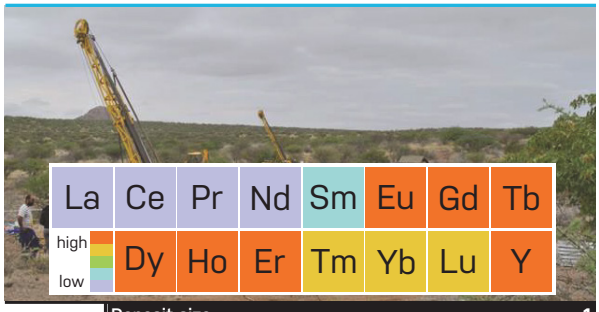

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	1
Political stability	6
Proportion of "rarest" rare earth elements	9

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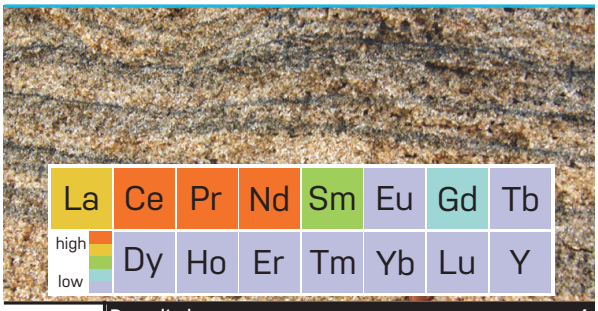
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Mineral Sands - India

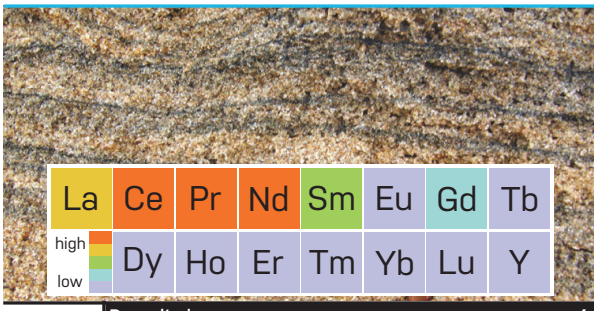


SoS RARE 2022 KARE

Deposit size	4
Accessibility	4
Radioactivity	6
Environmental score	3
Production stage	4
Political stability	6
Proportion of "rarest" rare earth elements	3

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Mineral Sands - India

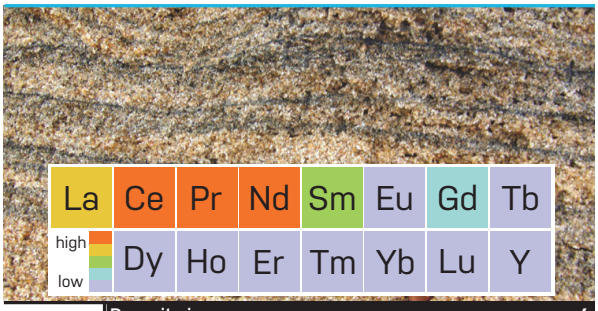


SoS RARE 2022 KARE

Deposit size	4
Accessibility	4
Radioactivity	6
Environmental score	3
Production stage	4
Political stability	6
Proportion of "rarest" rare earth elements	3

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Mineral Sands - India

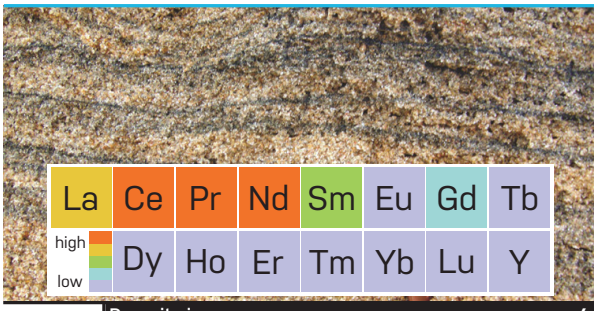


SoS RARE 2022 KARE

Deposit size	4
Accessibility	4
Radioactivity	6
Environmental score	3
Production stage	4
Political stability	6
Proportion of "rarest" rare earth elements	3

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Mineral Sands - India



SoS RARE 2022 KARE

Deposit size	4
Accessibility	4
Radioactivity	6
Environmental score	3
Production stage	4
Political stability	6
Proportion of "rarest" rare earth elements	3

NERC SCIENCE OF THE ENVIRONMENT

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

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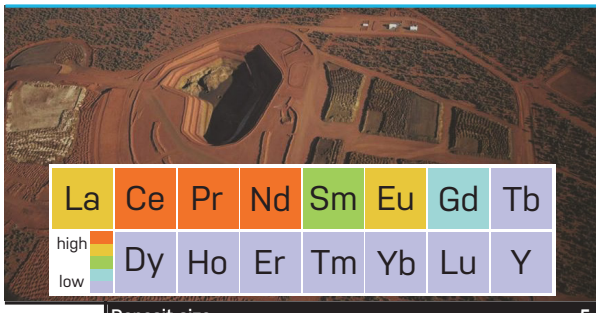
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Mount Weld - Australia



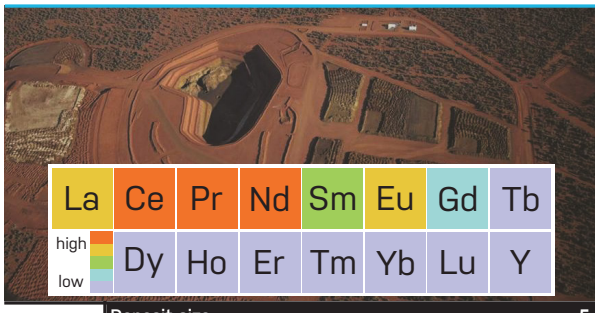
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	5
Radioactivity	3
Environmental score	10
Production stage	4
Political stability	8
Proportion of "rarest" rare earth elements	3

GeoBus Mount Weld - Australia



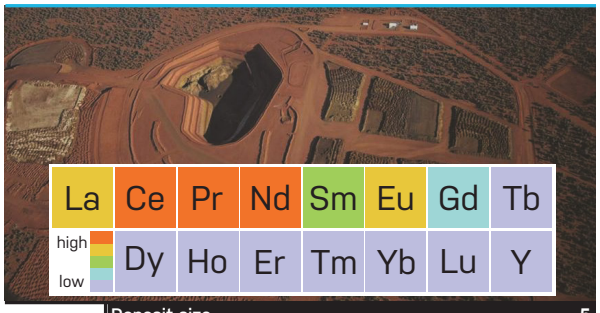
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	5
Radioactivity	3
Environmental score	10
Production stage	4
Political stability	8
Proportion of "rarest" rare earth elements	3

GeoBus Mount Weld - Australia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

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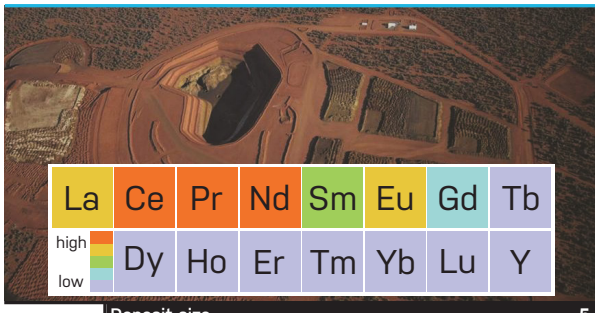

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

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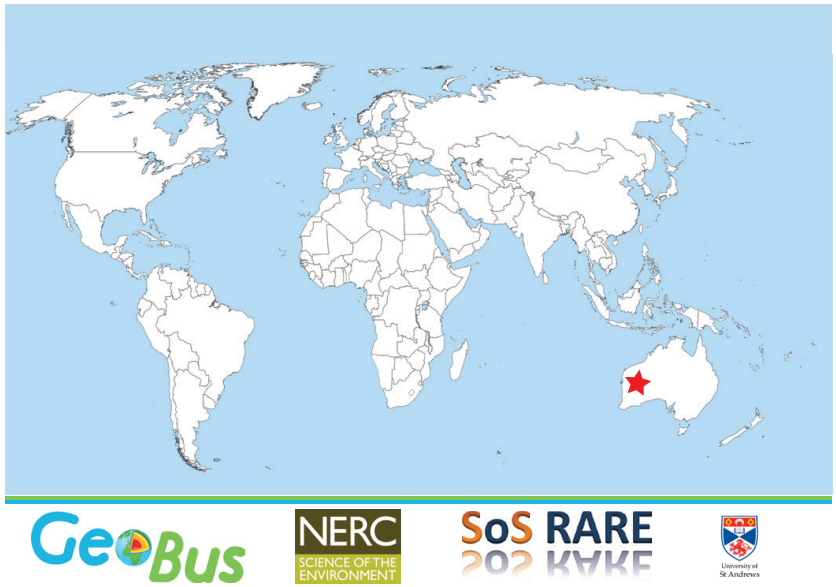
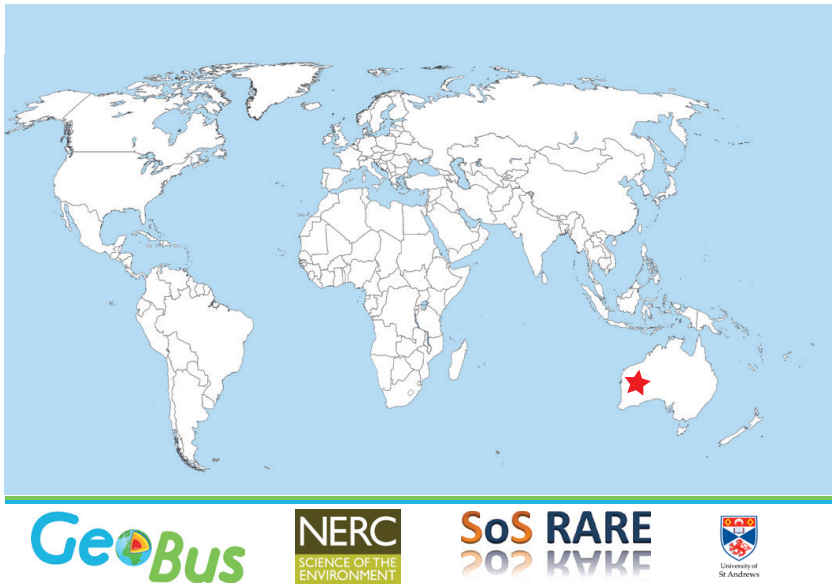
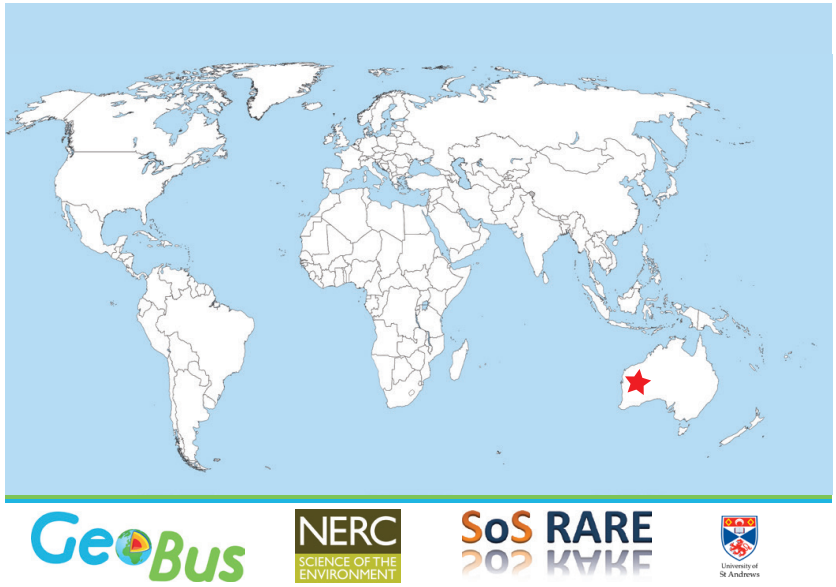


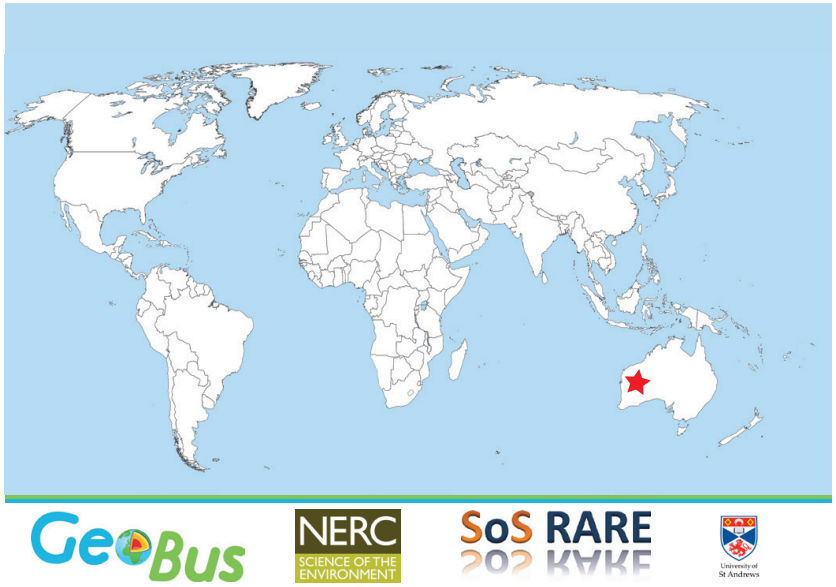
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

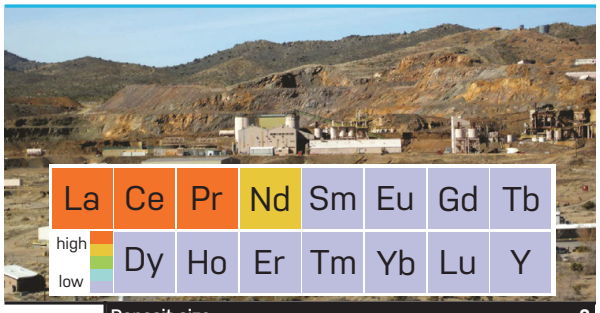


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Mountain Pass - USA



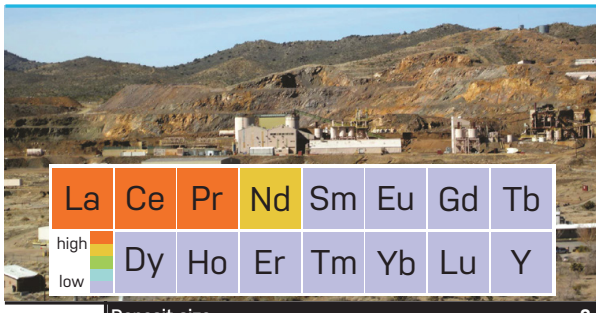
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	6
Accessibility	5
Radioactivity	2
Environmental score	6
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	2

