

SECURING OUR FUTURE

Mike Daly, The Society's new President, reflects on history and sets out some questions as the Society looks to the future...



The Earth sciences have never been more relevant or more integrated with other science disciplines than they are today. Much of the most exciting and relevant research and industrial work that Earth scientists do comes under large, integrated themes: securing the new resources required for the energy transition; monitoring and protecting people from geohazards; mitigating the impacts of environmental change and managing the storage of radioactive and carbon waste; and the comparative tectonics of Earth and planetary evolution.

These themes and others are rooted in Earth science, yet reach beyond the traditional disciplines of geology and raise several questions that the Geological Society needs to consider for its future. For instance, how should we contribute to the changing themes of Earth sciences? How can we support the Society's Specialist Groups to both develop our core disciplines, and help them visibly contribute into those bigger themes? How can the Society (and our science) reflect the diversity of the community we serve, and how might we achieve a more agile and externally facing mindset?

A look back

"..... the story of the development of the surface of the earth should interest everyone...for the simple reason that we walk about on that surface, grow our food in it, get the raw materials of industry from under it and, in these days of so-called progress, dig a nice safe shelter deep below it." So wrote H. H. Read in his 1944 review of Arthur Holmes' book *The Principles of Physical Geology*.

As President-designate learning about the Society's history I couldn't help reflect how much and how little has changed since Read's entertaining book review. I thought I'd share some of the perspectives I've gained, and pose some questions I have about the future – a future where a past dominated by the exploration and exploitation of our planet is being replaced by a focus on its stewardship and sustainability.

1807-2020

Formed in 1807, the Geological Society's history may be considered in four parts (Chart 1). During the first half of the nineteenth century, geology was characterised by the move to synthesise observation and specimen collection in terms of principles and process. Members of global reputation such as Lyell, Darwin, Murchison and Sedgwick were the Society's leaders, and their output laid much of the foundation of geology as we recognise it today. Not least, in 1849, the realisation of the impact of ice on Britain's landscape, and the profound environmental change that implied.

Those heady days were followed by a more UK-focused outlook, epitomised by Geikie and Lapworth and the mapping of Peach and Horne. Through the turn of the century they laid the basis for much of our understanding of the geology of the British Isles and stratigraphy globally.

Plate tectonics, age dating and a new UK industry

In contrast, during the first half of the twentieth century, against a backdrop of two world wars and the Great Depression, the Society struggled to make a mark. In 1914 the UK Government bought a controlling stake in the Anglo Persian Oil Company. The Society, having played a big role in the exploitation of coal resources, didn't contribute significantly in those early days of the oil industry. We also missed the radiometric dating of rocks and the quest for an absolute timescale. Arthur Holmes, a pioneer of both, published 31 papers between 1911-1962, none in the Society's journal. Similarly, the Society was relatively silent on the growing evidence and debate around continental drift.

After World War II things changed again and the latter part of the Society's history began. Holmes was awarded the Wollaston medal and in 1964 a meeting in his honour delivered the seminal book *The Phanerozoic Time Scale*. In 1963 a lecture by Teddy Bullard awakened the Society to the new geophysical evidence for continental drift. In 1967 Dan ►

