

Updated prospects for irrigation - forecast for 2019 (May 2019)

Summary Overview

This document provides an update to the document we produced in February 2019 and shows the main prospects for irrigation across areas of England where irrigation is most significant. Figure 1 shows an updated map of irrigation prospects for 2019. The insert shows the position in February 2019 for comparison.

Despite a wetter than average March, April started predominantly dry and settled. The cumulative rainfall totals for April (as at 23 April) range from 19% of the monthly long term average (LTA) in the East England to 86% in South-West England, with all regions apart from the South-West having had less than 50% of the monthly LTA.

The latest Met Office forecast For May, and May-June-July as a whole, shows that the chances of above- and below-average precipitation are similar. On balance, drier-than-average conditions are marginally more likely. For May and May-June-July as a whole, above-average temperatures are more likely than below-average temperatures.

The Irrigation prospects reflect the current hydrological conditions and latest available weather forecasts.

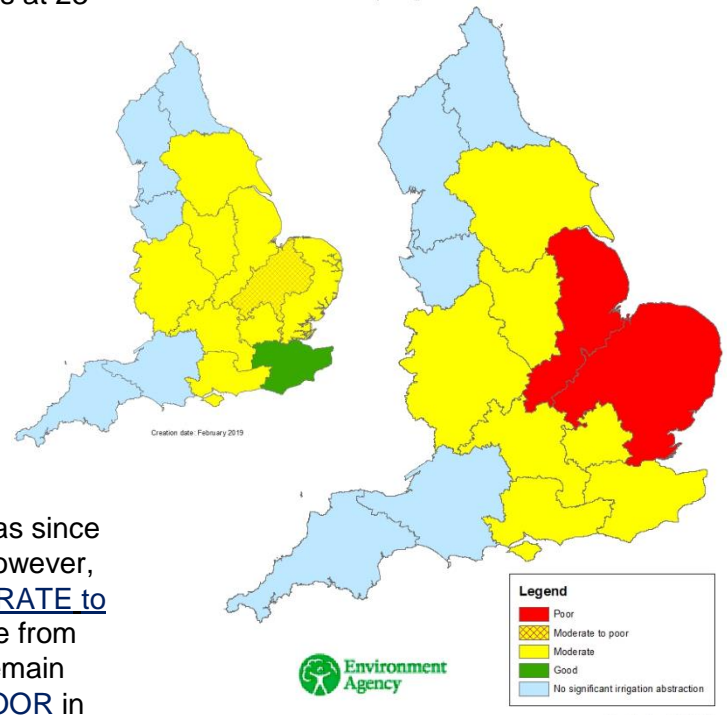
We are seeing a decline in irrigation status in some Areas since February. Seven areas are still classed as moderate. However, East Anglia has changed from MODERATE and MODERATE to POOR to POOR and Lincolnshire and Northamptonshire from MODERATE to POOR. Yorkshire and East Midlands remain MODERATE in most catchments but MODERATE to POOR in others. Kent, South London and East Sussex are in GOOD/MODERATE to MODERATE status.

Some Areas have provided detailed prospects which are contained later in this document. The document also contain the prospects should the rainfall scenarios turn out to be more pessimistic (i.e. drier) than expected. Therefore a range of prospect forecasts are presented for some Areas.

Definitions

Prospects for irrigation are defined as 'Good', 'Moderate' or 'Poor'.

Figure 1: Irrigation Prospects for relevant areas Spring - Summer 2019



Creation date: April 2019

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.

Paul Hammett, NFU's water specialist "said that farmers and growers are bracing themselves for a challenging summer. He urged farmers to consider how they could be affected by running out of water and to make plans, where possible, to manage water shortages".

Prospects for individual areas

Yorkshire

The prospects for spray irrigation for Summer 2019 are currently assessed as [MODERATE](#) for most catchments across Yorkshire, and assessed as [MODERATE](#) to [POOR](#) for the Swale and Derwent catchments.

Kent, South London and East Sussex

In Kent and South London Area the water resource availability for the 2019 irrigation season is: [GOOD/MODERATE](#) in the 'Most likely' scenario and [MODERATE](#) in the 'Reasonable worst case' scenario

The scenarios are defined as:

- Most likely - 100% of long term average (LTA) rainfall.
- Reasonable worst case - 80% of LTA rainfall.

East Anglia

The overall summer prospects for water resources availability for spray irrigation in East Anglia are currently [POOR](#).

Hertfordshire and North London

The prospects for water resources availability for irrigation in Hertfordshire and North London are currently [MODERATE](#), and likely to remain [MODERATE](#) based on the latest weather forecasts.

Lincolnshire and Northamptonshire

Lower than normal winter recharge followed by a dry April means that the overall summer prospects for water resources availability for spray irrigation in Lincolnshire and Northamptonshire are currently [POOR](#).

