29 February 2024

Initial prospects for irrigation - forecast for 2024

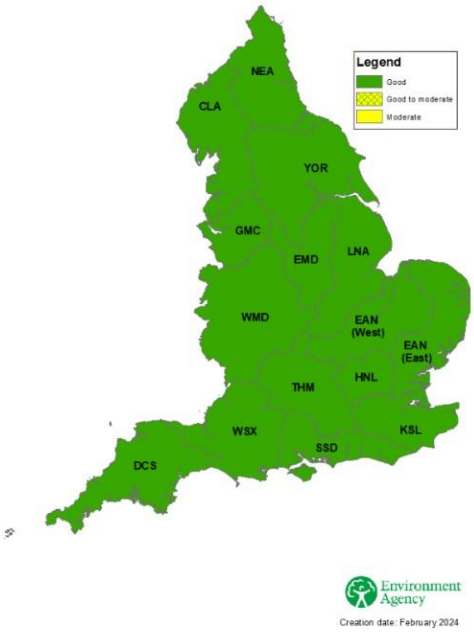
Summary

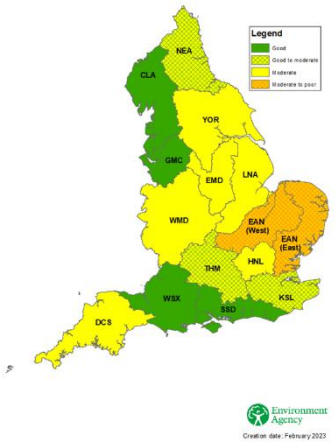
Following a wet autumn and winter, our initial prospects for irrigation across England in 2024 is Good, as shown in Figure 1. For comparison, the insert map below shows the position this time last year, which was much more variable and generally less favourable across England.

We encourage irrigators to take action now to safeguard supplies for the summer. Possible actions include:

- Maximising opportunities to refill reservoirs during high flows
- Contacting us if having reservoir refill problems
- Planning cropping to meet reduced water availability

Figure 1 - Initial Irrigation Prospects spring - summer 2024





The irrigation prospects reflect the water situation using current river flows, groundwater levels, weather forecasts and Met Office seasonal outlooks. Overall rainfall between November 2023 to January 2024 for England was 139% of the long-term average. All areas in England received above average rainfall over the past three months, with the north of the country receiving the most. Latest February rainfall has exceeded the long-term average both nationally and in each area. Latest information shows all rivers and many groundwater levels above normal, showing the effect of the wet winter. The current unsettled conditions are expected to continue into early March but there is a possibility of drier and settled conditions into the second part of the month, especially in the east of the country.

We will reflect any further changes in our updated prospects which will be released in late spring.

More information on the water situation is available at Water situation reports for England - GOV.UK (www.gov.uk).

More information on weather forecasts is available at the Met Office. The Met Office 3-month forecast is now available.

More detailed Area irrigation prospects are contained in a separate accompanying document on the Farming Advice Service website. Guidance can also be found in relation to abstraction during prolonged dry weather.

Definitions

Prospects for spray irrigation are defined as ‘Good’, ‘Moderate’ or ‘Poor’.

Good	Water levels are average or above average and supplies are expected to be safe. There is a possibility of minor local controls on abstraction from surface water in late summer if the weather is exceptionally hot and dry.
Moderate	Water levels are low. Some controls on surface water abstraction are possible by midsummer if the weather is hot and dry. Controls on abstraction from groundwater are possible in small, sensitive groundwater areas.
Poor	Water levels are well below average. Soil moisture deficit is developing early and significant restrictions on abstraction from surface and groundwater are probable.

Mark Betson, the NFU's Water Resources Specialist said, "With higher than long term average rainfall over a sustained period we agree irrigation prospects for the coming year indicate lower risk than in recent years. Climatic volatility cannot be ignored. In February 2023 many abstractors were worried that winter filling of reservoirs would not be possible and summer groundwater abstractions were at risk from restrictions if dry weather prevailed. Fortunately, the last 12 months have been predominantly wet. Groundwater levels are recovering well in most areas and summer abstractions look reasonably secure. Dry weather impacts can emerge very quickly and can influence the demand for water greatly. Sustained dry weather during this summer could impact river flows resulting in Hands off Flow restrictions for summer abstractors".

Prospects for individual areas

Area	Prospects for 2024
Environment Agency Cumbria and Lancashire	Good
Environment Agency Devon, Cornwall and the Isles of Scilly	Good
Environment Agency East Anglia East (covering Essex Norfolk and Suffolk)	Good
Environment Agency East Anglia West (covering Cambridgeshire and Bedfordshire)	Good
Environment Agency East Midlands	Good
Environment Agency Greater Manchester, Merseyside and Cheshire	Good
Environment Agency Hertfordshire and North London	Good
Environment Agency Kent, South London and East Sussex	Good
Environment Agency Lincolnshire and Northamptonshire	Good
Environment Agency North East	Good
Environment Agency Solent and South Downs	Good
Environment Agency Thames	Good
Environment Agency Wessex	Good
Environment Agency West Midlands	Good
Environment Agency Yorkshire	Good

Initial prospects for irrigation – Area forecasts for 2024

Our initial prospects for irrigation across England in 2024 are **GOOD**. Further detail of the prospects for your local area can be found in this document.