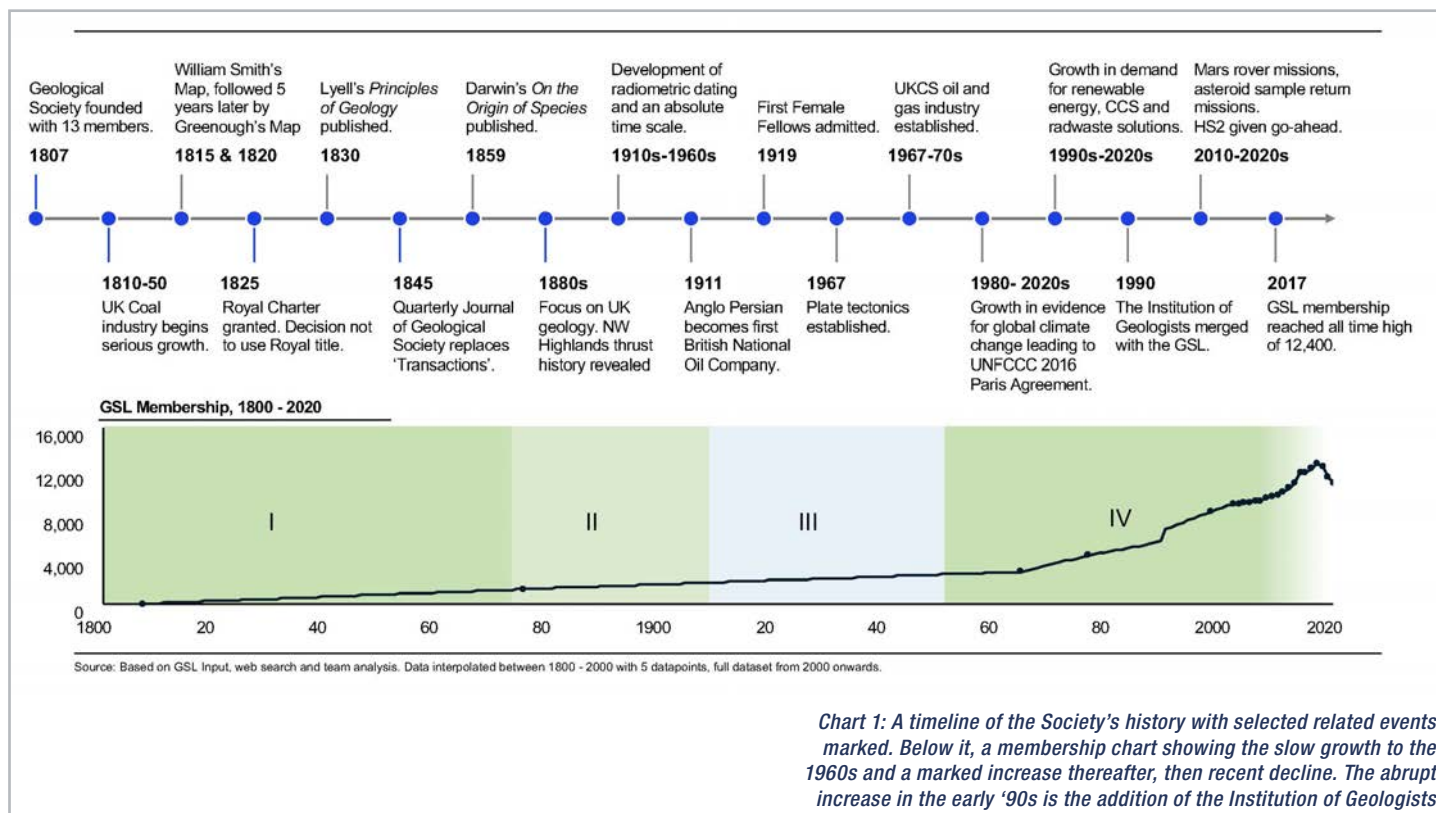


Chart 1: A timeline of the Society's history with selected related events marked. Below it, a membership chart showing the slow growth to the 1960s and a marked increase thereafter, then recent decline. The abrupt increase in the early '90s is the addition of the Institution of Geologists

► McKenzie led the breakthrough to Plate Tectonics and John Dewey brought that tectonic context to British and global geology. In 1967 the first North Sea gas landed at Easington in Yorkshire. Oil followed into Scotland in 1975 and a new UK industry, grounded in geoscience, was born.

The three new directions - plate tectonics, absolute age dating and North Sea oil & gas - brought new relevance and funding to our science and the Society. These days were among our most productive, with activity straddling both academia and industry. The Institution of Geologists merged with the Society in 1990. The growth in Chartered Geologists highlighted the importance of Earth science and the engineering and environmental challenges geologists were engaged in, along with the required professionalism. The Society's membership grew, peaking in 2017 at 12,406.

Global change

A wind of change was felt in the 1990s as concerns were raised about the impact of greenhouse gases in the atmosphere. Widespread evidence of the effects of global warming on ice sheets, oceans and deserts, together with the declining air quality of large

cities, popularised this concern.

That concern has led to global activism calling for reduced anthropogenic carbon emissions, and to large parts of the petroleum industry competing to decarbonise. This latter challenge is exacerbated by the Covid-19 pandemic that, for now, has destroyed ~25% of the global demand for oil with a consequent collapse in price and jobs.

At the same time, geoscience research funding has moved towards thematic issues of science with a clear relevance to society; a trend heralded by the earlier rebranding of university geology departments as Earth Sciences or Earth & Environmental Sciences.

2020

At the end of 2019 the Society had 11,932 members, spread throughout the UK and overseas (Chart 2). We continue to appeal to a broad range of geoscientists, many of whom are Chartered. We organise high quality, internationally streamed conferences (such as "Plate Tectonics at 50" in 2017) and support a range of Specialist Groups that sustain the fundamentals of our science along with many active Regional Groups. The Publishing House produces an array of journals and books. Publication metrics are improving and the Society is making

strides towards Open Access publishing. Our outreach and educational activities have a vibrancy and impact well appreciated by teachers, schools and the wider public.

The future

Despite the many positives, the rapidly changing global context has raised questions about the relevance of the Society's membership offering to the 21st century geoscientist. This seems particularly an issue for some academics and early career geoscientists who do not always see their integrated, thematic science reflected in our activities. The Society's attractiveness to a generation of flexible social media users is also being questioned. But most concerning is the difficulty geosciences as a whole, and the Society in particular, has in reflecting the diversity of the UK community.

