

The 172nd Annual Report of the Royal Meteorological Society for the period 1 January – 31 December 2022

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THE SOCIETY'S MISSION

The Royal Meteorological Society is the UK's Professional and Learned Society for weather and climate and its mission is to advance the understanding of weather and climate and its application for the benefit of all. At the heart of this lies the responsibility for the stewardship of both the profession and science of meteorology. The Society plays a key role as the custodian of both the science and the profession of meteorology in the UK and has an important role to play internationally as one of the world's largest meteorological societies. The Society is owned by its membership but exists for the benefit of all.

PUBLIC BENEFIT

The Royal Meteorological Society is dedicated to providing benefit to the wider public, or sections of it, in achieving its aims. The Charity Act 2011 lists 13 main charitable purposes that would be regarded as 'for public benefit'. In the Society's case, the public benefit of our activities falls into four of these categories.

The advancement of health or the saving of lives

Through partnerships such as the General Aviation Safety Council (GASCo), the UK Flight Safety Committee (UKFSC), and the Royal Institute of Navigation (RIN) as well as many weather service providers, the Society offers support and training for weather-related safety-critical issues. The Society holds weather education seminars and events for operational meteorologists, private pilots, and sailors, with the specific purpose of improving safety and reducing the number of accidents and incidents relating to poor weather conditions, which can sometimes be fatal.

In 2022, the Society attended a series of Aviation Safety Information Exchange meetings and hosted a joint training seminar with GASCo for private pilots and a joint meeting with RIN on Weather and Sailing at the RNLI College in Poole. The Society also hosted 6 Met Masterclass events for operational meteorologists in partnership with the University of Reading. Many of these events were free to attend.

The Society is the academic partner with EUROCONTROL to support the SKYbrary website (skybrary.aero/index.php/Main_Page) to oversee weather content in order to encourage a meteorological exchange of information with the aim of enhancing flight safety.

While responsibility for implementing and maintaining the Aeronautical Meteorological Personnel (AMP) standards rests with the weather service providers in the aviation sector, the Society continues to provide support and impartial advice where required to enable them to comply with the World Meteorological Organization's (WMO) and the International Civil Aviation Organization's (ICAO) criteria for competence and qualifications. The Society's professional accreditation schemes (Registered and Chartered Meteorologist) also support record holding of Continuing Professional Development (CPD) activities required as evidence for maintaining the AMP.

The advancement of education

The Society's mission has a wide remit that looks to support people's understanding, interest and enthusiasm in meteorology, whether they are research scientists, amateur meteorologists, practitioners or members of the general public. It goes further, supporting the development of high-quality science, the next generation of scientists, the professional development of individuals, accrediting further and higher education courses, informing policy and supporting learning in weather and climate through education and outreach activities.

The Society works with teachers and students at primary, secondary and higher education levels to promote understanding of weather and climate, and runs interactive projects to both stimulate the interest of students in meteorology and to improve the quality of teaching materials and resources in schools. The Society's aim is to reach every student in the UK so that they leave school with the basic weather and climate literacy to understand the impact of weather and climate change on their personal life, leisure activities and employment, and to engage with the climate conversation and make informed decisions about their own opportunities and responsibilities.

In 2022, the Society commissioned the very first climate literacy survey of school leavers in partnership with IPSOS. This will create a starting benchmark to continue to monitor climate literacy over the coming years. This new research shows an opportunity for better climate education in schools in Great Britain.

The Society undertook a curriculum review using a team of volunteers. The resulting analysis will enable the Society to continue to assist and advise exam boards, textbook creators, and other teacher support resources. The Society is now able to highlight gaps, inaccuracies, opportunities, and best practice.

The Society is part of a working group for the Climate Education Action Plan, which was unveiled at COP26 in November 21. The project has recently reached a significant milestone of more than 100 individuals signing up to become Climate Ambassadors in partnership with STEM Learning and the University of Reading.

In 2022, the Society delivered new resources that support learners and teachers in physics and geography available online via www.Metlink.org, and educational climate change related content to link in with International Women's Day and COP27.