GeoBus Mountain Pass - USA



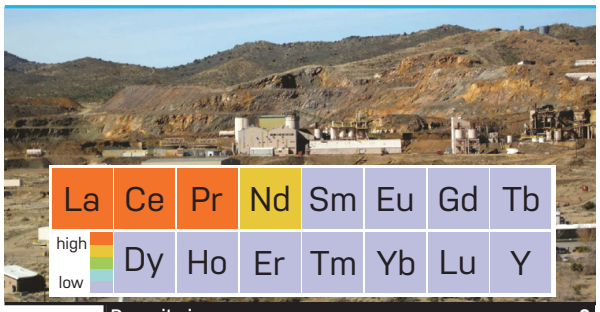
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	6
Accessibility	5
Radioactivity	2
Environmental score	6
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	2

GeoBus Mountain Pass - USA



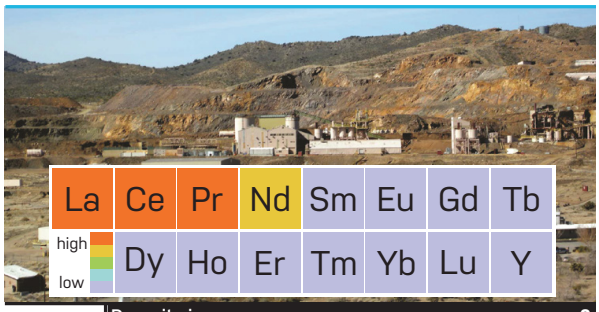
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	6
Accessibility	5
Radioactivity	2
Environmental score	6
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	2

GeoBus Mountain Pass - USA

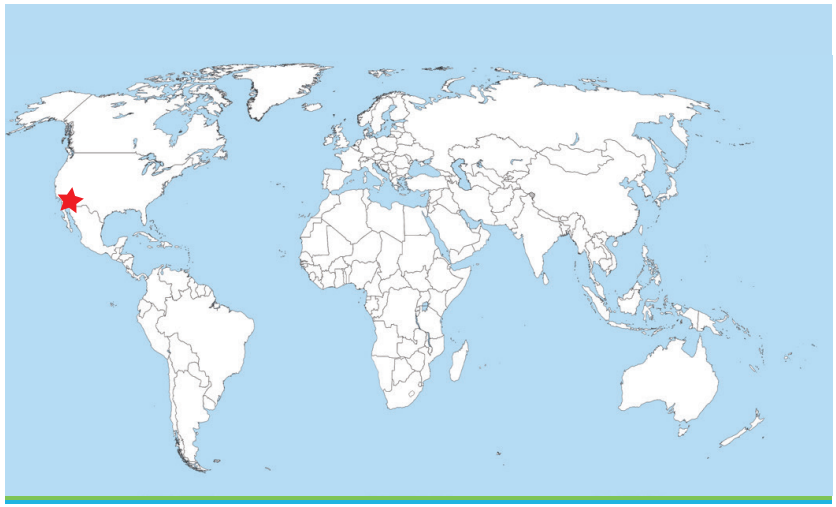


La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

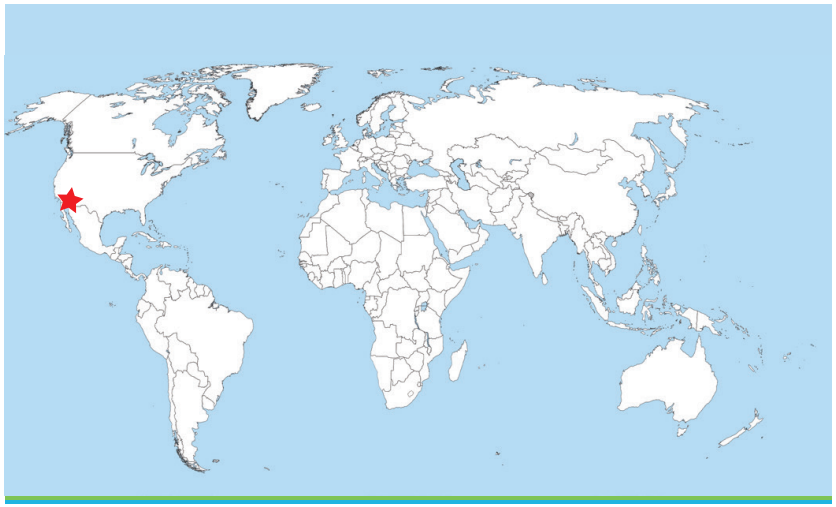
SoS RARE 2022 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	6
Accessibility	5
Radioactivity	2
Environmental score	6
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	2



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



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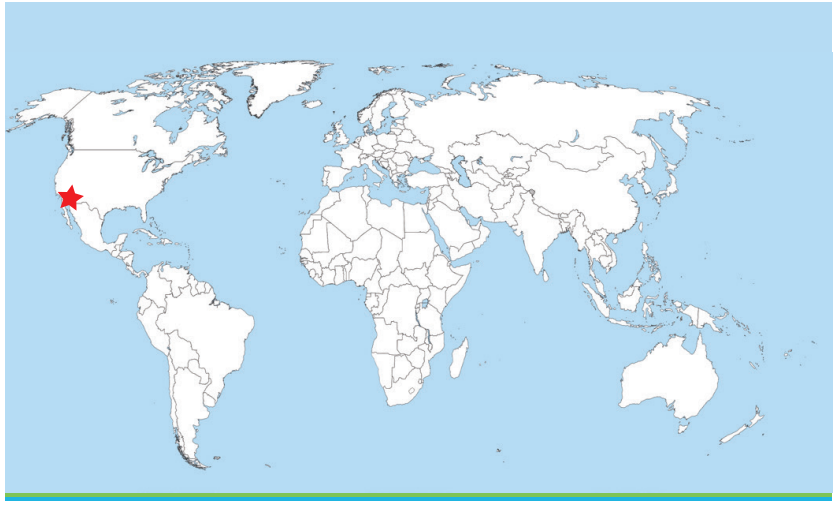
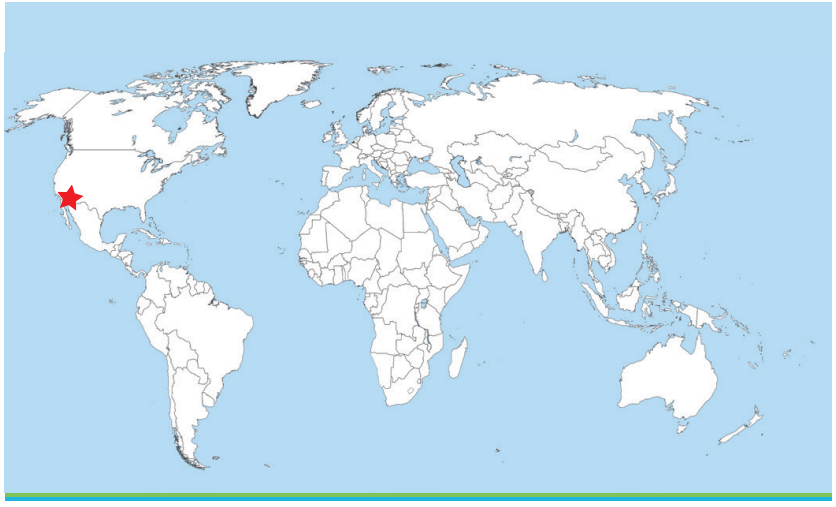
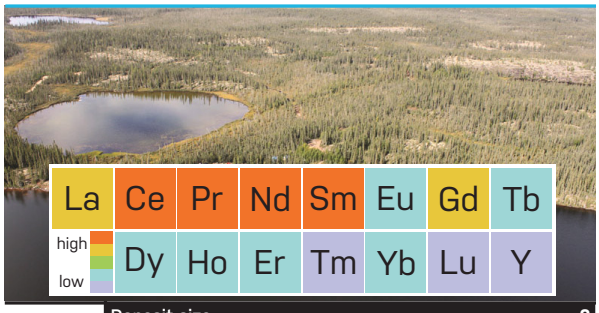


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Nechalacho - Canada



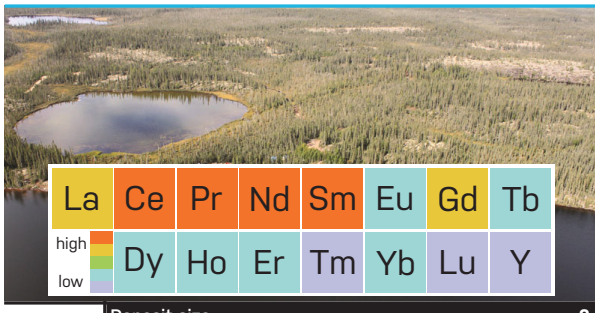
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	6
Accessibility	2
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	4

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Nechalacho - Canada



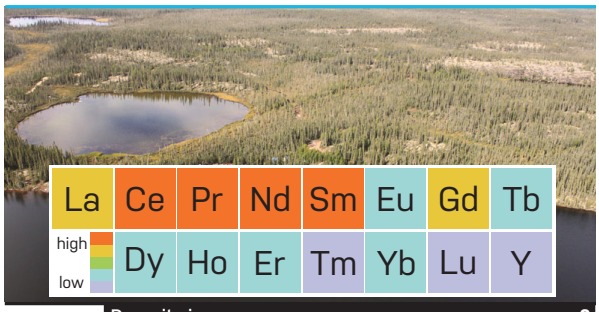
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	6
Accessibility	2
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	4

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Nechalacho - Canada



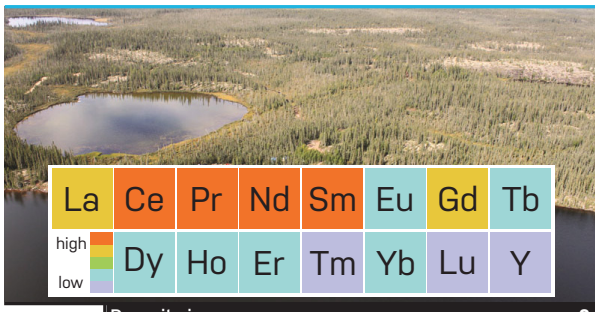
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	6
Accessibility	2
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	4

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Nechalacho - Canada

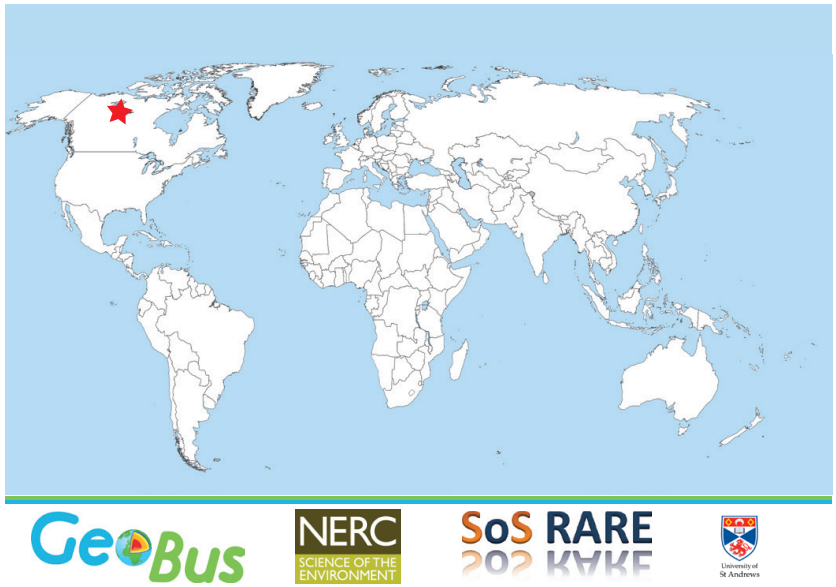


La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

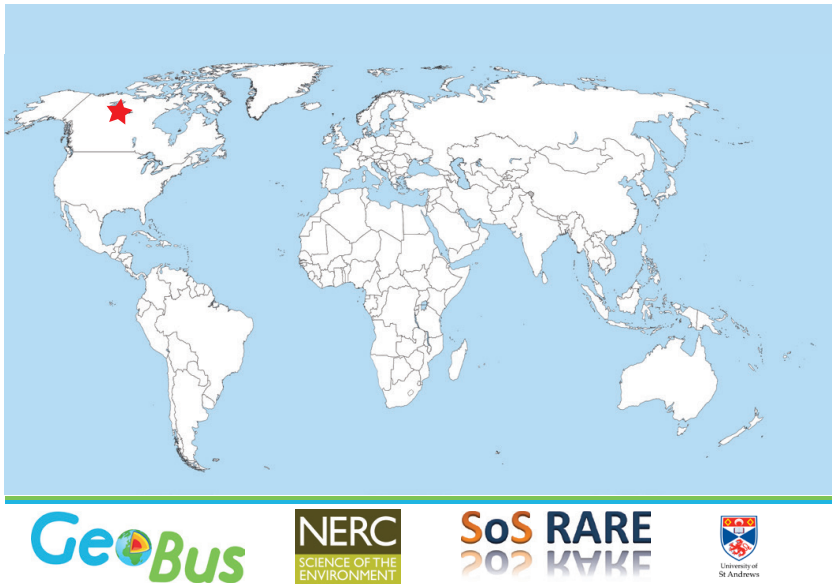
SoS RARE 2012

Deposit size	6
Accessibility	2
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	4

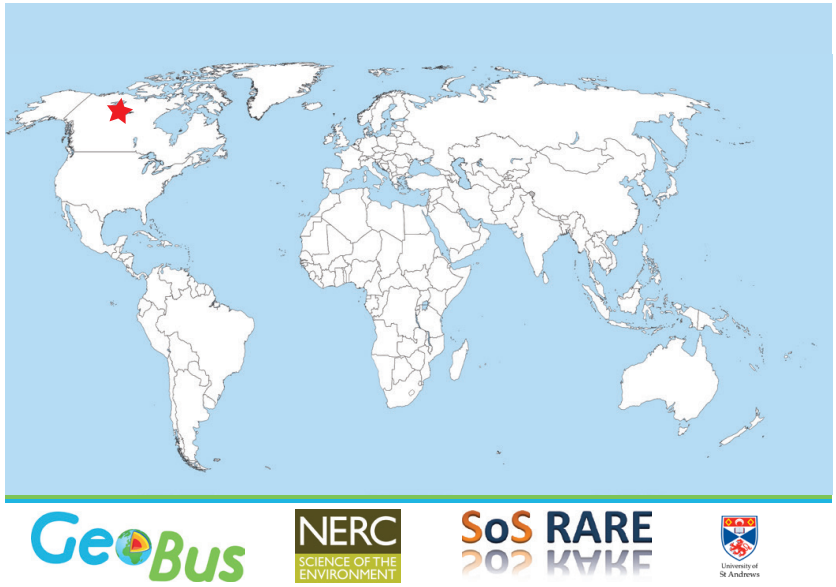
NERC SCIENCE OF THE ENVIRONMENT



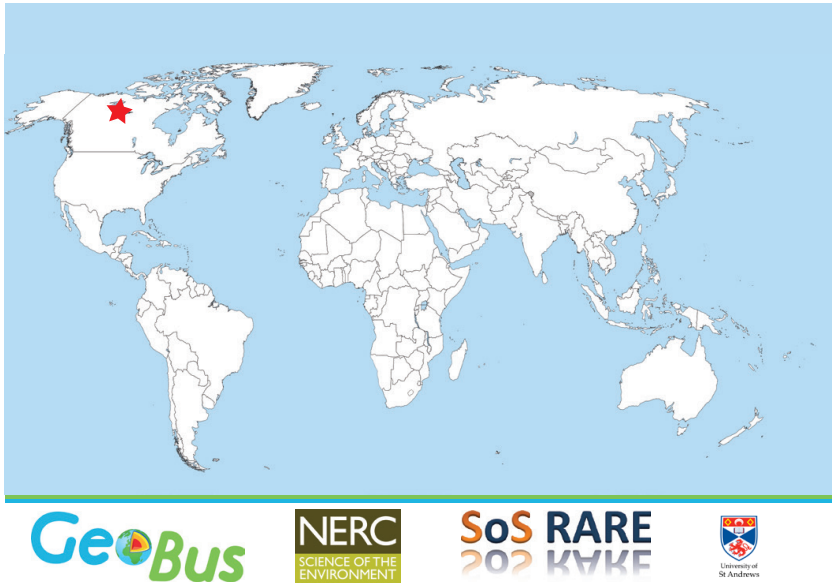
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