Ensuring a successful irrigation season

We encourage all irrigators to understand the risks of a period of prolonged dry weather on your abstraction. We ask all irrigators to take such actions as possible to minimise the impacts of prolonged dry weather on the environment and their businesses. If you believe your abstraction is at risk this summer, please talk to us about actions you can take. If you don't know your local Environment Agency contact, please call our customer service line on 03708 506506 and ask to speak to your local water resources member of staff dealing with irrigation prospects. We have provided local Environment Agency contacts within this report.

Abstraction Licences

- Understand your licence conditions. If you don't, please get in touch and we can help you.
- Check your licence details and, always:
    - adhere to licence conditions ensuring that abstractions are only taken from authorised locations during authorised periods.
    - ensure volumes and rates are not exceeded and keep accurate records of meter readings.
    - check for any local conditions on your licence such as hands off flow restrictions.
- Where third parties undertake irrigation, licence holders should ensure contractors fully understand the abstraction licence conditions. Those who have licences with compensation discharges and re-abstraction conditions should ensure that water is released at the same time as abstraction is taking place.
- Review your water needs. Make sure that you apply to make any changes to your water rights so that your abstraction is more resilient.
- Register to manage your licences online:
    - The EA has developed a secure Managing Water Abstraction Service on GOV.UK for abstractors, and over 8,000 abstractors have already registered.
    - We are encouraging abstraction licence holders to register to be able to submit abstraction returns easily and quickly online, see a summary of their licences while in the field and delegate access to a third party to submit returns. Most EA area teams are now using the service to send abstractors Water Abstraction e-Alerts when hands-off conditions are coming into force or being lifted.
    - The e-Alerts system is similar to the Environment Agency's targeted flood warning service but considers water management during periods of dry weather. These alerts help improve access to water when it is there, and better protect the environment when it is not. It is one of the ways the Environment Agency is supporting abstractors to adapt to climate change, and industry data has shown a potential benefit of up to £6.3 million per year to affected businesses through the provision of more timely alerts.
    - If you haven't heard from the Environment Agency about e-Alerts yet, please be patient. We need to ensure the transition from the existing approach to email alerts is seamless, so the local team

will contact you when it has completed the necessary preparatory work. You can read more about the new system at the Defra digital, data and technology blog.

- Following requests for increased flexibility from abstractors during recent storms, the Environment Agency has produced a Regulatory Position Statement. The statement applies to the abstraction of water at times of year that are not included within licence holders' conditions, or at instantaneous, hourly, or daily rates that exceed licence holders' quantities. Other licence conditions must still be met. It is important to note that it is not intended as an alternative to the abstraction licensing system. We still expect abstractors to vary their licences if they require additional water.
- Potentially increase your water resilience by applying (as part of a Water Abstractor Group or similar) for a study identifying and screening Local Resource Options (including reservoirs, rainwater harvesting and licence trading) in your area. More information will be available in the next few weeks on gov.uk.

Voluntary Restrictions

- Support voluntary restrictions if they are requested. This will delay and may avoid the need for more formal restrictions. If you voluntarily reduce your abstraction, this will not count against you if you apply to renew your licence.

Storage Reservoirs

- Take every possible opportunity to ensure that high flow storage reservoirs are as full as possible by the start of the irrigation season.
- If you are currently having trouble filling your irrigation reservoirs, please contact us as early as possible to enable maximising any potential that may exist to fill your reservoir.
- Continue to plan for the future. If you are applying for a Water Management Grant (Round 2) for a new reservoir and you think you may need a new abstraction licence or a variation to your existing licence, you should contact the Environment Agency as soon as possible. You will need a valid abstraction licence before you can submit your full grant application. The closing date for grant applications is 31 October 2024, but it can take up to a year to apply for an abstraction licence.
- Ensure your reservoir is regularly maintained, checking for cracks and leaks.

Irrigation Management

- Make sure that meters are in good working order and properly fitted.
- Check irrigation systems and replace worn or broken items before the start of the season.
- Make sure that irrigation systems are properly set up and operated in accordance with an accurate and reliable irrigation scheduling system.
- Ensure you are prepared to change your irrigation plans if necessary.
- Prioritise crops and fields in terms of water need.
- Choose irrigation times carefully, e.g. avoid the heat of the day; irrigate at night, if possible.
- Undertake a water audit. Know the cost of your water, calculate crop per drop.

- Be aware of the EA dry weather advice which is available under the prolonged dry weather abstraction guidance.
- A Water Rights Trading map is being updated with more recent data to cover all of England and we will share this information when available.
- See also the document: Guidance on the planning and design of irrigation reservoirs in Kent, jointly produced by Environment Agency, Kent County Council and EMR.

Abstractor Groups and Guidance

- Where appropriate, discuss issues and share ideas with neighbouring farmers. Several local liaison groups already exist for this purpose. Consider joining or setting up a group.
- Maintain an awareness of developing guidance from academic institutions and farming organisations (such as e.g. NFU, UKIA, Cranfield University etc.).

Other useful links and guidance

- We have a range of literature available to help support your business including Rainwater Harvesting; Adopting Best Metering Practice; and Think About Installing an Irrigation Reservoir (please request these from our local Environment Agency area – contacts below).
- Keep updated on the latest water situation reports at https://www.gov.uk/government/collections/water-situation-reports-for-england (national and area specific reports are available).

