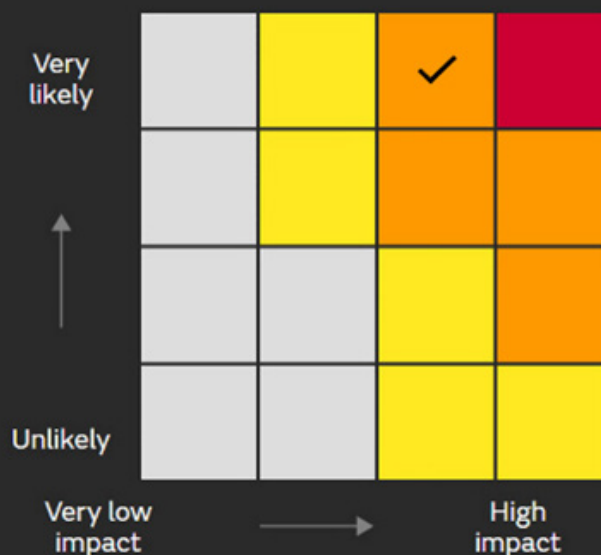


# Briefing

## Using categories to communicate risk information: Red is always go, but what about amber and yellow?

March 2026

### Warning impact matrix



### What we did

Warnings are often presented as levels and categories, often using yellow, amber, red levels to show escalating levels of risk. UK red warnings always create concern, but when it comes to amber people tended to be more concerned about a high probability of a moderate severity event than a low probability of a high severity event <sup>(1,2)</sup>.

These warning levels can be represented using risk matrices (as shown above) that combine information about potential impact severity with the likelihood of the event occurring. In these frameworks red always indicates that there is a high chance of a severe event taking place, but the meaning of yellow and amber can differ. Across a series of studies, we have investigated how people respond to different warning levels and whether providing information about probability affects risk perception and intention to act.

### What we found

**Warning Colours:** Most UK residents understand that yellow, amber and red indicate increasing levels of risk. However, a notable minority confused the level of risk implied by amber and yellow. Red warnings consistently elicit high perceived risk, high concern, high trust and high intention to take protective action irrespective of any additional information. There is though considerable variability in how yellow warnings are interpreted, potentially reflecting people's experiences of receiving yellow warnings and then experiencing a range of conditions.

**Information about probability and severity:** While public responses to red warnings do not appear to be affected by additional information about likelihood and severity, for amber warnings people tend to be more concerned about those indicating high likelihood of moderate impacts rather than low likelihood of high impacts. Explicitly saying that an event is low likelihood can reduce risk perception and trust in the forecast.

**Mapping warnings:** When presented with a map showing local warning levels people often cannot precisely locate their position.

## Recommendations

- Be aware that people vary in how they interpret amber and yellow warnings. People often find yellow warnings particularly ambiguous and may be unsure how to respond to them.
- If warning for a low likelihood but potentially severe event, provide concrete instructions about what the appropriate response to this information is (e.g. stay updated rather than take immediate action)
- Where possible allow people to easily find their location on interactive maps.

## References:

- <sup>[1]</sup> Taylor, A. L., Kause, A., Summers, B., & Harrowsmith, M. (2019). Preparing for Doris: Exploring public responses to impact-based weather warnings in the United Kingdom. *Weather, climate, and society*, 11(4), 713-729.
- <sup>[2]</sup> Taylor, A., Summers, B., Domingos, S., Garrett, N., & Yeomans, S. (2024). The effect of likelihood and impact information on public response to severe weather warnings. *Risk analysis*, 44(5), 1237-1253.

## Find out more

To talk about these findings and wider implications/ next steps for your organisation, please contact

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## About us

This research was conducted by academic researchers at Leeds University Business School's Centre for Decision Research and the School for Earth, Environment and Sustainability's Sustainability Research Institute.

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