Water utilities urged to adapt to risk from extreme weather events

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Australian water utilities must adapt to extreme weather events if they are to protect vulnerable supplies and ensure clean drinking water into the future, an international report warns.

Events such as flooding, prolonged rainfall, drought, cyclones and bushfires all have an impact on surface water quality, and are predicted to become more frequent and intense in many parts of Australia due to climate change.

"Water quality impacts from these events are diverse but can include the presence of highly toxic chemicals and infectious pathogens," says Dr Stuart Khan from the UNSW School of Civil and Environmental Engineering.

"Utilities without appropriate contingency plans will be at a major disadvantage when recovering from and adapting to these future weather-related impacts."

Khan is the lead Australian author on a report commissioned by the US-based Water Research Foundation, which was established to help water utilities better deliver clean drinking water and meet regulatory standards.

The results of the study identify various water quality impacts resulting from extreme weather. These include aesthetic impacts on colour, taste and odour, the presence of microbial and chemical pollutants, and

disruptions to normal water treatment processes resulting from damaged infrastructure.

To collect data, the researchers undertook detailed retrospective case studies of extreme weather events experienced during the past decade. These included surveying staff from 41 water utilities in Australia and the US, including major urban utilities in New York City, Houston, Sydney and Melbourne.

"Interestingly, the water quality impacts were observed to be much worse following a combination of extreme weather events in close proximity, rather than after a very extreme but isolated event," says Khan.

"As we see these events happening more frequently, it's likely the impacts will become more severe."

Khan says while Australian water utilities are "reasonably well prepared to respond to extreme weather events" thanks to an industry-wide focus on risk assessment and risk management, the vulnerability of our water systems requires urgent action.

"We need to focus on building resilience into our future supplies," he says. "This means designing systems that are more protected from the impacts of climate change and that have greater flexibility to respond to extreme weather events. This could be partially brought about through a diversification of water sources."

A follow-up project is now underway, focusing on how Australia may be able to include adaptation measures and extreme weather event resilience into future revisions of the Australian Drinking Water Guidelines.

More information: Read the report "Water Quality Impacts Of Extreme Weather-Related Events", here: www.waterrf.org/Pages/Projects.aspx?PID=4324

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