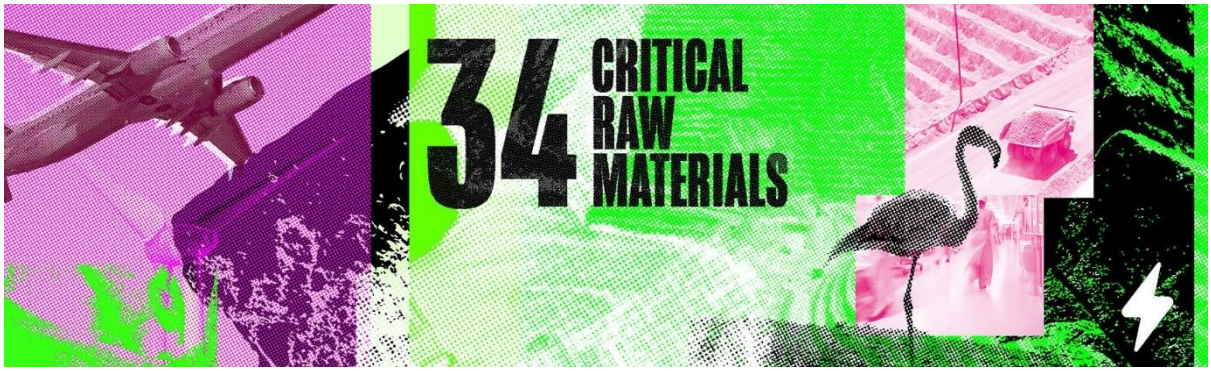
Museum of Natural History

University of Oxford | Gardens Libraries & Museums

Volunteer Role Description: '*Critical* 34' Exhibition Object Handling



About the Role

Aluminium, copper, lithium, titanium… We use raw materials extracted from the earth in our technology every day. Global demand for these materials is growing rapidly, and science and industry are urgently seeking ways to mine them more ethically, use them more efficiently, and recycle them more effectively.

But what are they? Why do we need them? Where do we get them? And how might we get them in the future? The Museum of Natural History's next exhibition, '**34: The critical raw materials shaping our future'**, seeks to address some of these questions for the 34 minerals that the UK government defines as vitally important but also problematic in some way.

'34' opens later this month, and we would like to recruit a small team of volunteers to offer object handling as an additional, alternative route into the exhibition, 1.30 - 3.30 pm on Saturdays. This will be a chance for visitors to get hands-on with objects and engage in conversations about some topics relevant to the exhibition, while also addressing more basic points like 'What is a mineral?'.

And don't worry: although there are some hard-hitting themes in the exhibition, we don't want it to be all doom and gloom. With a selection of museum specimens, objects relating to the steel industry, and specially-commissioned pieces by artist, Katie Surridge, we hope the activity will encourage people to think in different ways about minerals, makers, and manufacture - whether the materials and techniques being discussed have been used for centuries or are only now becoming more widespread thanks to modern technology.

Timing

We aim to offer free, drop-in, volunteer-led sessions **1.30 - 3.30 pm on Saturdays between late-July 2026 and mid-April 2027**, when the exhibition closes.

Depending on the size of the team and people's availability, we anticipate volunteers helping in pairs once every few weeks. There may also be opportunities to help at extra,

one-off events, which will be advertised as and when. For all sessions, volunteers will need to allow some additional time before and after to set up and pack away.

Who are we looking for?

Although the themes of both the exhibition and the object handling opportunity will best suit adults and older children, this role is about having interesting and balanced conversations with all sorts of visitors: using questions and different senses to help them learn more and/or share knowledge they already have. We are looking for volunteers who want visitors to have the best possible experience at the Museum, whilst also demonstrating a sense of responsibility for the objects they are using. Our ideal volunteers would therefore be:

- **welcoming, engaging, and keen to practise (science) communication skills with a variety of people**, from young children to knowledgeable adults, and tourists to regular visitors, in a busy (potentially noisy) museum setting
- **enthusiasts more than experts;** they may or may not have thought about it much before, but everyone can relate to some aspect of this exhibition, and we hope that volunteers will enjoy learning something new and sharing their knowledge with others in an interactive, accessible, and considered way
- **confident managing small groups** of people around a table, as well as happy sitting at the table and soaking up the atmosphere during any quieter moments
- **flexible and considerate;** we anticipate pairs of volunteers working together to deliver each session, sometimes using the same objects to have simultaneous conversations with different visitors, sometimes taking turns… always supporting each other to ensure that everyone is involved
- **polite and helpful;** public-facing volunteers are often asked a variety of unrelated questions, which they may or may not know the answers to – but remember, Visitor Experience staff are always nearby as back-up!

