Prospects for Spray Irrigation

Forecast for 2020: Yorkshire

Prospects for water resources availability for spray irrigation in Yorkshire for 2020 are ***GOOD***.

Background

2019 was a year of changeable weather throughout the region, ending with a period of very wet weather. Following the very dry summer of 2018, surface water stocks recovered during 2019, but groundwater stocks struggled to reach the highs of April 2018. The summer of 2019 did not result in any significant water scarcity across the region. However in the mid-summer of 2019, groundwater stocks in the East of the county were at risk. This was in contrast to surface water stocks which remained at a consistent level throughout the summer.

The above average rainfall in autumn and early winter saw unprecedented recharge, with many river flows and groundwater levels ending 2019 with high flows and levels. 2020 begins with storage reservoirs across the region at 100% full for all purposes (Navigation, Public Water Supply, and Agriculture).

Despite the wet weather at the end of 2019, 2020 has started dry and mild for the time of year with small declines in storage reservoir levels and river flows in the East of the County. Soil Moisture Deficit* throughout Yorkshire remains classified as Wet. The result is that reservoir stocks are maintained through relatively low volumes of rainfall accompanied by high levels of run off. Reservoirs regulate the flows in many of the rivers in Yorkshire, such as the Don, Aire, Calder and Holme.

January 2020 groundwater levels in the Chalk, Sherwood Sandstone, Magnesian Limestone and Millstone Grit are all above average with the Corallian Limestone at Average. These levels mean that reductions in groundwater supply are unlikely in spring and perhaps right into early summer.

The Met Office is currently forecasting spells of heavy rain and strong winds. Some drier and brighter weather could take place in the East of the county. Temperatures in the North in particular are likely to be above average in the coming weeks with the odd cold morning when skies are clear. In terms of overall rainfall in the upcoming three month period the predication is currently that his will be marginally drier than average.