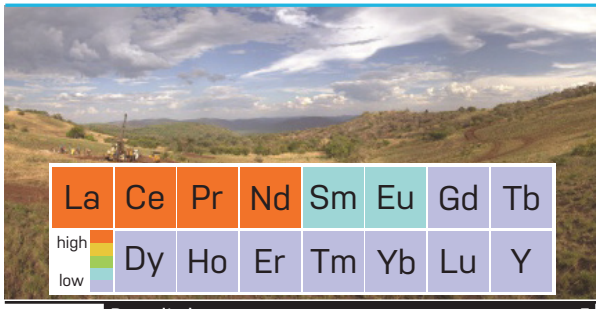


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Ngualla - Tanzania



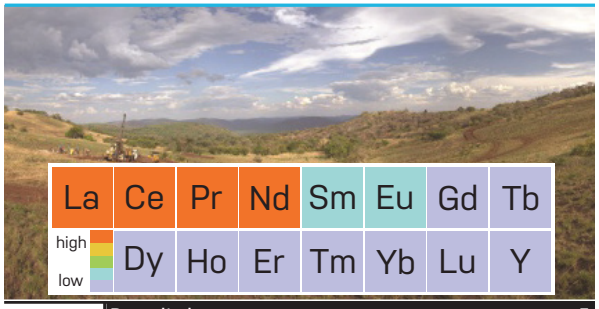
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Ngualla - Tanzania



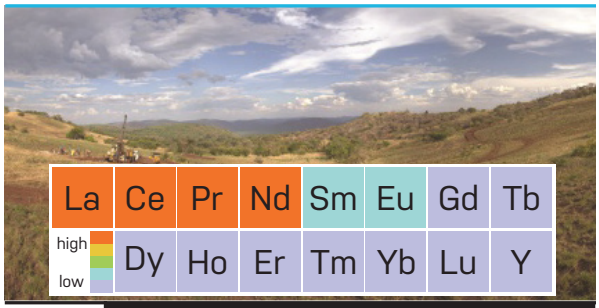
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Ngualla - Tanzania



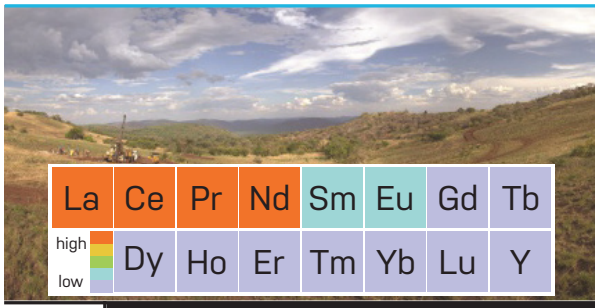
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Ngualla - Tanzania



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	5
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

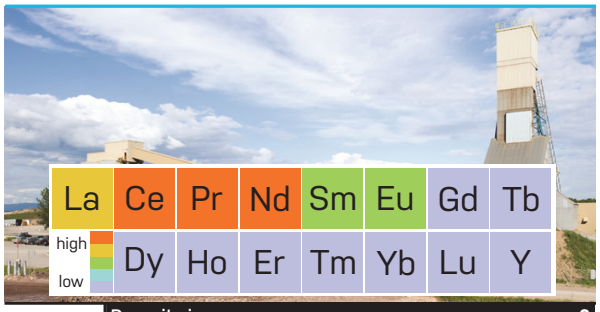
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus

St Honore - Canada



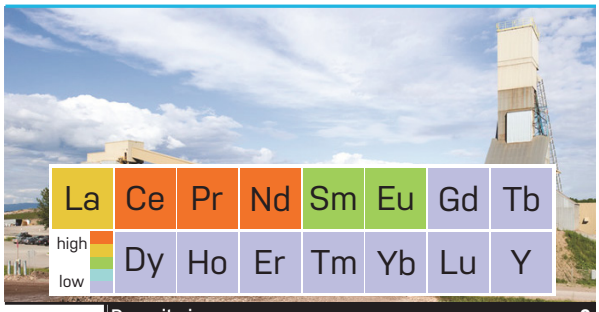
SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	9
Accessibility	5
Radioactivity	2
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus

St Honore - Canada



SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	9
Accessibility	5
Radioactivity	2
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus

St Honore - Canada

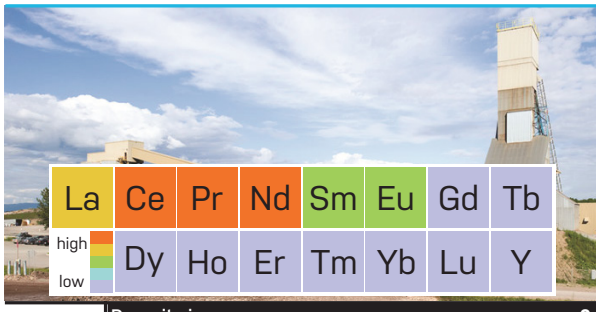
SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	9
Accessibility	5
Radioactivity	2
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus

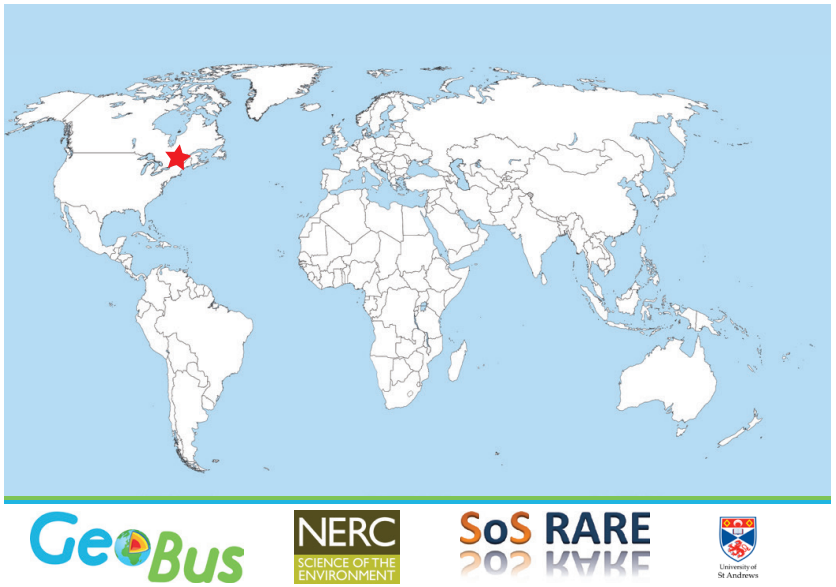
St Honore - Canada



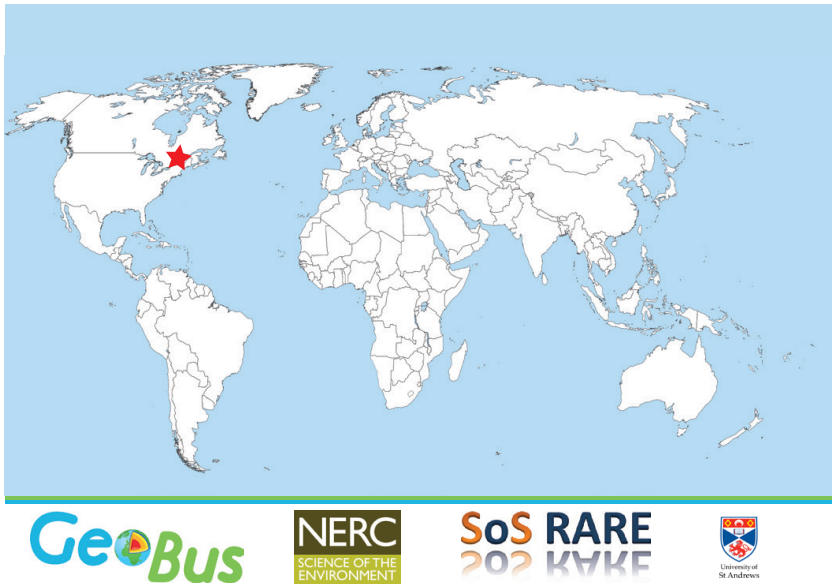
SoS RARE 2022

NERC SCIENCE OF THE ENVIRONMENT

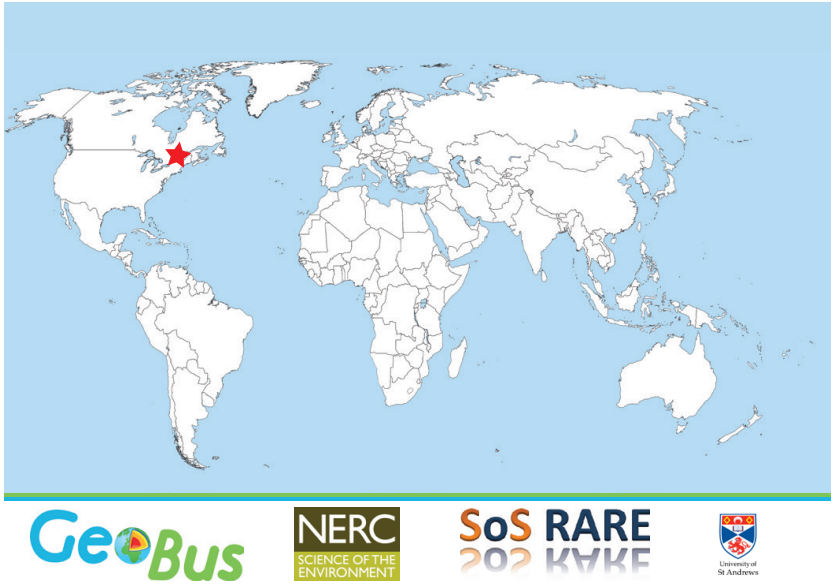
Deposit size	9
Accessibility	5
Radioactivity	2
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2



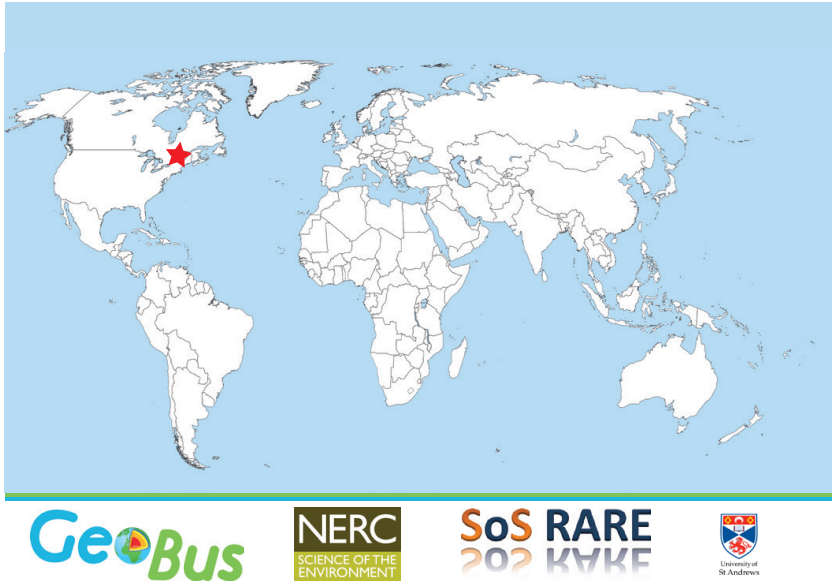
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

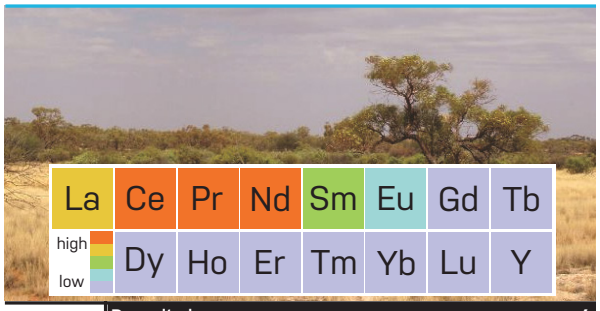


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Nolans Bore - Australia



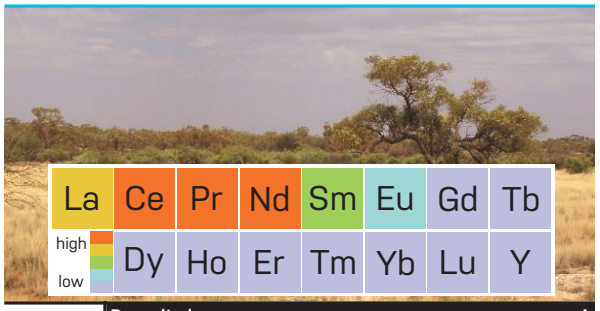
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus Nolans Bore - Australia



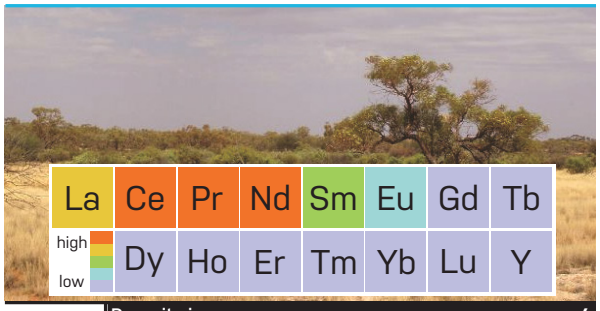
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus Nolans Bore - Australia



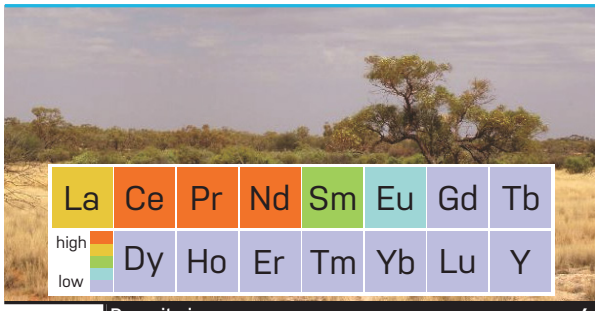
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