Definitions

Good	Water levels are average or above average and supplies are expected to be safe. There is a possibility of minor local controls on abstraction from surface water in late summer if the weather is exceptionally hot and dry.
Moderate	Water levels are low. Some controls on surface water abstraction are possible by midsummer if the weather is hot and dry. Controls on abstraction from groundwater are possible in small, sensitive groundwater areas.
Poor	Water levels are well below average. Soil moisture deficit is developing early and significant restrictions on abstraction from surface and groundwater are probable.

Prospects for individual areas

To jump to specific areas, please click the links below:

Cumbria and Lancashire

Devon, Cornwall and Isles of Scilly

East Anglia (East- covering Essex, Norfolk and Suffolk

East Anglia (West- covering Cambridgeshire and Bedfordshire)

East Midlands

Greater Manchester, Merseyside and Chesire

Hertfordshire and North London

Kent, South London and East Sussex

Lincolnshire and Northamptonshire

North East

Solent and South Downs

Thames

Wessex

West Midlands

Yorkshire

Area detail

Environment Agency - Cumbria and Lancashire

Forward look

The current situation is ‘normal’ and if we have average rainfall then the irrigation prospects for the summer are likely to be GOOD.

Cumbria and Lancashire have received exceptionally high rainfall over the three months from November 2023 to January 2024. Over this period, rainfall was 157% of the long-term average and was classed as ‘exceptionally high’. Soil moisture deficits were close to zero across Cumbria and Lancashire by the end of February which is either lower than or as expected for the time of year. Cumbria and Lancashire area has quick responding rivers and therefore the surface water situation can change relatively quickly. There are no concerns regarding irrigation from groundwater. As of January 2024, groundwater levels are healthy as levels at our indicator boreholes are between ‘exceptionally high’ and ‘normal’.

Please contact for more information:

Integrated Environment Planning team - drought.northwest@environment-agency.gov.uk

Environment Agency - Devon, Cornwall and Isles of Scilly

Forward look

The overall summer prospects for water resources availability for irrigation in Devon, Cornwall & Isles of Scilly are currently GOOD unless there are significant dry and warm conditions over the next few months.

With the groundwater levels remaining healthy and the limited environmental benefit of placing S57 spray irrigation restrictions in Devon, Cornwall & Isles of Scilly, we do not anticipate any restrictions regarding irrigation in the coming months. However, due to the nature of the geology and landscape in Devon, Cornwall & Isles of Scilly, it is difficult to predict water shortages for irrigation in the coming season. This position will be reviewed during 2024, dependent on the rainfall patterns and river/groundwater levels.

Background

Because of the nature of the geology and landscape in Devon, Cornwall & Isles of Scilly, it is difficult to predict water shortages for irrigation in the coming season. Whether there is sufficient water will depend on rainfall, water abstraction and temperatures during the season. We therefore expect abstractors to be prepared and encourage applications for winter storage reservoirs.

Devon, Cornwall & Isles of Scilly experienced a very dry period from November 2021 to August 2022, which led to the area being in drought status. There was a change in the weather which saw wetter conditions, with above average rainfall through to February 2024.

Rainfall/Soil Moisture Deficit

Devon and Cornwall received above average rainfall over the four-month period October 2023 to January 2024. Over this period, rainfall was 131% of the long-term average (LTA) and was ‘notably high’ for the time of year. Soil moisture deficit for Devon and Cornwall was two millimetres on 30 January 2024, which is drier than the LTA for the time of year, and a similar value as at the end of January 2023.

River Flows

January 2024 shows all sites reported ‘normal’ mean monthly mean river flows for the time of year. Daily flows for the end of January 2024 ranged from ‘notably low’ to ‘normal’ for the time of year. There will always be a risk that flows will drop off quickly if we have below average rainfall over the coming months.

Groundwater

Groundwater levels were healthy as of January 2024, with our indicator monitoring boreholes recording between ‘normal’ and ‘exceptionally high’ status. Groundwater levels are still generally rising, as would be expected at this time of year. Starting the year at these relatively high levels means that it is unlikely that very low levels will be reached in the summer and autumn.

Please contact for more information:

DCIS IEP WR Drought.DCIS@environment-agency.gov.uk

Environment Agency - East Anglia (East)

Forward Look

The overall summer prospects for water resources availability for irrigation in East Anglia East are currently GOOD.

Rainfall/ Soil Moisture Deficit

The Coastal catchments of East Anglia have been experiencing a particularly wet period since July 2023. During the seven months between July to January rainfall accumulations have been 120mm to 210mm above the long-term average. October was exceptionally wet particularly in East and mid Suffolk with records of up to 300% of long-term average rainfall. Soil moisture deficits fell rapidly during October regularly exceeding field capacity. Soil Moisture Deficit remains very low, and we can expect further sustained recovery into March/ April.

River Flows

Many parts of Suffolk experienced record high flows in October and groundwater levels began their annual recovery exceptionally early. This recovery has been sustained across the eastern catchments with the exceptionally wet conditions persisting into February.

