

# Storm naming and communicating risk

Becky Hemingway

Weather Impact Scientist, Met Office

Want to be a Meteorologist?

Institute of Physics, London

Saturday 23<sup>rd</sup> June 2018

# My Career Path...



Leeds Girls' High  
School  
Age 3 - 18

GCSEs – Age 14 to 16

- Geography (A\*)
- Art and Design – Textiles (A)
- Biology (A)
- Chemistry (A)
- Maths (A)
- Physics (A)
- English Language (B)
- English Literature (B)
- German (B)



# My Career Path...



Leeds Girls' High  
School  
Age 3 - 18

A-Levels – Age 16 to 18

- Geography (A)
- Biology (B)
- Physics (B)
- Maths to AS Level (C)



# My Career Path...

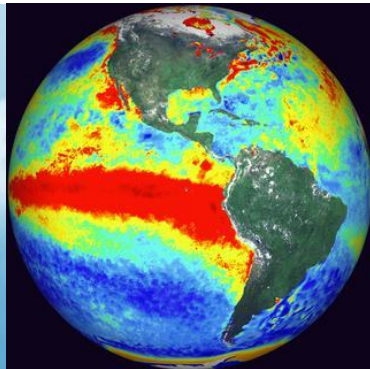
## 2008 - 2012

UNIVERSITY OF  
**Southampton**

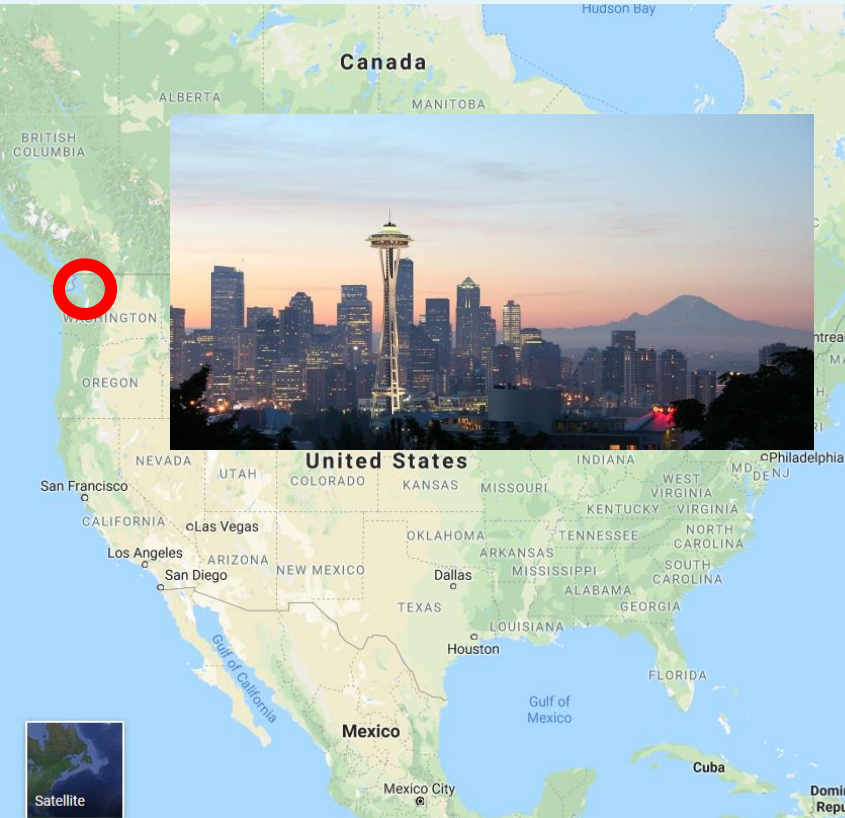


**National Oceanography  
Centre, Southampton**

UNIVERSITY OF SOUTHAMPTON AND  
NATURAL ENVIRONMENT RESEARCH COUNCIL



# My Career Path... 2010-2011



# My Career Path

Graduated 2012

(hons) Oceanography

1 year abroad



Global and Planetary

Contents lists and

Global and Planetary

journal homepage: [www.elsevier.com](http://www.elsevier.com)



ELSEVIER

Sea-level probability for the last deglaciation: A statistical analysis

J.D. Stanford<sup>a,\*</sup>, R. Hemingway<sup>a</sup>, E.J. Rohling<sup>a</sup>, P.G. Challenor<sup>b</sup>, M. Medina-Elizategui<sup>c</sup>

<sup>a</sup> School of Ocean and Earth Science, University of Southampton, National Oceanography Centre, Southampton SO14 3ZH, United Kingdom

<sup>b</sup> National Oceanography Centre, Southampton, SO14 3ZH, United Kingdom

<sup>c</sup> The Chamber of Shipping, 12 Carthusian Street, London, EC1M 6EZ, United Kingdom

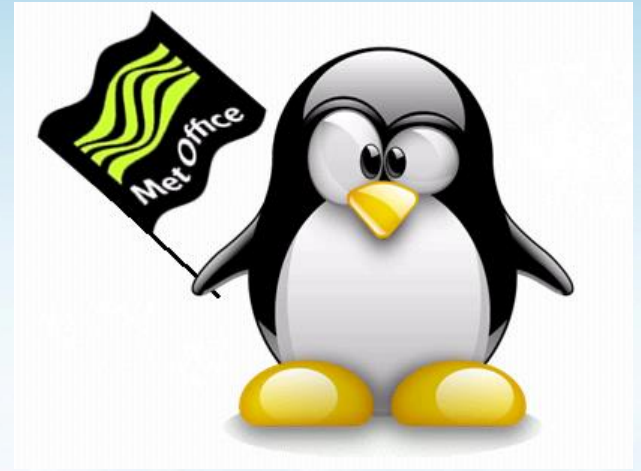


# My Career Path...

Met Office Summer Placement  
2012

Offered a chance to join the  
Weather Impacts Team

**Why not?**



“[People] want to know three things:

- **What does it mean to them?**
- **What does it mean to their family?**
- **What do they need to do right now?**

And so don't speak like a meteorologist.  
Tell me what we need to know.”

(television meteorologist, quoted by Demuth et al. 2012)



There is the potential for 150mm of rain in an hour



Some places will experience 60mph winds today



Temperatures today will reach 35°C



There will be a significant space weather event tomorrow



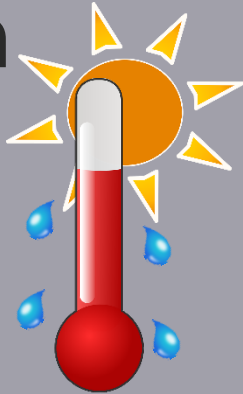
150mm of rain in an hour will cause flooding, action is required