GeoBus Nolans Bore - Australia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	2

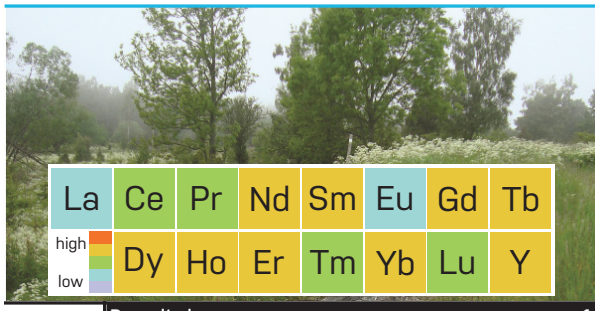
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Norra Kärr - Sweden



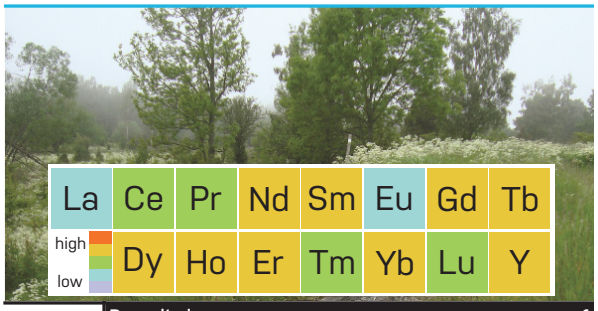
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	5
Radioactivity	1
Environmental score	3
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	7

GeoBus Norra Kärr - Sweden



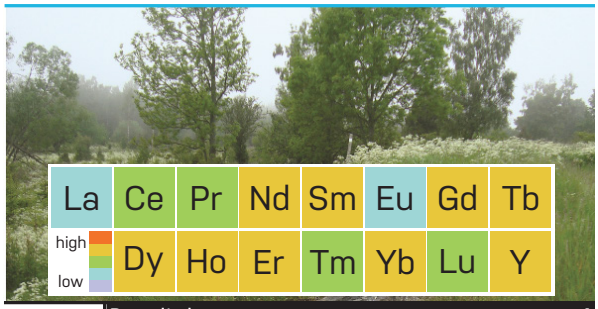
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	5
Radioactivity	1
Environmental score	3
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	7

GeoBus Norra Kärr - Sweden



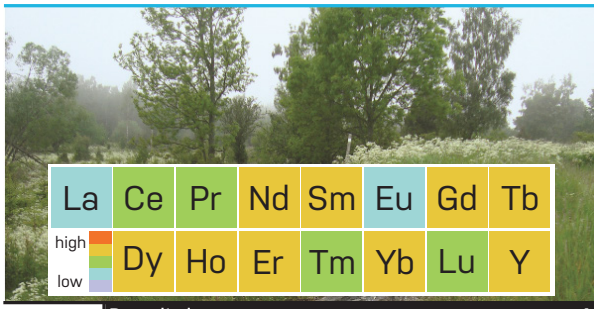
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	5
Radioactivity	1
Environmental score	3
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	7

GeoBus Norra Kärr - Sweden

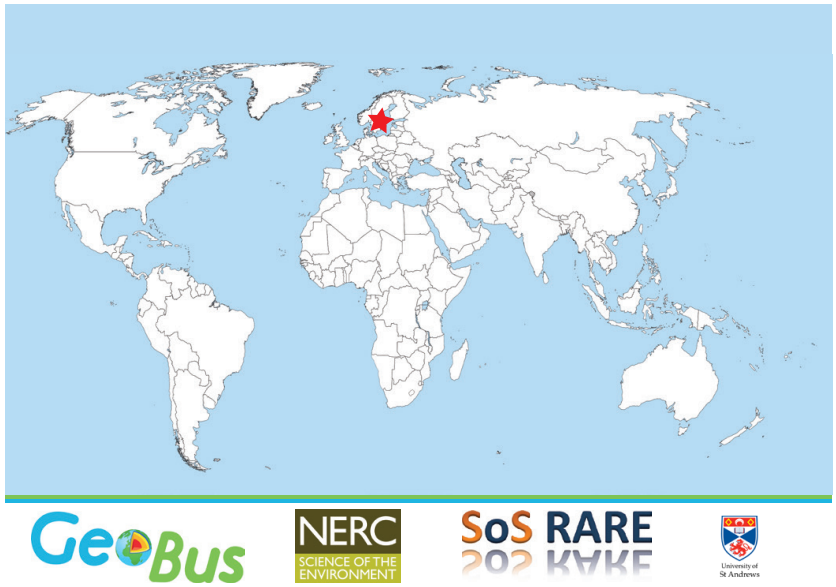


La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

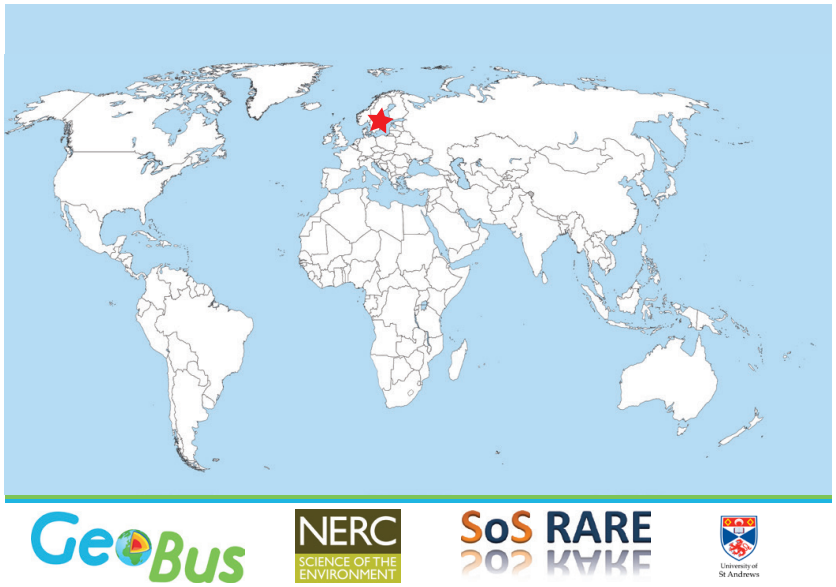
SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

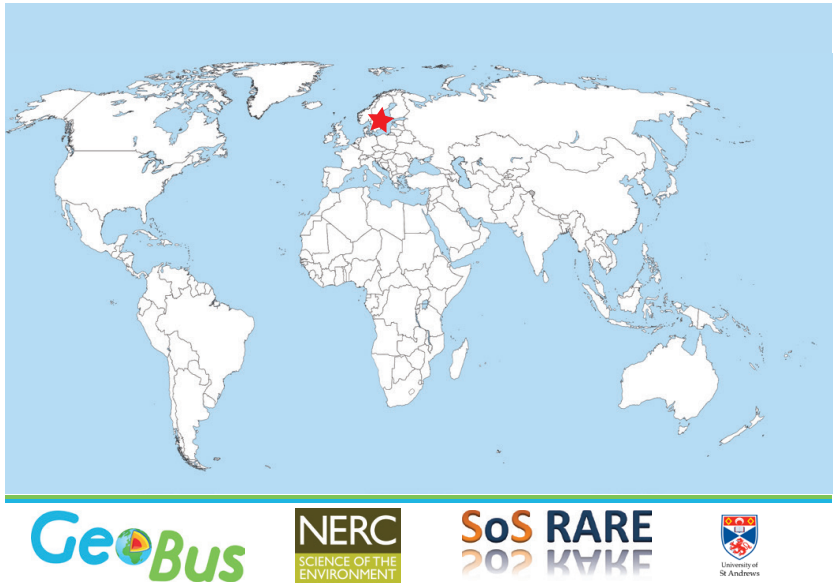
Deposit size	1
Accessibility	5
Radioactivity	1
Environmental score	3
Production stage	3
Political stability	5
Proportion of "rarest" rare earth elements	7



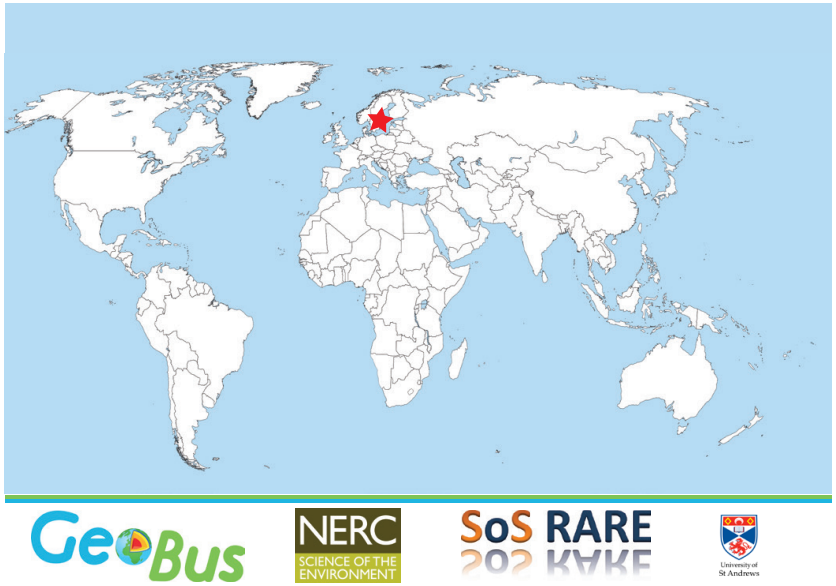
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



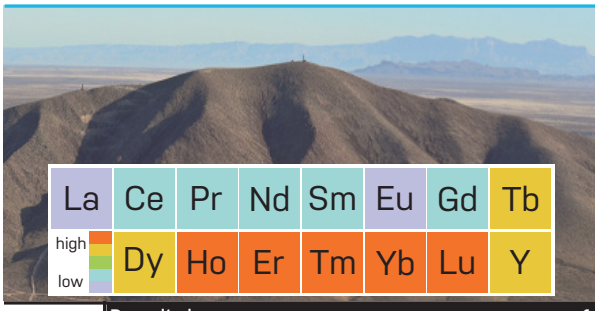
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus

Round Top - USA



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

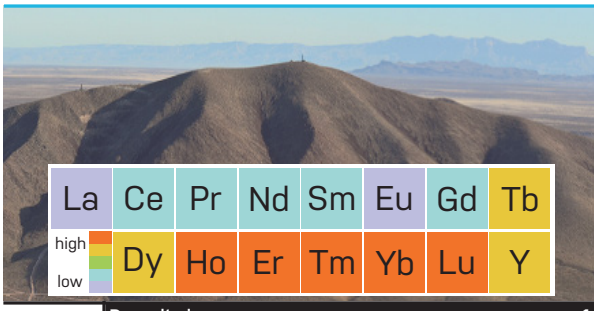
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	4
Radioactivity	5
Environmental score	6
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	9

GeoBus

Round Top - USA



La Ce Pr Nd Sm Eu Gd Tb
high / low Dy Ho Er Tm Yb Lu Y

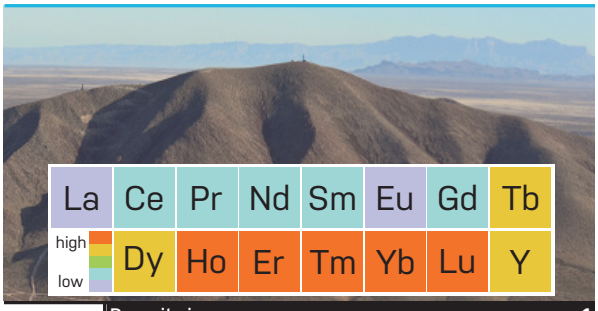
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size 1
Accessibility 4
Radioactivity 5
Environmental score 6
Production stage 2
Political stability 8
Proportion of "rarest" rare earth elements 9

GeoBus

Round Top - USA



La Ce Pr Nd Sm Eu Gd Tb
high / low Dy Ho Er Tm Yb Lu Y

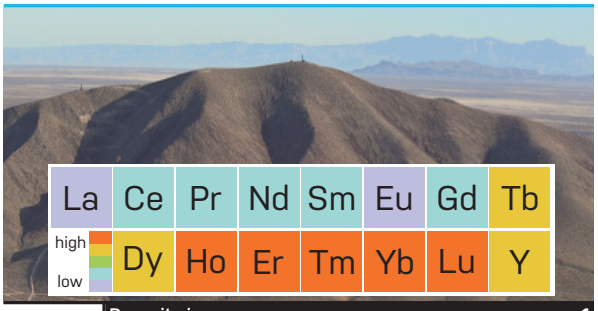
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size 1
Accessibility 4
Radioactivity 5
Environmental score 6
Production stage 2
Political stability 8
Proportion of "rarest" rare earth elements 9

GeoBus

Round Top - USA

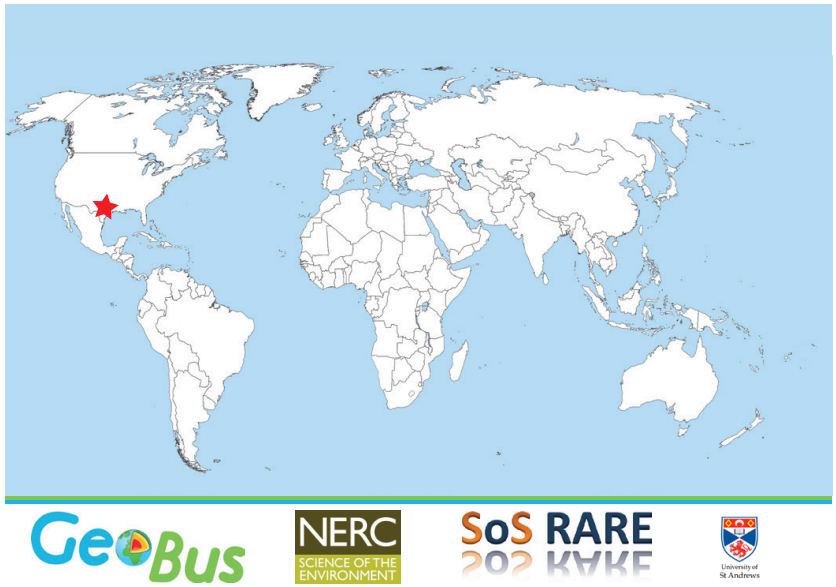


La Ce Pr Nd Sm Eu Gd Tb
high / low Dy Ho Er Tm Yb Lu Y

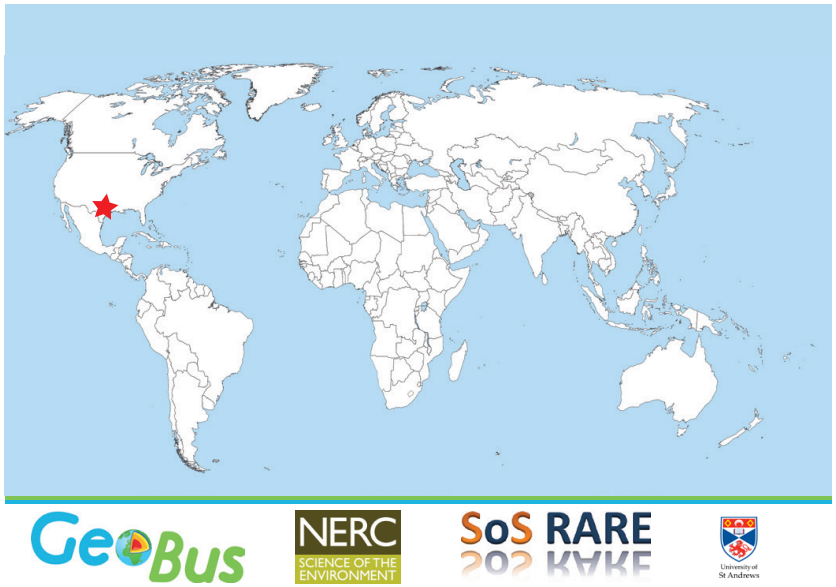
SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

