

Met Éireann Future Weather, Future Challenges

#AimsirAgTeacht

#WeatherReadyIreland



Making Ireland Weather and Climate Prepared

The Round Room
at the Mansion House.
Tuesday, December 12th 2017



@MetEireann



An Roinn Tithíochta, Pleanáil
agus Rialtais Áitiúil
Department of Housing, Planning
and Local Government





Mary Robinson

Mary Robinson is President of the Mary Robinson Foundation – Climate Justice. She served as President of Ireland from 1990-1997 and UN High Commissioner for Human Rights from 1997-2002. Between 2013 and 2016, Mrs. Robinson served as the UN Secretary General's Special Envoy in three roles; first for the Great Lakes region of Africa, then on Climate Change and most recently as his Special Envoy on El Niño and Climate.



Séamus Walsh

Séamus Walsh is the Head of the Climatology and Observations Division in Met Éireann. His main areas of work are past data analysis, observation networks and generation of long term datasets for Ireland. He compiled the 1981-2010 Long Term Average datasets for Ireland and has contributed to various publications on the climate of Ireland.



Prof. John Fitzgerald

John FitzGerald is an Adjunct Professor in both TCD and UCD, having previously been a Research Professor in the Economic and Social Research Institute in Dublin. He is a member of the Central Bank of Ireland Commission and he is Chairman of the Irish government's Climate Change Advisory Council.



Laura Burke

Laura Burke is the Director General of the Environmental Protection Agency (EPA). Laura has been a Director of the EPA since 2004, initially serving as the Agency's Director of Communications and Corporate Services and then as Director of the Office of Climate, Licensing, Research and Resource Use. In 2017 Laura was elected Chair of the European Environment Agency (EEA) Management Board.



Prof. Peter Lynch

Peter Lynch is Emeritus professor in the School of Mathematics and Statistics, UCD. He worked at Met Éireann for 33 years and was Assistant Director for ten years before moving to UCD. His research interests include dynamical meteorology, numerical weather prediction and Hamiltonian mechanics. He has a passionate interest in all things mathematical. He writes a column called "That's Maths" in The Irish Times. He also blogs regularly at thatsmaths.com.



Prof. Dame Julia Slingo

Professor Dame Julia Slingo served as Chief Scientist of the UK Met Office from 2009 to 2016. At the Met Office she led a team of more than 500 scientists working on a broad portfolio of research that underpins weather forecasting, climate predictions and climate change projections. In her retirement, she has taken on a number of advisory roles, including Special Advisor on Science to the Secretary General of the World Meteorological Organisation.



Dr. Sarah O'Reilly

Sarah O'Reilly is Assistant Director at Met Éireann. Sarah has previously held the position of Head of Technology in Met Éireann, managing the observation and IT infrastructure of the national meteorological service. She has worked with Met Éireann since 2000, working initially as a weather forecaster, and subsequently on the development of applications for the agricultural sector.



Evelyn Cusack

Evelyn has been a meteorologist with Met Éireann for over 30 years and is Deputy Head of the Forecasting Division. Her passion is to promote meteorology and the Scientific Method in Irish Society. She is also chair of the EUMETNET Task Team for storm naming in Europe. "The naming of storms using a single authoritative system should aid the communication of approaching severe weather through media partners and other government agencies."



Gerry Murphy

Gerry Murphy is a meteorologist and weather forecaster with Met Éireann. He joined Met Éireann in 1992 and worked as Chief Scientist of Valentia Observatory from 1993 to 1999. Since 2001 he has worked as a weather forecaster and TV broadcast meteorologist. He is Met Éireann's representative on the EUMETNET drafting team on weather observations and is an occasional lecturer at University College Dublin on the subjects of Meteorology and Climate Change.



Derek Hynes

Derek Hynes is the Operations Manager for ESB Networks, responsible for managing the safe operation of the Electricity network in Ireland. He graduated from Trinity College in 2000 as an electrical engineer. He has been working for 17 years in ESB Networks in various technical and management roles. He represents ESB Networks on the National Emergency Co-ordination Group.



Gerald Fleming

Gerald Fleming is Head of the Forecasting Division at Met Éireann. He joined Met Éireann in 1980. For most of his 37 years with Met Éireann he has worked as a weather forecaster and a weather broadcaster. For the World Meteorological Organisation he Chairs the Programme Group on Public Weather Services, and is a member of the Management Group of the WMO Commission for Basic Systems. He has lectured extensively, and conducted many training courses on weather communication and related matters.