60mph wind gusts will cause travel disruption and fallen trees



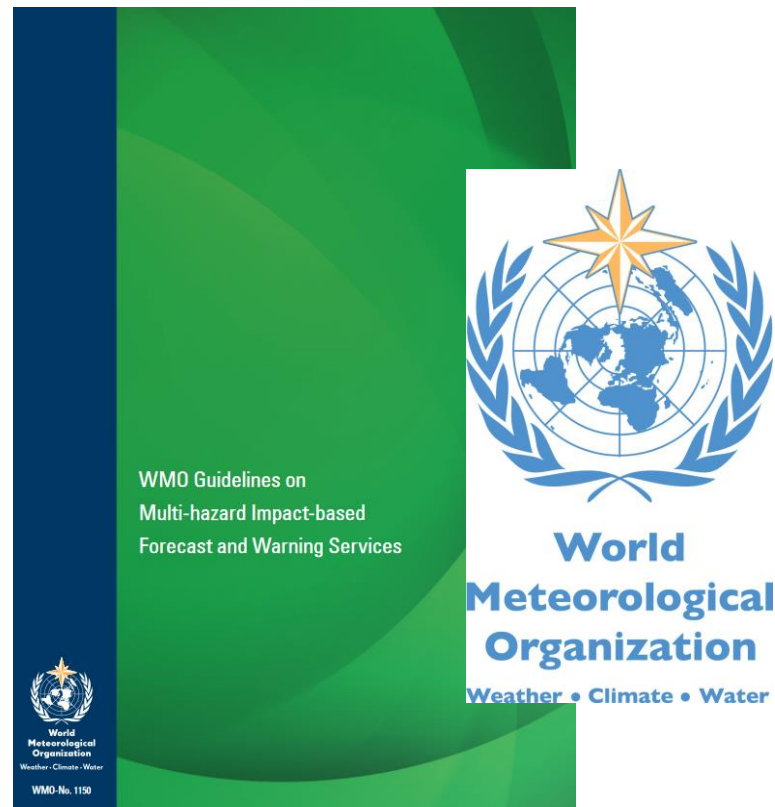
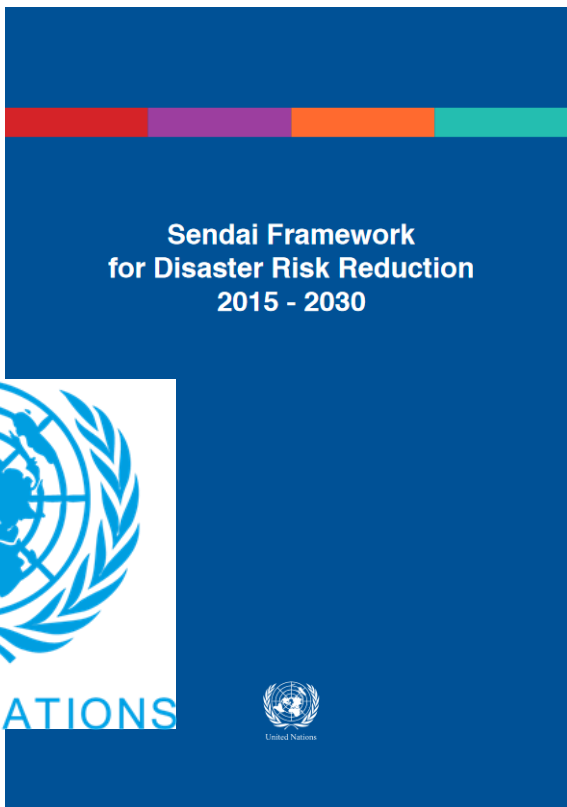
At 35°C stay in the shade and drink plenty of water



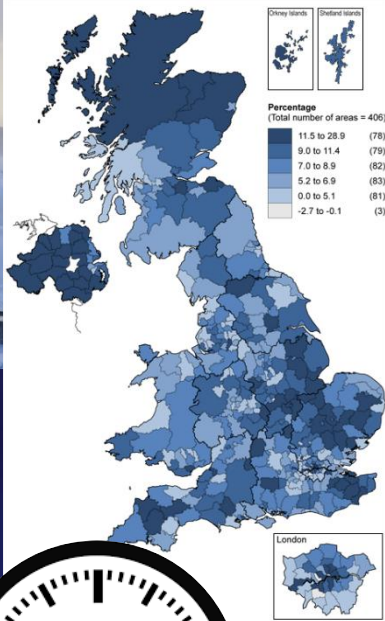
A space weather event may cause communication and GPS problems



# Why do impact forecasting?

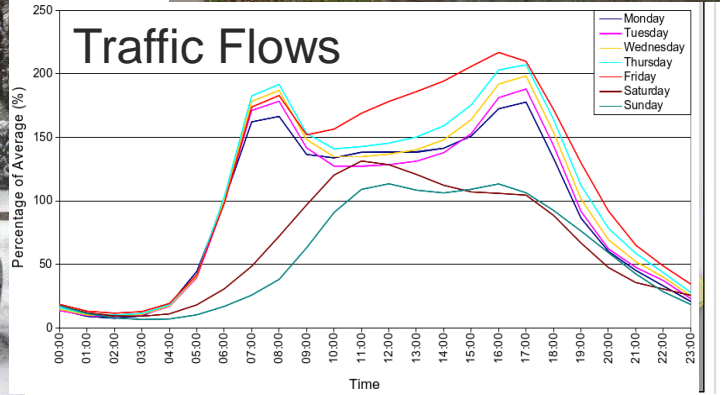
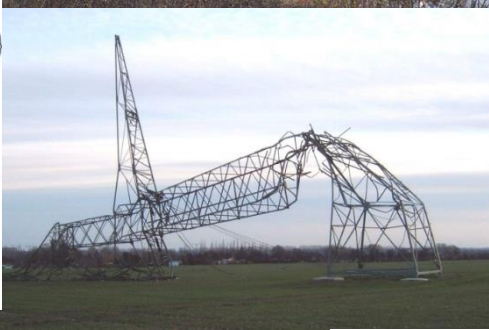






On time	10:57	Cancelled
Cancelled	10:58 MINDSOR & B	Cancelled
Cancelled	11:00 via Guildford	Cancelled
Cancelled	11:03 via Cobham	Cancelled
Cancelled	11:03 Teddington	Cancelled
Cancelled	11:05 Meymouth	Cancelled
Cancelled	11:06 Hampton Court	Cancelled
Cancelled	11:07 via Brentford	Cancelled
Cancelled	11:09 via Epsom	Cancelled
10 On time	11:09 via Basingstoke	Cancelled
Cancelled	11:09 via Basingstoke	Cancelled
Cancelled	11:12 Basingstoke	Cancelled
Cancelled	Front 8 coaches	Cancelled
Cancelled	11:12 via Kingston	Cancelled
Cancelled	via Weymouth	Cancelled

CityAM



# Hazard Impact Modelling



**Aim:** Combine data and expertise from Partners to identify and forecast the impact on populations, areas and assets from a range of natural hazards

[www.naturalhazardspartnership.org.uk](http://www.naturalhazardspartnership.org.uk)