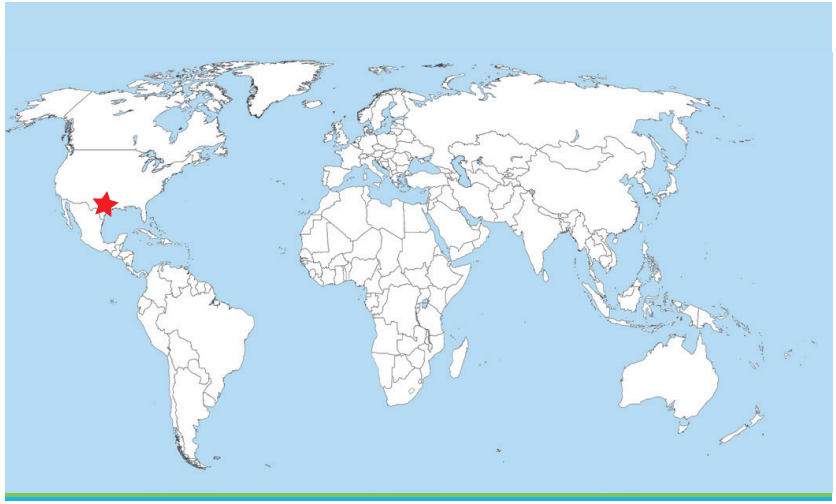
Deposit size 1
Accessibility 4
Radioactivity 5
Environmental score 6
Production stage 2
Political stability 8
Proportion of "rarest" rare earth elements 9



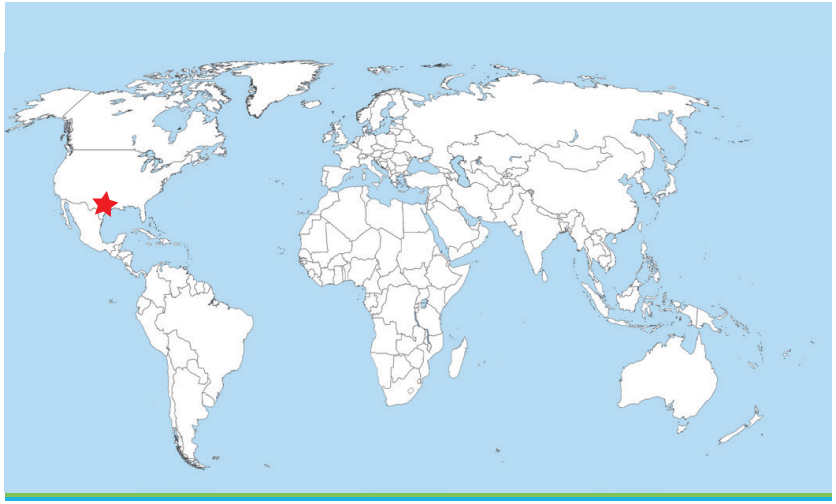
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

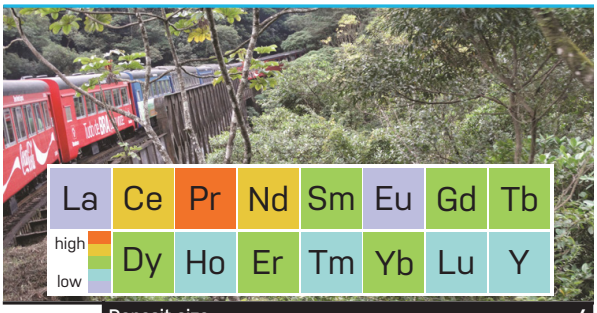


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Serra Verde - Brazil



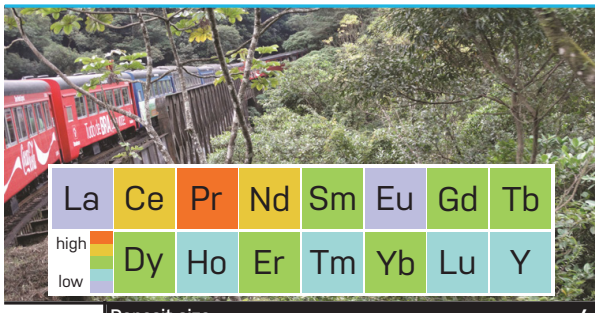
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

GeoBus Serra Verde - Brazil



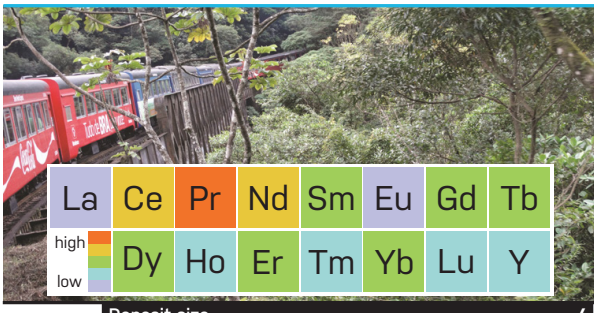
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

GeoBus Serra Verde - Brazil



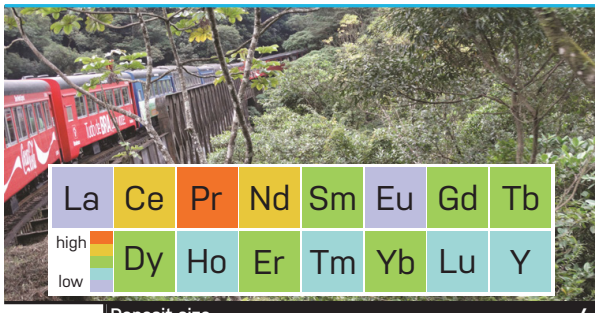
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

GeoBus Serra Verde - Brazil

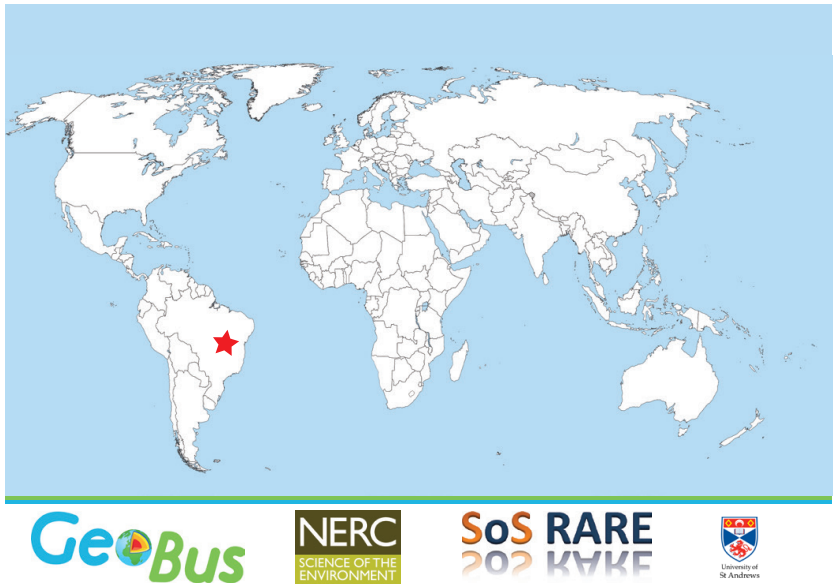


La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

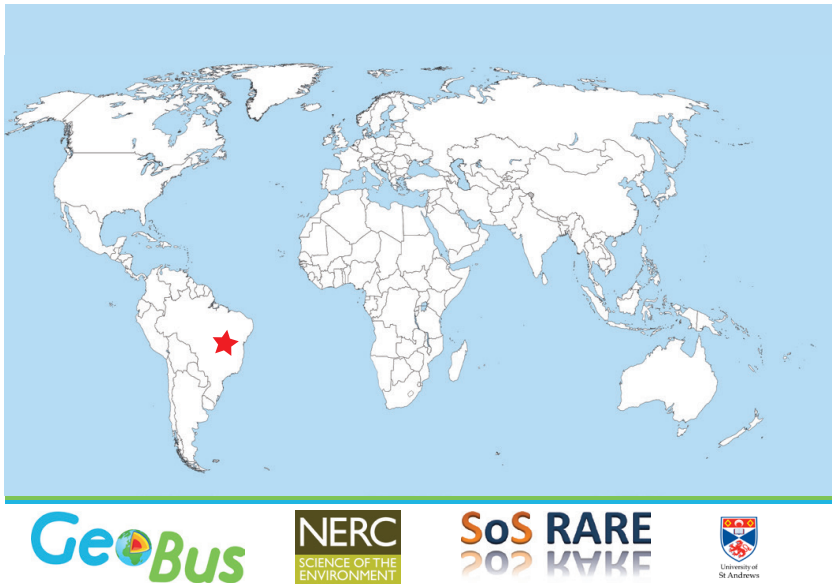
SoS RARE 2012 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	4
Accessibility	3
Radioactivity	1
Environmental score	4
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

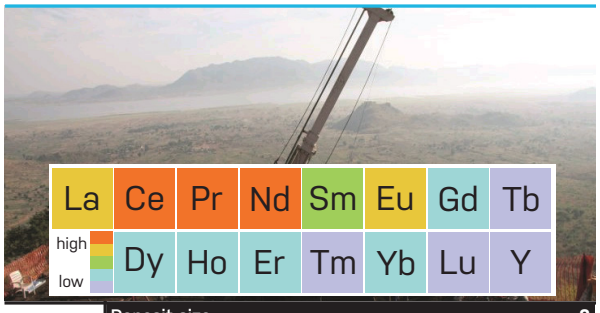


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Songwe Hill - Malawi

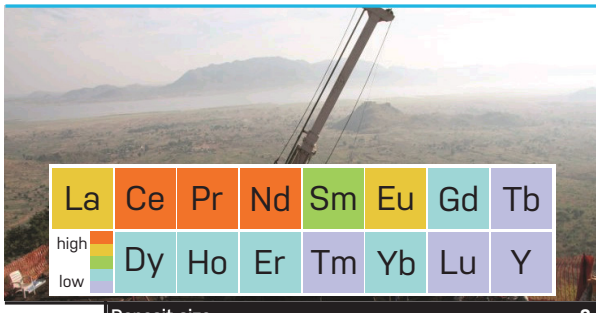


SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	4

GeoBus Songwe Hill - Malawi

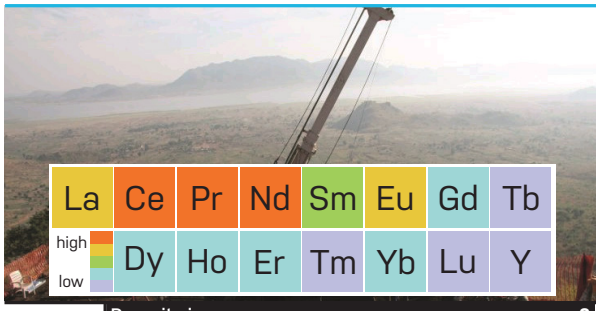


SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	4

GeoBus Songwe Hill - Malawi



SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	4

GeoBus Songwe Hill - Malawi

SoS RARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	3
Accessibility	3
Radioactivity	3
Environmental score	3
Production stage	3
Political stability	4
Proportion of "rarest" rare earth elements	4

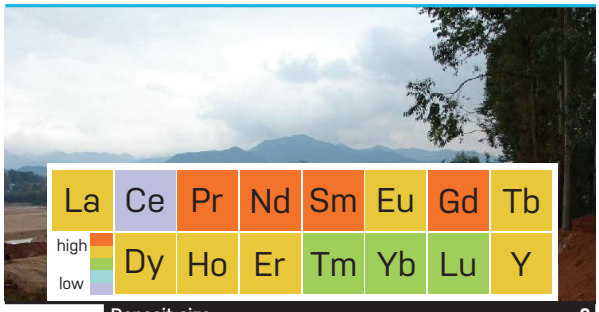
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus South China Clays - China

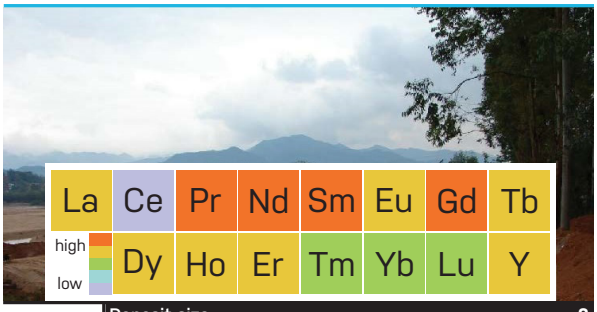


SoS RARE 2022

Deposit size	6
Accessibility	4
Radioactivity	1
Environmental score	1
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	8

NERC SCIENCE OF THE ENVIRONMENT

GeoBus South China Clays - China

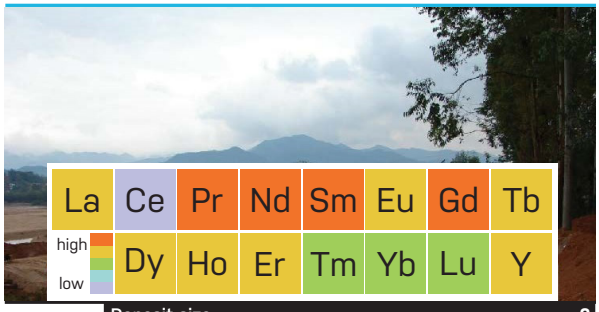


SoS RARE 2022

Deposit size	6
Accessibility	4
Radioactivity	1
Environmental score	1
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	8

