25th August 2022

Irish Water – Technical Report on Introduction of Water Conservation Order in the West Cork Area ("WCA")

Under Section 56(16) of the Water Services Act 2007 (S.I. 30 2007) and Water Services Act 2007 (Commencement) Order 2007 (S.I. No. 528 of 2008), art. 2

IW/FF/LDB/0115

1. Note of Technical Expertise

Mairéad Conlon MEngSc BEng CEng

I am a Water Resource Specialist, working within the Asset Management Section of Irish Water. I am a Civil Engineer by training and hold a BEng in Civil Engineering and an MEngSc in Engineering Hydrology with recent experience covering analysis of water supply and demand balance and projections for schemes across the country, as part of preparation of the National Water Resources Plan (NWRP).

2. Technical Justification for Water Conservation Order

Weather in 2022 has been extremely dry for the entire year in the south of the country. Irish Water has experienced several difficulties in relation to shortages in the public water supply, and these issues are particularly acute across the 30 supplies in the West Cork Area (the "WCA").

Raw water sources in the WCA area are significantly depleted and we are tankering water to a number of areas to maintain water supply to our customers. Irish Water ran a significant water conservation communications campaign in the area, (including stakeholder and media engagement, social media, media and press advertising), however, this has not resulted in the required reduction in demand and the supplies are still suffering. Due to the prolonged dry period it will take significant levels of rainfall to recharge our water sources areas and the long range weather forecast does not indicate any significant period of prolonged rainfall.

All supplies in the WCA are listed in Table 1 below. A map of the WCA is provided in Appendix 1.

Adrigole	Dunmanway
Allihies	Durrus
Bantry	Dursey Island
Bayview	Glengarriff
Caheragh	Goleen
Cahermore	Johnstown
Cape Clear	Kealkill
Castletownbere	Kilcrohane
Clonakilty	Lyre Clonakilty
Cluain Court Allihies	Reenmeen West
Coppeen	Skibbereen
Crookhaven	Skibbereen

Crosterra	Tarelton
Drinagh	Toormore
Dromore Bantry	Whiddy Island

Table 1 – List of 30 Public Supplies in West Cork

Water levels at our surface water and ground water sources in the WCA have reduced to historic lows and with below average rainfall predicted for the coming 2 week period we expect the situation to continue to deteriorate.

Private wells in the area have come under strain and this has resulted in farmers in the WCA diverting to the public supply which has resulted in an increase in demand.

This agricultural demand along with increased demand associated with warm weather and tourism in the area has put pressure on our supplies and if sustained could have a potential impact on the ecology of our raw water sources.

We are currently tankering water to 3 of the 30 supplies and 1 supply had to be placed under a Do Not Consume notice as a result of deterioration in raw water, due to extremely low levels in the lake source. There is potential requirement for tankering to additional supplies in the WCA in the next two weeks.

In 2018 Irish Water introduced a number of Water Conservation Orders ("WCOs") across the Country. The WCOs and restrictions, which were introduced by Irish Water during the drought of 2018, were essential to and instrumental in reducing water demand nationally and, in our view, prevented large scale water outages that could have impacted on up to 50% of the Domestic and Non-domestic water users reliant on the public water supply.

It is acknowledged that we are coming to the end of the summer period when we typically experience wetter weather, however, due to the existing dry ground conditions (high soil moisture deficit) it will take time for our sources to recover, particularly our ground water sources which have historically taken a period of weeks to recharge after periods of dry weather even if weather patterns return to normal.

While the country has experienced rainfall over the last week (14 August to 21 August), only 5.3mm of rainfall was recorded at the Roches Point rain gauge. The week ahead forecast for the WCA predicts dry weather with temperatures on average at 18^0C for the coming week. The Met Eireann 4 week look ahead issued on 23 August notes that lower than average rainfall is predicted for the week commencing 26 August and notes that weather in September will be mainly dry to the end of the month.

To reduce demand and limit any potential impact on the environment I consider it necessary to introduce a WCO to prohibit certain water usage across the 30 supplies in the WCA. This Order should, given the data currently available to us,

be effective for four weeks from the date it is made and should apply to all the supplies (water resource zones) listed in Table 1 and outlined in the map in Appendix 1. This Order will assist Irish Water to appropriately manage water supplies in the area and to attempt to control the rate at which raw water sources are being depleted until there is sufficient rainfall to replenish them. Taking action now allows us avail of options that are unlikely to be available to us later if conditions worsened in future weeks.

The technical justification for the prohibition is that we have experienced dry weather in the WCA over a prolonged period evidencing a critical decrease in water availability together with an increased demand for water. If left unchecked, this will result in a risk of failure of the water supply network in the WCA. Irish Water must be especially cognisant of risk to water supplies later in the autumn, due to the current prolonged period of dry weather with further dry weather forecast. We must prudently manage that risk by conserving and reducing water consumption now to ensure continuity of supply. Irish Water must therefore take a precautionary approach in formulating the planned prohibition and/or restriction of water supplies. In considering the proposed restriction and/or prohibition and its duration, Irish Water must and has considered the potential hardship to and economic impacts on domestic and commercial water users.

2.1 Evidence of Extreme Weather

Rainfall levels have been mostly below average for the first 7 months of this year across the south of the country. Due to the prolonged dry spell in spring/summer 2022, it will likely take many weeks to replenish the water sources in the area when precipitation returns to normal levels, however, below average rainfall is predicted for the next month.

2.1.1 Met Eireann Data

Met Eireann Data published data to the end of July which highlights that 2022 has been a dry year in the WCA. Figure 1 below shows rainfall data from the rain gauge at Roches Point. This data is shown in relation to the long-term average for the same gauge. From Figure 1 it can be seen that rainfall levels at the Roches Point rain gauge were below or at average for every month since November 2021, except for the month of June. While rainfall levels were approximately 30% above average in June this compares to 6 previous below average months, and for 4 of these months rainfall levels were greater than 50% below average with rainfall levels in July nearly 75% below average.

This was followed with more recent dry weather and a heatwave in the 2nd week of August (10 to 14 August) with temperatures greater than 25^{o}C for five consecutive days recorded at Cork Airport.