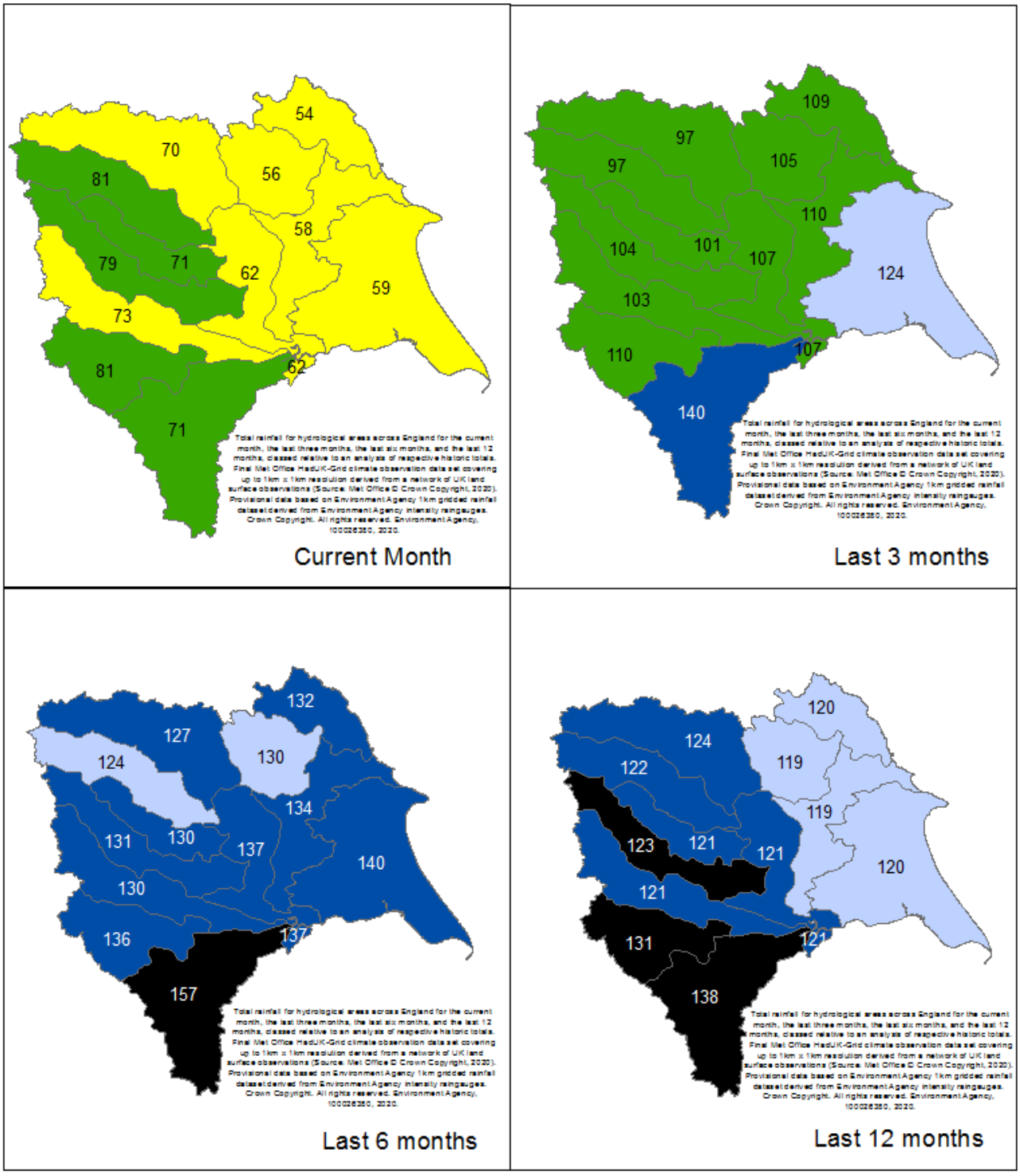
Forward look

Spray irrigation prospects are currently ***GOOD*** for spring/summer 2020.

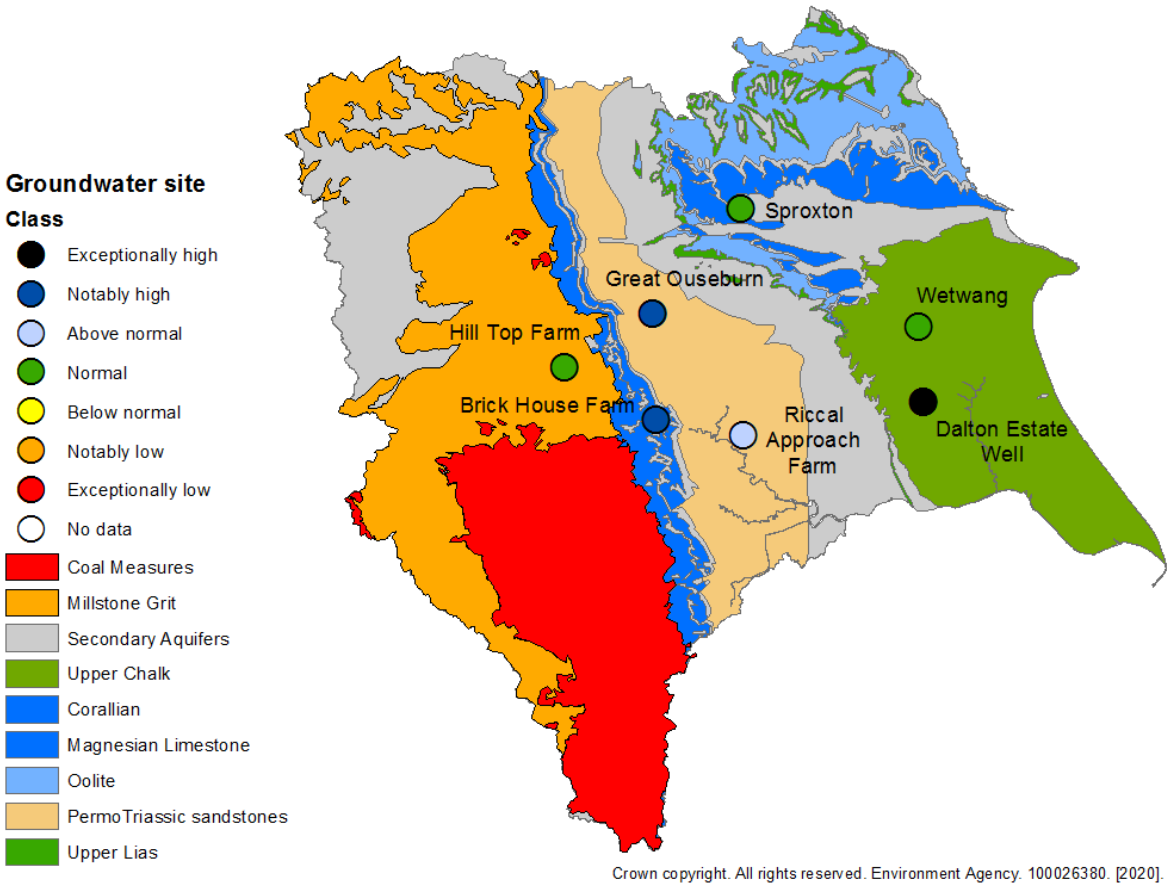
A dry start to the spring this year however, will not provide stocks with the additional pre summer top up they have had in the last two years which may result in Hands Off Flow restrictions being imposed on winter fill abstraction licences.