NERC SCIENCE OF THE ENVIRONMENT

GeoBus South China Clays - China

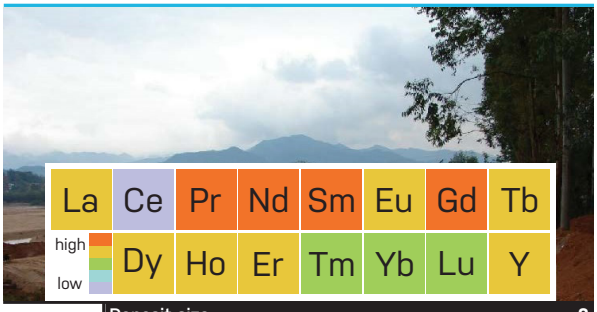


SoS RARE 2022

Deposit size	6
Accessibility	4
Radioactivity	1
Environmental score	1
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	8

NERC SCIENCE OF THE ENVIRONMENT

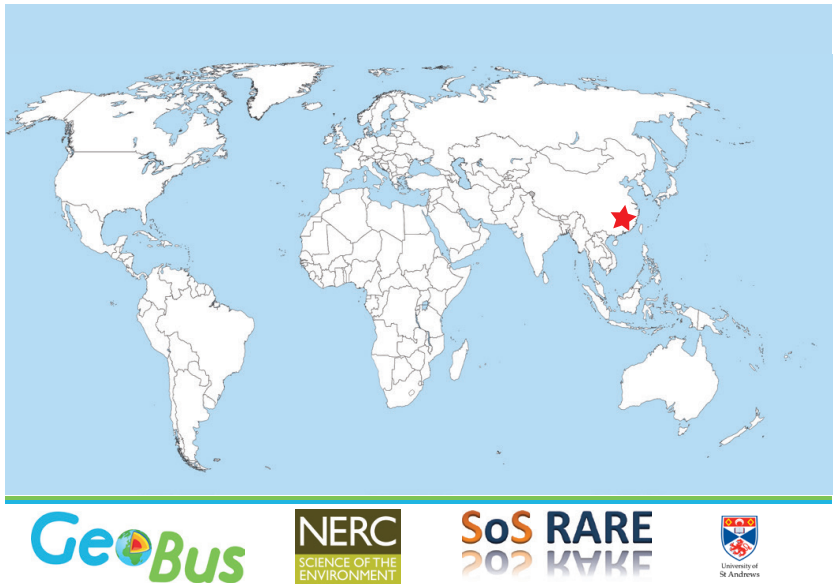
GeoBus South China Clays - China



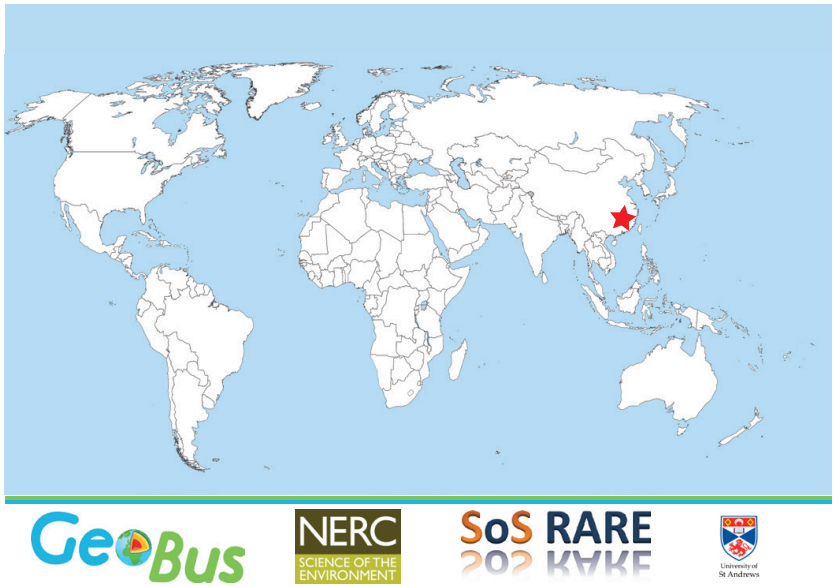
SoS RARE 2022

Deposit size	6
Accessibility	4
Radioactivity	1
Environmental score	1
Production stage	4
Political stability	4
Proportion of "rarest" rare earth elements	8

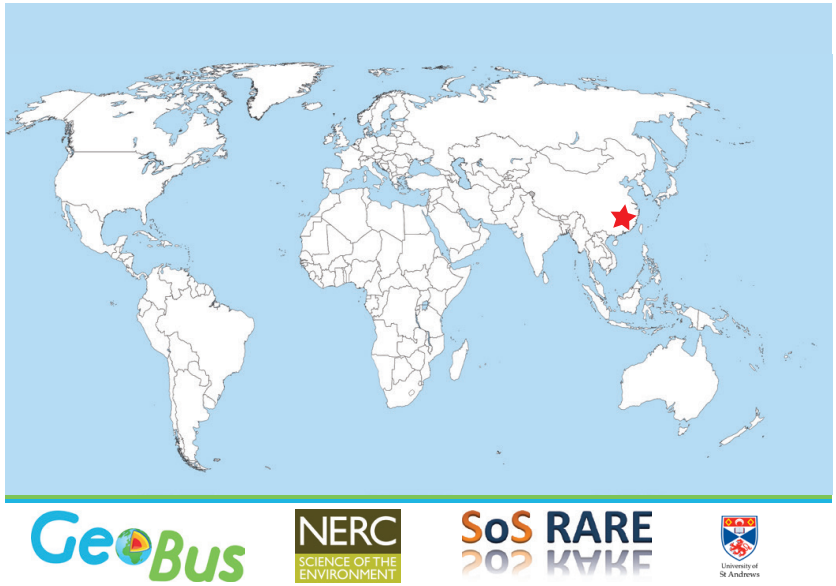
NERC SCIENCE OF THE ENVIRONMENT



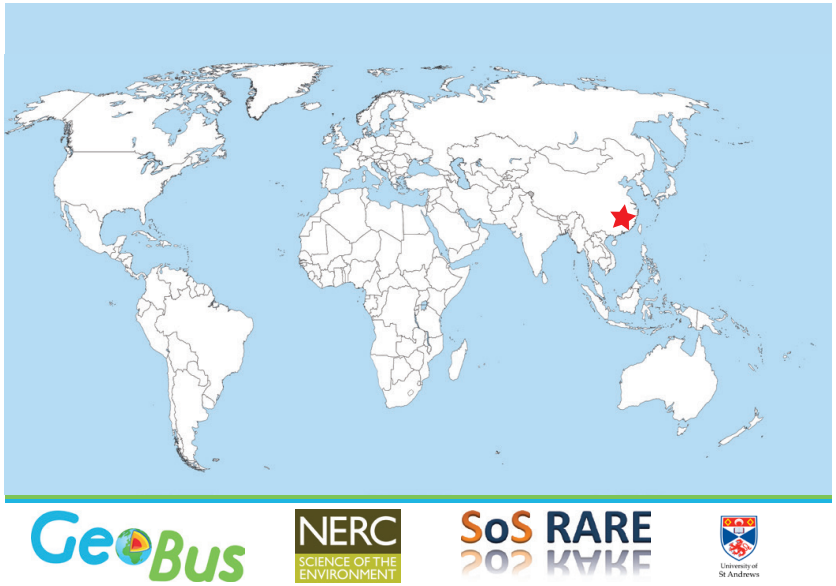
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

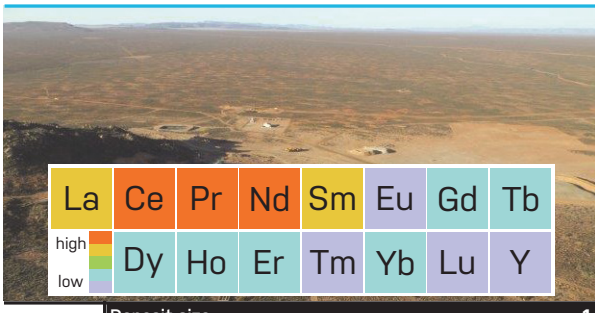


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Steenkampskraal - South Africa

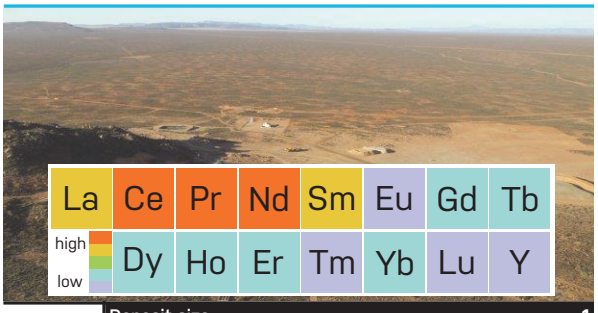


SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	4
Radioactivity	6
Environmental score	9
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3

GeoBus Steenkampskraal - South Africa

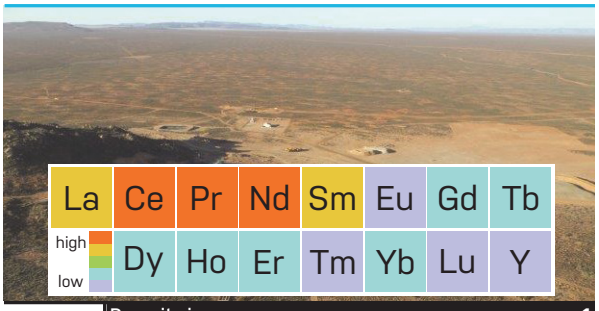


SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	4
Radioactivity	6
Environmental score	9
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3

GeoBus Steenkampskraal - South Africa



SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
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Radioactivity	6
Environmental score	9
Production stage	2
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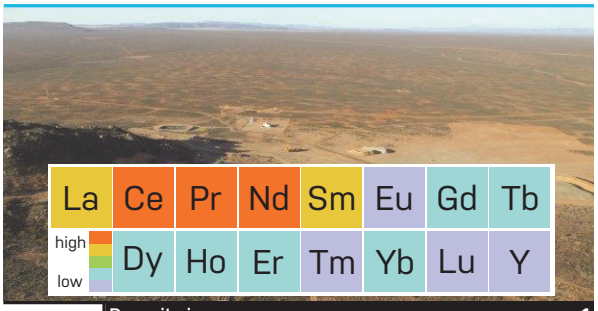
Proportion of "rarest" rare earth elements	3

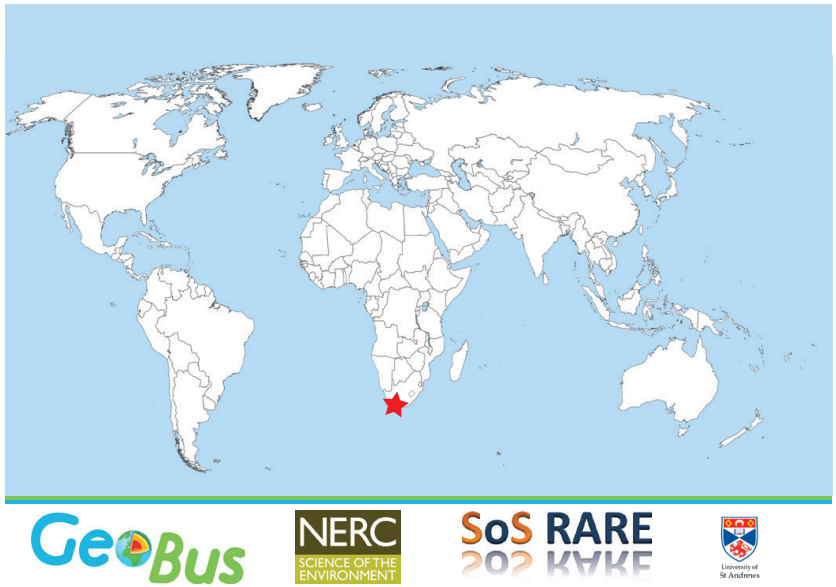
GeoBus Steenkampskraal - South Africa



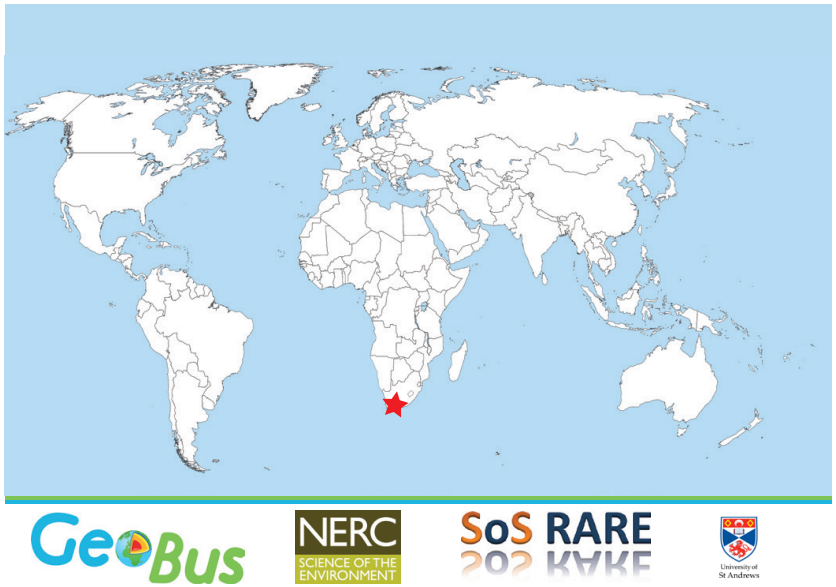
SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

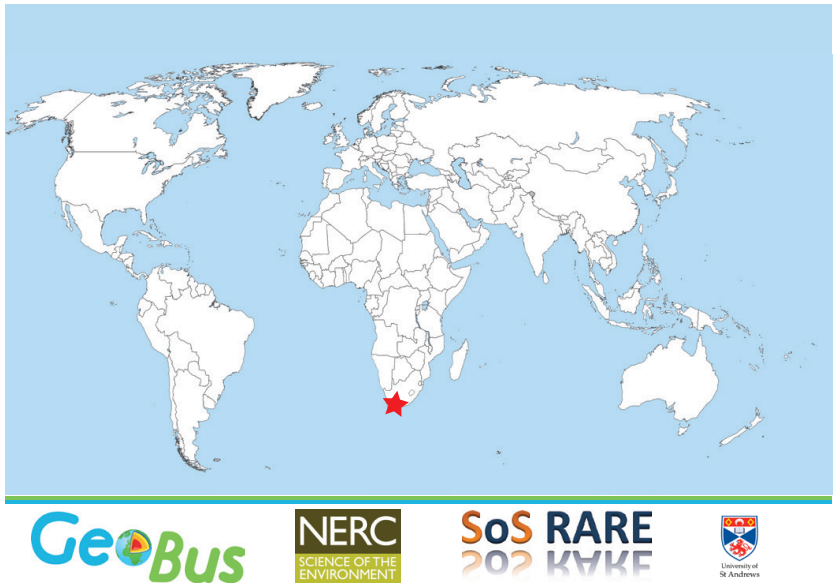
Deposit size	1
Accessibility	4
Radioactivity	6
Environmental score	9
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	3