# What is a Hazard Impact Model?



**Hazard**

**x**

**Vulnerability**

**x**

**Exposure**





Met Office

# Vehicle OverTurning

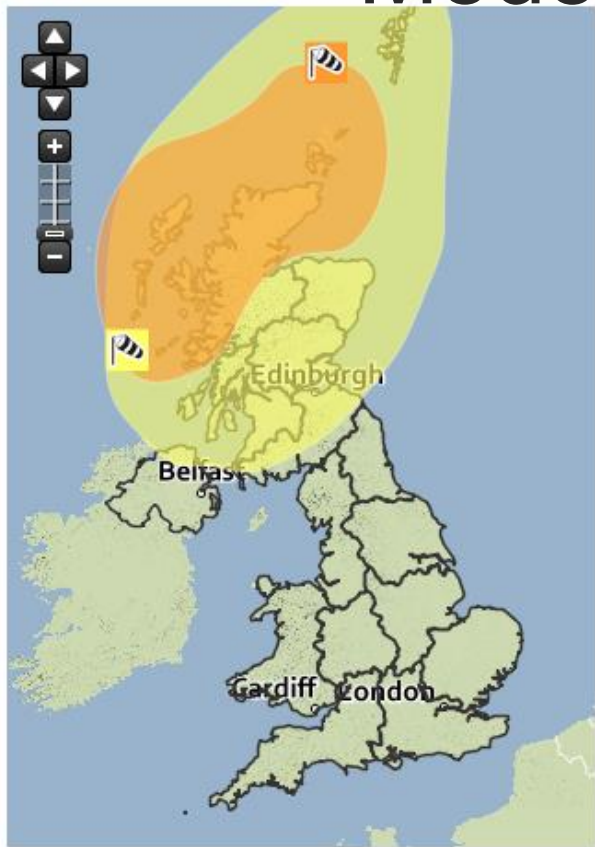
8<sup>th</sup> January 2015

19:00

## Model

NSWWS  
Wind  
Warnings  
Morning 8<sup>th</sup>  
January  
2015

Fri 9 Jan



### Maximum Risk of Disruption on the UK Road Network

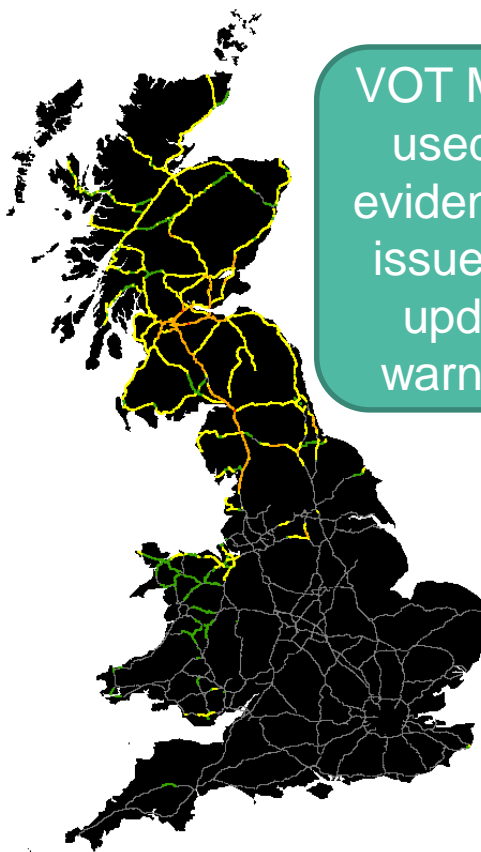
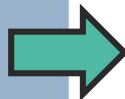
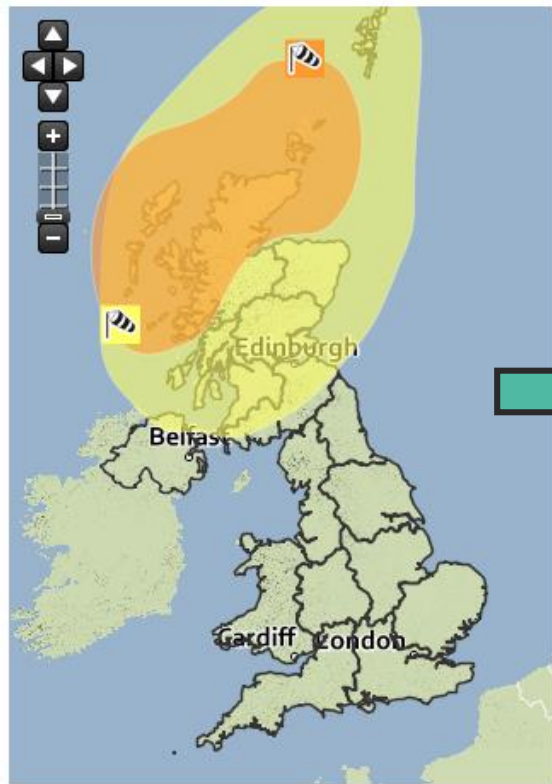
- Low Risk
- Low - Medium Risk
- Medium - High Risk
- High Risk



T+22 Model run: 7<sup>th</sup> January 21Z

# Morning 8<sup>th</sup> January 2015

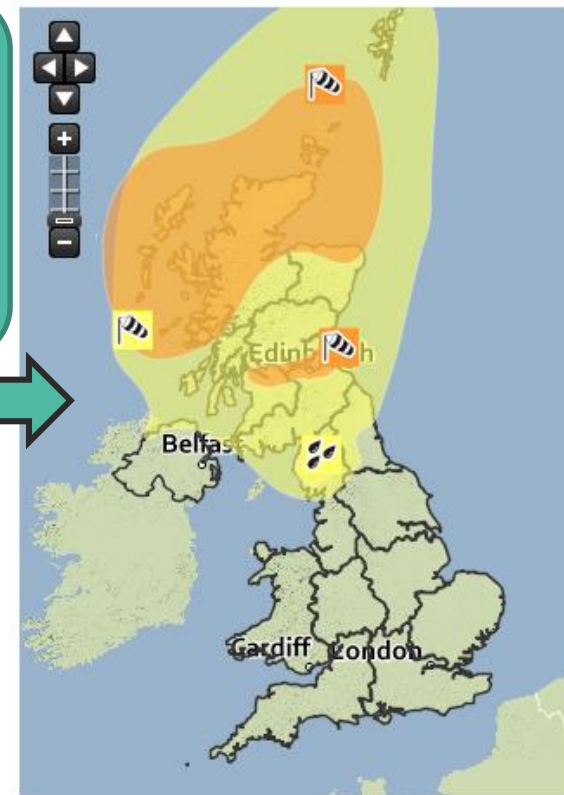
Fri 9 Jan



VOT Model  
used as  
evidence to  
issue and  
update  
warnings



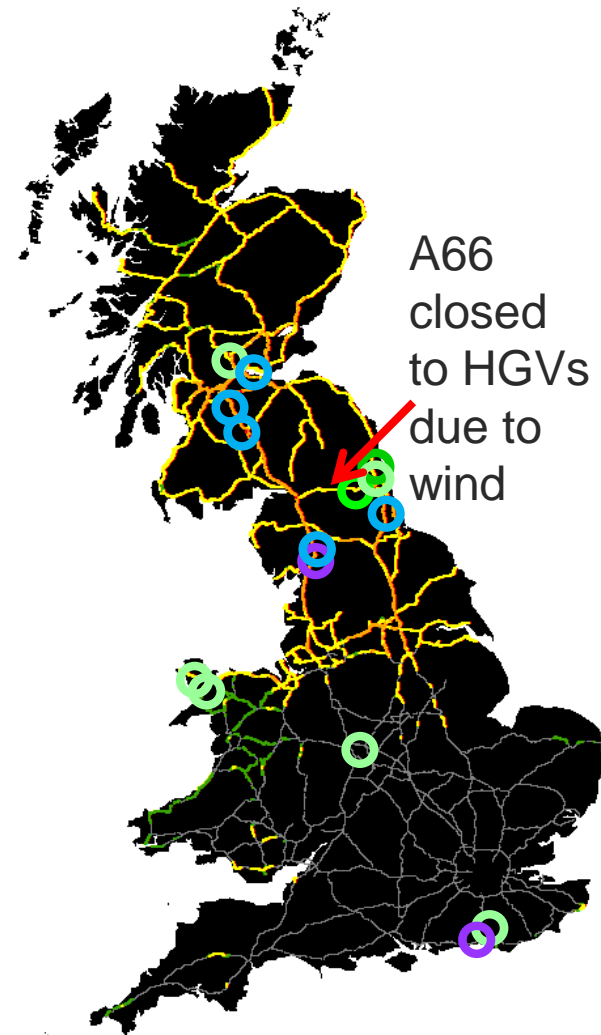
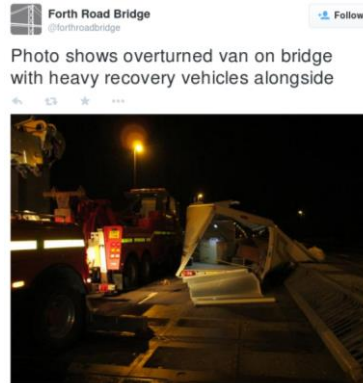
Fri 9 Jan



