



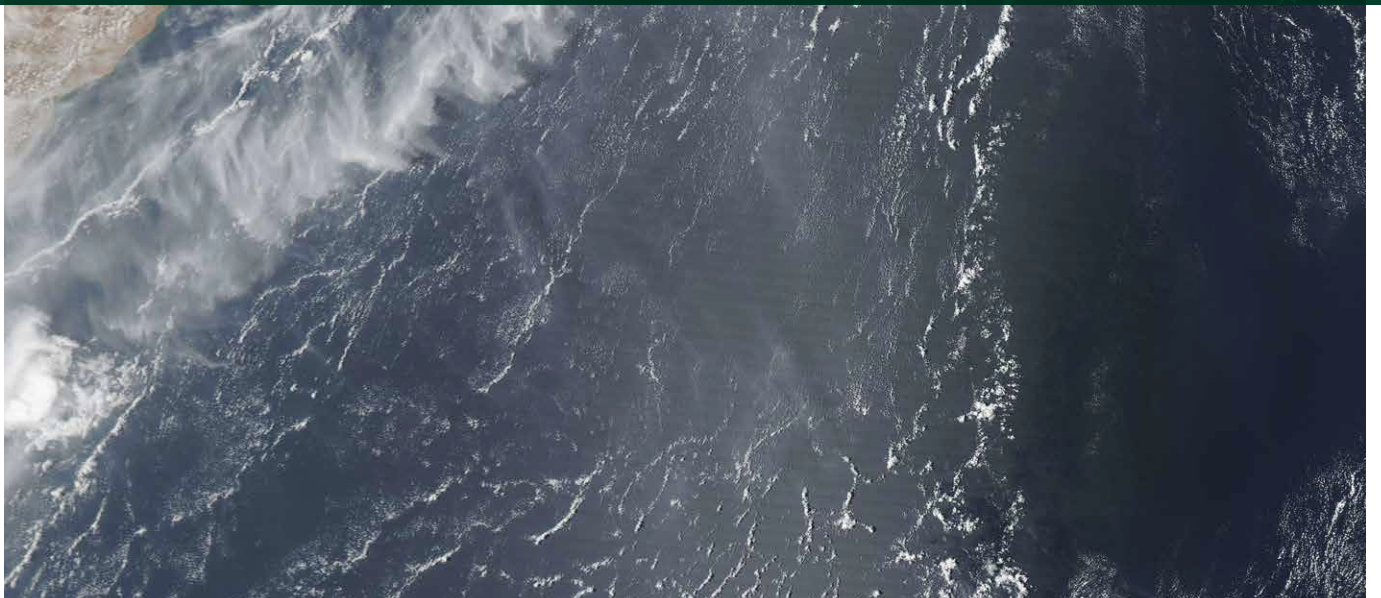
Independent workplace compliance



White Paper

Adverse weather – What is the forecast for you?