Abstraction in the region is primarily controlled by conditions on licences and licence holders must ensure that they adhere to these at all times. If a dry summer does materialise, 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.

*SMD is a measure of how dry the soils are, and how much rainfall would be required to reach saturation - allowing recharge to the groundwater and run off to the rivers. The higher the SMD, the drier the soil.



N.B. The 'current month' in this figure is for January 2020 and the maps are using data up until the end of January 2020.



N.B. The groundwater map is using data collected within January 2020.

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

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 your business is as resilient as possible to periods of reduced water resource and drought. We continue to work with abstractors to minimise the impact of drought and related restrictions on businesses in the future.

Please get in touch with us if:

- You have any ideas regarding voluntary initiatives to conserve water, whilst reducing the impacts of imposed restrictions in your area

- You would like advice on how to set up an abstractor group in your area to facilitate working together to improve resilience. Our contact details are at the end of this newsletter.

We recognise the importance of irrigation to the agricultural industry in the region and will work with farmers and others to try to minimise, where possible, the impact of any dry weather on their business.
Abstraction is primarily controlled by conditions within licences and licence holders must ensure that they adhere to these at all times. We would encourage all abstractors to review their abstraction licence to ensure that it continues to meet your needs.

During 2018, the Environment Agency launched its "Flexible Abstraction" initiative. This allowed abstractors in the agricultural sector to trade water quickly or temporarily increase abstraction. All abstractors who utilised the flexible abstraction initiative are encouraged to apply to vary their licences if they require an increase in abstraction volumes for future years.

We will make decisions on any new flexible abstraction requests based on the current risk to the environment and water resources position locally.

An up to date version of the Environment Agency Flexible Abstraction position can be found here: https://www.gov.uk/guidance/water-abstraction-flexible-options-in-exceptional-dry-weather

For any 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.

The Environment Agency has powers to further restrict the abstraction of water for irrigation from rivers, streams and underground sources, and will consider use of those powers should the situation become critical. If such a situation arises, however, we will always seek to achieve as much as we can through voluntary reduction before imposing formal restrictions. A ban on groundwater abstraction will only be considered as a last resort.

What actions can irrigators take?

Irrigators are encouraged to take action to minimise the impact of reduced water availability on their businesses and the environment. Please talk to us now about actions you can take:

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 - consider if there is 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 equipment 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, so that you can 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

Resilience

- Consider discussing issues and sharing ideas with neighbouring farmers. Consider setting up an abstractor group or make informal contact with other 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 2020 are currently assessed as ***GOOD*** for all catchments across Yorkshire.

For more information please contact us by emailing AEPYorkshireandNE@environment-agency.gov.uk

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.
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

Soil Moisture Deficit (SMD)

- The difference between the amount of water actually in the soil and the amount of water the soil can hold. Expressed in depth of water (mm)

Categories

- 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