

Prospects for spray irrigation

Forecast for 2019

February 2019

Background

2018 was a year notable for the extremes of weather that took place. Water stocks did not recover in the early winter period, but there was a significant increase in stocks following the cold and wet weather that persisted throughout March and early April. The summer of 2018 started with river flows and groundwater levels at Normal or above in all of the waterbodies in Yorkshire. This was reflected in storage reservoirs which were at or around 100% full for all purposes (Navigation, Public Water Supply, Agriculture). Despite this promising start to 2018, the hot dry summer took its toll on water resources for all water users, including agriculture.

Despite the dry start to 2019, water resources have been replenished to some extent since the extreme summer conditions - river flows are reacting to rainfall although base flows remain lower than normal, public water supply storage reservoirs have refilled.

Soil Moisture Deficit calculations currently show that soils throughout Yorkshire are classified as Wet. This means that low volumes of rainfall still keep many reservoirs in Yorkshire relatively full as there is lots of runoff from the hills. Reservoirs regulate flows in many of our Yorkshire rivers such as the Don, Aire, Calder and Holme.

However, so far groundwater refill has been limited and has not made up for the water lost over the summer of 2018. The current groundwater conditions are reflected in the groundwater-fed river flows in East Yorkshire, where the flows stabilise for a short period following rainfall but continue their steady decline once the rainfall impact has worn off.

As of February 2019, groundwater levels in both the Chalk and Corallian Limestone aquifers are at average or just above average for the time of year. The Magnesian Limestone aquifer within Yorkshire is just below average for the time of year.

The Met Office is currently forecasting Atlantic weather fronts affecting the west and northwest of the UK, with these perhaps making some progress across to the east of the country. These will occasionally bring rain to some places, however with higher pressure remaining close to the east of the UK we are more likely to see a continuation of drier than average conditions in the near future.

Forward Look

Spray Irrigation prospects for the Yorkshire Area for Spring - Summer 2019 are currently MODERATE.

This is due to the continued lack of recovery in groundwater stocks. Although many aquifers have similar levels to this time last year, there was rainfall in excess of the Long Term Average throughout March and April 2018 coupled with extremely cold temperatures.

