

**The 170th Annual Report of the Royal Meteorological Society
for the period 1st January – 31st December 2020**

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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 is the responsibility for the stewardship of both the profession and science of meteorology. The Society 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 with the General Aviation Safety Council (GASCo), the UK Flight Safety Committee (UKFSC), and the Royal Institute of Navigation (RIN), the Society provides support and advice for weather-related safety-critical issues. The Society holds weather education seminars and events for private pilots and sailors, with the specific purpose of improving safety and reducing the number of accidents relating to flying and sailing in deteriorating weather conditions, which can sometimes be fatal. In 2020, the Society attended a series of Aviation Safety Information Exchange meetings and GASCo meetings. In November 2020, the Society hosted a virtual meeting on forecasting for dinghy regattas to assist sailors make better decisions while out on the water – the event was recorded and is freely available to access online www.rmets.org/event/virtual-meeting-forecasting-dinghy-regattas.

The Society is the academic partner with EUROCONTROL to support the SKYbrary website (www.skybrary.aero/index.php/Main_Page) to oversee weather content in order to encourage 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 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 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. The Society's education website, MetLink (www.metlink.org), provides free resources for teachers on weather and climate that are curriculum focused, and are accompanied by lesson plans and some short videos or animations that can set the scene in the classroom or when home schooling.

The 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. The educational focus during 2020 was in support of teachers and those home-schooling during lockdowns. Our online weather and climate course, **Come Rain or Shine**, was made permanently available from the end of March 2020. It remains one of the top-rated 'nature and environment' courses on the FutureLearn platform.

In 2020, the Society has been developing a weather and climate textbook to be used in geography teaching for 11- to 14-year-olds, called "Weather and Climate: A Teachers' Handbook". This resource consists of a printed teachers' guide and an online collection of teaching resources and background information for teachers and will be distributed to schools early in 2021. We were able to fund this project because of a generous legacy from Colin McKerrow, a member of the Royal Meteorological Society until 2019.

Also in 2020, the Society:

- redeveloped www.MetLink.org, our schools' website which will be live to all early in 2021;
- refreshed our climate change negotiations resource;
- recorded a number of podcasts in conjunction with our key education partners;
- delivered vital teacher training to five universities;
- provided expert advice and guidance for two children's books, one textbook and a set of short films for BBC Bitesize Scotland;
- sent a letter to Government, and the devolved administrations, calling for climate science and climate change to be given greater emphasis in school curricula, to reflect the prominent role that a changing climate will play in the lives of young people now in school;
- responded to the call for feedback about a proposed Natural History GCSE; and
- awarded six schools with our 'MetMark' – a quality mark for weather and climate teaching.

The Society has an Education Committee with representatives from organisations including the Institute of Physics, the Royal Geographical Society, the Met Office, the World Energy and Meteorology Council and the Geographical Association to ensure partnership and collaboration.

At higher-education levels, the Society awards financial support to enable students to broaden their studies of meteorological sciences. It also provides careers information and helps with the development of careers in meteorology through its work on National Occupational Standards in meteorology as part of the Regulated Qualifications Framework (RQF), which provides the structure for creating and accrediting qualifications. 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 and regulation around training and professional development for meteorology and meteorologists. The Society's accreditation framework offers individuals a range of recognised vocational qualifications, professional registration and chartered status as well as related CPD opportunities.

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, launching a new journal called **Climate Resilience and Sustainability** in 2020. These are made available free to developing countries through publishing aid programmes and to the World Meteorological Organisation's (WMO) Regional Training Centres.

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 national and local 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. Prior to the COVID-19 pandemic, the Society was live streaming some of its face-to-face events, but now all our events are virtual until it is safe to host public events again in the future. There are benefits to live streaming events or hosting them virtually as it makes them more accessible to wider audiences.

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 2020 the conference was a virtual 2-day event attracting students and young scientists from the UK and from around the world, including the Philippines, Indonesia, Ghana, Germany and India.

The Society offers grants and bursaries to encourage interaction between scientific groups both in the UK and internationally, to allow 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, Climate Science, Weather, Art and Music (WAM) 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 and the Climate Science Special Interest Group; the latter aims to sustain, encourage and progress activity in climate science and its relevance to society.