Other educational resources provided by the Society, including the loan of instruments to schools, are made freely available to all schools. In addition, the Society is also freely providing an increasing number of Continuing Professional Development (CPD) opportunities for teachers who have come to teaching meteorology from a non-meteorological background. Our online weather and climate course, [Come Rain or Shine](#), continues to be permanently available with 3 facilitated periods a year.

At higher education levels, the Society awards financial support to enable students to broaden their studies of meteorological sciences. The Society provides careers information, such as our updated careers booklet rmets.org/careers-meteorology-guide. In 2022, the Society set up a Youth and Early Career Special Interest Group (SIG) which met for the first time in October. The SIG will focus on the Society's engagement with and provisions for youth and early careers, as well as champion their voice within RMets activities.

The Society is recognised in European and UK law as both the Competent Authority and the Regulatory Body for Meteorology in the UK, and offers independent recognition around training and professional development for meteorology and meteorologists. The Society's accreditation framework offers individuals schemes for professional registration and chartered status as well as related CPD opportunities. The Society offers a number of CPD opportunities through the events programme, scientific journals and volunteering.

The advancement of the arts, culture, heritage or science

One of the Society's charitable objectives is to promote the advancement and dissemination of knowledge and education in science for public benefit. The Society aims to advance professionalism in meteorology through the Chartered Meteorologist and Registered Meteorologist accreditation schemes which recognise high professional standards and competences and follow an established code of conduct. The Society sets standards for CPD, and professional conduct and performance, so that meteorologists are empowered to conduct high-quality, ethical work consistently throughout their careers. The Society works with professional bodies, government, employers and national academies, and aims to ensure the workforce across the meteorological community reflects the diversity of society.

The Society publishes eight world-leading scientific journals, including our recently launched new journal ***Climate Resilience and Sustainability***. These are made available free to developing countries through publishing aid programmes and to the World Meteorological Organisation's (WMO) Regional Training Centres. Half of our portfolio is fully open access providing free access on important science to readers.

The Society has a curation programme for a historical and culturally valuable archive of documentation on behalf of the UK. Most of our important artefacts are held at the National Meteorological Library and Archive in Exeter, with many articles being digitised to make them accessible to all. The Society also owns a set of cloud study drawings (c1803-1811) produced by Luke Howard, famous for naming the clouds, which are held in the archives at the Science Museum and are regularly exhibited.

The Society runs a comprehensive events programme, which is open to all with an interest in weather and climate. This includes free public meetings to encourage a focus on global, national and local issues, and also conferences to bring about the advancement in the understanding of meteorology as a science, through its applications and as an interest to all. 2022 saw the long-awaited return to in-person meetings and whilst this was welcomed by many, it became clear that the events needed to diversify, and that audiences' requirements had changed and adapted since before COVID-19. The Society now offers a variety of in-person, virtual and live streamed events.

The Society hosts an annual Student and Early Career Scientists' Conference that brings together those involved in graduate and post-graduate studies, as well as early-career scientists from the UK and internationally, to create a community of young scientists and to give them experience in active participation in scientific conferences. In 2022 the event was held for the first time as a hybrid conference at Manchester University on the 4-5 July. The opportunity to attend both in-person and online was offered for all sessions, as well as the chance to present virtually. The conference attracted 76 delegates in-person and 16 online.

The Society offers grants and bursaries to encourage interaction between scientific groups both in the UK and internationally, to enable attendance at meetings and conferences, and more recently, due to the travel restrictions relating to the pandemic, to fund small research projects.

The Society's Special Interest Groups deliver events and other activities to facilitate the exchange of information and views within specific areas of meteorology. The groups are primarily a way of communicating at a specialist level and include areas such as the History of Meteorology and Physical Oceanography, Atmospheric Electricity, and Meteorological Observing Systems.

The advancement of environmental protection or improvement

The Society is at the heart of the debate on climate change. It plays a particularly important role in communicating some of the more complicated scientific and technical issues to the public at large, enabling them to understand and engage with what is one of the most important global issues that we face today. This role is overseen by the Society's Science Engagement Committee, which aims to sustain, encourage, and progress activity in climate science and its relevance to society.