Groundwater

Groundwater levels are now notably high or exceptionally high in most aquifer units. Our early assessment of prospects based on current groundwater levels is therefore good for all catchments and particularly good for those rivers with a strong baseflow or high groundwater contribution. This includes the rivers North of the Waveney, coastal crag and gravel fed catchments in Suffolk and Essex. Those who abstract directly from rivers with a lower groundwater contribution i.e. the inland catchments south of and including the Waveney should also expect to experience a secure and restriction-free irrigation season in all but the most extreme of summer heatwaves. We have a few catchments where peak summer demand for irrigation can exceed the available summer baseflow, even when groundwater levels are high. Therefore, there is always a possibility that local demand may need to be constrained to protect the environment outside of a formally classified drought. The probability of restrictions being needed this year in the most vulnerable heavily pressured rivers remains exceptionally low (less than 2% chance).

Please contact for more information:

Tim Wojcik – East Anglia East
easterniep@environment-agency.gov.uk

Peter Willett – Technical Specialist – Hydrology
peter.willett@environment-agency.gov.uk

Environment Agency - East Anglia (West)

Forward look

The overall summer prospects for water resources availability for irrigation in East Anglia (West) are currently GOOD.

In the higher baseflow catchments, high groundwater levels are likely to persist into the summer, and flows are likely to remain relatively healthy. Those catchments include the streams of northwest Norfolk, the Wissey, the Little Ouse, the Cam and the Ivel. These rivers' prospects are good for this year's irrigation season. Section 57 spray irrigation restrictions in these catchments are extremely unlikely. Individual hands-off flow conditions could come into effect on some licences, though, as they could in any year.

The runoff-dominated tributaries of the Bedford Ouse and the headwater streams elsewhere which don't benefit from strong baseflows can have low summer flows (as they are not influenced by wet weather during the preceding winter). There are relatively few irrigation licences in these catchments though.

The Fenland IDB-drained areas are always susceptible to prolonged hot and dry weather during the irrigation season. Local water management actions using existing licence conditions are likely to be required during this type of weather. Catchments such as the Middle Level, South Level, Counter Drain and Hundred Foot IDB catchments should benefit from river transfers that are boosted by high baseflows However, any increase in baseflow available is small compared to peak irrigation demands and the evaporative losses from those areas. Formal Section 57 spray irrigation restrictions are however very unlikely to be required in Fenland areas.

Groundwater licences will not be affected by Section 57 spray irrigation restrictions this summer.

Background

In the sixteen months since the exceptionally dry spring and summer of 2022, rainfall totals have been well above the long-term average. The water resources situation is now healthy, with high groundwater levels and river baseflows across the area.

Rainfall / Soil Moisture Deficit

East Anglia West has had exceptionally high rainfall totals this autumn and winter to date, with 420mm from September to January inclusive. The long-term average (1991-2020) for the same five-month period is 290mm. October 2023 was particularly wet with 130mm, more than double the long-term average. The wet autumn led to a rapid and early saturation of soils.

River Flows

The wet weather during autumn 2023 and particularly in late December 2023 led to some exceptionally high river flows. While runoff responses are short-lived, the rise in baseflows in catchments where rivers are fed by groundwater discharge bodes well for water resources later in the summer. In catchments without a large flow contribution from groundwater, the conditions so far this winter will have little influence on river flows during the coming summer.

Groundwater

Groundwater levels began recharging early in the autumn, particularly in response to the exceptionally wet October. Catchments in northwest Norfolk which typically take longer to begin recharging and were more of a cause for concern early last year now have high, and in some locations very high, groundwater levels.

Please contact for more information:

Catherine Keey, East Anglia (West)

iep_ang_central@environment-agency.gov.uk

Environment Agency - East Midlands

Forward look

The overall summer prospects for water resources availability for irrigation in East Midlands Area are currently GOOD. However, if spring and early summer turn dry, the irrigation prospects may change.

Background

East Midlands entered recovering drought status in January 2023 and returned to normal status in April 2023 with the return of average rainfall and steady groundwater recharge. The area has since seen an exceptionally wet autumn and winter 2023/2024.

Rainfall

During January, all hydrological areas received normal rainfall totals relative to the long-term average (LTA), ranging from 83% to 109%. The East Midlands has also already received 100% of February LTA (up to 13th February).

Soil Moisture Deficit

By the end of December 2023 soils were saturated or at 'field capacity'. Soil moisture deficit (SMD) has remained consistent across the East Midlands since December, with January continuing to have 10mm or less of soil moisture deficit.

River Flows

At the start of winter, we recorded exceptionally high monthly mean flows compared to the LTA, with some rivers exceeding their highest monthly mean historic flows for December. Rivers have remained at normal or above normal responding quickly to the increase in rainfall across our catchments.

Groundwater

Groundwater levels are healthy with all sites reporting normal for January in comparison with the long-term average. Two sites recorded their highest groundwater levels in the historic record for December.

Please contact for more information:

East Midlands Integrated Environment Planning team at WaterResources.DBNTLS@environment-agency.gov.uk

Environment Agency - Greater Manchester, Merseyside and Cheshire

Forward look

The current situation is normal and if we have average rainfall then the irrigation prospects for the summer are likely to be GOOD.

Rainfall for the last three months ending January 2024 was 145% of the long-term average and was classed as exceptionally high. Soil moisture deficits were relatively low (less than 5mm difference than the long-term average) across Greater Manchester, Merseyside and Cheshire by the end of December, and as expected for the time of year. Greater Manchester, Merseyside and Cheshire area has quick responding rivers and therefore the situation can change relatively quickly. There are no concerns regarding irrigation from groundwater.