In 2020, the Society published four climate science briefing papers in ***Weather*** entitled '*Global Carbon Budgets: Determining limits on fossil fuel emissions*', '*Climate Modelling*', '*Solar Variability: Does variation in the Sun's output affect climate?*' and '*How climate change is affecting sea levels*'. In November 2020, the Society hosted a virtual event on '*Science Behind the Greenhouse Effect*'.

In 2020 the Society delivered several outreach and engagement activities that promote a public interest in the environment:

- theWeather Club www.theWeatherClub.org.uk is the public outreach arm of the Society, engaging the general public on weather and climate, and provides a key framework for delivering greater public information, engagement and dialogue. Subscribers to theWeather Club email newsletters doubled in 2020. Following a theWeather Club users' survey, we increased the frequency of our newsletters and now send these monthly to over 4,000 subscribers.
- the Weather Photographer of the Year Competition ran for the 5th year in 2020 and the second time it has been supported by AccuWeather. We received over 7,600 entries from over 2,600 photographers with 11,275 public votes and media coverage was across 370 outlets in 54 countries.

- in collaboration with the Open University, we launched the year-long 'Heatwaves Mission' in August, supported by the BBC. The project tracks people's experiences of heatwaves using nQuire, a citizen science platform, with the results expected to provide valuable information to help people plan for heatwaves in the future. During August's short heatwave we received over 1,200 entries.
- we have developed a new area on our website www.rmets.org/node/309692 featuring a selection of articles from our journals using simpler language making the, often complex, research more accessible to a broader audience. Since launching in July, we have published 12 research summaries, which have received over 1,000 pageviews.

The Society's website www.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

The production of the Society's Annual report gives us an opportunity to look back on the year that has just passed, and I think we can all agree that has been a particularly challenging year. When I agreed to become President of the Society, I could not have imagined that I would take over in the middle of a global pandemic. I was looking forward to attending conferences and meetings, travelling round the country to local centres, getting to know the staff and volunteers and generally meeting people with a passion for the weather. Instead, it has been emails, online meetings and Zoom conferences.

Despite the extraordinary circumstances, the work of the Society has continued unabated. Working almost exclusively from home, the Society's staff have performed heroically delivering a full, high quality program of events and activities, albeit virtually. This is an extraordinary achievement and, if you will forgive me a few statistics, I think the numbers more than bear that out.

Over 6,000 people participated in Come Rain or Shine, our free online weather course. We delivered climate change communication training to 39 broadcast meteorologists and journalists, helping support more accurate reporting on climate science. We supported 150 media interviews and achieved over 1,650 pieces of media coverage, with over 4,600 new followers on social media. Over 1,200 people took part in our citizen science project, run jointly with the Open University and BBC, on heatwaves. We received over 7,600 photographs in our Weather Photographer of the Year competition. We had 542 attendees for our new Meteorological Masterclass Series in partnership with the University of Reading, 104 delegates from several countries attended our first virtual Student and Early Career Scientist Conference and 112 people attended our virtual WeatherLive event. We hosted over 20 virtual events, discussing some of the biggest issues in weather and climate. We launched a new journal ***Climate Resilience and Sustainability***, a subject that I am particularly passionate about. We even had over 100 people attend our virtual AGM, which must be a record.

We understand that 2020 has also been a difficult year for our members and volunteers. Despite this we welcomed 19 new Fellows, 175 accredited Meteorologists and 15 new Student Ambassadors. We have greatly appreciated the loyalty and support of all our members this year, without you there is no Royal Meteorological Society. In 2021, we will launch our new three-year strategy with a mission ***to advance the understanding of weather and climate and its application for the benefit of all***. The Society is owned by its membership but exists for the benefit of all, so we hope you will join us in supporting our work over the next 3 years. In return we promise to support you, whether that be in your career, advancement of the science and profession or in developing your passion for weather and climate.

I thoroughly commend to you our Annual Report for 2020.

Prof Dave Griggs FRMetS
7 May 2021

THE YEAR JANUARY TO DECEMBER 2020

A brief review of the highlights

There were some notable weather events during 2020 in the UK. It was the sixth wettest year since 1862. Three named storms contributed to the wettest February since 1862 and 3rd October was the wettest individual day on record since 1891. 2020 had both the sunniest April on record and the sunniest spring across all UK countries, with sunshine hours exceeding those of most summers. England had its driest May on record, and Wales its second driest. 2020 was the UK's third warmest year since 1884 and it was Europe's warmest on record. Globally speaking, 2020 was one of the top three warmest years on record with the average global temperature across the year around 14.9°C which is around 1.2°C warmer than pre-industrial times, and the 10 years from 2011-2020 were the warmest decade on record.