# VOT Validation

8<sup>th</sup>/9<sup>th</sup> January 2015

Multiple impact events reported including a van blown over in the amber warning in the Central Belt, Scotland.  
Model validated well



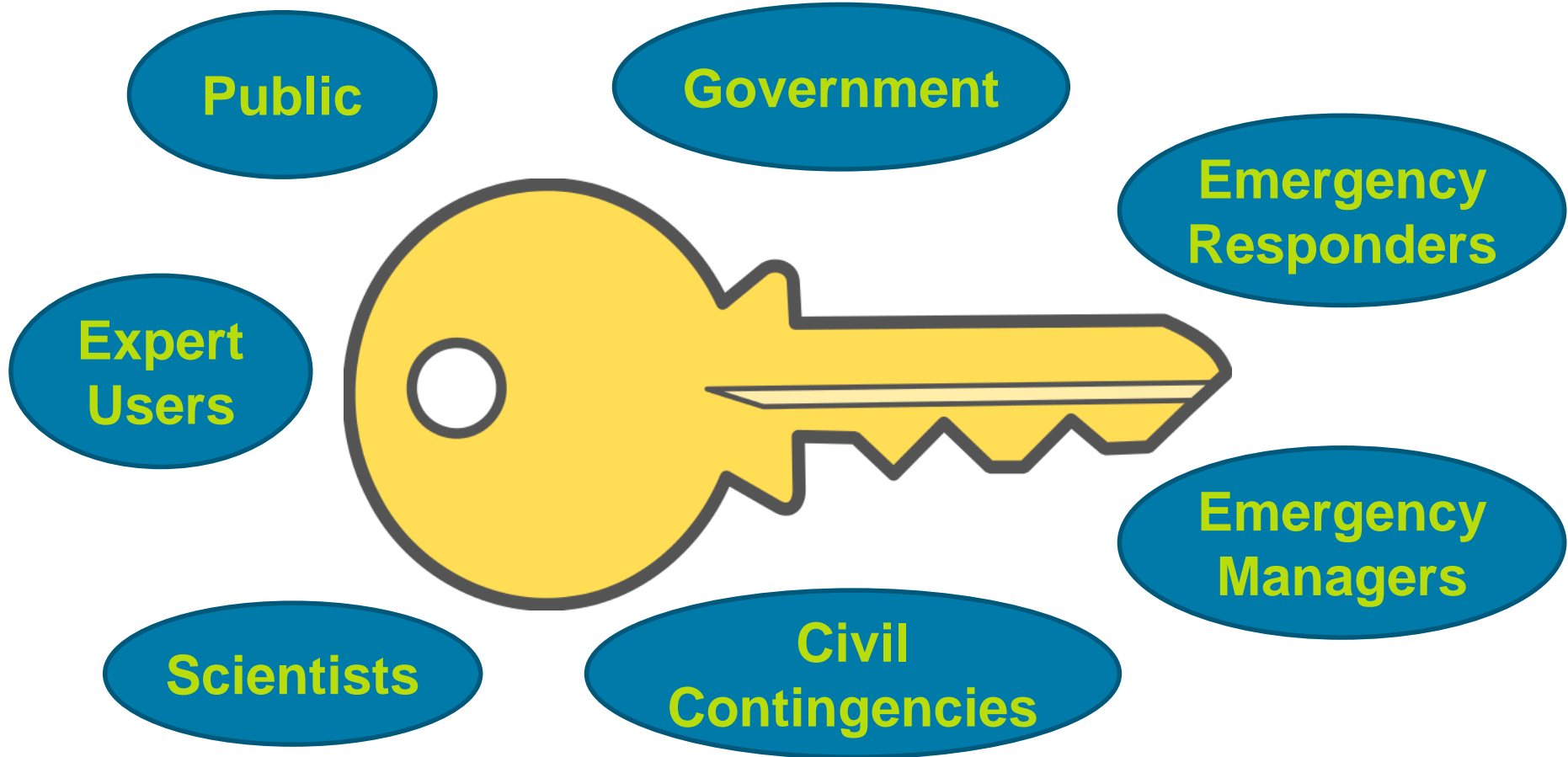
## Benefits

- Objective outputs
- Aid decision making for warnings/alerts
- Improved preparedness before event
- Improve understanding of natural hazard impacts
- Encourage cross-organisation collaboration to create and visualise

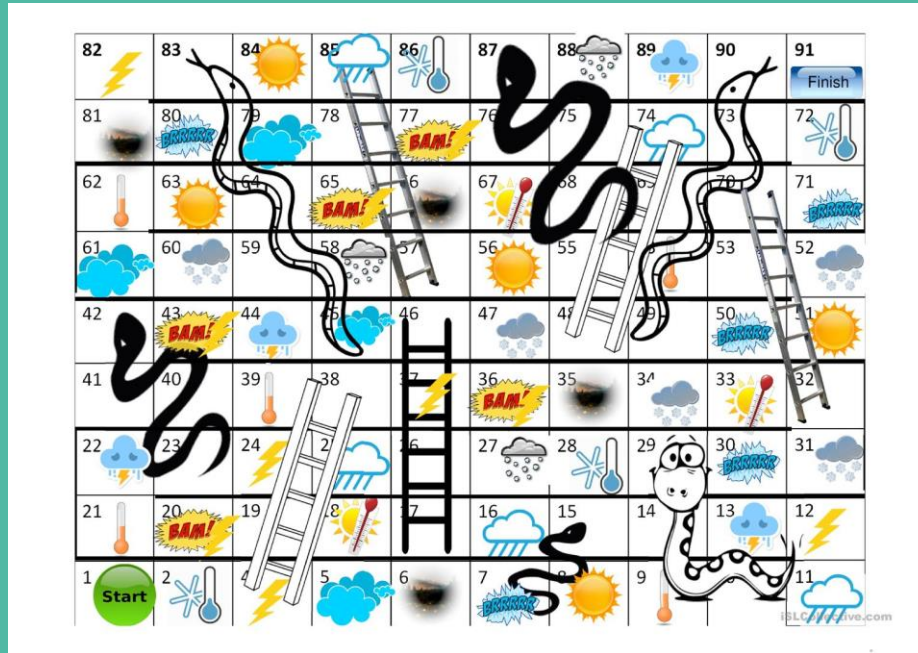
## Challenges

- Underpinning Science
- Data availability
- Timeliness
- Validation of the models
- Communication of Results

# Communication



# Time to play a game!



# Who Remembers?

12<sup>th</sup> February 2014 storm

Was is a major storm?



