

Prospects for spray irrigation: Forecast for 2018



East Anglia

20th February 2018

The overall summer prospects for water resources availability for spray irrigation in East Anglia are currently **MODERATE**.

After a dry autumn a wet winter has seen condition return to normal in most of the area although some parts of the south of East Anglia still have below average river flows and groundwater levels.

Background

A dry end to 2016 and start to 2017 resulted in limited recharge of groundwater across East Anglia. There followed a wet summer in which much of the area received summer recharge that meant most rivers and aquifers were back within the normal range for the time of year. However, there were still parts of East Anglia with lower than normal groundwater and river flows. The autumn of 2017 saw a return to much drier conditions with some catchments in Suffolk experienced their lowest recorded monthly flows for November. Starting at the end of November a more unsettled weather pattern established across the UK. There then followed a wet December with 160% of long term average rainfall with half of the rain falling during the last 6 days. This rainfall dramatically reduced the soil moisture deficit and with a slightly wetter than average January groundwater levels have been rising throughout East Anglia. River flows have also recovered enabling irrigation and water supply reservoirs to fill at a steady rate.

So far February has been wetter than average particularly towards the east helping to maintain river flows and recharge of the groundwater.

The latest weather forecast suggests a dry end to February.

In response to broadly average rainfall during February most river flows are classified as normal or above although some groundwater dominated sections in the south of the area are still 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 currently classified as normal or below normal with the below normal sites tending to be towards the south. The exception is Fringford in the limestone in the Upper Bedford Ouse which is classified as above 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.

Forward look

East Anglia area (west)

Prospects across East Anglia area (west) are good to moderate for 2018. Groundwater levels are average and the soil moisture deficits are also within normal bands. Rivers are likely to be flowing at

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normal levels in groundwater fed catchments throughout the irrigation season. Groundwater levels are likely to remain normal through the summer unless we experience very dry weather conditions.

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)

In Suffolk and Essex sustained aquifer recharge has been gradual with levels remaining below normal for the time of year. Further north an area from mid to north Norfolk has responded well to very wet conditions in December with groundwater levels now close to their normal seasonal level.

Soil moisture deficits have fallen sufficiently that further rainfall should now result in effective and steady recovery of all major aquifers. This is 6-8 weeks later than usual therefore prospects for next year continue to be dependent on the rainfall accumulations over the next 8 weeks.

The current expectation therefore is that recharge of aquifers that are currently below their normal levels will again be limited this winter. Average rainfall between February and April 2018 will not be sufficient to fully recover the major aquifers to their normal summer levels. In particular the confined chalk of Essex and Suffolk may remain below normal as we head into the summer. Average rainfall during the winter and early spring should however be sufficient to prevent the widespread development of environmental drought next summer. There remains a small possibility that informal limited demand reduction measures may be required should summer 2018 be hot and particularly dry. The general synopsis following average winter rainfall is therefore considered to be generally moderate throughout the area.

Prospects following February to April rainfall totals much below 75% of the long term are less favourable. There is around a 20 % probability of rainfall below this level and if associated with continuing prolonged dry conditions may result in the need for more active demand reduction measures during the mid to late summer period of peak environmental stress. A continuation of very dry conditions into the summer could result in flows falling below our exceptionally low indicator for drought in some catchments predominantly south of the river Yare. In addition to the impact of natural low flows, 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 remains low but sufficient for us to issue advice that we cannot exclude the need for formal restrictions. The prospects for the dry scenario are therefore moderate to poor.

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 (Our contact details are at the end of this document):**

Abstraction Licences

- Check your licence details and, at all times, adhere to licence conditions.

Voluntary Restrictions

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

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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.

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.

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 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.

Paul Hammett – the NFU’s National Specialist in water resources says that it is important to “build resilience into future water availability on farms so that they are in a better position to face the next drought. In particular, the NFU recommends that farmers review their abstraction licences now well before the next irrigation season starts”

Conclusions

After a dry autumn followed by a wet winter the overall prospects for spray irrigation in 2018 are currently assessed as ‘MODERATE’.

We will provide a full update in the spring.

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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 mid-summer 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.

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