Please contact for more information:

Integrated Environmental Planning IEP_GMMC@environment-agency.gov.uk

Environment Agency - Hertfordshire and North London

Forward Look

The overall summer prospects for water resources availability for irrigation in Hertfordshire and North London are considered GOOD

Water resources are in a good position with above average groundwater levels, helping support those base flow rivers through the early spring and summer periods. Rivers in more impermeable catchments will always be more reflective of rainfall pattern. Flow and level conditions could always become active in drier conditions. Individual abstractors will be notified of any restrictions.
We will continue to monitor river flows and groundwater levels. This data is published and available to irrigators via https://www.gov.uk/government/publications/water-situation-local-area-reports

Background

Rainfall amounts have exceeded the winter seasonal average at 148% for the period 1st October to 29th January.
Groundwater levels are rising as saturation rates have already been reached in the soil. River flows have risen due to rain and/or additional baseflow coming from the rising groundwater levels. This has all assisted the early filling of winter storage reservoirs.
Further rains will allow any final reservoir storage levels to be achieved and increase the resilience in the groundwater system before the onset of any possible drier spring conditions.

Rainfall / Soil Moisture Deficit

The soil moisture deficit (SMD) values will reflect rainfall patterns. The current SMD data indicate the soils are saturated. This is due to a wetter than average winter period. Further rain will allow further improvement to groundwater levels and river flows.

River flows

River flows have responded to rainfall, with monitoring stations indicating flows are at normal or higher values for this time of year. There have only been short periods where hands off flow restrictions were required over the winter period. Early filling of winter storage reservoirs has been possible with the expectation that those abstracting over the winter period will be full.

River source monitoring indicates most rivers are flowing, although some headwaters are still to fully recover. This is most noticeable with the Ver and Mimram headwaters, along with the middle and very upper reaches of the Misbourne.

Groundwater

Groundwater levels at our key indicator sites are presently in or above their normal range. Levels have continued to rise. There is scope that further rain could lift values into the notably high range. This is likely to be seen first in the Mid-Chiltern Chalk area.

Please contact for more information:

Alastair Wilson at HNLenquiries@environment-agency.gov.uk

Environment Agency - Kent, South London and East Sussex

Forward Look

The Area's water resource availability outlook for the 2024 irrigation season is GOOD.

Conditions remain favourable and there are no imminent concerns from a water resources perspective and irrigation outlook. Even if drier than normal conditions were to return and persist for the remaining winter aquifer recharge period, water resource conditions would remain stable.

Under current conditions it is likely that flow constraints will be contained to rainfall sensitive catchments only in the summer, with no groundwater level constraints being triggered over this period. A more detailed irrigation prospects report will be developed in April, ahead of the summer irrigation season.

Please read the latest Water Situation Reports via https://www.gov.uk/government/publications/water-situation-local-area-reports to view the KSL Area water resource situation in more detail. Latest local groundwater level reports can be read here: Kent: groundwater situation - GOV.UK (www.gov.uk); South London: groundwater situation - GOV.UK (www.gov.uk)

Rainfall

Across the KSL area over the winter period to date (Oct 2023 to mid-Jan 2024) we received 148% of the long-term average (LTA) rainfall, with effective rainfall for the same period at 183%. This follows last year's relatively wet winter that subsequently led to normal conditions in the summer.

Groundwater

The groundwater resources that support many of our catchments responded early and sharply to the initial wet winter, with groundwater levels currently assessed as notably high.

Please contact for more information:

Your local environment officer or the Groundwater Hydrology team at: ksl.gwh@environment-agency.gov.uk

Environment Agency - Lincolnshire and Northamptonshire

Forward look

The overall summer prospects for water resources availability for irrigation in Lincolnshire and Northamptonshire area are currently GOOD for 2024.

We are likely to see normal (or above) river flow conditions and normal (or above) groundwater levels this summer with 100% of the LTA rainfall. However, groundwater levels and river flows are likely to be at low-end of normal to below normal levels this summer with only 80% of LTA rainfall. Despite irrigation prospects being good, it is still possible that local water management actions will be required across the area during the irrigation season. Even in average conditions any dry periods during the summer can result in some form of local water management actions.

Background

The last six months of 2023 saw normal levels of rainfall or higher in every month, including exceptionally high volumes in both October and December (due to the impacts of several storms). The rainfall in the last six months of 2023 was classified as exceptionally high. As a result, Soil Moisture Deficits (SMD) ended 2023 at exceptionally low levels (as they had been since mid-October 2023). River flows were classified as exceptionally high at all monitoring stations at the end of 2023. Groundwater levels were also in the above normal to exceptionally high range.

Rainfall / Soil Moisture Deficit

January 2024's rainfall was more in line with the long-term average (LTA), with 107% of the LTA rainfall falling, classifying the rainfall as normal. Most of January's rainfall fell in the first few days of the months because of Storm Henk. As such, SMD had started to slightly increase throughout the latter half of January, ending the month at notably low to below normal levels for the time of year. As of the 12th February, there has already been over 130% of the LTA rainfall and as such SMD has returned to exceptionally low levels for the time of year.