The Independent



The Independent



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**NEWS**

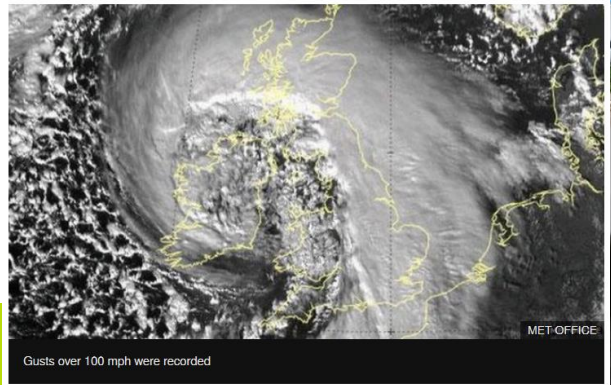
Home UK World Business Politics Tech Science Health Education Entertainment

Wales Wales Politics North West North East Mid South West South East Cymru

## 75,000 without power after 100 mph storms hit north and west Wales

© 12 February 2014 | Wales

Share



Wales Online

**BBC** Sign in News Weather iPlayer TV Radio

**NEWS MID WALES**

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Wales Politics North West North East **Mid** South West South East Cymru Fyw

12 February 2014 Last updated at 22:25

Share

## 'Stay indoors' warning issued in mid Wales as winds hit

A fallen tree blocks the road in Aberystwyth

TOM POULTON

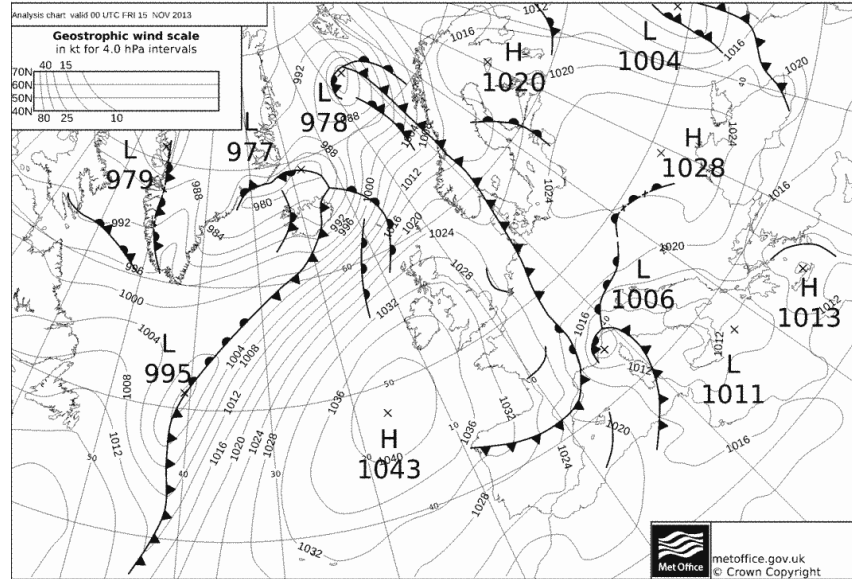


# Who Remembers?

15<sup>th</sup> November 2013 storm

Was is a major storm?

# 15<sup>th</sup> November 2013 storm



Trick question – there was no storm!

# Who Remembers?

Storm Doris February 23<sup>rd</sup> 2017  
Storm Fred February 26<sup>th</sup> 2017

Was is a major storm?



@JamieCKnox



@monwysyn



Daily Post

# Storm Doris: 'weather bomb' causes transport chaos across UK

Woman dies in Wolverhampton as high winds, heavy snow and rain also bring major disruption to roads, trains and flights

● Are you affected by Storm Doris and flooding in the UK?



Waves crash over the marina wall in Brighton during Storm Doris. Photographs: Gareth Fuller/PA



© SWNS



@BostonPoliceUK

BBC Sign in News Sport Weather iPlayer TV R

## NEWS

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UK England N. Ireland Scotland Alba Wales Cymru

