

Executive summary

Droughts are infrequent events in the UK but when they do occur their impact can be significant. The Environment Agency has responsibility in England and Natural Resources Wales in Wales, for alleviating the effects of drought on people, businesses and the environment through sensible management of water resources.

The River Severn is the UK's longest river. The majority of its catchment sits in England but substantial parts are in Wales. Since April 2013 the Environment Agency and Natural Resources Wales (NRW) have had joint responsibility for drought planning in the River Severn catchment. We are committed to working together where there is an environmental need or benefit; for drought planning it has been agreed the Environment Agency will take the lead in the River Severn catchment.

This environmental assessment report has been written to support an application should a River Severn Drought Order be required. A drought order outlines the procedures we will use to better manage our water resources during prolonged or extreme spells of dry weather. Around six million people rely on the River Severn catchment for drinking water as well as a huge number of businesses, leisure clubs and wildlife. The Environment Agency and NRW aim to ensure that the River Severn is able to support all of these uses without compromising the environment. We must decide how much water needs to be released to the river from both surface water and groundwater storage sources to balance the needs of the river and the demands of abstraction. This is called River Severn regulation and involves legal responsibility under the Clywedog Reservoir Joint Authority Act (1963).

The robustness of the water supply in the River Severn is judged by water levels in Llyn Clywedog reservoir in Wales. Procedures from the River Severn Drought Order will only be enforced when critical water levels in the reservoir are reached. The River Severn Drought Order would allow us to reduce the quantity of water released from the reservoir and restrict abstractions from the River Severn. This would preserve the remaining water resources and allow support to continue for longer to protect people and the environment against extended droughts.

Llyn Clywedog reservoir is the main surface water store used to support the River Severn. Without its support the river levels we need to protect could not be achieved. This would result in a reduction of flow and water levels down the River Severn.

The River Severn Drought Order is our final option for managing the impact of a severe drought in the catchment. It aims to protect public water supply and the environment along the river. We believe it is safer for everyone if we limit our water use earlier in order to be able to continue supporting the River Severn for longer during a drought. We believe that taking no precautionary action risks running out of water in the reservoir, which could lead to severe environmental and human impacts.

This report looks at the positive and negative impacts to the environment and people of implementing and not implementing a drought order for the River Severn. It considers the short (Acute) and long term (Chronic) impacts from modelled drought conditions; whether the impacts could result directly or indirectly because of the drought order; and whether they are likely to be temporary or permanent.

In the short-term the River Severn Drought Order would lower flows and water levels along the River Severn to conserve water in Llyn Clywedog in case the drought continues. Water Framework Directive (WFD) standards would not be expected to fail as a result of the River Severn Drought Order and water quality would not be significantly impacted. Flows along

the majority of the River Severn should not fall greatly below what is expected under natural drought conditions.

Our models found that if the drought continued and the drought order was not operated, water supply from Llyn Clywedog reservoir could run out. This would result in a severe impact on river levels, the environment and communities as no releases could be made. By reducing input from the reservoir earlier we preserve the stores for longer and enable releases to continue during the worst part of the drought. This would benefit all river users and the environment by preventing the upper River Severn catchment (below Llyn Clywedog reservoir) from drying up and maintaining higher flows and levels throughout the river.

In the long-term, the River Severn Drought Order would seek to conserve storage in Llyn Clywedog reservoir for subsequent years. This should accelerate refill by reducing the amount of rainfall needed to restock the reservoir in time for the following year. This would greatly reduce the impacts of any further dry winters and drought summers on the River Severn. More water would be available for a subsequent dry year and potentially prevent the need for a second River Severn Drought Order application. This means that the river could be regulated normally, which would maintain flows significantly higher than would naturally occur. People and the environment of the River Severn would benefit greatly, whilst neighbouring unsupported rivers may be suffering another drought year.

The impacts from operating the River Severn Drought Order are predicted to be temporary and are not expected to cause any new WFD failures. Once normal rainfall returns, the environment should improve naturally and recover within one to three years. This is consistent with the expected natural drought recovery period. This means that although the drought conditions may cause environmental stress, the River Severn Drought Order is not predicted to make conditions worse, and would provide benefits to people and the environment, especially in the long term.

The assessment of the River Severn Drought Order with the maximum abstraction for the Gloucester & Sharpness Canal, found that the lower part of the River Severn and important migratory fish could be at risk of negative impacts under extreme conditions. To satisfy the Habitats Directive and reduce the risk to the Severn Estuary, during River Severn Drought Order operation an abstraction cap of 300 MI/d will be imposed on the Canal & River Trust when flows drop below 1200 MI/d at Deerhurst.

Reports and data from previous periods when a drought order has been in operation have been used to assess the impact of the River Severn Drought Order. Drought orders have been in operation in 1976, 1984 and 1989. Using this data we have modelled the likely impacts of the River Severn Drought Order on hydrology, water quality, ecology, including fish, and designated sites. A separate Habitat Regulation Assessment (including Appropriate Assessment) has been produced for the Severn Estuary National Site Network (Annex 1).