River Flows

Heavy rainfall at the start of January meant that river flows remained exceptionally high for the time of year. With the rest of January being relatively dry, river flows declined throughout the rest of the month and by the end the daily flows at most sites were in the normal to above normal range. The monthly mean flows were classified between normal to exceptionally high, with the high flows at the start of the month slightly skewing the mean. A wet February has seen river flows increase back up to above normal to exceptionally high for the time of year.

Groundwater

Groundwater levels increased at the start of January following heavy rainfall. Due to the rest of the month being relatively dry, the more responsive groundwater sites began to decline and ended January at normal to above normal levels. The less responsive groundwater sites remained at exceptionally high levels but were starting to decline by the end of the month. The wet weather in February will likely mean groundwater levels increase in the coming weeks.

Please contact for more information:

Drought.LNA@environment-agency.gov.uk

Environment Agency - North East Area

Forward look

The overall summer prospects for water resources availability for irrigation, in North East Area are currently GOOD for 2024.

The Met Office 3- month outlook for the UK suggests that over the period March to May, there is a normal chance that the season will see near average temperatures; and a normal chance that precipitation will be near average.

It is possible that the implementation of hands off flow conditions will be required in some catchments during the irrigation season as, even in average conditions, any dry periods may result in some form of local water management actions.

Irrigators with licences that include cessation conditions associated with river level or flow (i.e. hands off flow conditions) will be contacted by EA area staff when restrictions are in place.

Background

There have been relatively few dry months throughout the past year, with most monthly rainfall totals being above the long-term average (LTA) across the North East from autumn onwards. In some catchments rainfall has been above average since July 2023. Exceptionally high rainfall was recorded in October (220% of LTA), leading to an increase in river flows and a decrease in soil moisture deficits. All soils have been classed as wet since October 2023. Reservoir stocks across the area have been increasing since the

autumn and are currently all healthy; with most coming close to their maximum level or are 100% full. River flows remained high in most catchments from October to December 2023. However, in January flows receded slightly and fell within normal ranges. There have been a few significant storms, starting with Storm Babet in October, Storm Ciaran in November, and Storm Isha in January 2024, all of which produced high rainfall totals aiding catchment recharge.

Rainfall / Soil Moisture Deficit

Since June 2023, rainfall totals across the North East have been in the normal or above normal range. The cumulative 12-month totals up to and including January 2024, were classified between above normal and exceptionally high. This trend went from north to south, with the Tweed catchment in Northumberland showing above normal rainfall and the Wear, Seaham and Tees catchments showing exceptionally high 12-month cumulative totals. As a result of the autumn/winter storms, rainfall totals were exceptionally high between October and December 2023, with the Seaham, Northumberland Rivers, and the Tweed catchments experiencing the second wettest October to December period since records began in 1871. Rainfall in January 2024 was above average in all catchments. The Tweed and Seaham catchments were the driest, with rainfall monthly totals falling in the normal category for January. The rest of the North East fell into the above normal category.

Soil moisture deficits were highest in June, when most of the North East was in the normal to dry ranges. By July and August soil moisture deficits had improved with soils becoming more saturated. By October the whole catchment fell within the wet category, where all catchments remain.

River Flows

River flows have generally been normal and above for the past 6 months from September 2023 to February 2024. Over the past 12 months, mean river flows were below normal in February 2023 (coinciding with the dry month) and June 2023, where there was normal rainfall but a high soil moisture deficit. Recovery began with a very wet July, and most catchments had exceptionally high river flows in October and December. During October, Hartford Bridge and Mitford, on the River Wansbeck, recorded the highest monthly mean flows in October for the period of record from 1968 and 1963 respectively.

Groundwater

Groundwater stocks are at normal or above normal levels for the time of the year. In general, groundwater levels are rising as a result of the overall wet 2023 and above average rainfall throughout autumn. The more confined parts of our aquifers are yet to benefit from this rain. Therefore, further increases in groundwater levels are expected through into spring 2024. This may lead to groundwater flooding, impacting low lying farmland in some areas.

Please contact for more information:

Water Resources: water.resources.northeast@environment-agency.gov.uk

Environment Agency - Solent and South Downs

Forward look

The overall summer prospects for water resources availability for irrigation in Solent and South Downs (SSD) are currently GOOD for 2024 unless there are significant dry and warm conditions over the next few months.

Background

Overall, the winter has been wet to date. The September to January five month period is the 10th wettest on record with overall aquifer recharge above average. SSD is heavily dependent on groundwater so

prospects for summer rely on the extent to which the chalk and greensand aquifers are replenished over winter.

Rainfall / Soil Moisture Deficit

Rainfall in the months from September to December 2023 were all above average. January 2024 was around average. Most of January's rain was received in the first week and there were several dry days during the month. Early February saw another extremely wet period from the 7th –9th. At the end of January soils were slightly drier than average but the rain in February has brought the soil moisture deficits back to average.

River Flows

At the end of January 2024, the majority of reporting sites had normal or higher monthly mean flows. The higher-than-average recharge has helped to increase baseflows in the catchments with chalk and greensand aquifers. More responsive rivers dominated by impermeable geology, which only make up a small part of SSD, have summer flows largely dependent on the immediate weather conditions.

Groundwater

The wet autumn and winter to date has meant that so far recharge has been above average and most reported groundwater levels are higher than normal (as of 31 January).