### Storm Doris: Woman killed as UK hit by winds reaching 94mph

23 February 2017 | UK

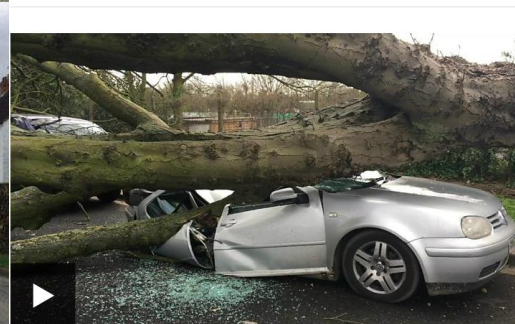
Share



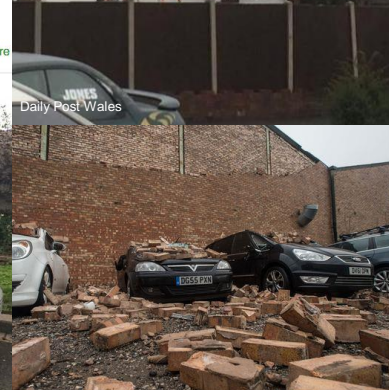
Daily Post Wales



Daily Gloucester

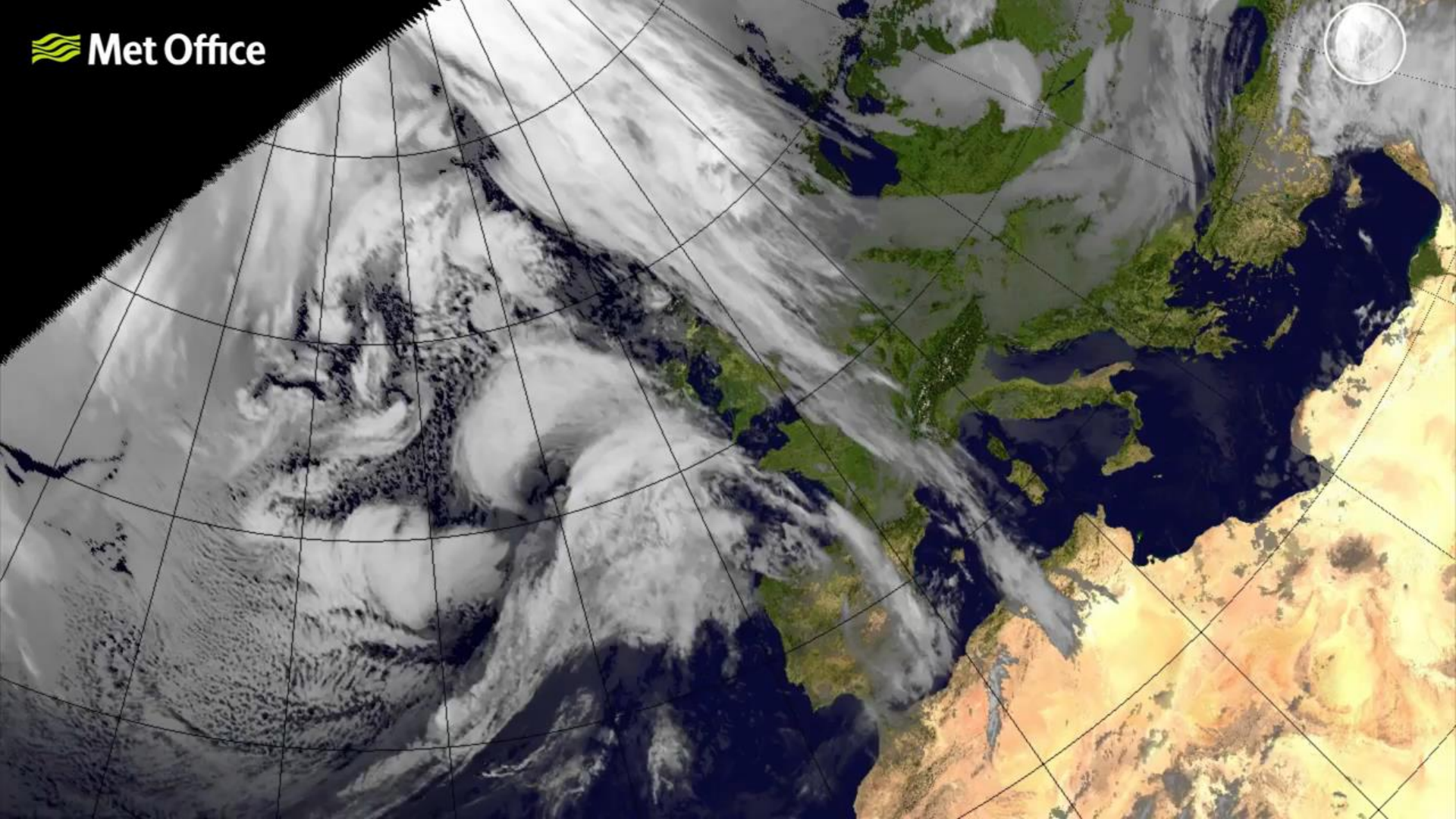


Footage shows a tree balanced on a car in Chiswick



Liverpool Echo







Working in partnership with Met Éireann

# A-Z of UK storm names 2015-2016

<b>A</b> Abigail 12-13 Nov 2015	<b>H</b> Henry 1-2 Feb 2016	<b>O</b> Orla	<b>V</b> Vernon
<b>B</b> Barney 17 Nov 2015	<b>I</b> Imogen 8 Feb 2016	<b>P</b> Phil	<b>W</b> Wendy
<b>C</b> Clodagh (Clo - da) 29 Nov 2015	<b>J</b> Jake 2 March 2016	<b>Q</b> *	<b>X</b> *
<b>D</b> Desmond 4-5 Dec 2015	<b>K</b> Katie 27-28 March 2016	<b>R</b> Rhonda	<b>Y</b> *
<b>E</b> Eva 23-24 Dec 2015	<b>L</b> Lawrence	<b>S</b> Steve	<b>Z</b> *
<b>F</b> Frank 29-30 Dec 2015	<b>M</b> Mary	<b>T</b> Tegan	
<b>G</b> Gertrude 29 Jan 2016	<b>N</b> Nigel	<b>U</b> *	

\* These letters are not included. This assures we are in line with the US National Hurricane Centre naming convention and will maintain consistency for official storm naming in the North Atlantic.

Ex-Ophelia  
16-17 October 2017

Emma  
1-2 March 2018

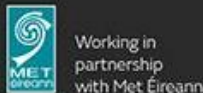
# A-Z of storm names 2016-2017

<b>A</b> Angus 19-20 Nov 2016	<b>J</b> Jacqui	<b>S</b> Susan
<b>B</b> Barbara 23-24 Dec 2016	<b>K</b> Kamil	<b>T</b> Thomas
<b>C</b> Conor 25-26 Dec 2016	<b>L</b> Louise	<b>U</b> *
<b>D</b> Doris 23 Feb 2017	<b>M</b> Malcolm	<b>V</b> Valerie
<b>E</b> Ewan 26 Feb 2017	<b>N</b> Natalie	<b>W</b> Wilbert
<b>F</b> Fleur	<b>O</b> Oisín	<b>X</b> *
<b>G</b> Gabriel	<b>P</b> Penelope	<b>Y</b> *
<b>H</b> Holly	<b>Q</b> *	<b>Z</b> *
<b>I</b> Ivor	<b>R</b> Robert	

# A-Z of storm names 2017-2018

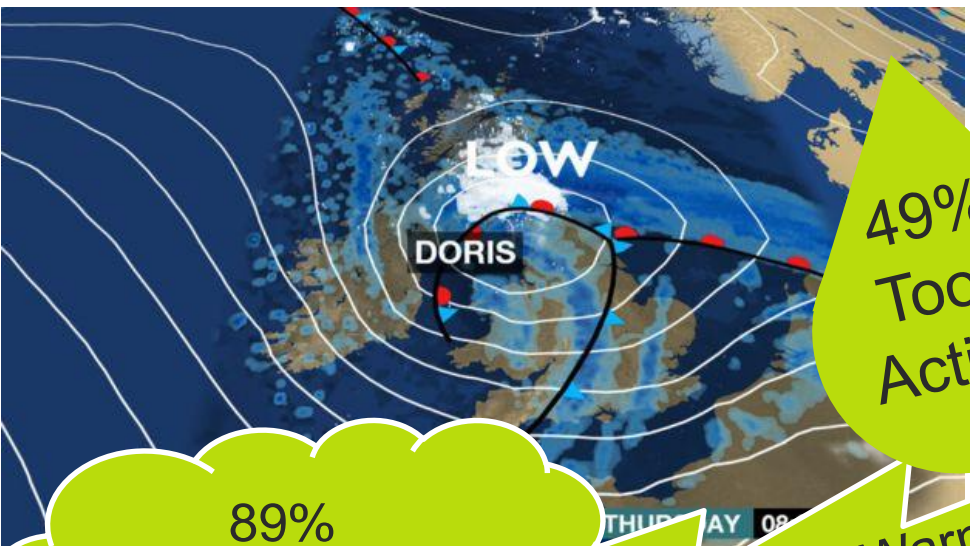
<b>A</b> Aileen 12-13 Sept 2017	<b>G</b> Georgina 24 Jan 2018	<b>M</b> Maeve	<b>S</b> Simon	<b>Y</b> *
<b>B</b> Brian 21 Oct 2017	<b>H</b> Hector 14 June 2018	<b>N</b> Niall	<b>T</b> Tali	<b>Z</b> *
<b>C</b> Caroline 7 Dec 2017	<b>I</b> Iona	<b>O</b> Octavia	<b>U</b> *	
<b>D</b> Dylan 30-31 Dec 2017	<b>J</b> James	<b>P</b> Paul	<b>V</b> Victor	
<b>E</b> Eleanor 2-3 Jan 2018	<b>K</b> Karen	<b>Q</b> *	<b>W</b> Winifred	
<b>F</b> Fionn 16 Jan 2018	<b>L</b> Larry	<b>R</b> Rebecca	<b>X</b> *	

David (named by Meteo France)  
18 January 2018



Working in partnership with the US National Hurricane Centre for official storm naming in the North Atlantic.