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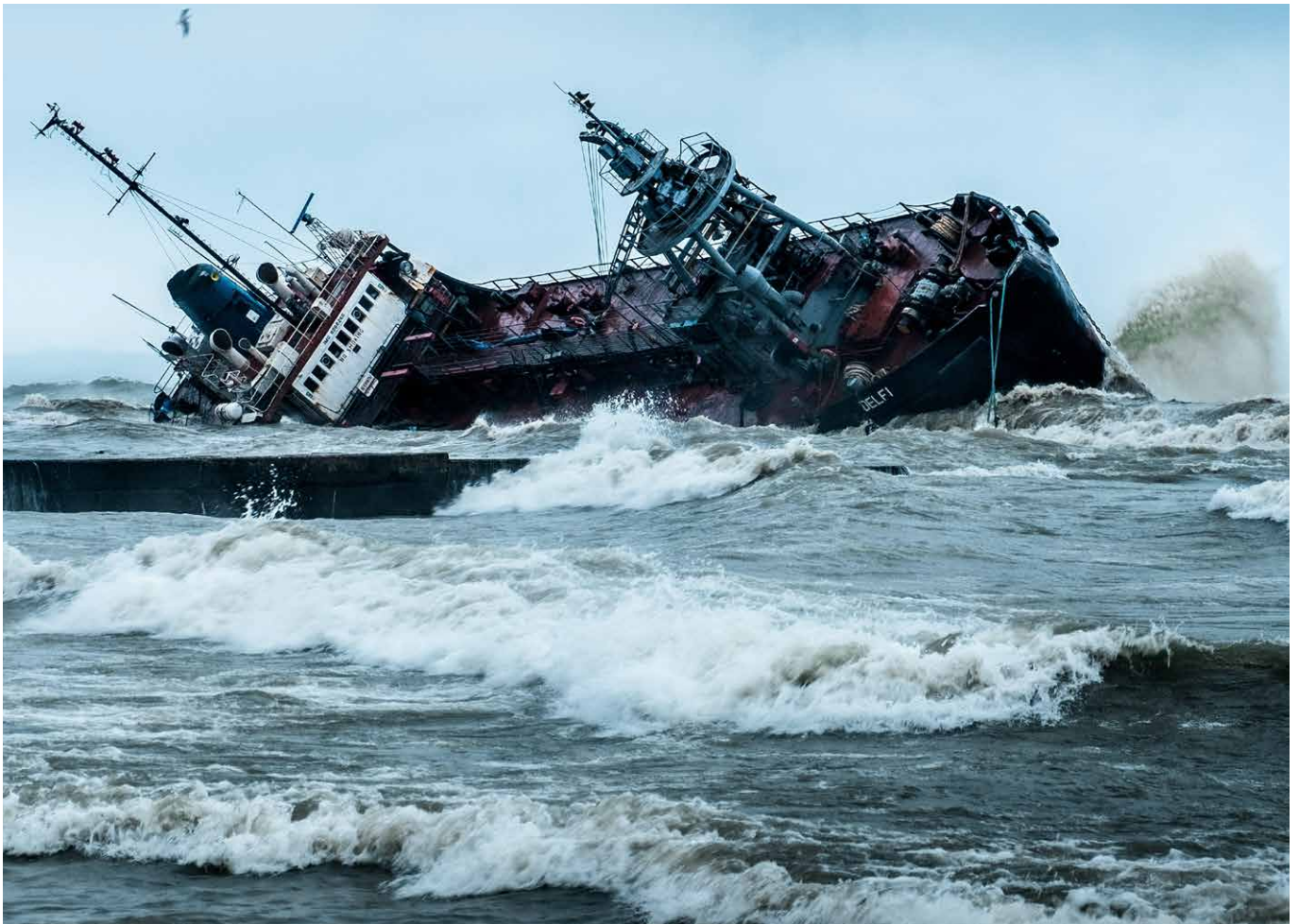
Adverse weather – What is the forecast for you?

The weather is, according to popular belief, a regular topic of conversation for us in the UK. That shouldn't be a surprise, because we inhabit an area with a temperate climate (no dry season and a warm Summer), so 'changeable' can be the order of the day, week, month, and year!

Extremes of weather is also something we've always had to contend with, although the influence of climate change is appearing to compound such events. According to the Met Office,

"Extreme weather events have severe impacts on society and ecosystems in our current climate and pose an increasing threat as climate changes. The number of extreme events which cause loss in any given year affected by both changing human factors, such as growing population and increasing infrastructure, as well as natural variability of the climate. In addition, there is evidence that the frequency of some types of extremes have changed – particularly warm temperature extremes and heavy rainfall events. There has also been a decrease in cold extremes."

So, we are looking at the topic of adverse weather in a bit more detail.



1. What constitutes “weather”?

According to information published by the National Centre for Atmospheric Science (NCAS),

“Weather is made up of six main components. These are temperature, atmospheric pressure, cloud formation, wind, humidity, and rain. A small change to any of these conditions can create a different weather pattern.