Seán Hogan

Seán Hogan is National Director for Fire and Emergency Management in the Department of Housing, Planning and Local Government. In that role he is best known as Chair of the National Emergency Co-ordination Group which manages Ireland's response to severe weather events. Seán's leadership role was seen most recently during Storm Ophelia in October 2017. Over the last decade, Seán has worked with Met Éireann staff to enhance weather warning systems which raise public awareness and safety consciousness.

Abstracts

Mary Robinson

Seeing future weather through the lens of climate justice

Climate change does not mean the same in every part of the globe. The ability to cope with a changing climate varies with economic strength and resilience. We need to understand the injustice of the impacts of climate change on the poorest countries and communities. What are the ethical dimensions of climate change in the global context? What are the intersections between climate change and the ever-growing movement of refugees and economic migrants? How should we integrate these dimensions into Irish and European policies around climate change?

Séamus Walsh

Ireland's Changing Climate in a Warming World

Warming of the world since the 19th century is unequivocal. The global mean temperature is projected to continue to increase by between 1.5 and 4.5 degrees Celsius by the end of the 21st century, depending on future levels of emission of greenhouse gases. Changes in the Earth's climate system which have already been observed, such as increases in air and sea temperature, sea level rise and decreasing extent of Arctic sea ice and glaciers, will continue to occur, with changes also likely in precipitation patterns and extremes. This presentation places these global changes in the Irish context. A warmer future climate in Ireland will bring more frequent wet winters, drier and hotter summers and an increased likelihood of extreme weather events, with implications for many sectors of society.

Prof. John Fitzgerald

Tackling Climate Change and its Consequences

The task of tackling climate change is a very different policy problem than those we normally face. In most other policy areas politicians can promise benefits tomorrow in response for difficult decisions today. Instead, in tackling climate change this generation must bear the burden of making major changes that will have much greater benefit for our grand-children later this century than for ourselves today. We need to use climate projections to plan how to adapt our homes, businesses and lifestyles to make Irish society resilient to the possible consequences of climate change. Planning and spending wisely now is an investment in the lives and lifestyles of our grand-children. Investment is needed to make Ireland more robust to future extreme weather events.

Prof. Peter Lynch

The Emergence of Computer Weather Forecasting: an Irish Perspective

The development of computer models for weather forecasting and climate prediction is one of the great scientific triumphs of the twentieth century. Today, numerical weather prediction plays a central and essential role in operational weather forecasting. Forecasts now have accuracy at ranges beyond a week. Climate models are our primary means of anticipating changes in the global climate of our planet. This talk reviews developments from the pre-history of computer forecasting around 1900, through the first computer forecast in 1950 to the establishment of the European Centre for Medium-Range Weather Forecasts. The principles of computer forecasting will be illustrated by considering some specific models and their application to practical forecasting.

Prof. Dame Julia Slingo

Forewarned is Forearmed: Prediction across scales - from the global to the local, from tomorrow's weather to long-term climate change

Advances in science, observations, modelling and supercomputing are bringing us to the point where we can predict with some confidence what our climate and weather will be like across timescales from hours to decades and from the global to the local. We have gone from just dealing with the atmosphere to incorporating other components of the Earth system and even considering the local environment. This presentation will outline these advances, highlight the new frontiers in the science of forecasting, and show how this seamless approach is helping us to assess current and future risks from hazardous weather, natural climate variability and climate change.

Dr. Sarah O'Reilly

Predicting Ireland's Weather – meeting the future weather challenge

This talk will outline the forecasting systems that underpin Met Éireann's climate and weather services. In the context of the future weather Ireland can expect over the coming decades, the talk will outline the developments planned in Met Éireann to ensure that the national meteorological service will play its part in helping Irish society to be ready for, and responsive to, weather and climate risks.

Gerry Murphy

Impact based forecasting – A partnership between Science and Society

Impact based forecasting shifts the emphasis of weather forecasting from what the weather will 'be' to what the weather will 'do'. It takes account of vulnerability of people and infrastructure to extreme weather and its potential impacts and it considers behaviour of people in response to forecasts and warnings. The key to providing high quality impact based forecasts is fuller engagement between the Meteorological Service and its customers. This presentation outlines what impact based forecasting is, what its benefits are and what is required to develop and optimise partnerships between the national weather forecast service and society.

Derek Hynes

Managing Electricity Networks During Extreme Weather Events

This presentation looks at the changing impact of weather events on the ESB Networks electricity network over the past 10 years and discusses how weather forecasting influences ESB Networks emergency preparation. The talk looks at the impact of technology on the response to these weather events, how information is becoming as important as safety and at electricity restoration during severe weather events. Short case studies are presented on Storm Darwin (2014) and Storm Ophelia (2017) to illustrate these points. There will be a discussion on developments in Ireland and abroad in planning for and mitigating the impact of severe weather events on electricity networks.