The Society's activities during 2022 included:

- sponsoring three 12-month Science Engagement Fellowships to engage with non-academic stakeholders to build multidisciplinary partnerships, develop engagement skills and experiences, enhance their profile with stakeholders and leading academics, and grow their research impact. The Science Engagement Fellows launched three new Special Interest Groups on: Energy; Insurance; and Youth and Early Career
- hosting a Climate Change Forum exploring a 2050 vision for climate change and society's responses to it. The event was held in partnership with the Institute of Food Science and Technology, Chartered Institution of Highways and Transportation, and Royal Institution of Chartered Surveyors supporting the afternoon breakout sessions. The Society submitted a summary of the outcomes from each breakout session to the Government's Net Zero Review in October
- attending COP27 in Egypt as an observer organisation in November to participate in the formal meetings, input into the process through the constituencies, contribute to several side events and produce round-ups for MetMatters
- leading a project to build a learning portal for the new African Regional Meteorological Society, which was then promoted at COP27
- delivering climate change communication training to ITV; members of Public Relations and Communications Association (PRCA); Plant Network/the Botanical Gardens Education Network; and to Community Leaders
- running the Weather Photographer of the Year Competition which received over 3,000 photos from over 980 photographers around the world
- responding to over 300 media requests.

The Society's website rmets.org has a wide range of information and content that is freely available to all with an interest in the Society and in meteorology. The Society continues to invest significantly in making its website more accessible and informative, providing a wide range of freely available educational, scientific and professional material.

PRESIDENT'S FOREWORD

I have been in my role as RMets president for just a couple of months, but already it has been eye-opening to see the breadth and depth of all that has been achieved this year.

As members, we are all aware of the incredibly varied programme of events that the society organises for us, from the annual 3-day science conference, the student and early-career forum, to the special interest group meetings, the masterclasses and the local centre meetings. That's often several each week for us to choose from. This year we've moved gradually towards a mixture of in-person and on-line formats, so that we can finally get back to meeting together once again, but also kept our on-line options so more meetings are open to those who can't travel so easily. A new initiative this year has been to introduce three 12-month Science Engagement Fellowships and corresponding Special Interest Groups, in the

areas of 'Youth and Early Career', 'Energy' and 'Insurance'. These have got off to a flying start with dedicated meetings that will help foster and improve partnerships and engagement with these sectors.

Academics like myself will also be very aware of the strong publishing reputation of the Society, with its portfolio of 8 different journals. The oldest, the Quarterly Journal, will reach its 150th birthday in 2023 while the youngest was launched only this year, on the topic of Climate Resilience and Sustainability. The Society also published a new Weather A-Z book this year, which has already sold over 700 copies. What I think is perhaps less well known is all the amazing work the Society does in terms of its education and outreach. I think we will all agree on the importance of teaching weather and climate topics in schools from an early age. Over the years, I have been involved in many initiatives to understand why there is such a gender-imbalance in science, technology, engineering and mathematics. Pretty much every research study comes back with the importance of attitudes that are formed from a very early age. So, a key aim of the Society is to work with schools to foster an interest in weather and climate from an early age, to help introduce weather and climate topics so that every school-leaver achieves an improved level of climate-literacy.

This year, the uptake of our Weather and Climate Teachers guide has been heart-warming. In collaboration with IPSOS we carried out our first climate literacy survey of school leavers, with the plan to repeat this annually. We also thank the many volunteers who helped carry out an audit of schools' exam board curricula, looking for opportunities where we can work with them to broaden and improve climate education. If you take a look at the web pages, at the MetMatters weather and climate blog, you'll see the huge array of material that the society provides, with topical content such as the Tonga volcanic eruption and record-breaking heatwaves. There are new animated videos explaining topics ranging from rain, sleet and snow, to why the sky is blue and how rainbows are formed. New resources for schools were produced around the IPCC climate reports, COP27 and several targeted specifically towards physics teachers. All of this has helped to grow our reputation for being a source of interesting and reliable content.