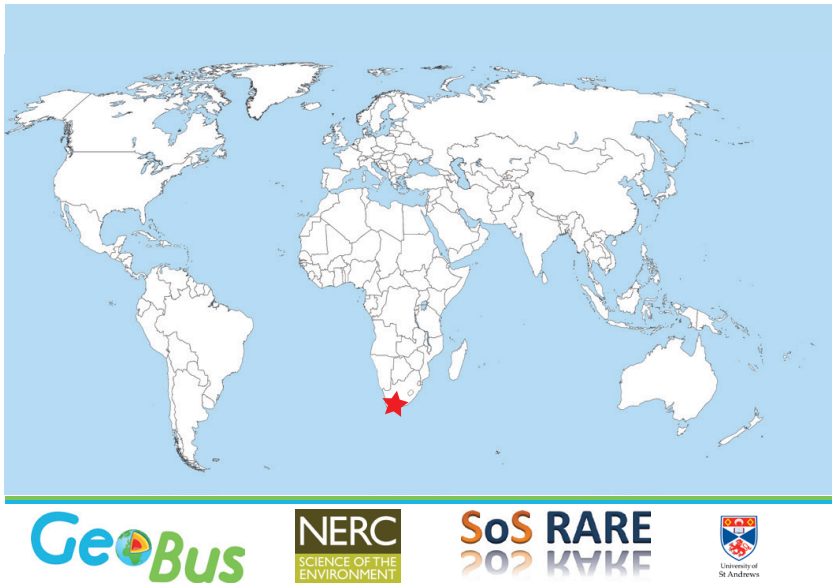
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

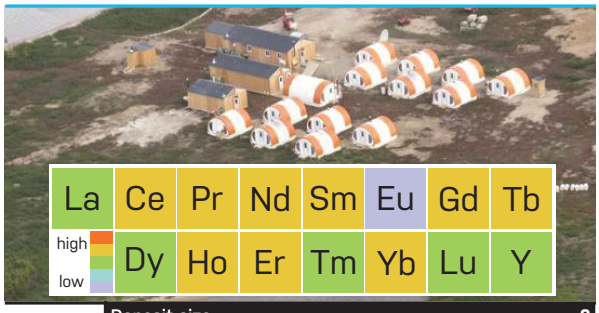


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Strange Lake - Canada



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	1
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	8
Proportion of "rarest" rare earth elements	6

GeoBus Strange Lake - Canada

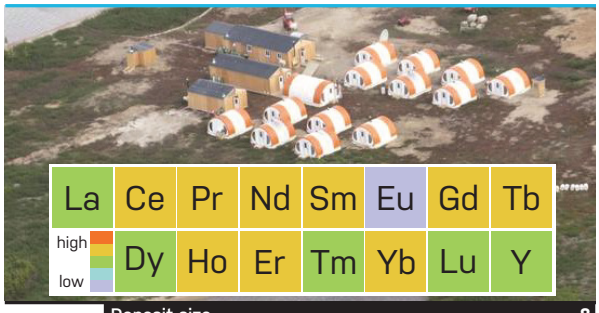
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	1
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	8
Proportion of "rarest" rare earth elements	6

GeoBus Strange Lake - Canada



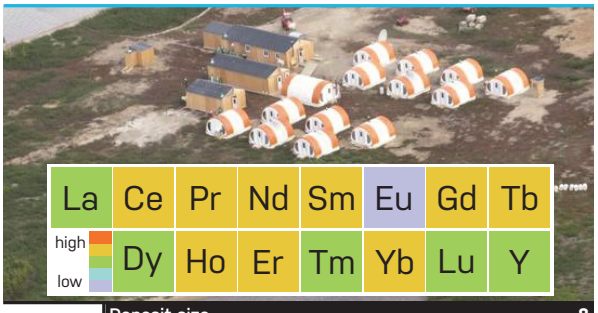
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	1
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	8
Proportion of "rarest" rare earth elements	6

GeoBus Strange Lake - Canada



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	8
Accessibility	1
Radioactivity	2
Environmental score	3
Production stage	1
Political stability	8
Proportion of "rarest" rare earth elements	6

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Tanbreez - Greenland

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	10
Accessibility	1
Radioactivity	1
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	6

GeoBus Tanbreez - Greenland

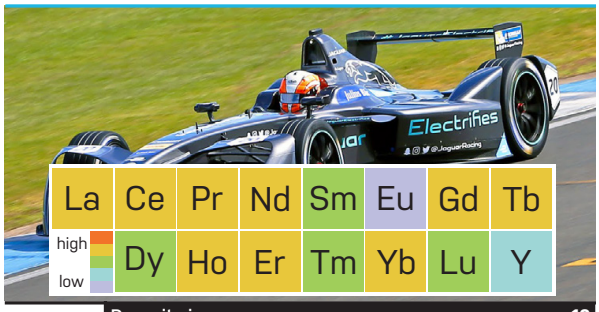
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	10
Accessibility	1
Radioactivity	1
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	6

GeoBus Tanbreez - Greenland



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	10
Accessibility	1
Radioactivity	1
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	6

GeoBus Tanbreez - Greenland

La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	10
Accessibility	1
Radioactivity	1
Environmental score	3
Production stage	1
Political stability	7
Proportion of "rarest" rare earth elements	6

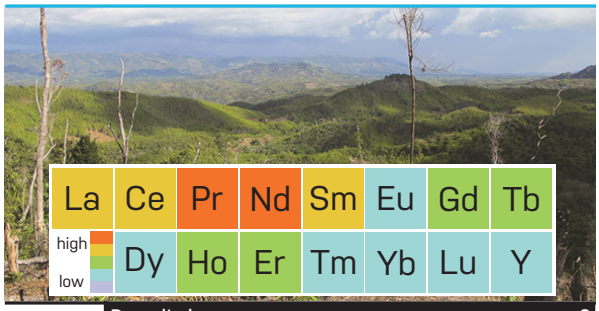
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Tantalus - Madagascar



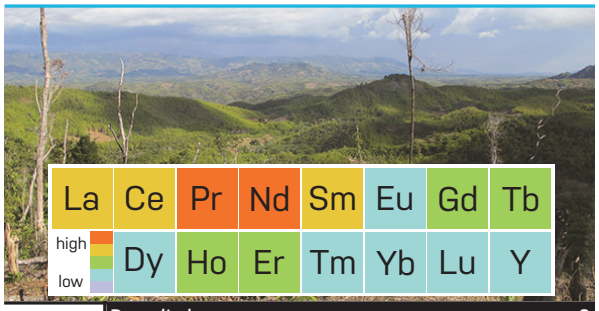
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	3
Accessibility	2
Radioactivity	1
Environmental score	2
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Tantalus - Madagascar



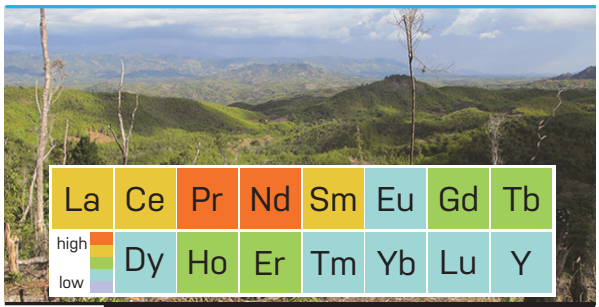
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	3
Accessibility	2
Radioactivity	1
Environmental score	2
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Tantalus - Madagascar



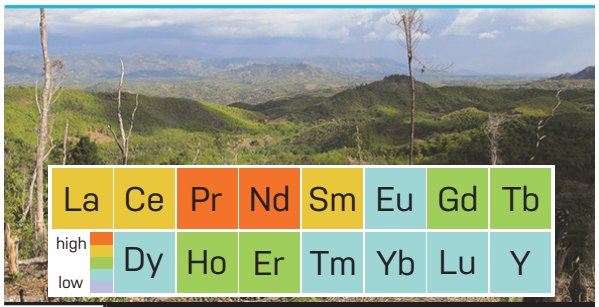
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	3
Accessibility	2
Radioactivity	1
Environmental score	2
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

GeoBus Tantalus - Madagascar



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

Deposit size	3
Accessibility	2
Radioactivity	1
Environmental score	2
Production stage	2
Political stability	4
Proportion of "rarest" rare earth elements	5

NERC SCIENCE OF THE ENVIRONMENT

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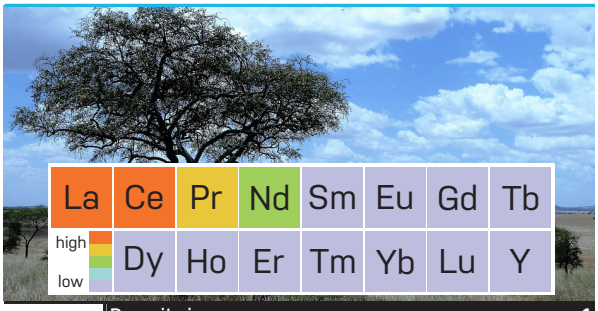
GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews

GeoBus Wigu Hill - Tanzania



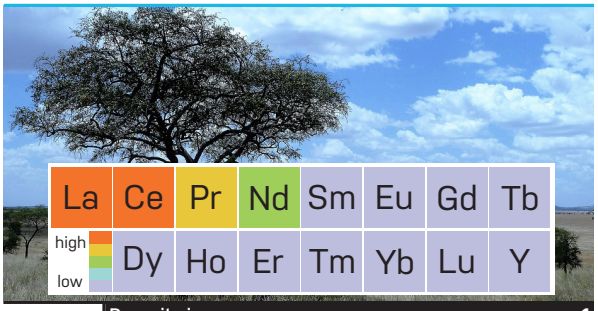
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Wigu Hill - Tanzania



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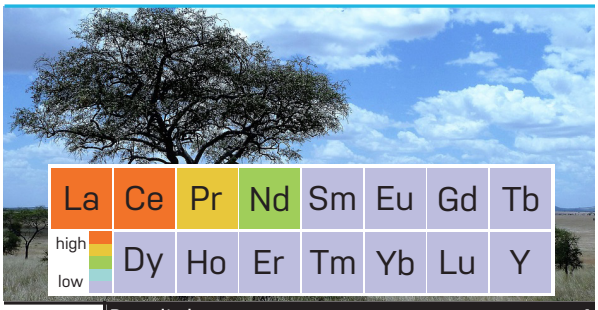
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Wigu Hill - Tanzania



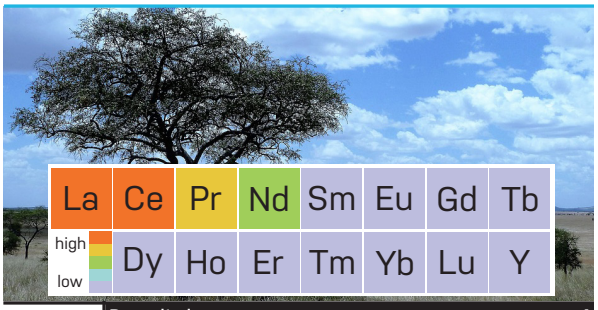
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	3
Environmental score	4
Production stage	1
Political stability	4
Proportion of "rarest" rare earth elements	2

GeoBus Wigu Hill - Tanzania



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SoS RARE 2012

NERC SCIENCE OF THE ENVIRONMENT

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Production stage	1
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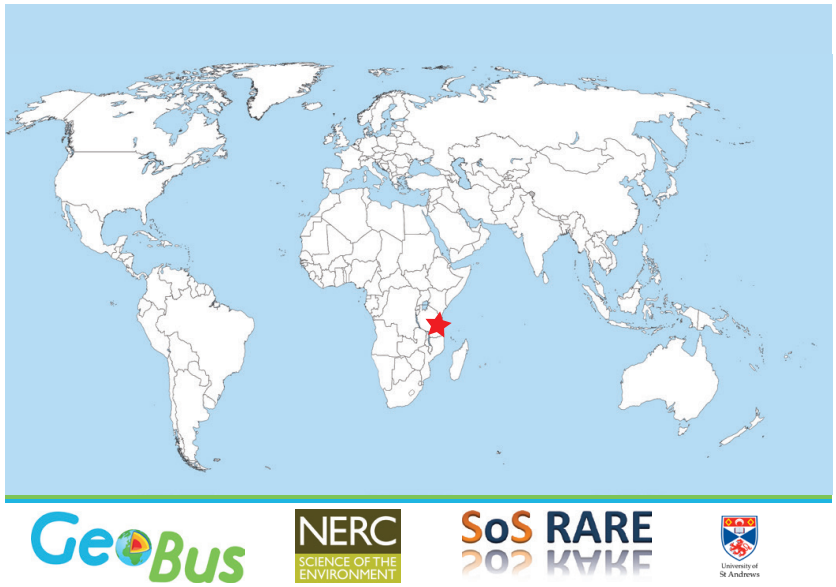

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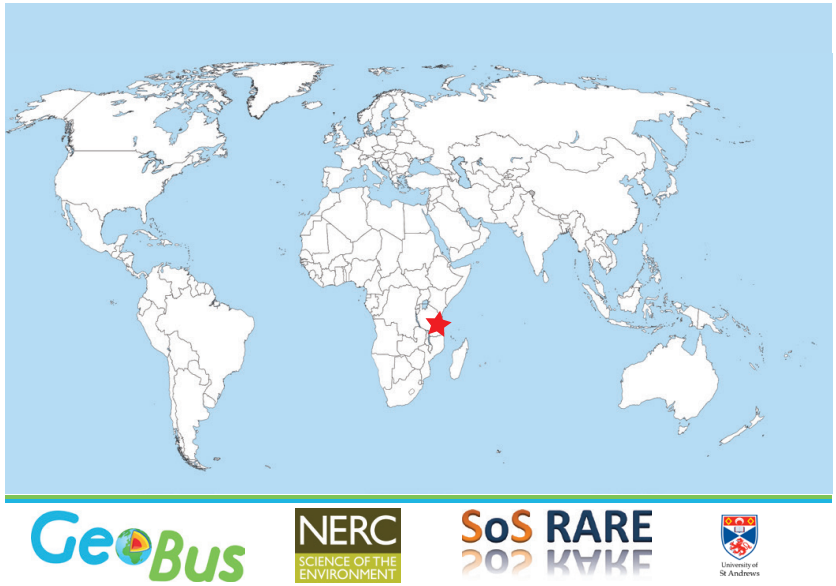
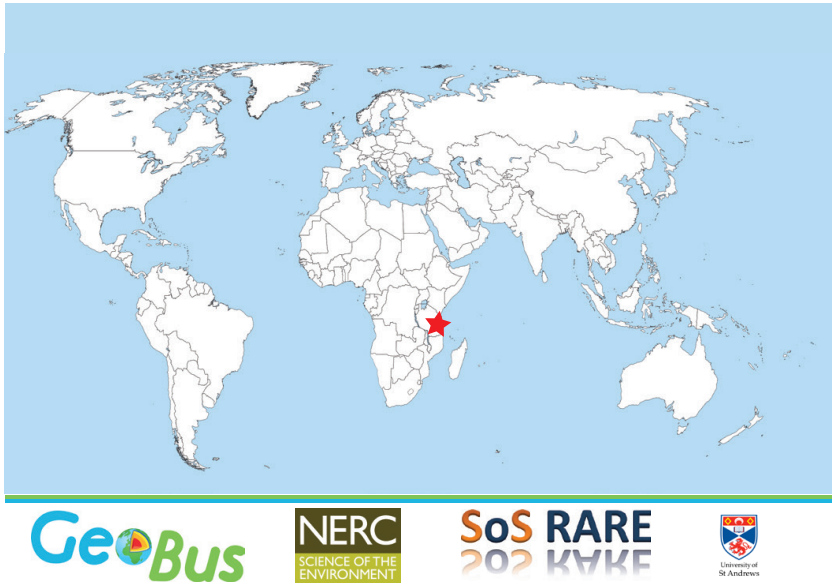