Gerald Fleming

Weather and Emergency Management – an evolving challenge

Emergency Management has evolved significantly in recent decades, with the focus now not just on the "emergency" event but on the "Five-Stage Emergency management paradigm" of Planning & Preparedness – Response – Recovery – Hazard Analysis – Mitigation. In consequence, the support and guidance available from meteorology to Emergency Management must become broader, as meteorological services have a useful contribution to make to each of these five stages, and not just in the immediate pre-event warning period. This presentation will reflect on this broader context, and the implications for the provision of weather and climate services.

Eoin Moran

Eoin Moran was appointed Director of Met Éireann in September 2016. Eoin has worked on all aspects of Met Éireann's scientific and technical programmes from his early years as a Meteorological Officer to his role as Meteorologist in managing the scientific meteorological and geophysical programmes at Valentia Observatory. As the Head of Instrumentation and Environmental Monitoring Division, Eoin oversaw Met Éireann's national meteorological infrastructure and associated scientific programmes. As Director, Eoin is a delegate to international meteorological organisations which oversee important international meteorological programmes.



Eoghan Murphy

Eoghan Murphy TD was appointed to Cabinet as the Minister for Housing, Planning and Local Government in June 2017 by An Taoiseach Leo Varadkar. Prior to that he served as Minister of State at the Departments of Finance and Public Expenditure & Reform, with special responsibility for Financial Services, eGovernment and Public Procurement. Prior to entering politics, Eoghan worked in the area of international arms control, and was based in London, Geneva and Vienna, working at various times for NGOs and the UN. He spent two years as speechwriter and advisor to the Executive Secretary of the Comprehensive Nuclear Test Ban Treaty Organisation in Vienna.



Making Ireland and Weather and Climate Prepared

An overview will be given of Met Éireann's recently completed 10 year strategy 'Make Ireland Weather and Climate Prepared' – which focuses on assisting Irish society to be ready for and responsive to weather and climate risks. The strategy is built around 6 goals which involve (1) moving to impact based services; (2) providing enhanced climate services; (3) establishing a new flood forecast service in support of the OPW; (4) providing an effective authoritative voice on meteorology in Ireland; (5) sustaining an expert, professional workforce and (6) supporting Ireland meteorological infrastructure and an enterprise environment for weather and climate services. The strategy is underpinned by Met Éireann's core role as Ireland's National Meteorological Service of helping society protect life and property and is aimed at supporting economic and environmental resilience and promoting wider societal wellbeing.

Future Weather, Future Challenges

Making Ireland Weather and Climate Prepared

8.00	Registration and coffee	
9.00	Opening Welcome	Eoin Moran, Director, Met Éireann

Session 1: Climate Change

Convener: Laura Burke, Director General, Environmental Protection Agency

9.05	Seeing future weather through the lens of climate justice	Mary Robinson, President of the Mary Robinson Foundation – Climate Justice
9.40	Ireland's Changing Climate in a Warming World	Séamus Walsh, Head of Climatology and Observations, Met Éireann
10.15	Tackling Climate Change and its Consequences	Prof. John FitzGerald, Chairman, The Climate Change Advisory Council
10.50	Coffee Break	

Session 2: The Future of Forecasting the Weather

Convener: Evelyn Cusack, Deputy Head of Forecasting, Met Éireann

11.20	The Emergence of Computer Weather Forecasting: an Irish Perspective	Prof. Peter Lynch, Emeritus Professor, UCD School of Mathematics & Statistics
11.55	Forewarned is Forearmed: Prediction across scales - from the global to the local, from tomorrow's weather to long-term climate change	Prof. Dame Julia Slingo, Former Chief Scientist at the Met Office
12.30	Predicting Ireland's Weather: Meeting the future weather challenge	Dr. Sarah O'Reilly, Assistant Director, Met Éireann
13.05	Lunch	
14.00	Making Ireland Weather and Climate Prepared	Eoin Moran, Director, Met Éireann

Session 3: Response to Weather Emergencies

Convener: Seán Hogan, National Director for Fire and Emergency Management

14.10	Impact based forecasting – A partnership between Science and Society	Gerry Murphy, Meteorologist, Met Éireann
14.45	Managing Electricity Networks During Extreme Weather Events	Derek Hynes, Operations Manager, ESB Networks
15.20	Weather and Emergency Management – an evolving challenge	Gerald Fleming, Head of Forecasting, Met Éireann
15.55	Closing	Minister Eoghan Murphy, TD, Minister for Housing, Planning and Local Government