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Creative Use of Colour to Satisfy Different User Needs

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Meteorological data, commonly visualised in map format, has to satisfy wide-ranging user needs. For example, the needs of the forecasting community and business-critical users tend to be very different to the needs of more passive user categories, such as the public. And in turn user requirements depend also on the variable(s) being displayed. One way to address this complexity, and achieve customer satisfaction, is via creative, carefully tailored use of colour - this may seem like a trivial undertaking but it is not. Questions that need to be posed to design appropriate visualisation strategies include, but are not limited to: Does the user need to quickly identify values? Should the variables in question have an intuitive connection to colour (e.g. blue for cold)? Are different variables being overlaid or juxtaposed? Do we want to highlight hazardous conditions? Many times a compromise has to be found between competing requirements in these and other categories. This talk will provide examples of good and bad practice, including common pitfalls related for example to "visual non-linearity" of RGB settings, and provide pointers to how to best tailor a colour scheme for a target audience. We will also touch on strategies for colour-blindness, and also on how colour should not be used to overstate minimally significant results. We will also stress that, although time consuming, trial and error testing using inputs from multiple meteorological scenarios is the way to achieve visual presentations that will stand the test of time.

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