Please contact for more information:

Tony Byrne or Bethan Davies: HydrologySSD@environment-agency.gov.uk

Environment Agency - Thames

Forward look

In this early assessment, irrigation prospects across Thames area are GOOD for 2024. This will be updated in April ahead of the irrigation season.

If rainfall through the remainder of the winter period (to April) is around normal or above for the time of year, we expect to go into the summer with flow and groundwater levels at normal or higher. This will be a good position to support abstraction into summer 2024. There are no imminent concerns from a water resources or irrigation perspective. Some restrictions on abstraction may come into force towards the latter half of the summer as would be expected in any summer, particularly if conditions through the first half of the summer are hot and dry.

Background

At the end of January, river flows and groundwater levels in the Thames area were normal or higher for the time of year at most indicator sites. This was due to higher-than-average rainfall through the winter period so far.

Winter rain to date has resulted in river flow and groundwater levels across catchments in the Thames area being in a good position for irrigation in summer 2024.

Rainfall / Soil Moisture Deficit

Over the winter period so far (October to end of January), the Thames area received over 155% of the long-term average (LTA) rainfall. The effective rainfall (the component of overall rainfall that recharges our aquifers) for the same period was 221% of the LTA. In January we received 108% of the LTA rainfall for the month (74mm) - the majority of which fell in the first half of the month. The average Soil Moisture Deficit for the area at the end of January was 3mm, approximately the LTA for the time of year.

River Flows

As of the end of January, all flow indicator sites were between ‘Above Normal’ and ‘Exceptionally High’ for the time of year. 4 out of 15 flow indicator sites were classed as ‘Exceptionally High’, 7 out of 15 flow indicator sites were classed as ‘Notably High’, with the remaining 3 flow indicator sites classed as ‘Above Normal’.

Groundwater

At the end of January, 8 out of 11 key groundwater indicator sites were classed as between ‘Above Normal’ and ‘Exceptionally High’ for the time of year, with 3 groundwater indicators sites (Ampney Crucis, Fringford and Jackaments Bottom) in the Oolites classed as ‘Normal’. The groundwater level of the Chalk at Gibbet Cottages was classed as ‘Exceptionally High’ for the third month in a row, due to continued high rainfall since the start of the winter period.

In general, the recovery of the groundwater levels over the winter period has been continual because of higher-than-average rainfall throughout Thames area since October. Groundwater levels generally remain in a favourable condition for the time of year.

Please contact for more information: IEP_THM@environment-agency.gov.uk

Environment Agency - Wessex

Forward look

The overall summer prospects for water resources availability for irrigation in Wessex are currently GOOD for 2024.

Due to the high rivers flows and normal groundwater levels, there are currently no licences restricted from abstraction and all winter storage reservoirs are expected to be full.

Background

The Wessex Area water situation report for January indicates a continuing on of the wet conditions which has led to some flooding from high river flows and groundwater levels. from high river flows and groundwater levels.

Rainfall / Soil Moisture Deficit

Whilst January received average rainfall, over the past six and twelve month periods, all areas of Wessex reported notably or exceptionally high. It was the eighth wettest 6-month period and the sixth wettest 12-month period on our records ending in January.

With this period of wet weather, the soil moisture deficit remains close to zero and the long-term average.

River Flows

As of the end of January, all rivers were above long-term average flows, with the majority either above normal or notably high. Three flow gauges recorded exceptional high flows – the Amesbury gauge on the Upper Hampshire Avon, Throop on the lower River Stour and East Stoke on the Dorset Frome.

Groundwater

Following very good groundwater recharge over the winter, all aquifer water levels were at least normal by the end of January. The exceptions were found in the north, in the Jurassic Limestone, with Didmarton 1 at exceptional high and Allington 2 notably high.

The average rainfall in January led to the majority of groundwater levels falling slightly, although the wetter weather in February is likely to stop or reverse this trend.

Please contact for more information

AEPWessex@environment-agency.gov.uk

Environment Agency - West Midlands

Forward look

The overall summer prospects for water resources availability for irrigation in West Midlands Area for 2024 are currently GOOD.

With good winter recharge, an increase in groundwater levels is already observed in our fast-responding aquifers. Further increase is expected in the following few months in the slow-responding sandstone aquifers. Surface water flows respond quickly to rainfall. Therefore, normal river flows will be expected if average rainfall totals are recorded for spring and summer. Reservoir storage and soil moisture is also expected to remain at similar status if normal rainfall totals are observed. A wet winter has put West Midlands in a good position to start the year. However, if spring and summer conditions become dry, irrigation prospects may change.

Abstraction and irrigation are primarily controlled by licence conditions associated with river flow and level. Licence restrictions are triggered by notification from the Environment Agency of “hands off flow or Level” (HoF/HoL) or are monitored and managed by the licence holder. During an average year it is likely that some licences will be restricted during dry periods. The proportion of licences restricted in the West Midlands and the duration they are affected depends on how resilient the catchment is to changes in water availability and whether we experience drier than average conditions.