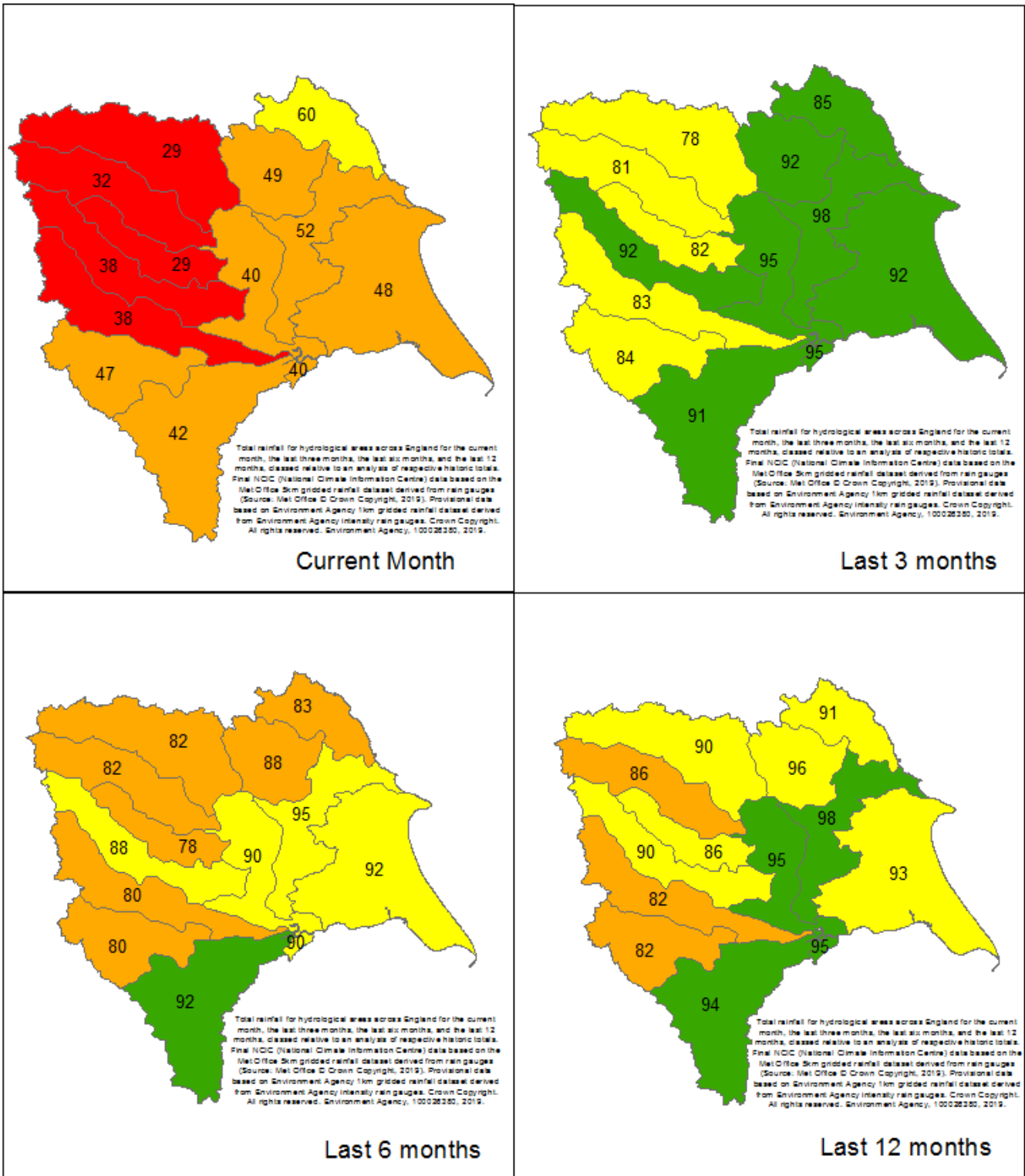
Should a hot, dry summer occur without any significant rainfall in early spring, then abstractors from both groundwater and surface water may encounter restrictions, and the environment would not have same resilience it had in 2018.

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>

Rainfall (January 2019)

N.B. The current month in this figure is for January 2019 and the maps are using data up until the end of January 2019.