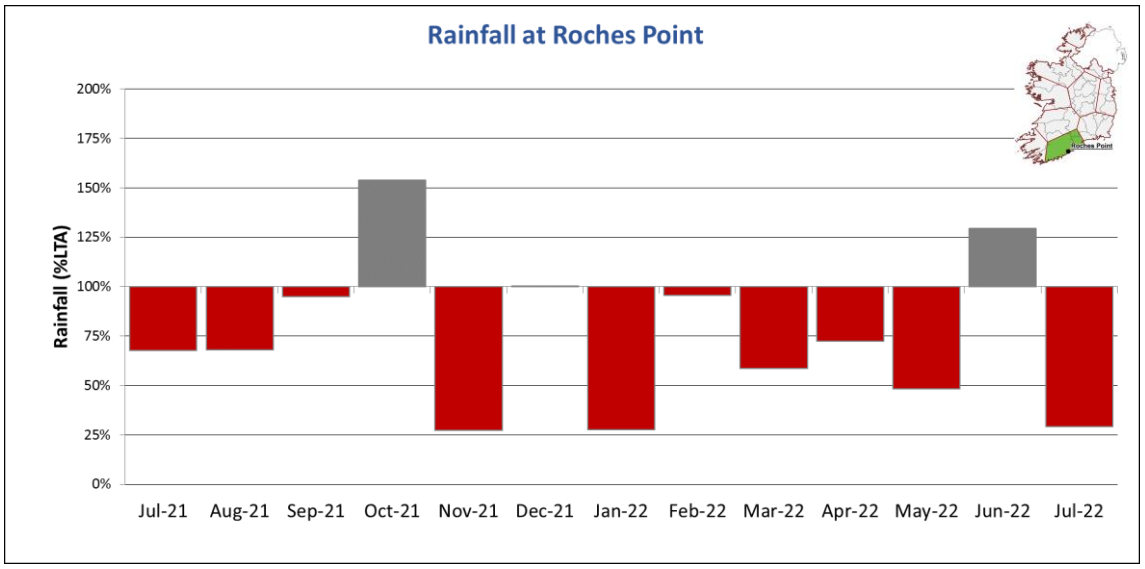


Figure 1 – Roches Point Rainfall Data

This review of Met Éireann rainfall data alone indicates significantly low rainfall levels in the south of the country over the past 7 months. This has created a range of difficulties across our supplies in the WCA. Ongoing measures have been in place since May 2022 and include;

- Tankering of water from nearby supplies
- Nighttime restrictions in Clonakilty during periods of peak demand during the heat wave in August
- Water conservation messaging campaigns

2.1.2 Drought Indicators

Irish Water has developed a draft Drought Management Plan that uses statistical indicators to track prevailing weather conditions in relation to drought. Using these indicators, we identify triggers for action as we enter drought periods and develop potential actions that can be used to maintain water supply (where possible) during these conditions.

Irish Water's indicator uses the Standardized Precipitation Index (SPI) method, advocated by the World Meteorological Organization. This indicator has been developed for representative sites across the country where we compare rainfall accumulations to the long-term average.

SPI is a normalised index representing the probability of occurrence of an observed rainfall amount when compared with the data for long-term reference period at a given location. Negative SPI values represent a rainfall deficit, moving towards drought, whereas positive SPI values indicate rainfall surplus. The larger the negative SPI values, the more serious the measured event is. SPI is produced for 1, 3, 6 and 9 month (denoted SPI 1, 3, 6, 9 respectively) accumulations. The

draft Irish Water Drought Management Plan proposes the following definitions, outlined in Table 1, for drought stages rated to SPI.

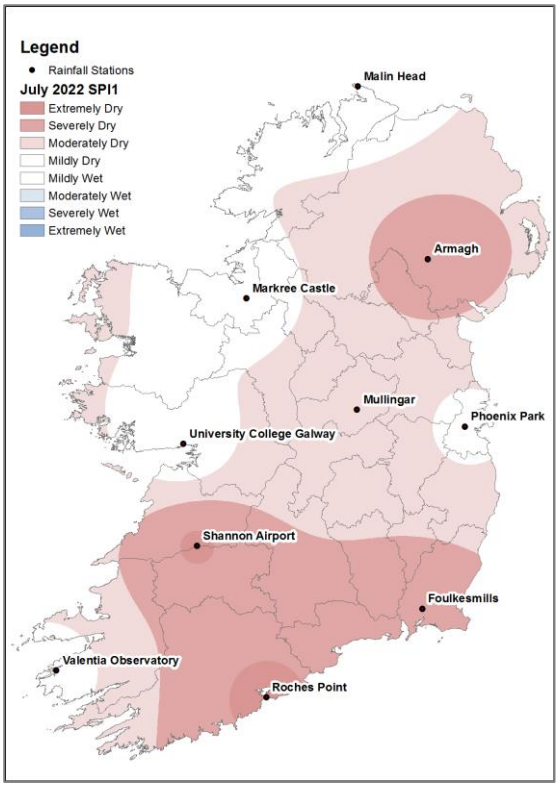
- A negative SPI 1 value means that at that location, for the previous month, there has been less rainfall than normal when compared to the same month, when all historical rainfall records are considered. The lower the value (-1, -2, -3) the drier the conditions. A single month of dry weather would only impact some of our sources, such as shallow springs or rivers where levels drop very quickly when there is no rain (predominantly flashy upland catchments).
- A negative SPI 3 value means that at that location, for the previous three months, there has been less rainfall than normal when compared to the same three months when all historical rainfall records are considered. The lower the value (-1, -2, -3) the drier the conditions. Three months of dry weather would have an impact on the majority of our water sources, including river, lake and some groundwater abstractions.
- A negative SPI 6 value means that at that location, for the previous six months, there has been less rainfall than normal when compared to the same six months when all historical rainfall records are considered. The lower the value (-1, -2, -3) the drier the conditions. Six months of dry weather would have an impact on all of our water sources, including river, lake, reservoirs, impoundments and groundwater abstractions. A negative SPI 6 usually occurs when a dry summer follows a dry spring.
- A negative SPI 9 value means that at that location, for the previous nine months, there has been less rainfall than normal when compared to the historical record. A negative SPI 9 usually occurs when a dry summer follows a dry spring

Table 1 – Drought Indicators

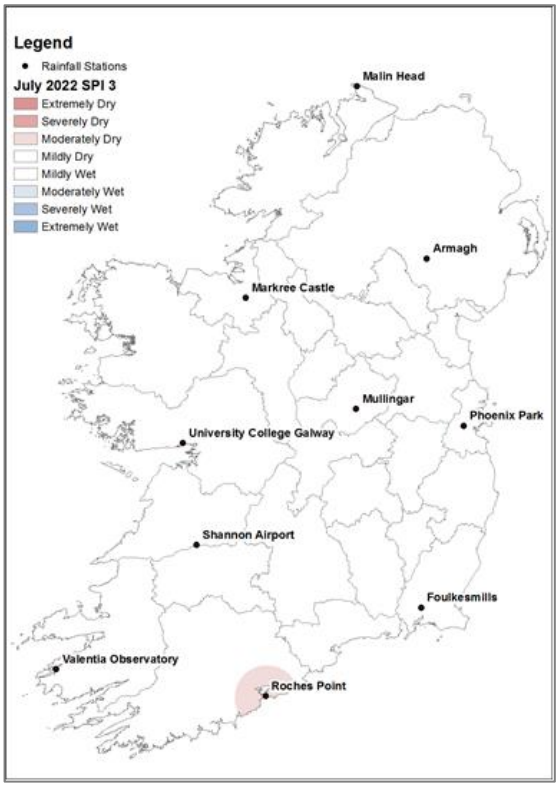
Drought Stage	Trigger
Normal	SPI above -1.
Potential Drought	SPI of -1 or below
Drought	SPI of -1.5 or below
Emergency (Severe Drought)	SPI of -2 or below
Post-Drought	Recovery in supply position and easing of environmental stress

As part of our technical review as to whether an Order may be required, the July SPI 1,3,6 and 9 index was developed and is shown in Figure 2 below.