It was a challenging year for the Society, as it has been for us all, due to the impact of COVID-19. The main impacts for the Society were on our events programme and moving to homeworking. We would typically host 60 face-to-face meetings / events each year but from mid-March onwards we moved our events to online platforms. The Society was celebrating its 170th anniversary in 2020 and had plans to return to Hartwell House, where the inaugural meeting took place on 3rd April 1850, for two events in 2020 but that has not been possible. Instead we found other ways to celebrate, such as publishing a virtual special issue of important papers from our scientific journals <https://www.rmets.org/news/170th-anniversary-virtual-special-issue>; an article written by our President on the history of the Society published in *Weather* <https://rmets.onlinelibrary.wiley.com/doi/full/10.1002/wea.3701?af=R> and we developed a special logo for the year.



In 2020 membership totals saw a slight drop compared to 2019, with a 2% fall in membership (3,162 members). Membership development remains one of the strategic aims of the Society overseen by the Membership Development Board. A detailed membership survey, completed every three years, was circulated with the 2020 renewals and the results fed into the Society's strategic plan which was then developed during the year and approved by Council in November.

The Society is extremely grateful for the continued support from an active and engaged community of volunteers, with approx. 300 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.

New roles were introduced to the Society's team in 2020 with marketing and communications posts, a new professional accreditation resource combined with additional support for membership development and additional administration and events support. The benefits from these new roles are already evident with over 1,650 pieces of media coverage, an increase of more than 4,600 new followers on social media, new online content, videos and podcast, increased engagement in our public engagement activities, wide reaching audiences attending our events and 175 accredited meteorologists.

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.

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 2020, the Society worked with Wiley to deliver its open access strategy through converting *Meteorological Applications* to fully open access and launching a new open access journal *Climate Resilience and Sustainability*.

We have introduced new sections to our membership journal **Weather**, namely “Spotlight” bringing timely high-level summaries of important recent weather events and ‘Insights’ that are short, explainer articles. The Society started a new academic book series **Developments in Weather and Climate Science** with Elsevier in 2020

The year was dominated by the impacts of COVID-19; despite these challenges and because of the determination and flexibility of the staff and volunteers, the Society has managed to deliver the vast majority of activities we planned to do in 2020. The Society continues to be in a strong financial position. However, the next few years remain challenging from the long-term impacts of COVID-19, 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. The new Strategic Plan 2021-23 recognises the difficulties we may face in the coming years, prioritising activities where the Society can have the biggest impact to advance the understanding of weather and climate and its application for the benefit of all.

FINANCE

The Annual Accounts for the year ending 31 December 2020 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 2020 stand at £2,515,308 (2019: £2,438,772).

The operating surplus of the Society in 2020 was £85,747 (2019: £412,169) 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 £9,211 (2019: gain £84,242) were recognised, this decrease in the value of investments reflects the turbulence in the investment market over the year and the substantial recovery in the FTSE All Share Index at 31 December 2020.

The Society’s scientific publications continue to make up over 75% of our income, providing £842,850 (2019: £903,925). 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 £7,862 (2019: £6,024). The associated expenditure on publications was £161,972 (2019: £147,725).

The total Membership Subscription income including Gift Aid and Accreditation Fees increased from £194,670 in 2019 to £204,604 in 2020, with small increases in both individual and corporate membership income. During 2020 staff have continued to develop the strategy and direction for the future, additional resource has been put in place to address the anticipated trend of falling individual membership numbers and re-invigorate sustainable partnerships with corporate members. The pandemic in 2020 has meant that the opportunities to maximise the financial impact of this investment in resource 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 have successfully been run on virtual platforms which has resulted in reduced income but a corresponding reduction in costs associated with venues, speakers and travel.

Staff costs were £698,345 (2019: £573,168), an increase of £125,177 over the previous year which reflects staff increases to develop membership, accreditation and digital communications as well as additional support for administration and events coordination. This support has been invaluable in implementing the move to online platform events which present the opportunity to widen the geographical spread of delegates as well as offering flexibility regarding timing to catch up on missed events. It is envisaged that post pandemic events will be structured to offer a blend of virtual and face to face event opportunities.

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