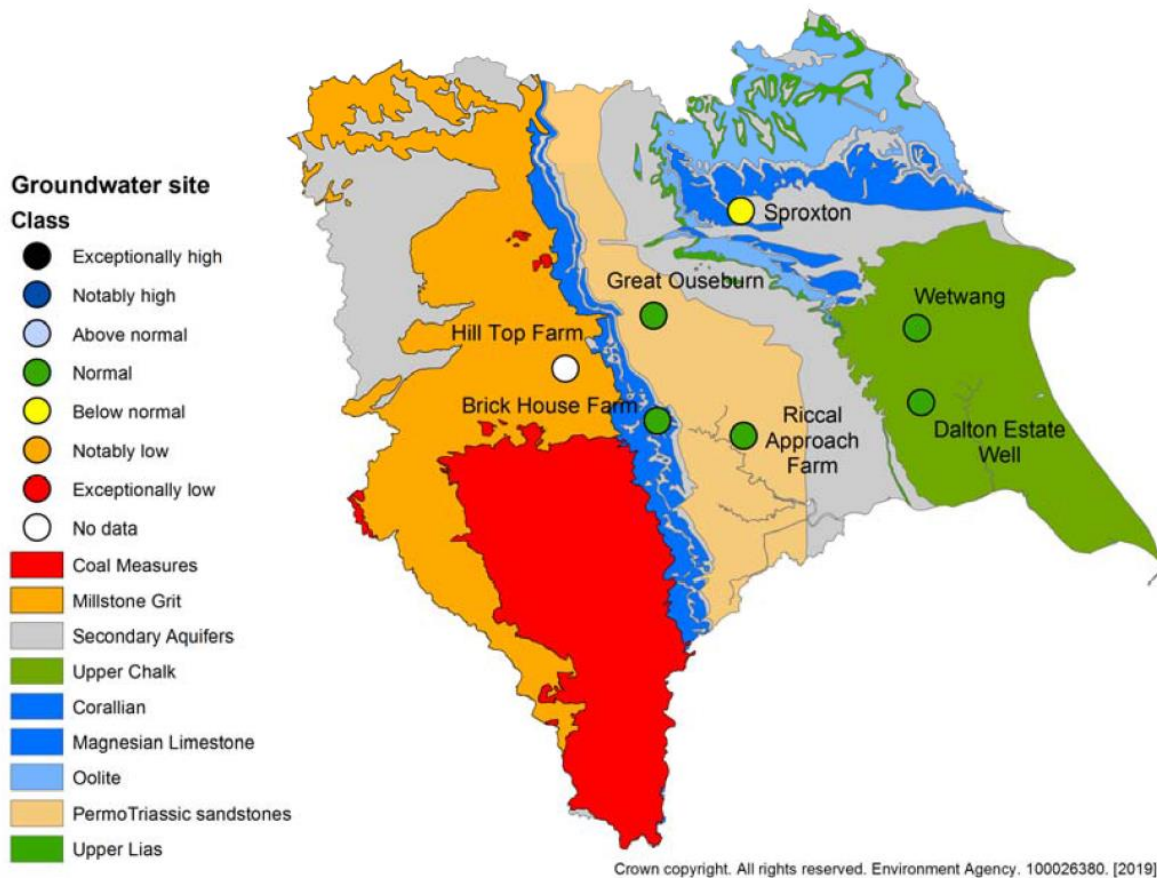
customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
0345 988 1188

www.gov.uk/environment-agency

Groundwater Levels



N.B. The current month in this figure is February and the maps are using data up until the middle of February 2019.

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 newsletter.

We continue to recognise the importance of irrigation to the agricultural industry in the region 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.

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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 Yorkshire this mainly utilised groundwater resources, which were plentiful at the time.

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

Abstractors must also be aware that the specific conditions of Summer 2018 meant hot and dry conditions were accompanied by healthy groundwater stocks, allowing trades and increased volumes from these aquifers without increasing the risk to the environment. Conditions in 2019 may be very different, therefore we will make decisions on any flexible abstraction requests based on their current risk to the environment and water resources locally.

An up to date version of the Environment Agency Flexibility 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/>.

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 straightforward and will provide you with long term drought resilience without the need to talk to us in the future for a temporary dispensation.

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.

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.

Storage Reservoirs

- Take every possible opportunity to ensure that winter 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?

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. Consider setting up a group or just making contact with local abstractors to discuss water trades and resources.
- Maintain an awareness of developing guidance from academic institutions and farming organisations

Conclusions

The prospects for spray irrigation for Spring - Summer 2019 are currently assessed as MODERATE for all catchments across Yorkshire.

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 both surface water and groundwater 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.
Exceptionally high	Value likely to fall within this band 5% of the time
Notably high	Value likely to fall within this band 8% of the time
Above normal	Value likely to fall within this band 15% of the time
Normal	Value likely to fall within this band 44% of the time
Below normal	Value likely to fall within this band 15% of the time
Notably low	Value likely to fall within this band 8% of the time
Exceptionally low	Value likely to fall within this band 5% of the time

Please contact us if you would like more information on any of the above ideas or have ideas of your own to assist you and/or other abstractors to improve their resilience.

If you have any questions or would like to feedback comments about the prospects report please contact Yorkshire Area Drought Team on drought.yorkshire@environment-agency.gov.uk

An electronic version of this document is available on the NFU website here:

<http://www.nfuonline.com/about-us/our-offices/north-east/environment-and-land-use-latest-news/water-use-in-the-north-east/>
