

Despite the lifting of Ireland's second ever Water Conservation Order following recent rainfall, the future for Ireland's drinking water resources remains uncertain.

The first six months of 2020 have seen change on a scale unfathomable at the end of last year as Ireland and the world has tried to deal with the COVID-19 pandemic. During the same period, the country has transitioned from a time of large-scale flooding in February to the implementation of its second ever Water Conservation Order (hosepipe ban) on the 2nd June.

Since the Water Conservation Order was initiated, the country has received some welcome rain and the Order was lifted by Irish Water on 8th June following a reduction in the number of drinking water supply schemes in, or at risk of being in drought.

Much of the rain that has fallen over the past few weeks has been soaked up by the soil and vegetation, with only some making its way to our rivers, lakes and groundwaters. In addition, there has been regional variation in the amount of rain received.

Analysis of river flows, lake levels and groundwater levels is provided by the EPA through their [monthly hydrometric bulletins](#). Despite the majority of rainfall stations around the country recording monthly rainfall totals above their long-term average in June, most rivers fell below their long-term monthly average flow. Over 59% of rivers recorded flows below normal for this time of year, with most of those rivers located in the East, Southeast and Shannon regions. Lake and groundwater levels also fell, some recording record low levels, with 80% of assessed lakes and 73% of groundwater monitoring wells showing below normal levels for June. A number of organisations including An Fóram Uisce, the Environmental Protection Agency, the Geological Survey of Ireland, Irish Water, Met Eireann and the National Federation of Group Water Schemes are working together to examine how communication around water availability can be improved to help promote the wise use of water.

The Phoenix Park in Dublin is the longest continuous meteorological station in Ireland, dating back to 1837. The dry Spring of 2020 smashed the records for low rainfall and in doing so has shone a spotlight on the difficulties associated with delivering clean and safe drinking water across the nation.

Ireland is perceived to be a wet country, yet it has the [largest trend for increasing summer meteorological drought in Europe](#) and [it is estimated](#) that approximately 1.76 million Irish people are living in areas of water stress – where the demand for water is not being met. New research funded by the Irish Research Council is delving into Ireland's drought history and is showing that drought in Ireland is not an unusual event. "The last 30 years have been unusually drought free in Ireland", said

Civic Offices, Limerick Road,
Nenagh, County Tipperary



Dr Arlene Crampsie, lead researcher on the Irish Droughts Project. “But drought is an overlooked climate hazard in Ireland, and it is likely that the frequency and severity of droughts in the coming decades will increase”.

Examining archives of printed media has highlighted how drought has affected the country in the past. “*The long drought threatens to become a national calamity...I therefore authorise you, under the present circumstances, to use the prayer for rain*” wrote the Bishop of Meath in the Irish Times on July 1st 1887. The drought that occurred that year has been [identified by researchers at Maynooth University](#) as one of the most intense island-wide droughts experienced in the last 250 years.

In a statement that would not have been out of place in Ireland a month ago, the Leinster Leader reported in 1921 that “*In the city of Dublin the supply of water is almost exhausted and notices have been issued warning the public of the possibilities of a water famine.*”

The Greater Dublin Area is particularly vulnerable to changes in both reduced water availability and increases in water demand. During the lockdown period, water consumption increased by 24 litres per person per day; and the good weather in May led to increased domestic use. [Irish Water have stated](#) that over the June bank holiday weekend an equivalent daily increase of water usage for an additional 200,000 people occurred.

The water supplies for the Greater Dublin Area are on a knife’s edge, with Dublin relying on the River Liffey to supply more than 80% of the city’s water needs. The vulnerability of depending so heavily on one water source was highlighted in 2019 when over 600,000 people were impacted by two boil water notices applied to consumers supplied by the Leixlip water treatment plant. In addition, the main treatment plants for the Greater Dublin Area at Leixlip, Vartry and Ballimore Eustace are at their maximum production capacity – they have no, or very little, ‘headroom’ for further drinking water production. With the population in the Greater Dublin Area projected to account for around 65% of the total population growth of Ireland by 2051, providing a secure and resilient water supply to the region is going to be challenging.

Ireland is certainly not alone in facing the challenges associated with securing safe, reliable and resilient water supplies. The scarcity of water in Cape Town in South Africa in 2018 was widely reported around the world as the city struggled to cope with a dry period which exposed its water system that relied on rainfall. The city narrowly managed to avoid reaching ‘Day Zero’ – when the city’s water supply was due to be shut off. This was achieved through severe water rationing and water conservation measures, and a little luck with the weather.

In 2019, the Indonesian Government announced that the national capital city will move more than 1,000km from Jakarta to Kalimantan on the island of Borneo. One of the primary reasons for the move is that Jakarta is sinking at an average rate of 1-15cm per year, with areas of North Jakarta having sunk 2.5m in 10 years. Insufficient volumes of drinking water are piped to and around Jakarta, causing large numbers of locals to rely on wells which pump water from shallow aquifers,

leading to the land above to collapse. The cost of the move to Borneo is estimated to be around €30 billion.

In March last year, the head of the Environment Agency in the UK stated that England would not have enough water to supply its needs in 25 years' time. London's water demand is expected to exceed supply within the next decade and severe water shortages may be frequent occurrences in the city by 2040. Under a climate change scenario of 2°C warming by the end of the Century, [it is projected](#) that England will face a water supply demand deficit of 1.1 billion litres per day.