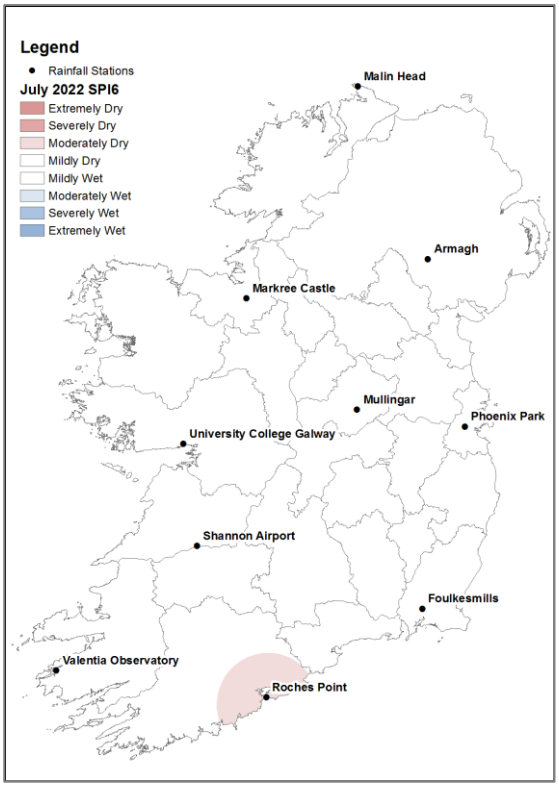
July 2022 SPI 1



July 2022 SPI 3



July 2022 SPI 6



July 2022 SPI 9

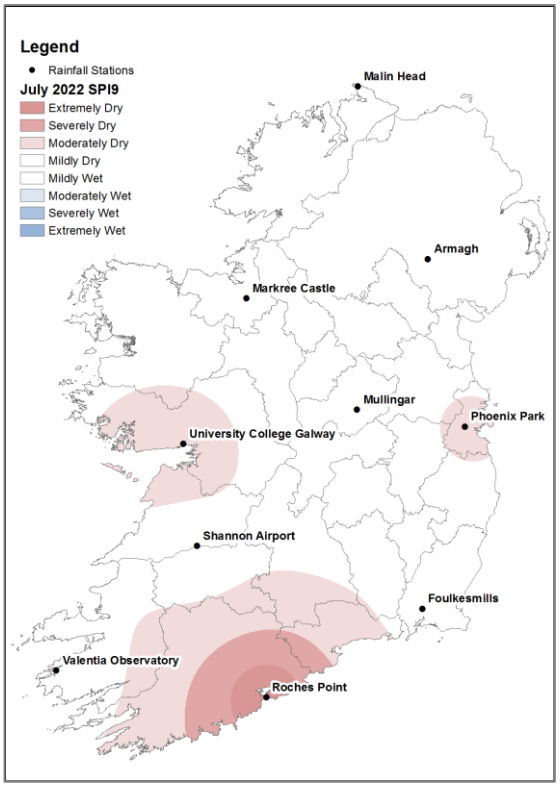


Figure 2 – July SPI 1,3,6 and 9 maps

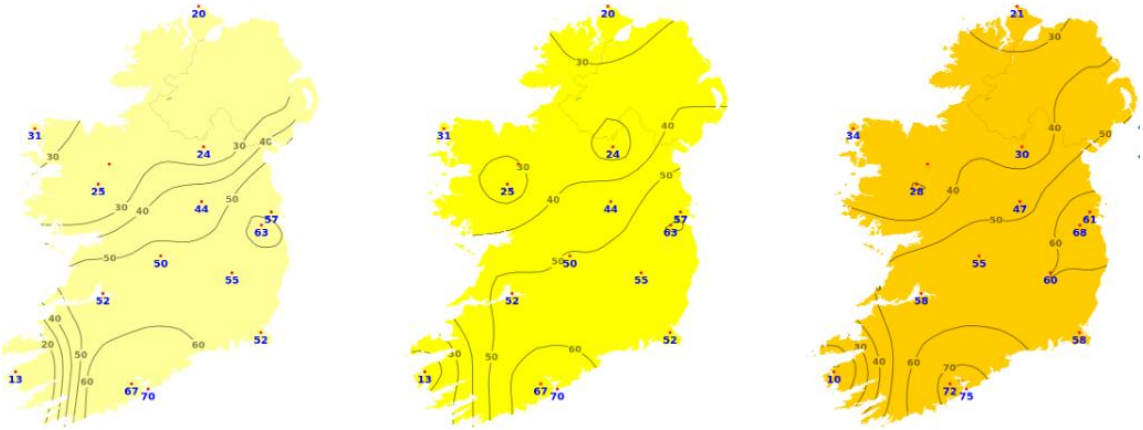
The SPI maps indicate that there has been less rainfall than normal at Roches Point when compared to the historical record over the last 1, 3 ,6 and 9 months. The duration of the dry spell has impacted sources in the area and given the duration of the dry spell it will take a significant period of time for water levels at our sources to return to normal, even if weather patterns return to normal and there is a significant risk to supply if we continue to experience dry weather through autumn.

Summary: On review of Met Éireann forecasts and drought triggers, up to the end of July 2022, developed as part of the draft Drought Management Plan, evidence of significant continued low rainfall compared to historical norms have been identified in the south of the country. The first two weeks of August have also been dry with the country experiencing a heatwave from the 10 to the 14 August.

2.2 Supply Side Pressures

Raw water sources in the south of the country include lakes, rivers, streams, springs and groundwater aquifers. All of these sources are reliant on sufficient rainfall for recharge. In warm weather, water is consumed by plant transpiration (take-up for growth) and evaporation from open surfaces. Our data shows that this combination, along with continuous daily abstractions, has significantly depleted surface and groundwater sources in the south of the country.

Soil moisture deficit is defined as the amount of rain needed to bring the soil moisture content back to field capacity. Soil moisture deficits, shown in figure 3 below, range between 60 and 76 mm in the south of the country, as of the 23 August. A soil moisture deficit of 60 to 75 mm means that when it rains, the soil in that area will try to absorb the first 60 to 75 mm of rainfall, before excess can run off or percolate through the land to recharge natural water bodies (lakes, rivers and aquifers) and replenish the sources of water for the Public Water Supply.



Well Drained Soil Moisture Deficit

Moderately Drained Soil Moisture

Poorly Drained Soil Moisture Deficit

Figure 3 – Soil Moisture Deficit – Met Éireann 23 Aug 2022

2.2.1 Surface Water and Ground Water Supplies

Irish Water's surface water and ground water supplies in the south of the country are currently under significant pressure. The data and analysis detailed below provides context to these issues.

For surface water abstractions (such as rivers and lakes) individual catchment characteristics and regional climatic conditions give rise to a pattern of flows that

varies from location to location. Figure 4 provides monthly daily mean river flows for indicator stations expressed as a percentage of the respective long-term average (LTA) and classed relative to an analysis of historic August monthly means, based on data from EPA/ LA and OPW hydrometric stations. Figure 4 shows that river flows are below average in the indicator stations in the south of the county with the gauges in the WCA at exceptionally low levels when compared to water levels on average for August.