East Midlands

East Midlands spray irrigation outlook for spring - summer 2019 is [MODERATE](#).

West Midlands

The summer prospects for water resources availability for irrigation in the Environment Agency's West Midlands are currently [MODERATE](#).

Solent and South Downs

The overall prospects for water resources availability for irrigation in Solent and South Downs is currently [MODERATE](#).

Thames

Spray irrigation prospects for the Thames Area for the Spring- Summer 2019 were expected to be [MODERATE](#) in February 2019 and are still considered [MODERATE](#).

Devon, Cornwall and the Isles of Scilly

Devon, Cornwall and the Isles of Scilly will not be providing a formal spray irrigation prospects report however their current situation is [MODERATE](#). If the area receives average rainfall during the summer then the irrigation prospects for the summer would normal. Rainfall in March was average, following slightly below average rainfall in January and February. Soils are nearly fully saturated. Devon and Cornwall has quick responding rivers and therefore the situation can change relatively quickly. We are monitoring the situation closely and will issue an update if required.

Wessex

Wessex area will not be providing a formal spray irrigation prospects due to this area not being considered with significant quantities of spray irrigation. Surface water flows and groundwater levels are slightly better than in 2017. The most impacted catchment is the Hampshire Avon and its chalk aquifers although at this stage this is not seen as a major problem. The situation can change if the area experiences prolonged hot and dry spell.

Cumbria & Lancashire

Cumbria and Lancashire will not be providing a formal spray irrigation prospects due to this area not being considered as having significant quantities of spray irrigation. Surface water flows have increased following the recent rainfall. Across the area most groundwater levels are either normal or above normal. The availability of water for irrigation will reduce if the area experiences a prolonged hot and dry spell.

Areas in detail

Yorkshire

Background

The Environment Agency in Yorkshire issued irrigation prospects in February 2019, forecasting the overall status of the Area as [MODERATE](#). Since this was issued there has been a very dry start to the 2019 irrigation season and a number of licence holders have already received notices to stop abstracting. It has

been decided to issue a revised prospects report given this unusually dry April that farmers are experiencing.

Current Situation

Currently in Yorkshire, there are 6 Hands off Flows (HoFs) in force; 5 of these are in the River Swale catchment and its associated tributaries, with another in the River Seven catchment.

There are currently 54 licences on an Advanced Warning. This notification informs abstractors that the flows in their wider catchments are near to the Hands off Flow threshold, and a Stop notification is a possibility in the coming days/weeks. All licence holders who have received an Advanced Warning should take note of the forecast as more dry weather will almost certainly result in their Hands off Flow being enforced.

The Hands off Flow notifications are currently sent out twice a week (Tuesday and Thursday) by the Yorkshire Area Integrated Environment Planning team. Many abstractors have signed up to receive their notifications by e-mail, resulting in notifications being received as soon as they are generated. This is especially important during a dry period when rainfall may result in a short period of 48 hours of potential abstraction before a further HoF potentially comes into force. All abstractors are encouraged to sign up to this e-mail notification system. If you wish to receive your notifications electronically, please email drought.yorkshire@environment-agency.gov.uk

The situation is unusual for the time of year but is not entirely unforeseen. There are a number of factors that this can be attributed to:

- Extreme hot and dry weather during 2018 - during the Summer of 2018 water usage increased, and specifically groundwater stocks were depleted as many licence holders used more of their allowance or licence holders operated a previously dormant licence. The extremely hot conditions in 2018 meant recharge of groundwater did not take place during the 2018 summer months.
- Winter recharge in 2018-19 - although the UK had periods of heavy rainfall over the winter months this was significantly less than what was experienced in 2017-18. The "Beast from the East" in early 2018 ensured groundwater levels were at record highs sustaining flows in the North and East Yorkshire rivers for a much longer period. This year, significant recharge has not occurred hence flows are reaching HOF triggers very early.
- April 2019 - it is not unusual to see very late recharge in the winter months with the UK experiencing high rainfall, flooding or snowfall in April. It is a pivotal month in the water resources calendar. Many parts of Yorkshire have seen less than 20% of Long Term Average Rainfall for April this year. This hits the water resources system hard as it coincides with longer daylight hours and warmer temperatures.

Forward Look

Spray irrigation prospects for the Yorkshire Area for Spring - Summer 2019 were set as MODERATE in February 2019. This was due to the lack of recovery in groundwater stocks.

The February 2019 Prospects Report stated:

"Should a hot, dry summer occur without any significant rainfall in early spring, then abstractors from both groundwater and surface water may encounter restrictions, and the environment would not have the same resilience it had in 2018."

Following a review of the situation Yorkshire Area has revised this classification for some specific catchments. The following catchments have had their classification amended from MODERATE to MODERATE to POOR.