Information on how resilient your catchment is to changes in water availability can be found in the Abstraction Licensing Strategies (CAMS process) by reviewing past restrictions to your licence and by contacting IEP_WMD_waterresources@environment-agency.gov.uk

Background

Overall, West Midlands received good amounts of rainfall throughout 2023. Towards the end of 2023, West Midlands experienced a series of storm events which brought high amounts of rain. This resulted in a steep upward trend in soil moisture, river flows, groundwater levels and reservoir storage. This means that winter recharge is sufficient and suggests that West Midlands is in a good position for the upcoming summer.

However, as we have seen in recent years this situation can change quickly and may result in the need to restrict abstraction licences. Please ensure you plan accordingly and maintain resilience in your water supply.

Rainfall

In June and August 2023, some catchments in the West Midlands recorded below average rainfall compared to the long-term average (LTA). However, due to a wetter than usual July, West Midlands received average rainfall during summer 2023. Impacted by the storms, October and December were particularly wet months with some catchments receiving exceptionally high rainfall.

By the end of January 2024, accumulated rainfall totals for the past three, six and twelve months have been above average compared to the LTA.

Soil Moisture Deficit

Although there were some dry periods during 2023 where below average rainfall was recorded, with rain throughout the winter, and soils currently were either as expected for the time of year or wetter than usual.

River Flows

Warmer temperatures last summer coupled with below average rainfall resulted in some flow monitoring sites recording notably low river flows in June 2023. However, flows quickly returned to normal after above average July rainfall. Surface water recovered quickly in winter, particularly as soils were already saturated from the impacts of Storm Babet in October. By the end of January 2024, all flow monitoring sites in the West Midlands recorded notably high or exceptionally high river flows compared to the LTA.

Groundwater

The Permo-Triassic Sandstone aquifers are the most important groundwater in the West Midlands. They provide a high level of storage and support water supply and river base flow on a strategic scale. The storage properties of these aquifers mean that they are slow to respond but are potentially resilient to drought over one or two seasons. Currently, due to the higher-than-average rainfall over the winter period, groundwater levels are rising in response to recharge and are currently normal or above normal. As a result, these aquifers are likely to provide a resilient water source for the coming 2024 season.

Other aquifers in the Area include the Carboniferous Sandstone, Carboniferous Limestone, Jurassic Limestone aquifers, which due to their storage properties are quick to respond to both recharge and drought conditions. Currently all of these aquifers have responded well to the higher-than-average rainfall over the last few months and groundwater levels are currently healthy. However, a return to a long dry period will see a corresponding decrease in groundwater levels.

Reservoir storage

Some reservoirs recorded a decrease in storage following the drier periods in 2023. However, with above average rainfall totals in the autumn and winter periods, the majority of reservoirs were at or near full capacity by the end of the year. By the end of January 2024, the majority of reservoirs have normal or above normal storage compared to the LTA. Some reservoirs in the West Midlands are being managed according to agreed flood drawdown procedures.

Please contact for more information:

IEP_WMD_waterresources@environment-agency.gov.uk

Environment Agency - Yorkshire

Forward Look

Prospects for water resources availability for irrigation in Yorkshire for 2024 are GOOD

Should conditions in March and April mark a significant change in weather patterns then the Environment Agency will be aware of this for any updates for the Irrigation Prospects in April, but currently the outlook is favourable for water availability. It is worth noting in 2018, 2020 and 2022, as soon as soils dried in these hot and dry years, the effectiveness of the precipitation that did fall was reduced significantly. This was particularly the case in 2018 where surface water flooding and high groundwater levels gave way to hot and dry conditions resulting in drought by September and drought permits in November. Yorkshire and the Northwest are particularly vulnerable to rapid onsets of drought irrespective of early summer resources. This is due to a reliance on surface water in the Pennine Region, with numerous individual reservoirs of

moderate volume and rivers largely fed by rainfall and minor streams, rather than by aquifers with high storage volumes.

There are no concerns over groundwater stocks following the wet year of 2023, but some aquifers that are currently 'high' such as those in the Corallian Limestone and certain parts of the Chalk could easily be become below normal my mid-summer should a dry spring materialise. Without a dry spring even average rainfall in March and April is likely to result in all aquifers being in good health at the start of the irrigation season.

Abstraction in the region is primarily controlled by conditions on licences and licence holders must ensure that they always adhere to these. If a dry summer does happen, it is still possible that we may need to implement 'hands off flow' (HoF) or 'hands off level' (HoL) conditions on licences as we would in any normal year.

Rainfall

2023 started with an extremely dry February - around 20% to 50% of monthly long-term average (LTA), and this stalled the early recharge to surface and groundwater stocks. This was followed by above average rainfall in March and from mid-June onwards. Throughout the summer months rain fell with regularity and although there were some dry periods, there were no water resources concerns in Yorkshire. For Yorkshire as a whole it was the wettest six-month July to December period in the 150-year Met Office Had-UK data record, with most individual catchments also ranked in the top four wettest.

Groundwater

During January 2024 groundwater levels in the Principal Aquifers were between Normal and Exceptionally high for the time of year. In many cases groundwater levels are still responding to the winter weather. This is especially true in the slow responding Sherwood Sandstone which will see its levels continue to rise as we approach spring. These levels mean that reductions in groundwater supply are highly unlikely for the spring.

For the most up to date water situation reports, please visit our website here:

Yorkshire water situation: January 2024 summary - GOV.UK (www.gov.uk)

Please contact for more information:

AEPYorkshireandNE@environment-agency.gov.uk