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



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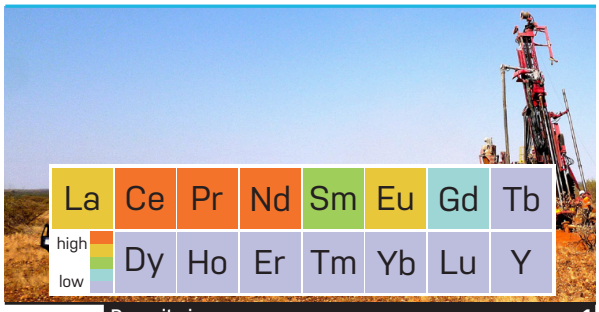
GeoBus Yangibana - Australia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	4
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	3

GeoBus Yangibana - Australia

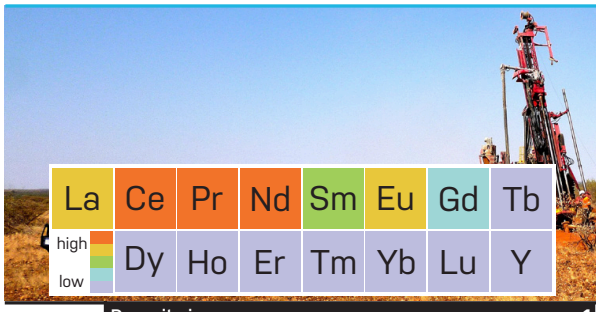
La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	4
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	3

GeoBus Yangibana - Australia



La	Ce	Pr	Nd	Sm	Eu	Gd	Tb
high / low	Dy	Ho	Er	Tm	Yb	Lu	Y

SoS RARE 2022 KAKE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	1
Accessibility	3
Radioactivity	4
Environmental score	3
Production stage	2
Political stability	8
Proportion of "rarest" rare earth elements	3

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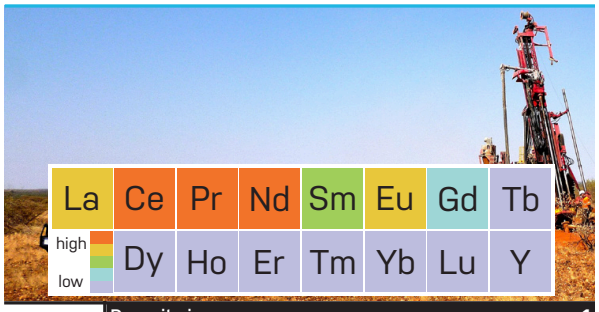

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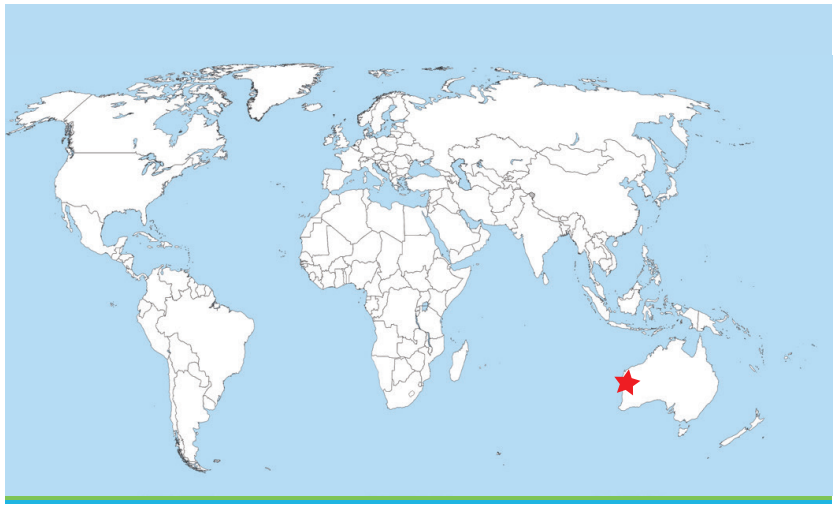

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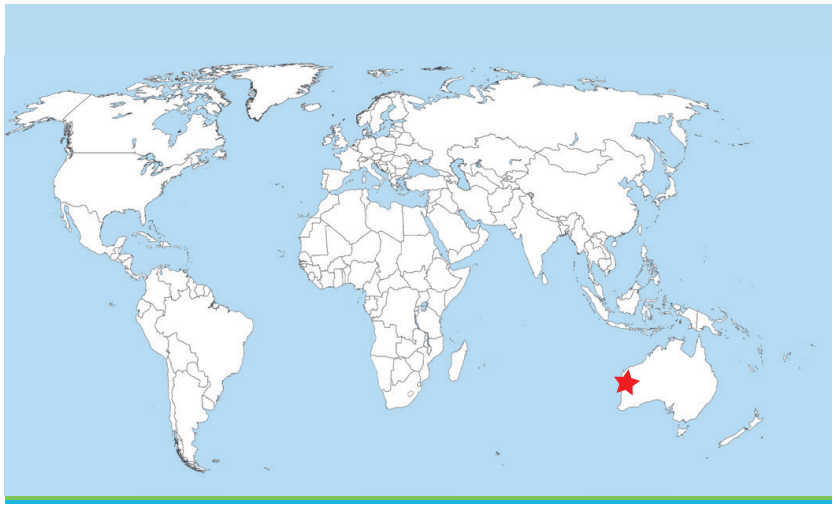

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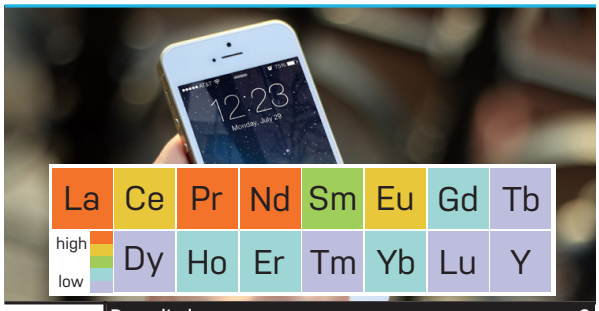
GeoBus Zandkopsdrift - South Africa



SoS RARE 2012 KARE

NERC SCIENCE OF THE ENVIRONMENT

Deposit size	2
Accessibility	4
Radioactivity	4
Environmental score	7
Production stage	2
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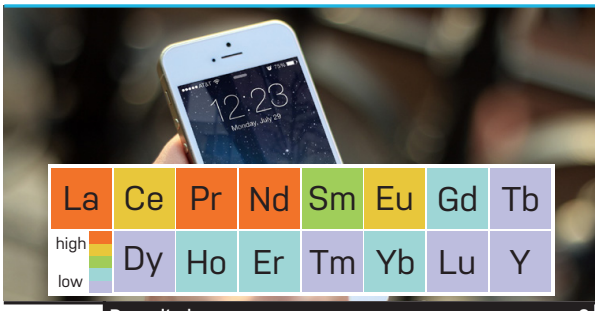

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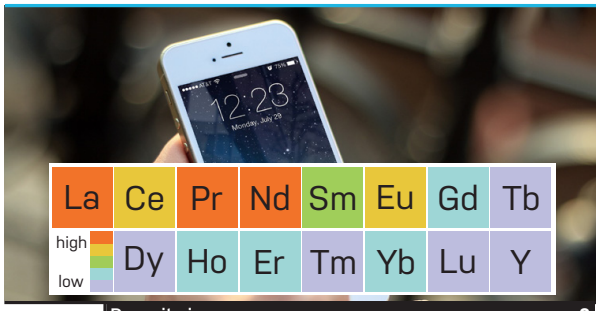

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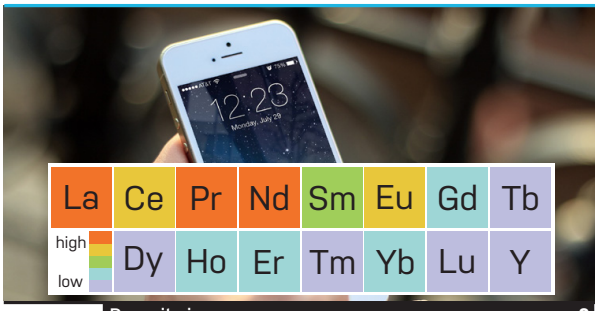

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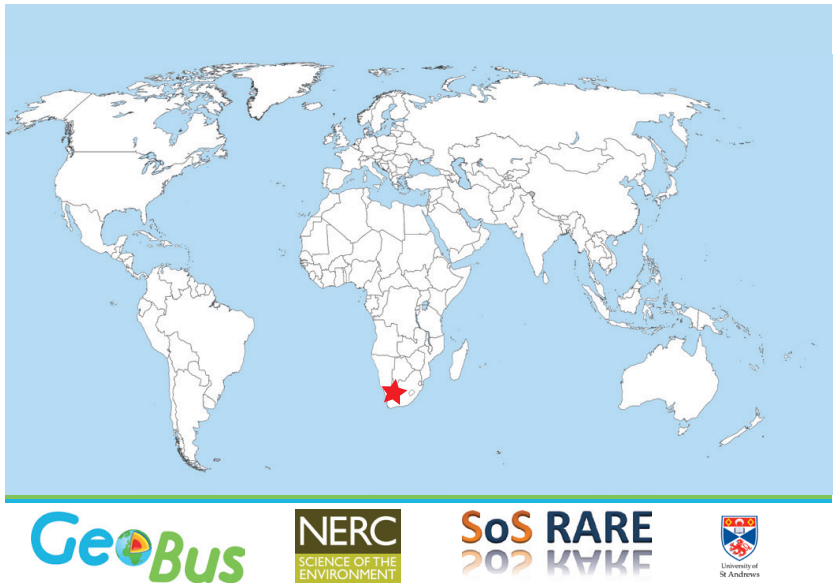
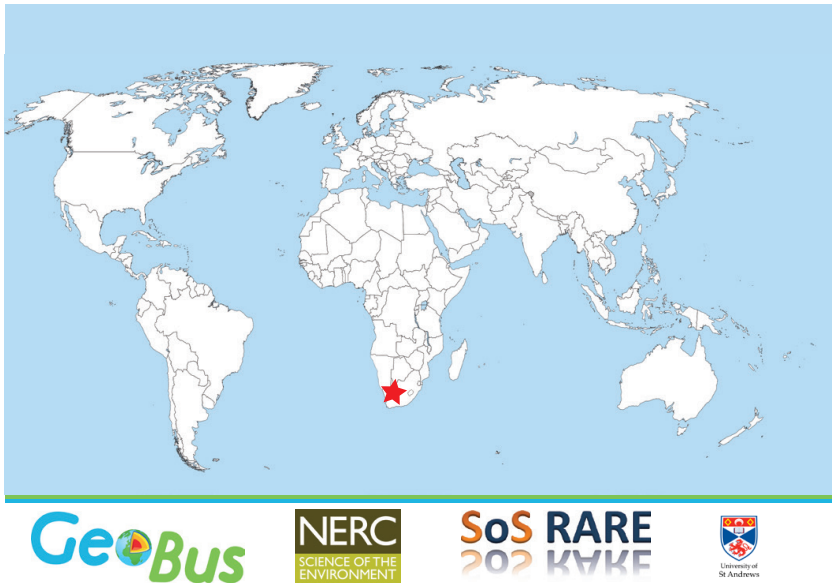


GeoBus NERC SCIENCE OF THE ENVIRONMENT SoS RARE University of St Andrews



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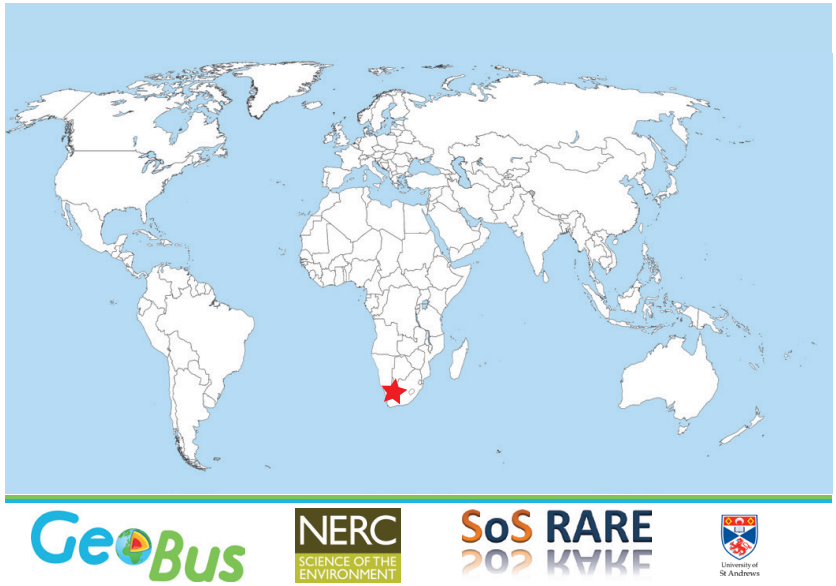

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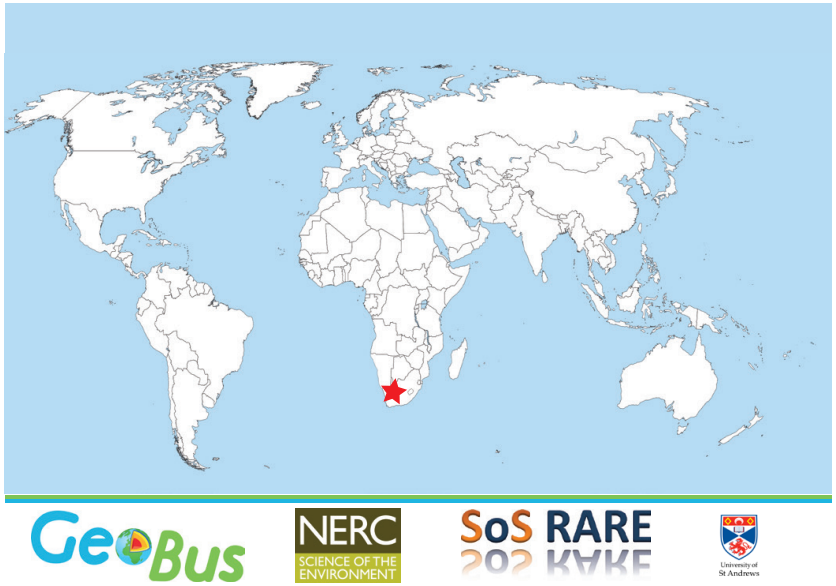

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