- Swale and associated tributaries
- Derwent

For all other licences in Yorkshire the current status of MODERATE still remains. Many catchments in the west of the County benefit from prescribed reservoir flows from reservoirs that filled to 90% or more during the rainfall in December and March. Catchments in the North and East of Yorkshire have significantly fewer prescribed reservoir flows and rely on groundwater sources which are currently lacking in significant recharge.

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

<https://www.gov.uk/government/statistics/water-situation-report-yorkshire-and-north-east>

What are the longer term prospects?

Although it is not possible to fully predict the Water Resources future of the County, many farmers may wish to think ahead to the 2019 harvest and beyond.

The latest Met Office forecast For May, and May-June-July as a whole, shows that the chances of above- and below-average precipitation are similar. On balance, drier-than-average conditions are marginally more likely. For May and May-June-July as a whole, above-average temperatures are more likely than below-average temperatures.

Given this forecast and the current situation, the likelihood of licence holders being subject to restrictions in early and mid-summer is increasing with each dry day or week. The lack of significant groundwater recovery means that periods where abstraction is permitted may only be a few days following rainfall events and restrictions could take place for a significant period of time following the initial stop notification.

Restrictions on direct groundwater spray irrigation licences are currently unlikely given the current long term weather prospects. A more likely scenario is long term Hands off Flow restrictions on Yorkshire Water courses predominately fed by groundwater. Current prospects of an outright Spray Irrigation Ban (Section 57) are currently low but cannot be ruled out in a worst case scenario (<50% LTA).

Environment Agency Flexible Abstraction in 2019

During 2018 the Environment Agency launched its "Flexible Abstraction" initiative. This allowed abstractors in the agricultural sector to trade water quickly with other licence holders or increase abstraction in the short term. In Yorkshire, this mainly utilised groundwater resources, which were plentiful at the time.

All of the abstractors who utilised this position are encouraged to apply to vary their licence if they require an increase in volumes for future years.

The specific conditions during Summer 2018 meant reduced surface water flows were accompanied by healthy groundwater stocks, allowing trades and increased volumes of abstraction from these aquifers without increasing the risk to the environment.

Conditions in 2019 are very different, therefore the Environment Agency will make decisions on any flexible abstraction requests based on their current risk to the environment and water resources position locally. Please contact us as soon as possible if you are likely to request to trade or request licence volume increases.

An up to date version of the Environment Agency Flexible Abstraction Position can be found on the Gov.uk web site following this link: <https://www.gov.uk/government/news/national-drought-group-ea-chairmans-statement-march-2019>

Conclusions

The prospects for spray irrigation for Spring - Summer 2019 are currently assessed as MODERATE for most catchments across Yorkshire, and assessed as MODERATE to POOR for the Swale and Derwent catchments.

Kent, South London and East Sussex

Background

Favourable conditions during the latter part of last year's winter were sufficient to address a concerning deficit that had arisen over the previous year and a half. An extended recharge season, which only culminated towards the end of May 2018, resulted in a significantly improved water resources situation throughout KSL Area.

Early summer 2018 was witness to an extended period of hot weather, and distinguishable, as for several successive weeks no meaningful rainfall was recorded across the Area.

Current Situation

Winter (Oct 2018 to Mar 2019) rainfall has supported average rates of groundwater recharge. Flows remain normal, although rainfall sensitive catchments have been impacted by periods of low rainfall. Water level dependant areas are reported to be healthy, heading into this season's irrigation season.

At the end of March groundwater levels in the more reactive eastern aquifers were beginning to stabilise and could be best characterised as Normal. Groundwater recovery continued in those aquifers to the west, and as a consequence levels are best described as Below Normal, although towards the higher range.

Whilst ground conditions are conducive and will support further recharge, the forecast for drier and warmer conditions would indicate that further opportunity for significant recharge is likely to be limited.

More detailed hydrological information can be found in the Environment Agency's Area Monthly Water Situation Report at: <https://www.gov.uk/government/publications/water-situation-local-area-reports>

Forward Look

The latest Met Office forecast For May, and May-June-July as a whole, shows that the chances of above- and below-average precipitation are similar. On balance, drier-than-average conditions are marginally more likely. For May and May-June-July as a whole, above-average temperatures are more likely than below-average temperatures.

Restrictions

Spray irrigation prospects for the summer are 'GOOD/MODERATE' to 'MODERATE' across the Area.

Under the reasonable worst case scenario (MODERATE), flow and level constraints for abstraction licences would likely come into force for:

- Rainfall dependent catchments from the middle of spring and remain throughout the summer
- Groundwater fed catchments from late summer onwards.
- Supported marsh water level dependant areas from mid to late summer onwards (Stour and Rother Marshes).

However, under the most likely scenario, if there is sustained average rainfall flow and level constraints for abstraction licences would likely come into force for:

- Rainfall dependent catchments from early to mid-summer
- Supported marsh water level dependant areas from late summer onwards (Stour and Rother Marshes).