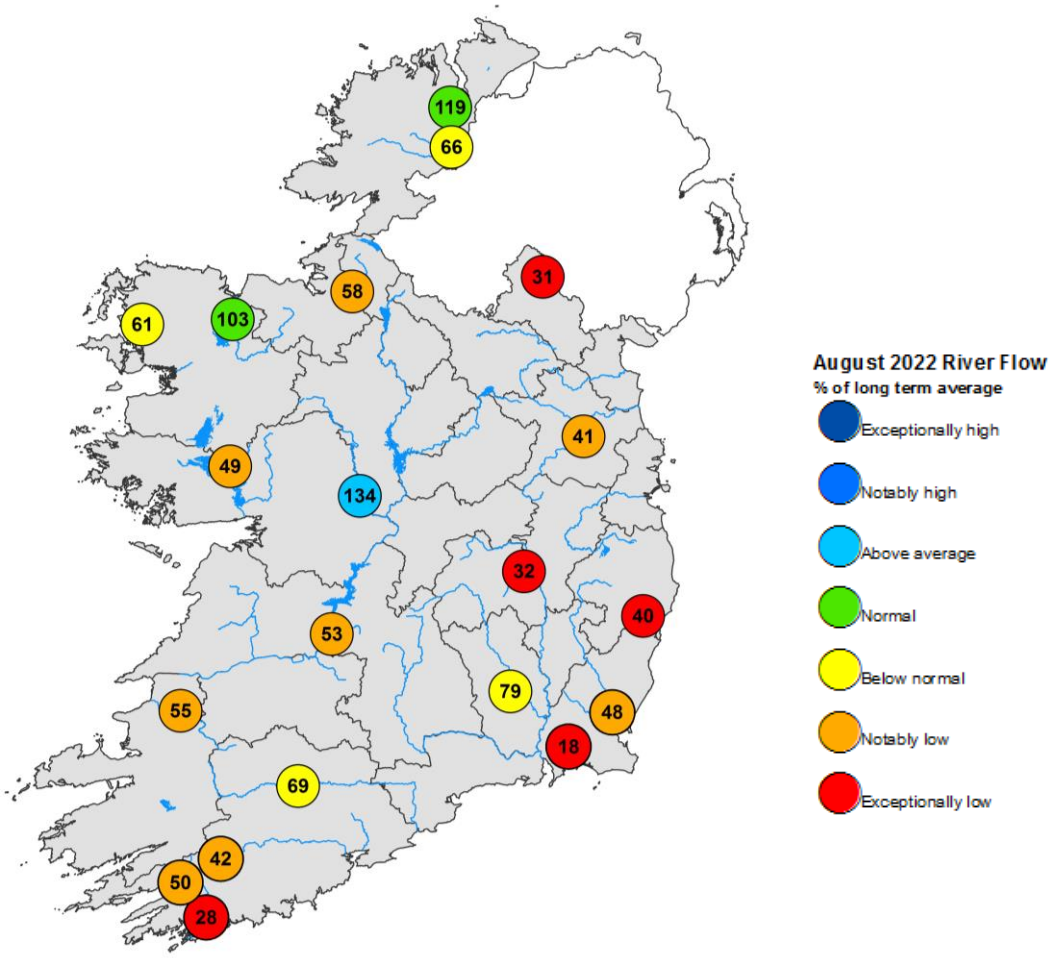


Figure 4 – River Flows August 2022 (Source: EPA, OPW)

Figure 6 outlines the time series flows for the water bodies at the gauging stations, represented in the map in Figure 5, across the country. On each graph, the upper gray line represents the maximum flow on record for the given site and the lower gray line represent the minimum flow on record for that time of the year. The light blue line represents the mean daily flows in 2018. The red line represents the current mean daily flow. As can be seen, the representative gauges are all trending downward, closer to the minimum level recorded. Currently, all of the flows are cause for concern and in most cases are below the flows and water levels experienced in 2018.