# Storm Naming Analysis



49% Took Action

Raised awareness and profile of severe weather

Simplified the message

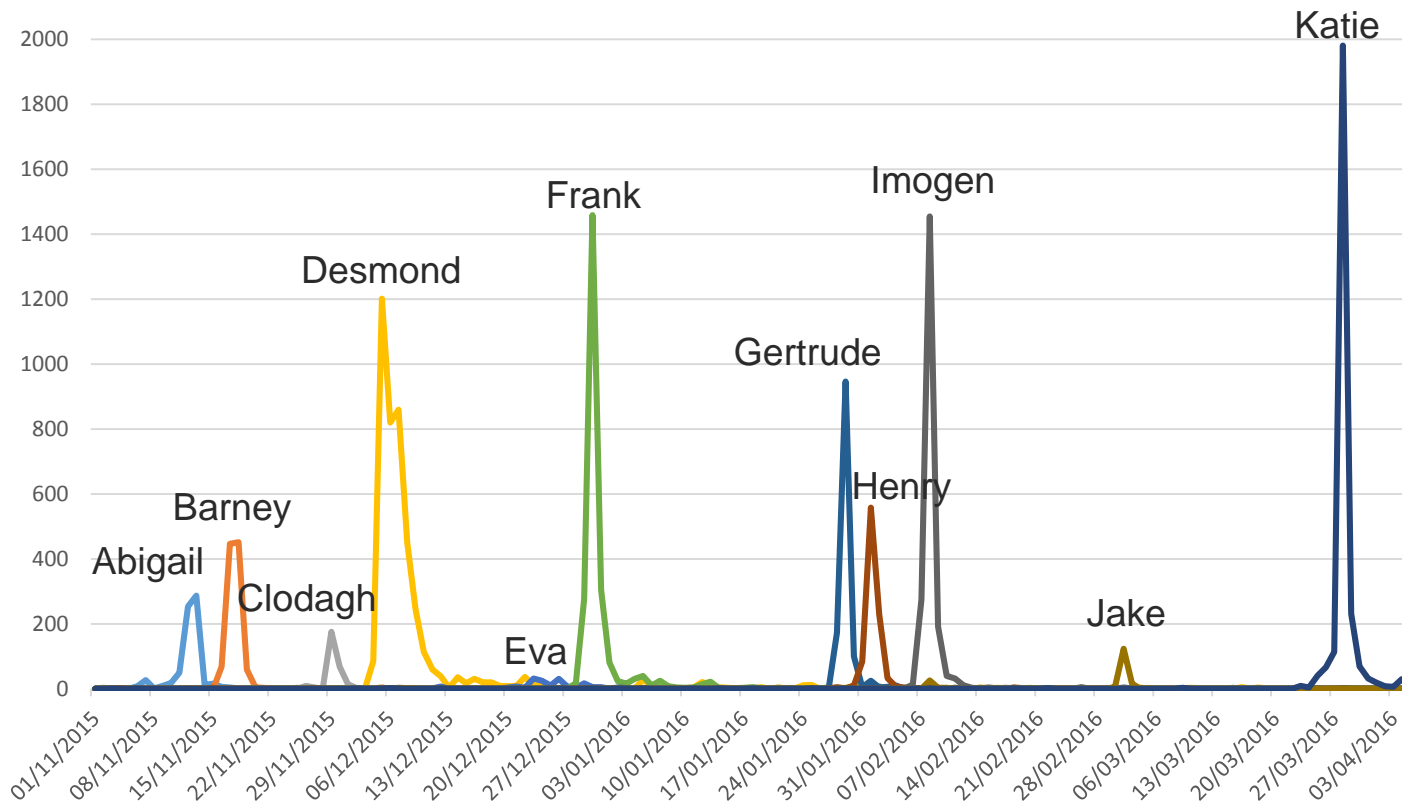
Easier to define individual events

Easier for general public to talk about

More people talking about the weather

89% Awareness in Warning Area

95% Found the Warning Useful



**UK News**  
@UK\_News

A major incident has been declared in Cumbria as residents are evacuated due to flooding. #StormDesmond

9:10 PM - Dec 5, 2015

87 retweets, 23 likes



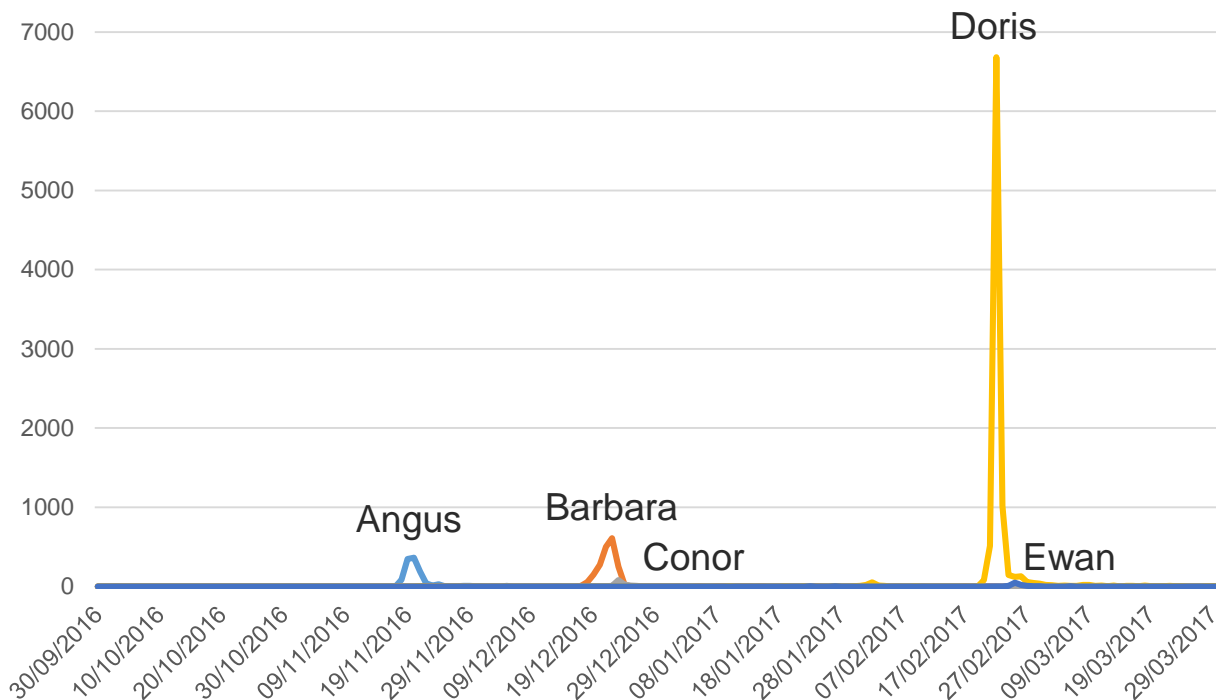
Doing the damage with @andrewf\_ at @ENVI Bathgate tonight

🔥 #StormDesmond

8:13 PM - Dec 5, 2015

1 reply, 5 retweets, 15 likes





**24** Report UK  
@ReportUK [Follow](#)

Flight from Edinburgh crash lands off runway during Storm Doris  
#D23 [goo.gl/70TJnz](https://goo.gl/70TJnz)  
12:52 AM - Feb 24, 2017

3 replies 3 retweets 3 likes



**Storm Doris is causing travel chaos across the UK**

**The Telegraph**  
@Telegraph [Follow](#)

Travel chaos as commuters warned not to travel from several major stations as Storm Doris batters Britain  
10:55 PM - Feb 23, 2017