When constraints are in force, abstractors with Hands off Flow conditions (HoFs) are encouraged to keep track of daily river levels on our website: <https://flood-warning-information.service.gov.uk/river-and-sea-levels> to take advantage of brief increases in flows following rainfall events. Further advice and details will be sent to affected abstractors prior to when constraints come into force and all abstractors are encouraged to provide email contact details, so we can improve our river flow messaging services to abstractors.

For further updates or advice please contact your local environment officer or the Groundwater Hydrology team on: ksl.gwh@environment-agency.gov.uk

Definitions:

The scenarios are defined as:

- Most likely - 100% of long term average (LTA) rainfall.
- Reasonable worst case - 80% of LTA rainfall.

East Anglia

Background

Last year a very wet March and April saw the 2017-18 recharge period ending with groundwater levels classified as normal or higher in the Chalk, Limestone and Greensand aquifers. River flows were classified as above normal or notably high at most sites across the area. Since May 2018, there has been a deficit of rainfall in the area in most months, only August, October, December 2018 and March 2019 rainfall have been close to the long term average. June was the driest month of last year, and the second driest on record (since 1910), with only 7mm of rainfall. Following a dry start to the autumn in 2018, rainfall between November and March 2019 has been around 80% of LTA.

Since our last report the rainfall deficit has continued. In February we received only 75% of LTA rainfall. In March we received 98% of LTA rainfall, however so far April has been much drier with only 20% of the monthly LTA rainfall.

In response nearly all rivers are classified as notably low or exceptionally low with only the groundwater dominated catchment of Heacham in NW Norfolk and Blunham in the Ivel categorised as below normal.

Groundwater levels give a clearer indication of the overall state of water resources as they largely determine the level of baseflows in rivers during the summer months. Groundwater levels are generally classified as notably low or below normal. An exception is Fringford in the limestone in the Upper Bedford Ouse which is classified as normal.

More detailed information can be found in the Environment Agency Monthly Water Situation Report at <http://www.environment-agency.gov.uk/research/library/publications/104036.aspx>

This is updated shortly after the 10th of each month.

Water Rights Trading Map

customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
03459 88 11 88

Last summer, we received numerous requests for flexibility around abstraction licence conditions or temporary abstraction licence trades and in many cases, licensed water or water stored in reservoirs has been able to be traded.

In response to this demand, we developed an online tool which we hope can help farmers to identify potential for short term trades. We hope that this may be useful should farmers still require flexibility this year and will be complementary to the NFU's Water Bank. The '**Help for water rights trading**' tool can be found using this link.

<https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=c9176c299b734cff9a6deffcf7f40a4e>

Forward look

Groundwater levels are likely to remain notably low this summer. Rivers are likely to be flowing notably low or lower in groundwater fed catchments throughout the irrigation season.

East Anglia area (west)

Prospects across East Anglia west area are POOR for 2019. Soil Moisture Deficit is notably high this spring throughout the west part of the area. Average rainfall during the rest of spring and summer would show river flows likely to be flowing below the normal levels to notably low levels in groundwater fed catchments throughout the irrigation season. Groundwater levels are expected to remain notably low levels at most sites. Significantly higher than average rainfall is required to get levels back to normal during summer.

If the dry weather conditions continue, river flows are likely to continue in the exceptionally low levels in the Ely Ouse catchment and to below normal and notably low in the Norfolk area. Groundwater levels are likely to show little or no recovery and levels could be either below normal or notably low during the irrigation period.

It is possible that local water management actions may be required in Fenland catchments during the irrigation season. Even in average conditions any dry periods during the summer can result in some form of local water management actions.

East Anglia area (east)

Most areas of major aquifer are currently below their normal levels and are not expected to recover further as we head into summer. Areas of the chalk under heavy clay cover in Essex and Suffolk have received very little recharge this winter and are currently at notably low levels. As we progress through the summer the area of aquifer affected by low levels could extend into catchments further north. There is a significant probability that either formal or informal limited demand reduction measures may be required should summer 2019 again be hot and dry. Prospects for East Anglia East area following average winter rainfall were previously considered to be MODERATE, however with a dry finish to the winter prospects are now considered poor.

A continuation of very dry weather into the summer could require more active formal demand reduction measures. We now expect some rivers particularly those in North Essex and Suffolk to fall below our exceptionally low indicator for drought. Particularly during periods of peak demand for irrigation. It is possible some of the groundwater dominated rivers of Norfolk could also fall to this level but this is likely to be later in the summer or autumn. Should this occur, the level of peak demand for resources direct from the river is likely to determine the need for demand reduction measures in individual catchments? This elevated risk of formal measures remains low (20 % for the most vulnerable rivers) but is sufficiently elevated above long term risk (5%) for us to issue advice that we cannot exclude the need for formal restrictions. The prospects

for this dry scenario are therefore POOR. We will not preclude the formal use of section 57 notices for surface water abstractions in the event of an emergency. Informal or voluntary restrictions are more likely to be in place from early June through the summer. The current risk of these requests being necessary is around 35-40 %. Normal Summer rainfall patterns should not result in any imposition of restrictions.