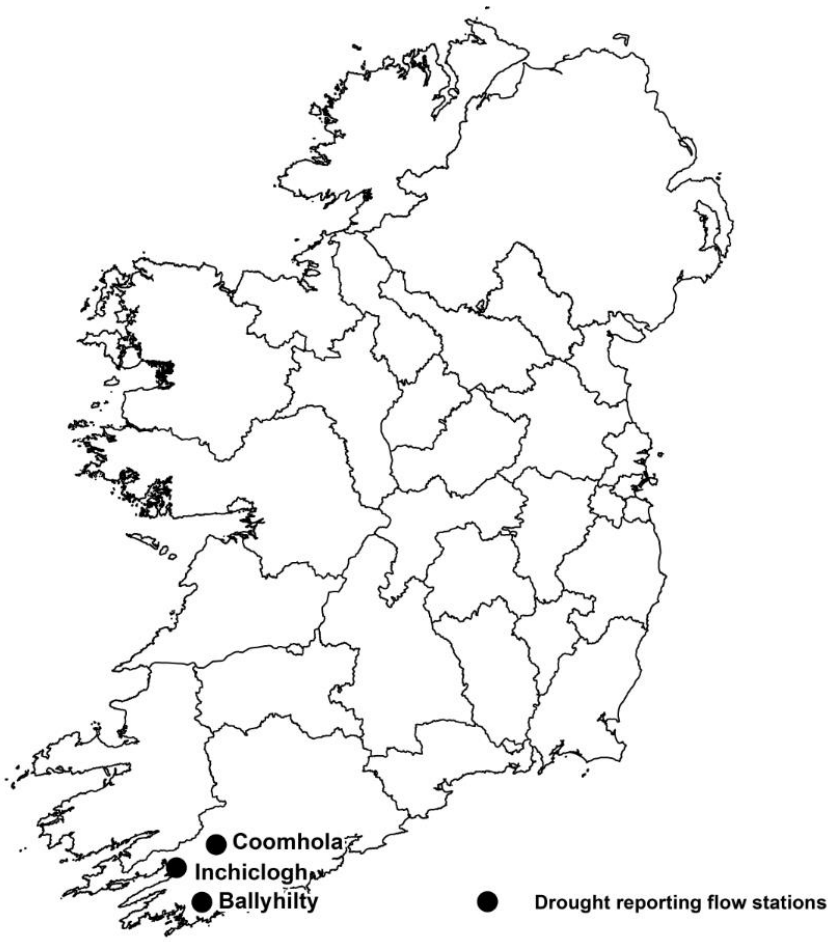


Figure 5 – Drought Reporting Flow Stations Surface Water

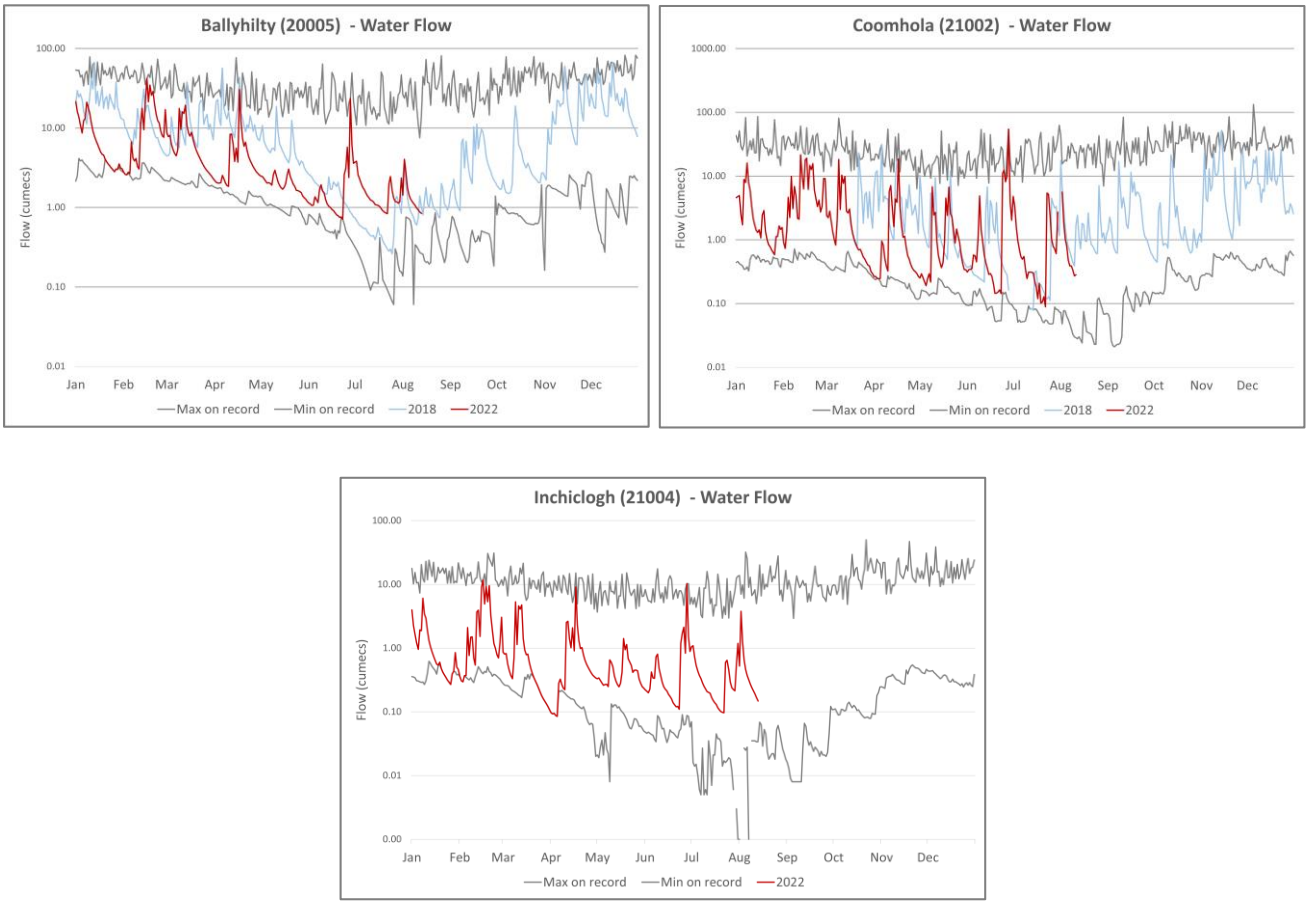


Figure 6 – Drought Reporting Flow Stations in Cork

The continued dry conditions are also significantly impacting groundwater supplies. Figure 8 shows the levels at a number of representative borehole sites, represented in the map on Figure 7. On each graph the upper gray line represents the maximum level on record, for the given site and the lower gray line represents the minimum level on record for that time of the year. The light blue line represents the daily level in 2018. The red line represents the current level. As can be seen, the representative gauges are all trending downward. Currently, all of the levels are cause for concern, and given that groundwater sources take longer to recover than surface water sources and the existing Soil Moisture Deficit levels, it is likely that they will deplete further before they start to recover.