3 replies 36 retweets 17 likes

 **Met Office**

I  my job



**RMetS**  
Royal Meteorological Society



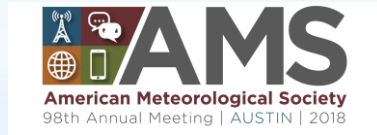
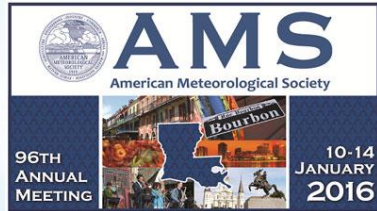
2013



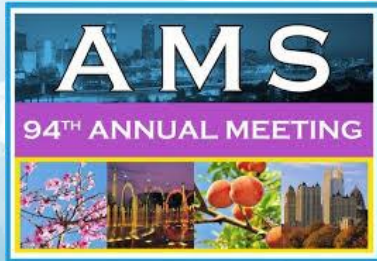
2014



2015



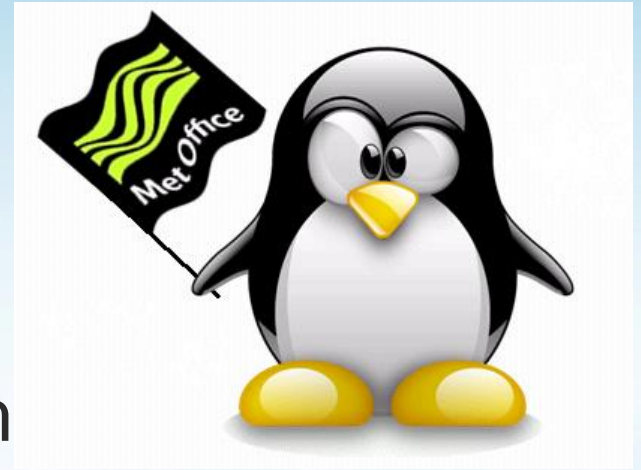
THE INNOVATIVE EMERGENCY SERVICES FORUM #SCOTLAND  
INTEGRATED - COLLABORATIVE - RESILIENT - MOBILE - #UKIESF



# My Career Path...

## Secondments

- Innovation and Application Team in Forecasting Service Delivery
- Natural Hazard Coordinator
- Strategic Relationship Manager for BEIS

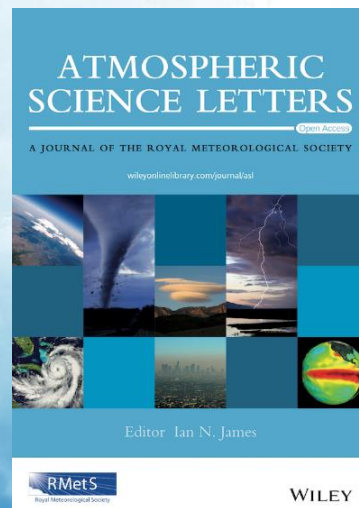
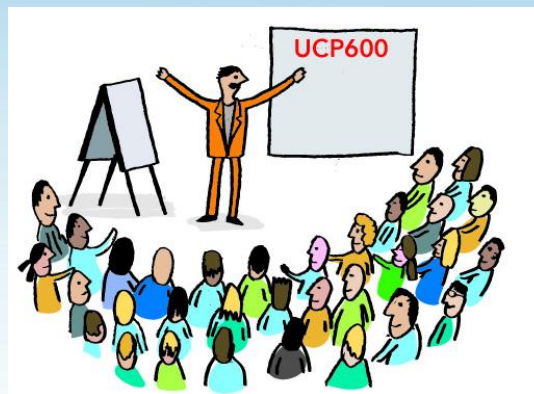


Department for  
Business, Energy  
& Industrial Strategy

# My Career Path...

## Other Opportunities

- Weather Science Seminar Organiser
- STEM ambassador
- FAAM
- Co-Editor of a journal



**STEM  
AMBASSADORS**  
ILLUMINATING  
FUTURES

Nationally coordinated by STEMNET



Science camp



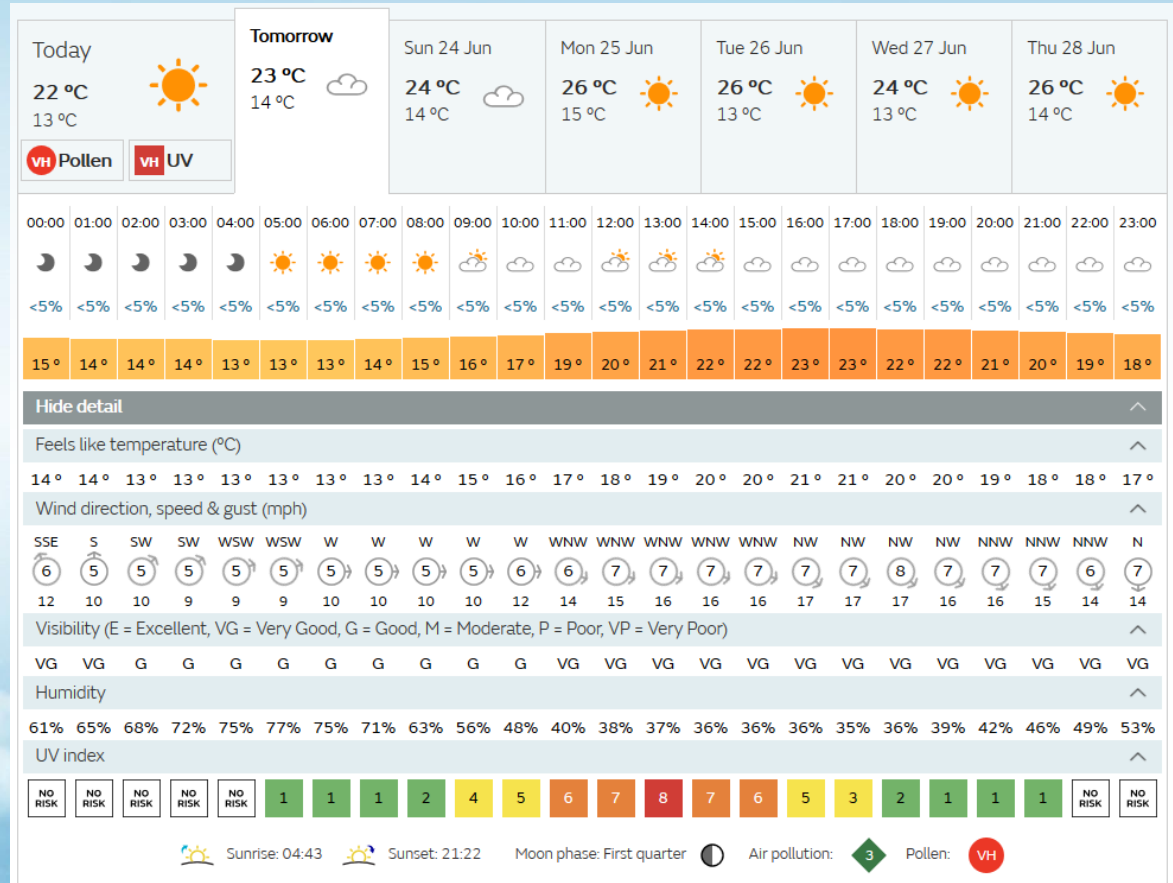
# Things I've learned

- Grasp opportunities especially when they interest you
- Ask yourself why not?
- Do your best

I still don't  
know what I  
want to do!

# Thank you for listening!

# Any Questions?



rebecca.hemingway@metoffice.gov.uk