As well as the schools work, the Society continues to work to improve weather and climate communications training for those working in the media and PR, and also secured funding to deliver climate change training to community leaders, in partnership with the British Antarctic Survey. In September a Climate Change Forum was held, exploring 3 key sectors; the food, building and transport industries. The findings from the event were submitted as evidence to the Government's Net Zero review. The Society has also continued in its important work towards achieving Net Zero by 2025, with several new initiatives outlined in the report below. Further new initiatives this year have included a complete review of the Society's Awards and the formation of its Equality, Diversity and Inclusivity Working Group. The Society has also continued to grow the Weather Photographer of the Year competition, reaching more countries than ever before, with entries from 119 countries and 25,000 visitors to the photography exhibition.

So, all in all, another very busy and productive year. When you get a little free time, take the chance to have a look around the RMets web pages and see all the things you are supporting. It couldn't be achieved without the continued support of you, our members, and all of the volunteers who give so freely of their time and energy. Thank you so much. And please do get in touch and let us know if you'd like to get more involved. We were delighted

that over 90% of you chose to renew your membership last year and look forward to our journey with you into 2023.

I thoroughly commend to you our Annual Report for 2022.

Lesley Gray, PhD, FRMetS

Date 4 July 2023

THE YEAR JANUARY TO DECEMBER 2022

A brief review of the highlights.

2022 was warmer, drier, and sunnier than average for most of the UK. It was another record-breaking year that will be remembered for breaking two significant records – a daily maximum temperature of 40.3°C at Coningsby, Lincolnshire on 19 July and a UK average annual temperature over 10°C. Both these records were highly unlikely to have happened without the influence of human-induced climate change. While 2022 was the UK's warmest year on record overall, it also included a prolonged spell of cold and snowy weather in December. This was one of the most significant cold snaps since December 2010.

It was another busy year for the Society across all of our activities.

In 2022 the Society saw an increase in most levels of membership, including standard members, life fellows, honorary fellows, and corporate members, but overall had a small decline in total **membership** of 1.7% (to 3,222). Membership development remains one of the strategic aims of the Society focusing on retention and new member acquisition through a series of activities. Member retention rates for 2022 were 90.4%, achieved during another difficult year, which is all credit to the hard work of the membership team. This demonstrates that members value their membership. Continuing through 2022 the Society's focus has been on the impact of COVID-19 on the sector. Subscription renewals have been closely monitored with additional communications on support available to members.

The Society is extremely grateful for the continued support from an active and engaged community of **volunteers**, with over 600 volunteers involved on the Society's committees or contributing in other ways. This important contribution from volunteers allows the Society to successfully achieve many of the activities highlighted in this annual report.

The Society gave 311 media interview requests fulfilled and 3,516 items of media coverage, an increase of 65% and 39% respectively. Website users grew by 37% in 2022, with 952,596 users visiting the website. Social media presence continued to grow with the most significant increase on LinkedIn, where followers grew by 55% from 2,000 to 4,441. In addition, we have 15,056 followers on Twitter, 6,564 on Instagram and 4,700 on Facebook. The Society **Marketing and Communications** team were finalists for Team of the Year at MemCom Excellence Awards 2022.

In 2022, the Society appointed an external consultant to provide overarching coordination for the Society's work on **Equality, Diversity, and Inclusion (EDI)** and to support the Society with reporting. The Society launched a new EDI Working Group to provide advice and guidance to the Society as it continues to deliver and improve its work on EDI. The Society has established clear actions and priorities for improving EDI and has begun to make progress e.g. through improving the accessibility of its communications, such as creating accessible documents, including closed caption option for virtual events etc. The current Council membership has an equal gender balance, with some representation from ethnically diverse communities.

The Society is part of [Pledge to Net Zero](#), [CAFA](#) (Climate Action For Associations), and helped develop and signed [The Charter for Climate Action](#). The Society is committed to achieving **net-zero** direct carbon emissions (Scope 1 & 2) by 2025, where there is direct control through avoiding, reducing and substituting. It is also working towards net-zero indirect emissions (Scope 3) by 2030, subject to a full feasibility assessment. The Society has already cut its scope 2 electricity emissions to net-zero by switching to a 100% renewable energy tariff, switching to efficient lighting and installing solar panels on the roof to contribute to its energy demands. During 2022, the Society replaced its gas boiler heating system with a new heating and cooling system run off our renewable energy supply.