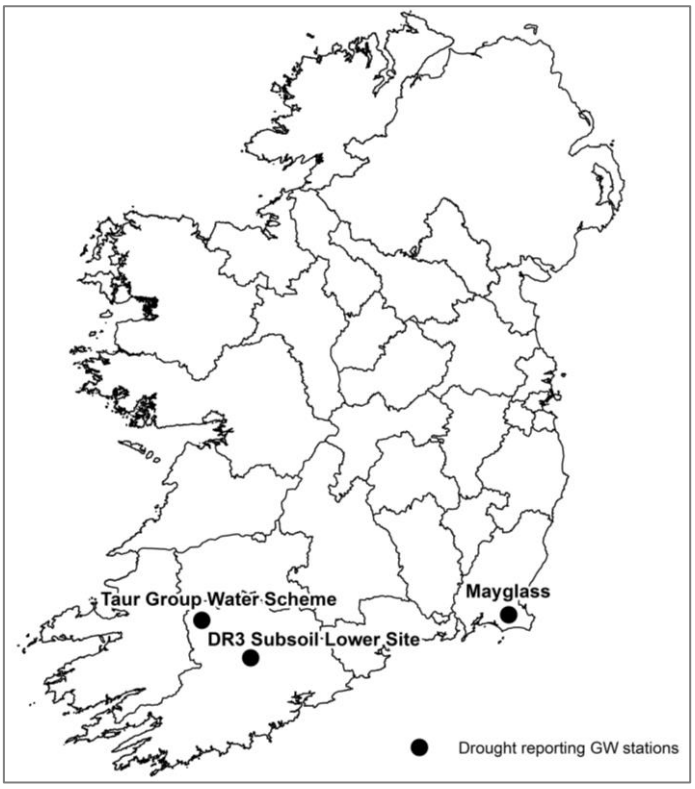


Figure 7 – Drought Reporting Groundwater Level Sites

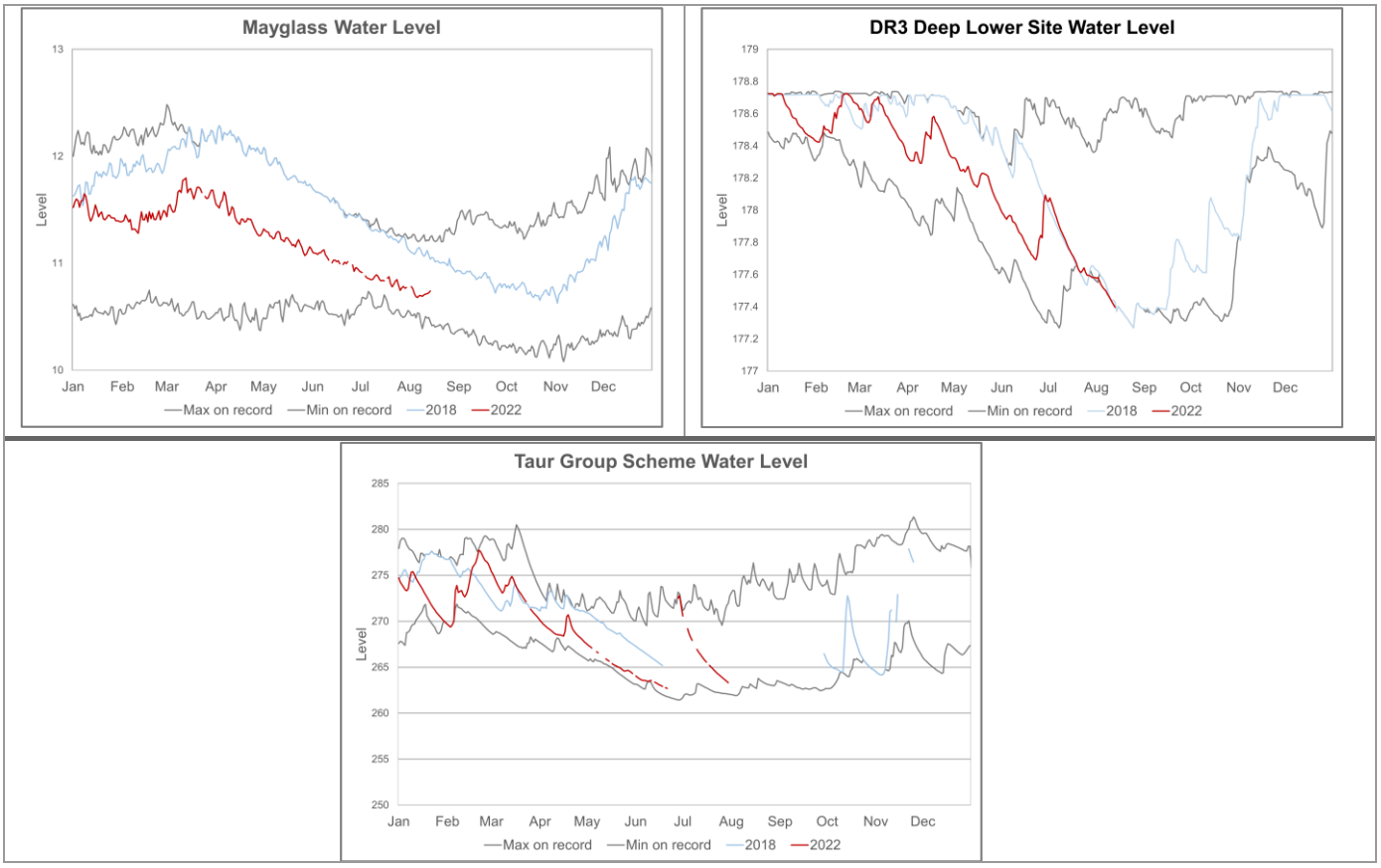


Figure 8 – Drought Reporting Groundwater levels in Cork

In summary, our data shows that the water supplies sources (both surface water and ground water) across the WCA are under continued pressure, due to the following:

- Low precipitation and soil moisture deficits affecting groundwater and surface water recharge rates;
- Due to Soil Moisture Deficits and the lowering water levels in rivers, lakes and streams, it will, in our experience, require significant immediate rainfalls or normal rainfalls over several months for raw water sources to recover and recharge to normal levels.
- For groundwater supplies, water sources which are slow to recover, effects of the current drought or near drought conditions may impact these sources for longer.
- Many water bodies support multiple pressures (both abstractions & discharges), including those for agricultural and other purposes such that a focus on individual water schemes within particular regions does not address the holistic environment of the waterbody.
- Lower flowrates in rivers and longer residence times in lakes imposes increased environmental stress on water bodies, impacting the assimilative capacity of these water bodies to cope with wastewater and other discharges, with increased risks to the aquatic environment and ecology.

At present Irish Water is tracking operational performance in the WCA in the context of drought indicators. As of the 24 of August, 3 supplies in the WCA are so low they have required to be replenished via tankered water supplies. Conditions in the further 27 supplies in the WCA are deteriorating and are being continuously monitored by operational staff.

Given the duration of the dry spell it will take a significant period of time for water levels at our sources to return to normal, even if weather patterns return to normal and there is a significant risk to supply if we continue to experience dry weather through the early autumn. Therefore, it is essential that we take a prudent approach throughout the WCA at present in order to conserve supplies and ensure that we are able to maintain supplies throughout the autumn period.

We are aware that for an Order to be made Irish Water must form the opinion that a serious deficiency of water available for distribution exists or is likely to exist. In our view, and on the basis of our experience and the data detailed in this report, it is clear that the criteria have been met for the WCA (supplies listed in Table 1 and outlined in the map at Appendix 1).

Summary: On review of EPA / OPW gauge data, developed as part of the Drought Management Plan, evidence of low water levels at our surface water and groundwater sources has been identified in the south of the country. The SMD for the area is the range of 60 – 75 mm which indicates that it will take some time for sources to recover when rain falls. These factors indicate a serious deficiency of raw water availability which has impacted water supplies in the area. We are currently tankering treated water to 3 supplies in the area and further supplies could require tankering in the coming weeks. Given the prolonged nature of the dry spell, significant rainfall will be required for soil conditions to return to normal before our raw water sources can recover.

2.3 Increased Demand for Water

Demand for water across the WCA has increased compared to the annual average. This is a result of the warm and dry weather and due to increase usage from tourists and agricultural users in the area.

Farmers in the area typically have their own private wells, however, due to the prolonged dry weather they have had to divert to the public water network as wells run dry. We typically experience this during August/September and it is essential to us to their demand in order to support the agricultural sector. This year farmers began diverting to our network as early as May, and this has put further pressure on our supplies. The difficulties we are experiencing in terms of recharging our supplies are also being experienced by the farmers, who will continue to stay connected to our supplies until their wells are recharged.

Table 2 outlines the recent WTP output across the larger supplies in the WCA and compares this to the average required output for 2021.

Supply	Daily Average demand 2021 (m3/day)	Daily Average 15 to 21 Aug (m3/day)	% increase compared to average
Skibbereen	4,822	6,338	31%
Castletownbere	2,068	2,320	12%
Clonakilty	8,039	9,108	13%

Table 2 – Demand across the larger supplies in the West Cork area

It can be seen that increased output (above average production) was required across these supplies to meet required demand over the past 7 days when compared to the monthly average for 2021. It should be noted that these increases are recorded across our supplies despite cooler weather during the 15

to 21 August period and warmer temperatures are predicted for the coming weekend.

Note the increased output does not reflect all demand across the supplies as operations have been tankering supplies to Clonakilty.

Irish Water has conducted an extensive media campaign nationally, including specially targeting the WCA, to encourage consumers to conserve water throughout the summer. This media campaign commenced in June 2022 and a summary of press releases and interviews is provided below.

Press Releases

20th June - People in West Cork asked to take some simple steps to conserve water over the summer months

14th July - People in Clonakilty asked to take some simple steps to conserve water in the coming weeks

10th Aug - Irish Water announce overnight water restrictions in the Newmarket area

10th Aug - Overnight restrictions continue in Clonakilty to maintain daily water supply

11th Aug - Overnight restrictions continue in Clonakilty and Newmarket areas to maintain daily water supply

19th Aug - Urgent appeal to people of West Cork to reduce their water usage as water supplies reach critical levels

Interviews

19th Aug - C103FM's Cork Today show

20th Aug – Interview published in the Irish Examiner

24th Aug - 96FM/C103FM – Interview and this segments of this interview was broadcast at hourly news bulletins.