Why volunteers might enjoy this role

It's an opportunity to:

- connect with the Museum and meet other volunteers
- have interesting conversations with the general public
- share or discover an interest in our mineral collections
- develop and/or raise awareness of topics around mineral use
- develop and practise (science) communication skills
- gain experience of learning through objects
- potentially contribute to the Museum's social media – if you would like to share something about your volunteering

Training

Volunteers need to attend a training session at the Museum of Natural History: **1 - 4 pm on Saturday 11th July**. The session will include an introduction to the exhibition and

information about the different themes and handling objects. It will also include techniques for engaging visitors with the objects. Volunteers will receive all of the information they need to get started but will be encouraged to further explore the exhibition in their own time. They will also be offered a practice session with a member of staff following the training and will then join the team by mutual agreement with staff.

Other information

- The team will be coordinated by Camille Britton from the Public Engagement Team, but front-of-house Visitor Experience staff will provide practical support on the day.
- This activity will happen in the Museum's Main Court, which has step-free access via a lift, and volunteers may choose to sit or stand. Because of the glass roof, the Court does get hot when the temperature outside is hot. Volunteers are encouraged to bring a bottle of water with them, or they can ask Visitor Experience staff for a drink.
- This role is open to volunteers aged 18+.
- Volunteers can claim travel expenses up to £5 per volunteering session.
- Volunteers new to onsite GLAM volunteering will need to be registered on the Volunteer Service mailing list (MyImpactPage.com), and the Volunteer Service will need to have received two references and done an ID check before volunteers can start in this role. The role does not require any additional checks.

Next Steps

If you would like to get involved, then please **email Caroline: volunteering@glam.ox.ac.uk by the end of the day on Sunday 21st June. In your email, please indicate**:

- your availability to attend training on Saturday 11th July
- your availability to help between late-July 2026 and mid-April 2027 (whether it's e.g., during the summer/holidays, university term-time only, throughout most of the period, etc.)

Please also see information below (taken from the exhibition's introductory webpage) and send us a short (up to 90 seconds) video or voice note, explaining what about the exhibition interests you / catches your attention and why you would like to engage visitors with it.

The recording can be very basic – no fancy effects required! – but if you are unable or unsure about how to do this, then please get in touch with Caroline, and she can support you to record something.

Caroline will share recordings with Camille, and someone will be in touch as soon as possible afterwards to confirm who is being offered a space on the team.

Any information you provide will be kept in accordance with our Data Retention Schedule.

34: The critical raw materials shaping our future

We use raw materials extracted from the earth in almost all of our technology, from smartphones to jet engines. These technologies, and the materials that make them, are critical to our ability to survive and thrive as societies. Global demand for these materials is growing rapidly as a result of our transition to green energy and increased reliance on digital technologies. Science and industry are urgently seeking more ethical and sustainable ways to mine vital raw materials, use them more efficiently, and recycle them effectively.

We hear about critical raw materials almost every day in our news feeds, but how do they actually fit into our lives? What are they? Why do we need them? Where do we get them from? And how will we get them in the future?

The Oxford University Museum of Natural History is currently developing an exhibition in collaboration with researchers across Oxford University from the Oxford EARTH Programme and the physical, life, and social science departments. The exhibition will explore these issues and potential solutions to our need for critical raw materials.

What are critical raw materials?

Critical raw materials are those essential to key technologies but their supply may be limited, unsustainable or unethical. Critical raw materials tend to have unique chemical properties which make them difficult to replace in technology. Governments responsible for ensuring their populations have access to the resources they need designate a raw material as 'critical' when there is a risk that they won't have enough. This is often because of political, environmental, or ethical concerns around the materials' extraction. Or, because we don't yet have the technology to locate them, extract them from the ground, or recover them through recycling. The UK government includes 34 raw materials on its designated critical list, but lists vary from country to country.

- aluminium
- antimony
- bismuth
- borates
- cobalt
- gallium
- germanium
- hafnium
- helium
- indium
- iridium
- iron
- lithium
- magnesite
- magnesium
- manganese

- natural graphite
- nickel
- niobium
- phosphorus
- platinum
- rare earth elements (REEs)
- rhenium
- rhodium
- ruthenium
- silicon
- sodium
- tantalum
- tellurium
- tin
- titanium
- tungsten
- vanadium
- zinc

Ilmenite, titanium ore
Titanium makes aeroplanes light and strong.