We have been aware of the difficulties in filling winter storage reservoirs, caused by a prolonged lack of winter runoff. In some catchments centred on the Essex and Suffolk border, the lack of response in clay headwaters has been particularly acute. Some depleted reservoirs have required additional time to fill, using an agreed extension of the winter season into April, although this extension has not always been beneficial due to lack of rainfall.

Please talk to us now about actions you can take:

East Anglia area (west)
Andy Chapman
02030 251786

East Anglia area (west)
Mark Corcoran
02030 251895

East Anglia area (east)
Dawn Goodhall
02030 258371

Hertfordshire and North London (HNL)

Abstraction concerns

Winter abstractions were affected by the limited rainfall. Flow constraints were often activated. Reservoirs were drained last summer due to hot temperatures and high abstraction volumes were needed to replenish reservoir levels. Seven licences had an extension of the abstraction period until 30 April approved. However flow constraints have been active for most of April due to a lack of rainfall.

Summer irrigation abstractors mainly rely on groundwater. There is limited direct river abstraction due to historical licence policy restrictions. HNL has a total 15 spray irrigation licences linked to flow constraints. Any restrictions are likely to be on longer due to low river levels. Mains water supply is an option for some but they would need to contact their local water companies to confirm arrangements.

Hydrological situation

Winter rains dictate the overall hydrological situation including how much groundwater levels recover to support HNL Chalk streams over the summer. Over the winter period (October to March), the Area received 91% of the long term average (LTA) rainfall and 42% of the LTA effective rainfall.

Monitoring boreholes in the Colne and Upper Lee have readings currently in the below normal range. Seasonal GWL decline has ceased and recharge has begun at the majority of our sites. The potential remains for greater recovery depending on rainfall levels but we are approaching the end of the recharge season. River flows across the Area, which are supported by groundwater, are also in the below normal range. Flows in the winterbourne sections has been intermittent this winter.

Forward Look

Above average rainfall totals are required before the end of the recharge period for the current situation to improve. Implications are likely to be felt on the environment with lower river flows and some earlier than normal drying out of upper reaches. The prospects for water resources availability for irrigation in Hertfordshire and North London are currently MODERATE, and likely to remain MODERATE based on the latest weather forecasts.

Summary

Over the winter period (October to March), the Area received 91% of the long term average (LTA) rainfall and 42% of the LTA effective rainfall. Recharge has begun at the majority of our sites but groundwater levels remain in the below normal range. Lack of rainfall has affected winter reservoir storage. Lower river flows and earlier than normal drying out of upper reaches are likely.

If you would like further information please contact: alastair.wilson@environment-agency.gov.uk or call 0203 025 8953.

Lincolnshire and Northamptonshire

Background

A very wet March and April saw the 2017-18 recharge period ending with groundwater levels classified as above normal or higher in both the chalk and limestone aquifers. River flows were classified as notably or exceptionally high across the area. There then followed a near average May before conditions turned dry and hot. June was one of the driest months on record particularly towards the south of the area with the Upper Welland and Nene receiving less than 2mm over the whole month. This hot dry weather continued well into July with the area receiving next to no rainfall in the first 26 days. The hot dry weather caused a very high demand for water both for public water supply and for irrigation and soil moisture deficits (SMDs) went from notably low at the beginning of May to exceptionally high at the end of July. Despite the dry weather baseflows in groundwater fed rivers stayed within the normal range. Flows in the River Welland and River Nene were generally below normal and could not keep up with demand in the lower catchments leading to restriction on abstractors. August was not as dry and the cooler weather provided some relief for irrigators. A dry September meant we started the recharge period with high SMDs which were not overcome by the near average rainfall in October and November. December was wetter than average and rivers started to respond and recharge began. This was brought to an abrupt stop on 24th December which was the start of a sustained period of next to no rainfall that continued until the 16th January during which time soil moisture deficit actually increased. January finished with just 20mm of rainfall, 39% of the long term average and most of the river flow sites classified as either notably or exceptionally low with the chalk fed sites towards the north and east of Lincolnshire classified as below normal. February was another drier than average month followed by a slightly wetter than average March. This meant that over the October to March recharge period we received only 90% of the long term average rainfall and this combined with the high soil moisture deficits at the start of the recharge period has meant that we have had below average recharge and runoff.

April 2019 started dry receiving an average of 9mm, 19% of the long term average, in the first 22 days. This has resulted in the soil being drier than normal for the time of year and most rivers classified as notably low.