Advertorial

Urgent appeal to people of West Cork to reduce their water usage as water supplies reach critical levels

- 25th August - Southern Star

Website and Social Campaign

- 11th May - Water conservation web and social campaign in across the country, including Cork.

Target web and social campaign to the WCA since Friday 19th August

However, despite this communications campaign, demand remains higher than average and Irish Water must take all reasonable steps to ensure that we can conserve water to reduce risks to the public water supply and ensure that we can limit any potential impact on the environment.

In 2018, a very prolonged dry period from early May 2018 to end of July 2018 resulted in severe depletion of water resources. Historically low levels were recorded in both surface and groundwater sources which were especially critical in the east and south of the country. Irish Water supplies came under severe pressures in these areas as did many private supplies.

Irish Water responded to that crisis by introducing a number of orders prohibiting water usage across the country. Our review of the 2018 data shows that these prohibitions helped to conserve vital raw water resources so that supplies were largely maintained, albeit with pressure management and some night-time restrictions, supplemented by tankering of water supplies to various small schemes as an emergency measure. The restrictions in 2018 were limited to measures which could be regarded as non-essential, protecting the needs of public health and economic activity. It is proposed that the Order recommended in this report should only cover the prohibition of the same uses as set out in the 2018 order(s).

Summary: There is evidence of increases in demand in the area due to warm and dry weather, tourist demand and increased agricultural use due to failure of private wells. An extensive media campaign has been ongoing since June 2022, however demand remains high. The effectiveness of the previous Order in 2018 in reducing demand and securing the national water supply has been shown. It is now important to take steps to suppress water demand for non-essential purposes across the impacted supplies in the WCA , to allow our sources recover and to ensure we can maintain supplies throughout Autumn.

3. Outlook for Month Ahead

While the country has experienced rainfall over the last week (14 August to 21 August), only 5.3mm of rainfall was recorded at the Roches Point rain gauge. The week ahead forecast for the WCA predicts dry weather with temperatures in the range of 18^{O}C for the coming week. The Met Eireann 4 week look ahead issued

on the 23 August notes that lower than average rainfall is predicted for the week commencing Fri 26 August and also notes that weather in September will be mainly dry to the end of the month.

As the dry spring and summer has depleted water sources across the area, with levels and flows observed well below normal levels, even a return to average rainfall conditions will not eliminate risk of supply failure in the WCA until the sources have had time to recover.

Summary: The weather and climatic outlook would suggest that the precipitation levels are to remain below average through September. The duration of the dry spell has impacted sources in the WCA and given the forecast it will take a significant period of time for water levels at our sources to return to normal even if weather patterns return to normal. There is a significant risk to supply if we continue to experience dry weather through autumn.

Actions by Irish Water to Address Supply Demand Balance in the WCA

Irish Water has already taken a number of actions to maintain supply at critical sites as follows::

- Nighttime water restrictions were introduced at several of our sites during periods of peak demand in July and August 2022.
- In areas where the availability of raw water is continuing to fall or where the sources are failing to replenish, Irish Water is optimising and managing available sources where possible to protect continuity of supply.
- Irish Water is currently relying on tankering in water from other sites to support customers in Clonakilty, Coppeen and Drinagh.
- Irish Water has had to implement temporary measures to ensure flow of water into a number of our treatment plants, including Clonakilty WTP which serves a population of 16,000.
- Irish Water has conducted an extensive media campaign nationally and specially to the areas impacted, to encourage consumers to conserve water throughout the summer.

Note nighttime restrictions can not be sustained for long periods, as the shut downs result in significant drops in pressure across the network, which increases the risk of burst mains and leakage across the network.

In addition, tankering of supplies is an emergency measure, and one that we try to avoid over extended periods due to the issues, health and safety and otherwise, associated with transferring water in large heavy vehicles on local roads over long distances and ensuring that the tankered water remains fit for public consumption.

4. Action Required

In an effort to prevent or contain the extent of outages over the next weeks and months, while dry weather conditions persist in the WCA, Irish Water proposes to exercise its powers under Section 56 (16) of the Water Supply Act 2007, as amended, to make an order prohibiting certain water uses in the WCA (listed in Table 1 and shown on the map at Appendix 1). The aim of such an order is to suppress demand – thus relieving the pressure on water supplies - through the prohibition of certain non- essential activities for a specified period. It is proposed that the order made under section 56 (16) should provide for the prohibition of the following uses of water:

Use of water drawn through a hosepipe or similar apparatus for the purpose of –

i. watering a garden

ii. cleaning a private motor-vehicle using a domestic hosepipe

iii. cleaning a private leisure boat

iv. filling or maintaining a domestic swimming or paddling pool (except when using handheld containers filled directly from a tap)

v. filling or maintaining a domestic pond (excluding fishponds)

vi. filling or maintaining an ornamental fountain (with the exception of such use for commercial purposes)

vii. filling or replenishing an artificial pond, lake, or similar application.

These are identical to the prohibitions that were introduced in 2018 and 2020. In 2018 such prohibitions, along with further water restrictions, were shown to moderate water demand from a peak of 15% above normal levels back to normal levels. The prohibitions involve the prohibition of certain non-essential customer uses and will help to ensure that all customers receive continuity of water supply over this difficult period, as far as possible.

These measures apply to both domestic and non-domestic users equally and are a more equitable and controlled way of suppressing demand compared to wide scale outages that tend to impact disproportionately certain areas of the network, or vulnerable users who have difficulty sourcing water.

It is our opinion that the proposed Order should be effective for a period of four weeks. The four week duration is reflective of the current condition of the sources, where flows and levels are at the lower extremes of historical conditions for this time of year, and the weather outlook which is to remain settled or dry for the next four weeks. Even after this period if there is a return to average rainfall conditions, it will take a considerable period for some sources to replenish. On that basis it may be necessary to extend the proposed Order (or extend the proposed Order for certain parts of the county).

To enforce these powers, as per section 56(17) of the Water Services Act 2007, Irish Water must give public notice of its intention to make an order and specify the period for which the order will remain in force, by publishing an advertisement in a newspaper and causing notification of the proposed order to be broadcast on radio or television. Section 56(16) does not specify any notice period. Having regard to this, a reasonable notice period will be given. The notice period will give consideration to the extent of the water supply challenges, the restriction of non-essential activities, and the fact that unless this action is taken and demand is not reduced, it is inevitable that there will continue to be serious deficiencies of water available for distribution, and potential widespread supply failure and large outages within the WCA.

Continuous monitoring of the situation will be undertaken by Irish Water, to ensure the Order is only in place for as long as is necessary.

The NWRP will develop a roadmap for Irish Water to ensure supply demand balance for all of our 535 Water Resource Zones (WRZs) nationally and will ensure that we can deliver our statutory obligations in terms of a safe reliable water supply with sufficient provisions for growth, in line with national government policy. The project includes source yield assessments, resource modelling, treatment capacity, water resource planning, growth assessment, supply demand scenario analysis and target headroom analysis for all water resource zones nationally, which, in turn, allows Irish Water to identify where any serious deficiencies of water available for distribution exist or are likely to exist. The NWRP will also enable for drought and critical period planning.