Lepidolite, lithium ore
Lithium makes batteries last longer.

Bastnäsite, rare earth elements (REEs) ore
Rare earth elements like dysprosium help wind turbines generate electricity more effectively.

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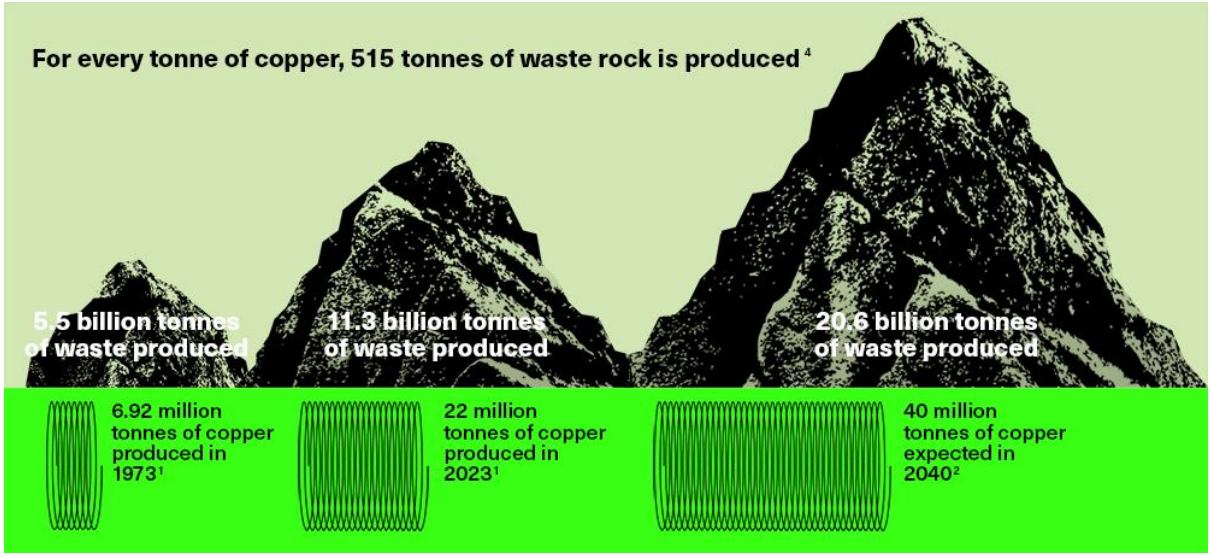
Demand for critical raw materials is growing rapidly