To begin to address these issues, in early 2020 Council launched a "Strategic Options Review" to consider our future direction and specifically the relevance of our science and membership programmes. We have been fortunate to enlist an international management consultancy firm to help us with this significant task (on a *pro-bono* basis). They bring an

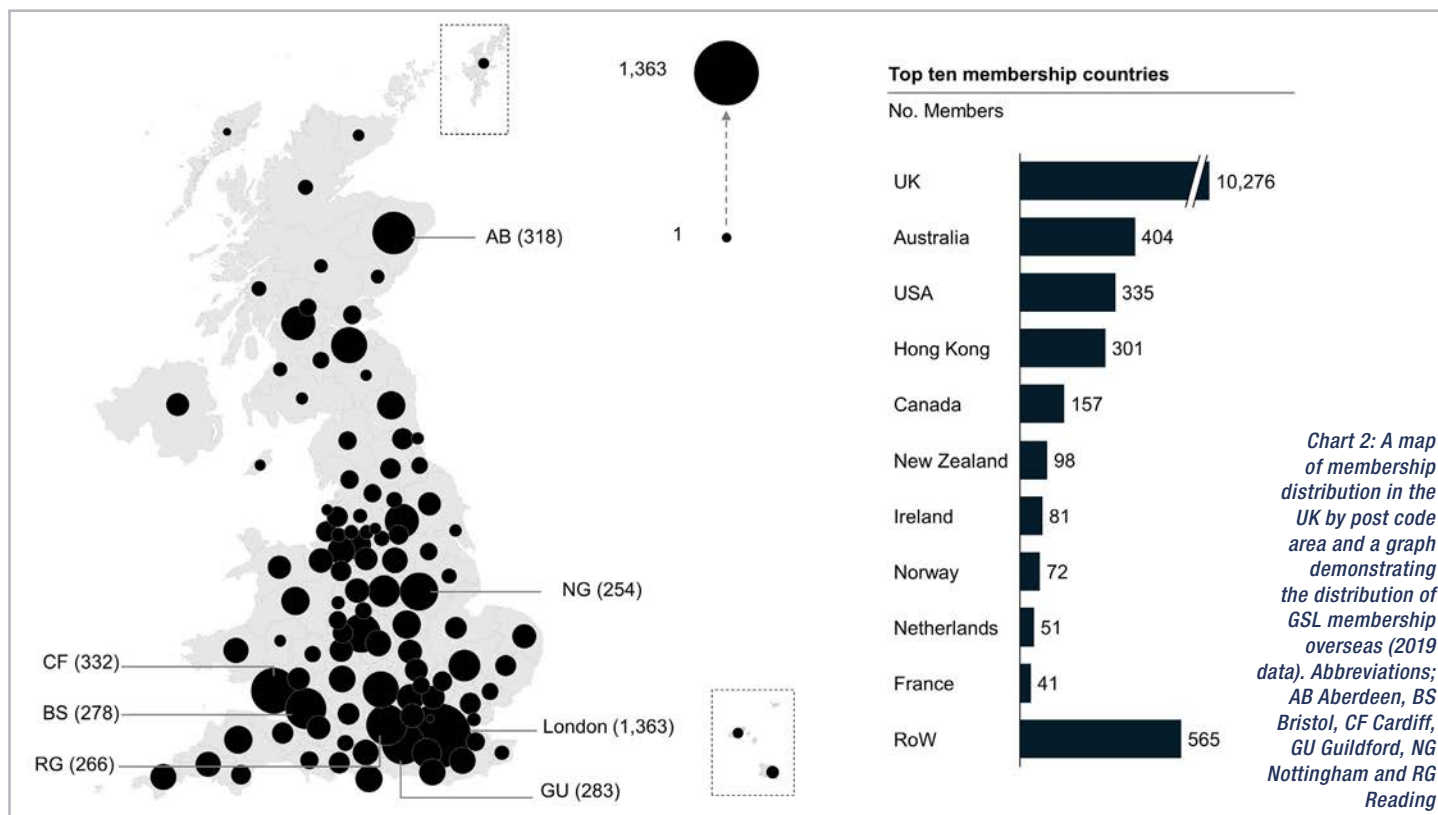


Chart 2: A map of membership distribution in the UK by post code area and a graph demonstrating the distribution of GSL membership overseas (2019 data). Abbreviations; AB Aberdeen, BS Bristol, CF Cardiff, GU Guildford, NG Nottingham and RG Reading

experienced and independent voice to challenge and inform us. Any final proposals and outcomes from the project will be discussed with Council in September and communicated to membership thereafter.

This time of change and uncertainty is an interesting period for our science and for the Society. The transition from ‘exploration and exploitation’ to ‘stewardship and sustainability’ raises many questions, not least of all how the Society will respond. How we deal with these questions, and participate in this changing world, will determine our ability to be relevant and thrive through the coming decades.

Mike Daly is President of the Geological Society. With a background in industry and academia, he is currently a Visiting Professor at Oxford University researching continental tectonics and resource systems, and holds director positions at Tullow Oil and CGG Geoscience

REFERENCES AND FURTHER READING

Read, H. H., 1944, Geology Without Tears. Nature, Vol. 154, 720-721

Davies, G. L. H 2007, Whatever is Under the Earth: The Geological Society of London 1807 - 2017. The Geological Society Publishing House, 2017.

Daly, M. C., 2015, The Sustainable Geoscientist. Geoscientist 25 (11), 6.