Groundwater levels give a clearer indication of the overall state of water resources as they largely determine the level of baseflows in rivers during the summer months. Most groundwater levels in both the chalk and limestone aquifers are currently classified as below normal.

More detailed information can be found in the Environment Agency Monthly Water Situation Report at <http://www.environment-agency.gov.uk/research/library/publications/104036.aspx>

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Last summer, we received numerous requests for flexibility around abstraction licence conditions or temporary abstraction licence trades and in many cases, licensed water or water stored in reservoirs has been able to be traded.

In response to this demand, we have developed an online tool which we hope can help farmers to identify potential for trades. We hope that this may be useful should farmers still require flexibility this year and will be complementary to the NFU's Water Bank. The '**Help for water rights trading**' tool can be found soon using this link.

<https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=c9176c299b734cff9a6deffc7f40a4e>

Forward look

With average rainfall we are likely to see below normal groundwater levels meaning that river baseflows will be lower than normal in both the chalk and limestone fed rivers. The River Welland and River Nene are likely to see below average flows.

With 80% of long term average rainfall groundwater levels are likely to be notably low this summer leading to significant lower baseflows in groundwater fed rivers. The River Welland and River Nene are likely to have notably low baseflows.

It is likely that local water management actions may 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.

Conclusions

After lower than average winter recharge and an early development of soil moisture deficit the overall prospects for spray irrigation in 2019 are currently assessed as [POOR](#).

If you would like further information or have a specific query about your abstraction licence please contact us at: Drought.LNA@environment-agency.gov.uk

East Midlands

Current situation

In East Midlands Area 9 of the last 11 months had below long term average (LTA) rainfall, with only March and December recording above LTA rainfall. The three month LTA for the Trent catchment is 81%.

Due to this below average rainfall some of the groundwater monitoring boreholes are recording low water levels for the time of year. The Crossley Hill monitoring borehole in the Sherwood Sandstone aquifer at Blyth near Worksop is recording 'notably low' levels for the time of year and as the Sherwood Sandstone responds slowly to rainfall, levels are still receding after last year's dry weather. The Southards Lane monitoring borehole at Bolsover into the Magnesian Limestone aquifer which is important for maintaining base flows to the central Nottinghamshire rivers is also recording 'notably low' levels for the time of year and there has not been the usual amount of recharge this winter.

Soil moisture deficits have developed early throughout most of the Area due to the below average rainfall and periods of above average temperatures such as over the Easter weekend.

Consequently many of the rivers in the Area are recording low flows for the time of year and from 10th April some Hands off Flow restrictions have been in force. The current position is that there are 5 HoF restrictions

in place, affecting 18 licences. This weeks' unsettled weather with rain showers has meant that some restrictions have been lifted however it is likely they will be imposed again once the unsettled weather has passed, due to the low groundwater levels.

Last summer, we received numerous requests for flexibility around abstraction licence conditions or temporary abstraction licence trades and in many cases, licensed water or water stored in reservoirs has been able to be traded.

In response to this demand, we have developed an online tool which we hope can help farmers to identify potential for trades. We hope that this may be useful should farmers still require flexibility this year and will be complementary to the NFU's Water Bank. The '**Help for water rights trading**' tool can be found soon using this link.

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Forward look

Spray irrigation prospects for the East Midlands Area for the Spring- Summer 2019 were set as MODERATE in February 2019 and is still considered MODERATE.

Following a review of the situation the classification has been revised for some specific catchments. The following catchments have had their classification amended from MODERATE to MODERATE to POOR:

- River Ryton
- Maun and Meden catchments
- Soar catchment

This status refers to surface water licences and restrictions on groundwater licences are not considered likely. For all other licences in East Midlands Area the current status of MODERATE still remains.

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

<https://www.gov.uk/government/publications/water-situation-local-area-reports>

West Midlands

Current situation

March 2019 was a wet month for the West Midlands with all Hydrological Areas apart from the Avon to Evesham, receiving the expected long-term average (LTA) rainfall or above. The rainfall received so far in April (as of 23/04/2019) in the Severn catchment is 32mm (60% LTA) and in the Trent catchment is 17mm (32% LTA). The three- month LTA for the Severn Catchment is 85% and is 81% for the Trent catchment.

During the first half of March, there was a reduction in soil moisture deficits with soils becoming wetter. Following warmer, drier weather, soil moisture deficits have increased and soils are drier than the long-term average for the time of year.

Groundwater monitoring boreholes are recording below normal water levels for the time of year. This raises concerns for the summer as groundwater supports river baseflows.

Some rivers in the Area are recording low flows for the time of year and Hands Off Flow (HoF) restrictions have been put in place this week on the rivers Trent, Avon and Tern, affecting 13 licences. The currently unsettled weather may delay the imposition of other HoF restrictions.