After completing a review in 2021, the Society used 2022 to launch a modernised awards portfolio. The review recognized that the nature and extent of contributions of Society members had broadened substantially, as meteorology and related disciplines have become more central to education, business and policy. **New awards** were introduced and other awards were updated with additional sign-posting and short videos to help nominators find the right award.

The Society continues to strengthen its relationship with strategic partners from a range of organisations including academic institutions, business and industry, NGOs and government to support the delivery of its charitable objectives.

The Society successfully delivered an ambitious programme of **events** throughout 2022. In total we hosted 53 events: 13 were held in-person; 5 live streamed; and 35 virtual conferences and meetings.

Scientific publishing is one of the Society's strengths and aims to deliver a high-quality portfolio of journals and book programme to support scientific knowledge management and promotion of the science. Income from scientific publishing makes up a significant portion of the Society's total income and allows the Society to deliver several other important programmes of work and charitable activities. In 2022, the Society published the first issue of the new open-access journal ***Climate Resilience and Sustainability***. In partnership with the Natural History Museum, the Society published a book called ***Weather A-Z*** presenting an A to Z guide to the Earth's spectacular weather phenomena, illustrated with dramatic imagery from the annual Weather Photographer of the Year competition.

The Society has managed to deliver the vast majority of activities planned 2022, thanks to the support and determination of the staff and volunteers. The Society continues to be in a strong financial position. However, the next few years remain challenging, with pressures on income across the meteorological community and from scientific publishing due to the move to an Open Access model; the Society will enter this period on a firm financial footing.

FINANCE

The Annual Accounts for the year ending 31 December 2022 are published separately from this Annual Report in line with the requirements of the Charity Commission. The Auditors' report is on page 1-2 of the Accounts and certifies that in their opinion the financial statements give a true and fair view of the Society's affairs and of its income and expenditure for the year then ended.

The Society continues to be in a good financial position and total reserves at 31 December 2022 were £2,630,199 (2021: £2,737,220).

The operating surplus of the Society in 2022 was £32,657 (2021: £115,849) which exceeded our budget for the year. We have been fortunate that historical income streams have not been substantially affected by the pandemic although there has been a consequential delay in our progress towards income diversification. Investment losses of £139,678 (2021: gain £106,063) were recognised, this decrease in the value of investments reflects the negative impact of the Russian invasion of Ukraine, interest rate hikes to contain inflation and lingering pandemic effects within the investment market over the year to 31 December 2022.

The Society's scientific publications made up over 70% of our income, providing £911,271 (2021: £814,515), The increase of 11% in the year is attributable mainly to the one-off bonus received for renewal of our publishing contract. Non-subscription publishing income from institutions has again made an important contribution and Open Access income is slowly increasing reflecting the gradual move away from traditional subscription journals. Other publishing activities such as the calendar and books contributed £11,323 (2021: £14,154). The associated expenditure on publications was £203,762 (2021: £191,786).

The total Membership Subscription income including Gift Aid and Accreditation Fees was slightly lower than the previous year at £236,835 (2021: £237,379) and reflects the slight reduction in overall membership of 1.7%. During 2022 staff have continued to develop the strategy and direction for the future, emphasis continues to be placed upon addressing the anticipated trend of falling individual membership numbers and re-invigoration of sustainable partnerships with corporate members. The pandemic has meant that the opportunities to maximise the financial impact of these initiatives have been more limited, but there is clear evidence that the public and professional profile of the Society continues to be raised by increased digital and media communication.

Conferences and meetings continued to be delivered predominantly on virtual platforms, although there has been a welcome return to "in person" events during the year, which has helped increase income to £46,719 (2021: £19,823)

The notes in the separate Annual Accounts provide more insight into the detailed figures and the way these have been compiled.