Over 2.3 billion people around the world live in water scarce areas and that number will have increased by around 350 million people by 2030. [An assessment in 2014](#) identified that one in four cities worldwide are under water stress due to geographical and financial limitations. Living in areas of water stress brings forth the issue of inequity. It is often those in society most in need that are impacted greatest by water shortages, whether through financial cost of alternative supply, geographical location, limited local infrastructure, or a combination of all of these issues and more.

Many cities worldwide have begun planning for a future where water is scarce. [The French City of Lyon](#) is of similar population size to Dublin and Lyon is expected to increase its population by 300,000 by 2030. Overuse of groundwater, increasing frequency of droughts, increasing impermeable surfaces preventing water percolating through the soil, increasing flood risk from the River Rhône and increasing urban heat areas are some of the challenges the city is facing. In a revolutionary move, the city has initiated a 'Masterplan for Territorial Coherence' to develop Lyon around its water resources to create a city that lives with water. This is being achieved through regenerating the city's water services, delivering water sensitive urban design, preparing for extreme climate events, and by empowering water-wise communities.

Water-wise communities are essential but they need to be assisted by legislation and policy. The opportunity for increasing rainwater harvesting and recycling household wastewater ('grey water' from washing and showering, for example) exist. But Ireland's building regulations need revision to facilitate national-scale action to reduce water consumption. Opportunities for retrofitting also need to be pursued. In the UK, current building regulations state that all new homes should be built to a water consumption standard of 125 litres per person per day, with an optional requirement of 110 litres per person per day in water stressed areas where there is a clear need. In Ireland, the average person uses 129 litres of water per day and encouragement is needed to increase water conservation measures.

In 2015, the Government introduced a €100 Water Conservation Grant for all households registered with Irish Water, promoting household expenditure on water conservation measures. No audits were held regarding the use of this grant which was suspended in 2016, and no further grants to enable domestic water conservation measures have been introduced since. Consequently, there is little stimulus for the general public to initiate domestic water conservation measures; and despite action undertaken and progress made by Irish Water to reduce leakage rates on water distribution networks, they are an easy target and excuse for further inaction by the general public. Currently,

Civic Offices, Limerick Road,
Nenagh, County Tipperary



43% of all water supplied by Irish Water is lost, and the utility aims to reduce this to 38% by 2021 following a €500 million investment. Recognising that further progress requires additional expenditure and time, there needs to be greater ambition to reduce leakage further below 38% beyond 2021.

But even with some progress on reducing leakage, there remains a need to diversify water supplies to reduce the risk of large-scale water outages, such as those which occurred at the Leixlip water treatment plant last year.

The Water Supply Project for the Eastern and Midlands Region is the preferred option proposed by Irish Water to deliver a sustainable, secure and reliable water supply for the region. The project proposes to take water from the River Shannon and pipe it 170 km to supply communities within the Greater Dublin Area, as well as North Tipperary, Offaly, Laois, Westmeath, Kildare, Meath and Wicklow. The project is expected to take at least 10 years to complete if it gains approval to proceed.

In selecting the Water Supply Project as its preferred option, Irish Water investigated other options, including desalination – removing the salt from seawater and treating it to provide drinking water. [A UN recently released a report](#) on ‘Unconventional Water Resources’, identifies the feasibility of using water from sources such as offshore deep groundwater, fog harvesting, municipal wastewater, agricultural drainage water and cloud seeding among others. While these unconventional water resources currently seem like pie in the sky and science fiction, if climate breakdown projections are correct and further action is not taken to improve the nation’s infrastructure, it is possible that one or more of these options may become a reality for Ireland in the not too distant future.

Planning for the future sustainability of our water supplies is essential. Irish Water are currently developing the first National Water Resources Plan, a 25 year strategy setting out how the utility will balance the supply and demand for public drinking water over the short, medium and long term. The draft plan will be released for public consultation this year, giving the opportunity to provide feedback on how drinking water is managed into the future.

Yet, Ireland is lagging behind other countries around the world in reducing risks associated with its water supplies. Even though the most recent Water Conservation Order has now been lifted, the experiences of two droughts in two years brings the availability of our water and the resilience of our water supplies to changing climate and increasing population into sharp focus. Ireland needs to catch up, and fast. Otherwise, as we look forward to further dry periods in a time when hygiene and water literally go hand in hand, we may well heed the Bishop of Meath’s advice from 1887 and “pray for rain”.

Note to editors

The author, Dr Alec Rolston, is Research Lead for An Fóram Uisce. Contact: alec@nationalwaterforum.ie or [@TugOfWater](https://twitter.com/TugOfWater)

An Fóram Uisce|The Water Forum was established as a statutory body in June 2018 to facilitate stakeholder engagement and debate on issues relating to water as a resource, water quality, rural water concerns, issues affecting customers of Irish Water and issues associated with the implementation of the Water Framework Directive.

Civic Offices, Limerick Road,
Nenagh, County Tipperary



The Forum consists of 27 representatives from a wide range of organisations with direct connections to issues relating to water quality. These include consumer, community and water sports groups, business and trade unions, environmental sector, Irish Water consumers, the group water scheme sector and a range of other sectors including education, agriculture, fisheries and forestry. The Forum is chaired by Dr Tom Collins.

For further information, contact gretta@nationalwaterforum.ie

www.thewaterforum.ie

[@AnForamUisce](https://twitter.com/AnForamUisce)