Last summer, we received numerous requests for flexibility around abstraction licence conditions or temporary abstraction licence trades and in many cases, licensed water or water stored in reservoirs has been able to be traded.

In response to this demand, we have developed an online tool which we hope can help farmers to identify potential for trades. We hope that this may be useful should farmers still require flexibility this year and will be complementary to the NFU's Water Bank. The '**Help for water rights trading**' tool can be found soon using this link.

<https://environment.maps.arcgis.com/apps/webappviewer/index.html?id=c9176c299b734cff9a6deffc7f40a4e>

Forward look

Spray irrigation prospects for the West Midlands Area for the Spring- Summer 2019 were set as MODERATE in February 2019. This remains the current status.

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

<https://www.gov.uk/government/publications/water-situation-local-area-reports>

If you would like further information please contact: Drought.WMD@environment-agency.gov.uk

Solent and South Downs

Background

Average rainfall over the winter period has helped to recharge groundwater to normal seasonal levels at present (23rd April). River flows are also normal with only one hands off flow condition in force across the area. In contrast, the end of March was dry and April has been drier than average to date. So far in April, there has been 33% Long Term Average (LTA) rainfall up to the 23rd April. Further information can be found in the Environment Agency's Monthly Water Situation Report for your area at:

<https://www.gov.uk/government/publications/water-situation-local-area-reports>

Forward Look

Spray irrigation prospects are MODERATE across the Solent and South Downs Area. Some licence restrictions are possible across the area for both the Reasonable worst case (80% of LTA rainfall) and most likely scenario (100% of LTA rainfall).

If you would like any further information or advice, please contact a local environment officer or the Integrated Environment Planning team at aep_ssd_southern@environment-agency.gov.uk

Thames

Current situation

In Thames area, winter rainfall was near the Long Term Average (LTA) for the winter period (October to March). At the end of March we had received 92% of the LTA for the winter period. Generally, there is a north-south split in the area, with southern catchments receiving normal rainfall for the winter period, and northern catchments receiving below normal. Looking at the last 12 months of rainfall, over half the

Thames catchments experienced notably low rainfall compared to the LTA, with conditions generally better in the south.

Following the heat wave and dry conditions over summer of 2018, the Soil Moisture Deficit (SMD) remained higher than the LTA into the winter period. Despite the near LTA rainfall for the period, the SMD at the end of March was 57% of LTA. This indicates that winter aquifer recharge was less effective, which is reflected in the area's groundwater levels coming into the spring: five of our indicator sites were below normal. Stonor Park in the Chilterns Chalk was notably low (although often experience delayed recharge), and five sites were normal for the time of year. Some recovery of groundwater levels is still being observed, but it is likely recovery will slow and cease as we move through spring.

Thames rivers responded to March rainfall, and the majority were normal for the time of year. River flows at indicator sites located in groundwater dominated catchments (River Coln at Bibury, River Kennet at Theale and River Wye at Bourne End) were below normal at the end of the winter period, reflective of the groundwater situation. The River Ock at Abingdon (clay dominated) was also below normal due to receiving limited rainfall in the catchment through March).

Despite slightly lower river flows than would be expected for the time of the year in many of our rivers, the number of abstraction licence restrictions in force coming into spring is low and as would be expected for the time of the year. Restrictions are responsive to rainfall at this time of year.

Last summer, we received a number of requests for flexibility around abstraction licence conditions or temporary abstraction licence trade. Where the licence and local conditions allowed, we granted short term trades and licence flexibility to assist with abstractors who were struggling with the water situation.

Forward look

April has been a dry month, with Thames area only receiving around 60% of the LTA rainfall. This has resulted in soils being drier than would be expected for the time of year. River flows are responding to the limited month's rainfall.

Spray irrigation prospects for the Thames Area for the Spring- Summer 2019 were expected to be [MODERATE](#) in February 2019 and are still considered [MODERATE](#).

While few restrictions are currently in place, it is expected that rivers will respond to reduced base flow. This is likely to mean restrictions will come into force earlier in the year than may normally be expected, and may remain in force for longer than would normally be expected.

A number of spray irrigators in Thames area abstract from groundwater sources, and while abstractors may not be limited by groundwater levels, the impacts of increased surface water restrictions will affect abstractors from both surface water and groundwater sources. Following a winter of near average rainfall in Thames area and few restrictions in place, we expect winter storage abstractors to have obtained reasonable storage.

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

<https://www.gov.uk/government/publications/water-situation-local-area-reports>

If you would like further information please contact: tom.entwistle@environment-agency.gov.uk or call 02030 259779.

Ensuring your business is resilient to drought

Climate change predictions suggest the extremes of weather we have seen in the last few years are likely to become more frequent in the future. It will become increasingly important to ensure we are as resilient as possible to periods of reduced water resource and drought. The section below gives you some ideas on what you could consider before and during a drought to help make your business more resilient.