As part of the work of assessing each WRZ supply / demand balance, the lack of resilience in many of our schemes currently has been confirmed. This is especially true for times of drought, when increased demands, combined with reduced available raw water results, without restrictions, in a failure to meet the daily water needs in full. The NWRP recogonises that sources in West Cork are vulnerable to dry weather. It is a key objective of the NWRP to develop strategies to eliminate these deficits. However, it will take several investment cycles to fully implement the Plan, so that in the interim, Irish Water must manage its resources to mitigate the impact of water shortages on communities, customers and economic life.

Irish Water is aware of the significant impact that water usage prohibitions/restrictions can have on both domestic and commercial life. On that basis Irish Water only moves to considering the imposition of such prohibitions/restrictions when, based on an extensive technical review of available data, the situation cannot be properly managed in the absence of such prohibitions/restrictions.

5. Conclusion and Recommendation

The public water supply in the WCA is considered at significant risk due to prolonged extreme dry weather conditions, which are forecast to continue, which

have depleted existing water supplies, and due to significant increases in the demand for water.

While the country has experienced rainfall over the last week (14 August to 21 August), only 5.3 mm of rainfall was recorded at the Roches Point rain gauge. The week ahead forecast for the WCA predicts dry weather with temperatures in the range of 18^{O}C for the coming week. The Met Eireann 4 week look ahead issued on the 23 August notes lower than average rainfall is predicted for the week commencing Fri 26 August and notes that weather in September will be mainly dry to the end of the month. As a result, a serious deficiency of water available for distribution exists or is likely to exist across the WCA.

Irish Water has carried out practical measures to increase supply and to reduce demand for water through managing pressures in the network. Also, a large media campaign on water conservation is ongoing, in an effort to reduce demand. However, the situation remains serious, and Irish Water must take all reasonable steps to ensure that we can conserve water to reduce risks to the public water supply and manage any potential impact on the environment.

The 2018 prohibitions achieved substantial savings in demand.

Given:

- the prevailing weather conditions as set out in this report,
- increased demand; and
- the pressure on water supplies sources across the WCA,

It is essential that an Order is introduced now in the WCA to ensure that we can mitigate against the ongoing risk of failure in the public water supply over the coming months.

It is proposed that the Order should run for a period of four weeks from the date it is made so as to seek to allow raw water sources to recover. If it is possible to lift the proposed Order (or lift the proposed order in certain areas of the WCA) before the specified period expires, having regard to prevailing weather conditions, availability of water resources and reduction in demand, this will be done. Equally, it may be necessary to extend the specified period for all or any specific areas of the WCA for a further period and/or to other water uses, should the prevailing conditions exist.

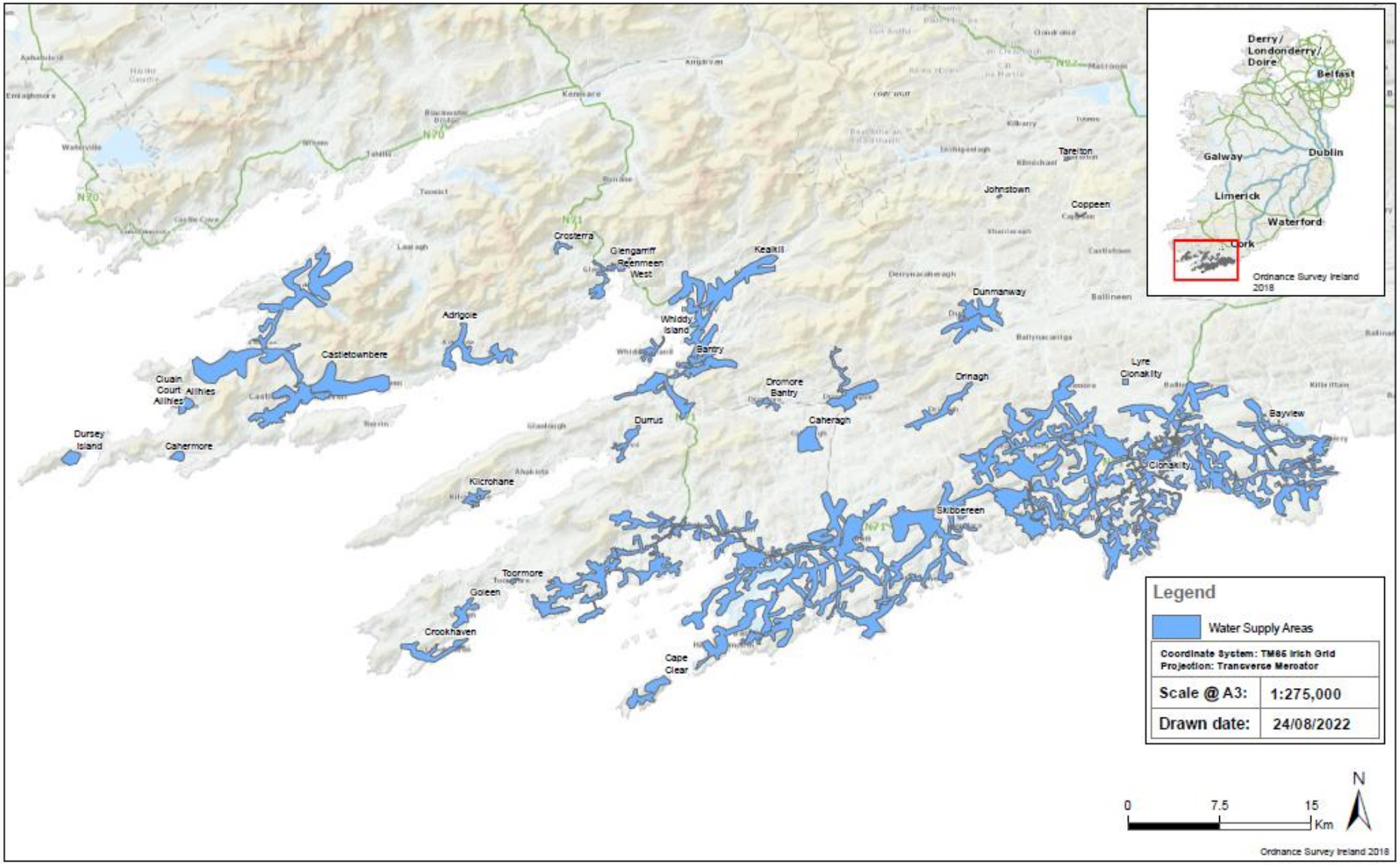
Recommendations:

- **Seek Board approval to immediately use powers under section 56(16) of the Water Services Act 2007 as amended to introduce**
    - **An order to prohibit certain water usage for the WCA for a four week period as and from when the Order is made. The non-essential high water use activities to be the subject matter of the Order are as specified in section 5 above.**
- **To develop and advertise all necessary advertisements and notifications under section 56(17)**.

- **To stipulate that these prohibitions be maintained for a period of 4 weeks as from the date of the Order and that it is a criminal offence under section 56(18) not to comply with an order served pursuant to section 56(16)**.
- **To apply these prohibitions in the West Cork Area (WCA) only.**

Appendix 1

West Cork Area – Water Supply Areas



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