Every weather pattern has a knock-on effect, creating a ripple effect around the world. That’s why weather can sometimes seem chaotic. It’s constantly changing.” (What causes weather? - NCAS)

Each of these components interact in the atmosphere to create our weather, where:

- **Temperature** - is influenced by heat energy from the sun and the planet and indicates how warm or cold the air in the atmosphere is;
- **Atmospheric pressure** - the relative weight/density of the air. Warmer air is less dense than cold air and so lighter, leading to differences in pressure in the atmosphere - gravitational attraction (of the planet), wind velocity can also have an effect;
- **Humidity** - the term used to describe how much water vapour is contained in the air (which can make up to 4% of the gaseous atmosphere). Temperature can influence humidity too, with warmer air typically carrying more water vapour than cold;
- **Cloud** - forms when water vapour in the atmosphere condenses as it cools. Cloud formation is also influenced by factors such as turbulence, the sun, topography (hills and mountains) and weather fronts;
- **Precipitation** - happens when the water vapour in the air condenses to form droplets that become too heavy for the air to support and so fall out of the atmosphere. Depending on temperature and altitude can include, rain, fog, snow, sleet, hail, etc.; and
- **Wind** - describes the movement of the air in the atmosphere. Differences in pressure see air move from the higher to lower pressure areas. The greater the difference in air pressure between the two areas the higher the resulting wind speed.



2. What constitutes adverse weather?

The Cambridge Dictionary definition of adverse weather is 'bad weather that could cause harm or damage'. That bad weather comes in a variety of forms and can have a wide range of effects.

In general, adverse weather is that considered as potentially dangerous or damaging to safety and/or property, causing disruption to transport or infrastructure systems or normal day to day activities (i.e. driving, commuting, working). Typical examples of adverse weather could include:

- Heavy/prolonged rainfall and flooding;
- Extreme temperatures, heatwaves or freezing conditions;
- High winds and storms;
- Blizzards, snow and ice;
- Drought; and
- Fog.

In various occupations, construction for example, contracts can contain clauses that define what does and what doesn't constitute adverse weather and so potentially 'excusable delays', should it occur.

Advice is also provided in, for example, The Highway Code, which contains a section on 'Driving in adverse weather conditions' (226 to 237), which identifies 'rules for driving in adverse weather conditions, including wet weather, icy and snowy weather, windy weather, fog and hot weather.'

The 2019 Business Continuity Institute (BCI) Horizon Scan Report identified Adverse weather as the third costliest disruption reported at a cost of \$500 million.



3. What is The National Severe Weather Warning Service (NSWWS)

The Met Office run the National Severe Weather Warning Service (NSWWS), which provides warnings, up to seven days in advance for severe weather including rain, thunderstorms, wind, snow, lightning, ice, extreme heat, and fog.

Each warning issued should contain:

- A headline – describing the type of weather forecast;
- Details on the predicted impact(s) of the weather forecast and an indication of how likely those impacts are;
- Links to advice and guidance on staying safe in severe weather; and
- Additional information on the forecast weather.

When applicable, warnings could also cover information on why a warning has been updated, depending on the impact the weather may have and the likelihood of those impacts occurring. These impacts can include 'damage to property, travel delays and cancellations, loss of water supplies, power cuts and, in the most severe cases, bring a danger to life.' The warnings are also colour coded, yellow, amber, or red, according to their severity, where:

- **Yellow Warnings** - are issued when the weather could cause some low-level impacts (i.e. disruption to travel) in a few places. Yellow warnings could also occur when more severe weather impacts, affecting many people 'but the certainty of those impacts occurring is much lower.'
- **Amber Warnings** - indicate an increased likelihood of severe weather impacts, with a potential risk to life and property and the possibility of travel delays, road and rail closures, power cuts. Consider amending your plans and taking action to protect yourself and your property.
- **Red Warnings** - indicate dangerous weather is expected (risk to life, damage to property and infrastructure and substantial disruption to travel and energy supplies) and you should take action to keep yourself and others safe from its impact. Avoid travel if possible and follow advice provided by the emergency services.