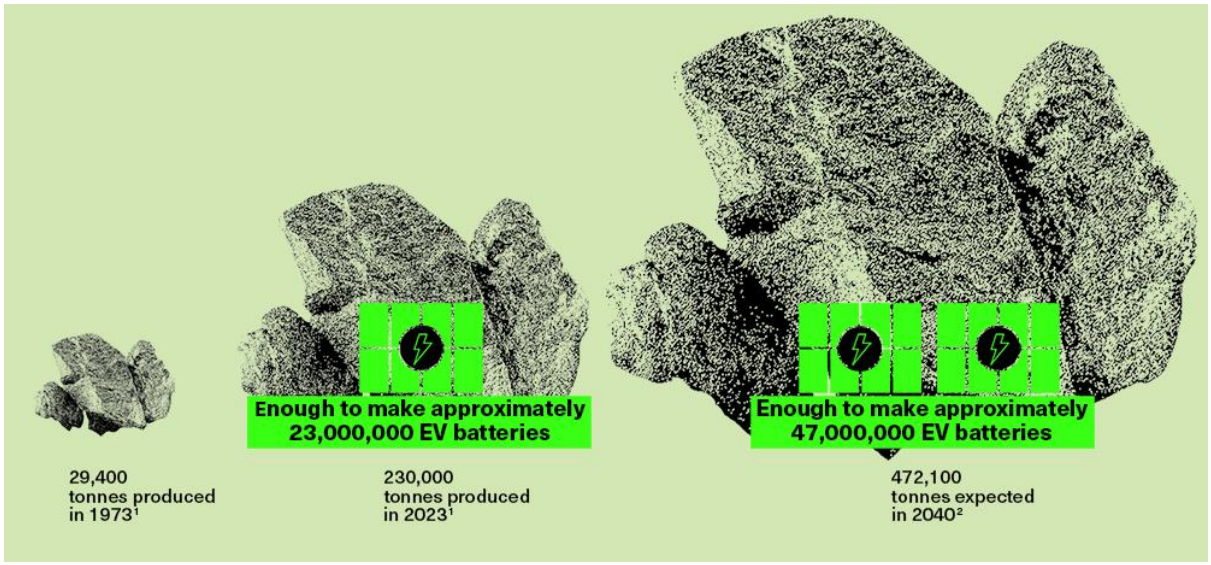
Copper

We need more copper each year to wire our technology and update our electrical grids. Our demand for copper is increasing much faster than it can be mined.



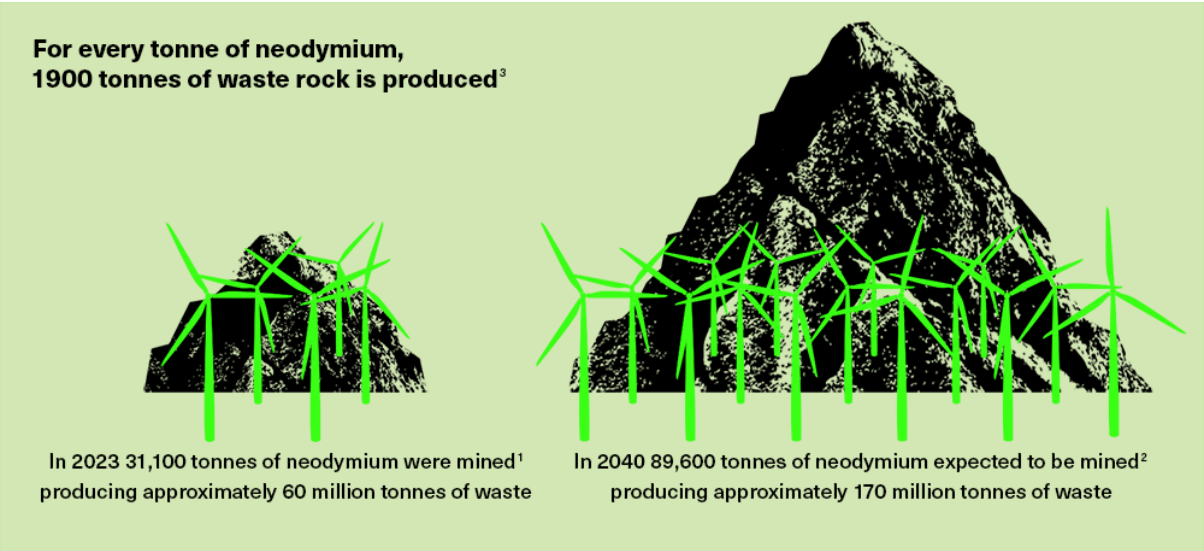
Cobalt

Cobalt, found in rechargeable batteries, is critical because two thirds of the global supply comes from the Democratic Republic of Congo, where labour practices can be exploitative and unsafe.



Neodymium

Neodymium makes wind turbines more efficient in generating power. The ore contains tiny amounts of the metal, so you need to mine a lot to get a little.



Where do we get critical raw materials?

Top global producers of the 34 critical raw materials:

- Algeria
- Argentina
- Australia
- Brazil
- Canada
- Chile
- China
- Democratic Republic of the Congo
- France
- Gabon
- Germany
- India
- Indonesia
- Israel
- Kazakhstan
- Mexico
- Morocco
- Myanmar
- Nigeria
- Norway
- Peru
- Philippines
- Poland
- Qatar
- Russia
- Rwanda

- South Africa
- South Korea
- Tajikistan
- Turkey
- United States
- Vietnam
- Zimbabwe

Most critical raw materials are extracted through mining, but they can also be recovered by recycling, or processing mine waste. Mining practices are often damaging to local communities and ecosystems. In order to protect people and environments, Oxford researchers are seeking to improve the ways that we source and process the materials we need. To reduce our dependency on critical raw materials, we need to design products more efficiently and expand second life uses, all while increasing our recycling capacity and reducing demand.

Researcher working in partnership with Oxford EARTH collecting samples of geothermal gases, a potential low land footprint source of critical raw materials.

Visual identity by David Sudlow Design, infographics by Oxford University Museum of Natural History