

Fish kill at Beverley Brook

August 2018

Summary of the incident

On Sunday 29 July 2018 a major fish kill occurred on the Beverley Brook. This was a category 1 incident.

- A large stretch of the river was impacted, including the sections through Richmond Park and Barnes.
- We identified critically low levels of dissolved oxygen along an 8 kilometre stretch of the river.
- Between 400 and 500 dead fish have been recorded in the affected stretch.
- We also responded to reports of dead and distressed fish in the Hogsmill River and River Wandle catchments, however, these were less significant and involved fewer numbers of dead fish.
- Volumes of treated effluent discharged into the Beverley Brook were increased to help dilute the contaminated run-off. The treated effluent was sourced from the Hogsmill Sewage Treatment Works.
- Since Monday 30 July 2018 Dissolved oxygen levels have returned to within expected levels and we have not received any further reports of dead or distressed fish.

In the continuing hot and dry weather there is a risk of similar incidents occurring, especially following rainfall events, and we encourage members of the public to report sightings of any dead or distressed fish to us using our incident hotline on 0800 807060.

Cause of the incident

The incident was caused by the extended period of hot dry weather which was then followed by significant rainfall on the 28 and 29 of July.

Prolonged dry weather in urbanised catchments leads to a build-up of contaminants from roads, in addition to organic matter such as leaves, silts, and sewage from misconnected properties.

All of these materials collect in the surface water drainage system and are released as run-off into rivers during the first few minutes of a significant rainfall event.

This 'first flush' caused by the rainfall is short-lived, but can have a major effect on water quality. The impact can be greater with prolonged warm temperatures and low river flows. This is because the higher temperatures increase the breakdown of organic matter and low flows provide less dilution of the run-off. The combination of these factors can result in a rapid drop of oxygen levels which, if extensive, can result in widespread fish mortality. This has been the case in the Beverley Brook catchment.

Base flows in the Hogsmill River and River Wandle were much higher before the rainfall events, therefore the impact on these two rivers was less significant.

Environment Agency response

On 29 July 2018 we responded promptly to reports of dead fish and visited the site to monitor and assess the situation.

Along an 8 kilometre stretch of the river, our officers attending the incident identified low levels of dissolved oxygen which are known to be lethal to fish. Our officers found between 400 and 500 dead fish in the affected stretch, including specimens of chub, dace and barbel.

customer service line
03708 506 506

incident hotline
0800 80 70 60

floodline
03459 88 11 88

We also responded to reports of dead and distressed fish in the Hogsmill River and River Wandle catchments, however, these were less significant and involved fewer numbers of dead fish.

The majority of the dead fish we recorded were located between Raynes Park and the confluence with the Thames Estuary. Please note that as we are unable to access large sections of river channel, the true figure will be higher than the number we have counted.

During our response to this incident we observed significant numbers of live fish of multiple species, indicating that many fish survived the incident.

We worked closely with Thames Water Utilities throughout the incident, and together we decided to increase the discharge volumes of treated effluent from the Hogsmill Sewage Treatment Works to the Beverley Brook. This effluent contained a higher dissolved oxygen level than the water in the Beverley Brook and helped to boost oxygen levels, diluting the contaminated run-off.

We continue to monitor the river remotely and dissolved oxygen levels have returned to within expected levels and we have not received any further reports of dead or distressed fish.

The wider situation

Urban run-off is a serious pressure to the health of our river systems.

We are working with partners such as the South East Rivers Trust to reduce the impacts of urban run-off and improve the resilience of river ecosystems during extreme events. This work includes promoting the use of sustainable urban drainage systems, alongside community projects such as installing rain gardens and silts traps, regular surveillance of outfalls and the implementation of a programme of river habitat and fish passage improvements. We are also working with Thames Water and Local Authorities to identify and rectify misconnected residential and commercial properties, where their foul water drains have been incorrectly plumbed into surface water systems, which end up polluting the watercourses.

These measures are aimed at improving the quality of urban run-off as well as improving the capacity of aquatic ecosystems to overcome these events.

Other projects we have carried out in the catchments to help improve their resilience include the following:

In the Hogsmill River and River Wandle catchments we have improved many of the surface water outfalls over the years, which has reduced the number of misconnections that can cause pollution into the rivers. This has included working with the Zoological Society of London and South East Rivers Trust (SERT) in training volunteers to inspect the river and identify outfalls causing pollution as part of the Hogsmill Outfall Safari project. We have also carried out pollution prevention visits to industrial and commercial premises.

In the lower reaches of the River Hogsmill we have been working with SERT in conjunction with Kingston University to improve the river habitat adjacent to the university. We are currently carrying out research to assess the effectiveness of the fish passage measures at the Hogsmill gauging station. Further habitat improvement work is planned working with the SERT and volunteers in the vicinity of the A3.

At Richmond Park along then Beverley Brook we worked with The Royal Parks and SERT on a river habitats project. We created marginal habitat of coarse wood material and vegetation, providing refuge from the main flow of the river. We will be auditing the site to assess the effectiveness of the scheme in due course.