Further information can be found at - [Weather warnings guide - Met Office](#)

While red weather warnings are relatively rare, we've seen three within 18 months, Storm Arwen, Nov 2021, Storm Eunice Feb 2022 and the extreme heat warning in July 2022.



4. What are the Government's plans for adverse weather

Published by the UK Health Security Agency, the 'Adverse Weather and Health Plan Protecting health from weather related harm 2023 to 2024' runs to 51 pages and provides a single plan, bringing together and improving current guidance on weather and health.

Using historic initiatives (e.g. Heatwave Plan for England, first published in 2004, and the Cold Weather Plan for England, first published in 2011), its focus is the protection of individuals and communities and build resilience against the health effects of adverse weather.

"The Plan outlines the important areas where the public sector, independent sector, voluntary sector, health and social care organisations and local communities can work together to maintain and improve integrated arrangements for planning and response to deliver the best outcomes possible during adverse weather."

Four goals have been set for the plan, these being (these may be refined and adapted as the plan develops):

- **G1.** Prevent the increase in years of life lost due to adverse weather events;
- **G2.** Prevent mortality due to adverse weather events;
- **G3.** Prevent morbidity due to adverse weather events; and
- **G4.** Reduce the use of healthcare services due to adverse weather events.

The 2023 to 2024 Plan is targeting activities specifically related to three topics, heat, cold and flooding hazards. Outputs will include:

- Guidance - on heat, cold weather, flood and drought;
- Evidence – covering aspects such as a Health Equity Review and rough sleeping/homelessness; and
- An impact based weather health alert system.

Future plans are potentially being expanded to capture additional topics, including thunderstorm asthma, drought, and storms.

Further information on the Government plan can be found at - [Adverse Weather Health Plan \(publishing.service.gov.uk\)](https://publishing.service.gov.uk)



5. What should your adverse weather planning look like?

Alfred Wainwright is quoted as saying “There’s no such thing as bad weather, only unsuitable clothing.” This sentiment, while of course focussed on an individual’s response to adverse weather, it does get to the heart of the matter, effective and proactive planning.

Some of the areas your adverse weather plan should include are:

- **Risk assessment** - A risk assessment of your organisation’s vulnerability to different types of adverse weather conditions is your starting point. Identify areas of potential risk, such as the building structure, equipment, and critical systems that could be affected. Assess your location in terms of flood risk, access restrictions/road closures and possible power outages. What key workers are required to keep your locations operational?
- **Keep informed** - Monitor weather forecasts and stay up to date on potential weather-related risks via Government and Met Office weather warning information.
- **Develop your building infrastructure** - Strengthen your building’s structural integrity, for example flood defences, or identify areas that could be particularly susceptible to high wind damage.
- **Develop your adverse weather response plan** - Create a comprehensive plan that outlines the specific actions you will take before, during, and after adverse weather events. This should include, for example:
 - Responses needed to different weather events;
 - Safe access/evacuation procedures;
 - Employee roles and responsibilities;
 - Staff communication procedures; and
 - Contingency plans.

Additionally, have specific advice and procedures created and communicated to others away from your workplaces who could be affected, such as peripatetic staff, drivers, company car users etc.

- **Investigate backup power options** - Review your essential power requirements and your backup options in the event of power outages for your critical systems.
- **Information** - Review systems for information storage, access, and provision to make sure it is accessible as required, even if on-site infrastructure is affected.
- **Outdoor equipment** - Make provision to secure or relocate outdoor equipment, vehicles, etc., as needed, to protected areas during severe weather warnings.
- **Establish communication channels** - Investigate and identify the lines of communication you will need to maintain with employees, customers, and suppliers during adverse weather events.
- **Educate and train** - Conduct specific training for those directly involved in your response activities and educate all employees about emergency procedures, e.g. evacuation routes, safe shelter locations, and first aid.

Your plan will need to be tailored to your organisations, its activities and the relative risks adverse weather could pose.

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