We will work with abstractors to minimise the impact of drought and related restrictions on businesses in the future. If you have ideas on things such as voluntary initiatives to conserve water whilst reducing the impacts of imposed restrictions in your area, or would like to set up an abstractor group in your area to work together to improve resilience, please get in contact, our details are at the end of this document.

We continue to recognise the importance of irrigation to the agricultural industry and will aim to work with farmers and others to try to minimise, where possible, the impact of any dry weather on their businesses.

Abstraction is primarily controlled by conditions on licences and licence holders must ensure that they adhere to these at all times. We would encourage all abstractors to review their licences to ensure that they continue to meet their needs. In areas across England in 2009 and 2010, some farmers experienced difficulties lifting crops from dry ground and found that their abstraction licences didn't cover abstraction beyond the end of September. You may also need to extend the winter season on your licence from February to March.

For those farmers who wish to extend their licensed abstraction period, we strongly recommend that you apply now to formally vary your licence. In most cases these variations will be relatively straight forward and will provide you with long term drought resilience without the need to talk to us in the future for a temporary dispensation. This is particularly important as the allowances in the last few years are unlikely to be made in the future as more farmers formally vary their abstraction periods.

We do have powers to further restrict the abstraction of water for irrigation from rivers, streams and underground sources, and will use those powers should the situation become critical. If such a situation arises, however, we will always seek to achieve as much as possible through voluntary savings before imposing formal restrictions. Total bans will only be used as a last resort.

The latest version of the Environment Agency's Flexible Abstraction Position can be found on the NFU web site following this link: <https://www.nfuonline.com/cross-sector/environment/water/irrigation-and-water-resources/environment-agency-licence-flexibility-provisions-extended-to-reservoir-filling/>.

We are planning to extend the Water Rights Trading Map in East Anglia to Midlands and Northamptonshire and Lincolnshire.

More detailed hydrological information for all the areas can be found in the Environment Agency's Weekly and Monthly Water Situation Reports at:

<https://www.gov.uk/government/collections/water-situation-reports-for-england>

Following the 2018 drought in England, the Environment Agency (EA) asked Cranfield University to undertake [a high level review of the Optimum Water Use methodology](#) which is used by the EA for assessing 'reasonable need' on spray irrigation licences for agriculture. The findings show that in irrigation terms 2018 was considerably drier than a typical 'design' dry year across most of the indicator weather station sites included in the study. The report also identifies a number of specific areas within the Optimum Water Use methodology for outdoor crops that warrant revisiting and updating in the near future, taking account of changes in cropping mixes, farming and irrigation practices (e.g. trickle irrigation) over the last 15 years. It also provides advice on how irrigation abstractors might better plan and manage

against future drought events such as 2018 and the actions needed to increase drought resilience for farming businesses.

[Guidance for livestock farmers](#) in the event of water supply interruptions is now available.

What can irrigators do?

For their part, irrigators are encouraged to take such actions as they can to minimise the impacts on the environment and their businesses: Please talk to us now about actions you can take. If you don't know your local EA contact, please call our customer service line on 03708506506 and ask to speak to your local water resources member of staff dealing with spray irrigation prospects.

Abstraction Licences

- Check your licence details and, at all times, adhere to licence conditions. The Environment Agency is developing its secure online water resources licensing service, which can be found by searching GOV.UK for 'Manage your water abstraction or impoundment licence'.

As part of the digital service you can now:

- Submit your abstraction returns
- View your licence and previous returns
- Receive letter notifications (expiry reminders, HoF warnings and irrigation bans)
- Give permission to a named contact to manage your licence

Voluntary Restrictions

- Comply with voluntary restrictions where they are requested. This will delay, and may avoid the need for more formal restrictions.

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;
- Continue to plan for the future. Is there an opportunity to convert from direct summer abstraction to high flow storage? The Rural Development Programme for England (RDPE) may be able to help with funding.
- Ensure your reservoir is regularly maintained, checking for cracks and leaks.
- The Environment Agency has a range of literature available to help support your business including Rain Water Harvesting; Think about installing an irrigation Reservoir and adopting Best Metering Practice. [Guidance on the planning and design of irrigation reservoirs in Kent](#), jointly produced by Environment Agency, Kent County Council and EMR.
- 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.

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;

customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
03459 88 11 88

- 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.
- Keep updated on the latest water situation reports at <https://www.gov.uk/government/collections/water-situation-reports-for-england>

Abstractor Groups and Guidance

- Where appropriate, discuss issues, share ideas etc. with neighbouring farmers. A number of 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 (e.g. NFU, UKIA, Cranfield University etc.);
- The Environment Agency has a range of literature available to help support your business including Rain Water Harvesting; Think about Installing an Irrigation Reservoir and adopting Best Metering Practice.