

WHAT HAPPENS WHEN... THERE IS AN OXYGEN CRASH?

We're sure most of you can all remember the disastrous consequences when the infamous 'Mere' suffered a severe oxygen crash a few summers back and ended the lives of some of the country's finest carp – including The Black Mirror. But why did it happen and how could this act of Mother Nature perish every aquatic beastie and wriggly thing? We asked Otley College and angling tutor, James Anderson to fill us in...

What causes an oxygen crash?

“An oxygen crash can be caused by two main factors. The first is an increase in organic load which could be caused by an algal crash, pollution, excessive baiting or leaf litter. This organic material is broken down by huge amounts of bacteria which strip oxygen from the water as they feed. Oxygen crashes can also occur when atmospheric pressure falls very rapidly and this can often occur during thunderstorms. As the atmospheric pressure drops, oxygen rapidly diffuses from the water into the air. It's a bit like taking the lid off a fizzy drink, the pressure is released and the gas is then rapidly released from the liquid.”

What should a fishery do in this situation?

“The only thing a fishery can do in the event of an oxygen crash is to aerate the water. This involves having emergency aeration equipment on standby unless the fishery has aerators permanently installed. These aerators can range from paddle wheels, fountains or venturi air injection systems. These will help to maintain oxygen levels in the fisheries and may need to be in use for several days depending on the cause of the oxygen crash. In some cases, the Environment Agency introduces hydrogen peroxide into the water which reacts and produces pure oxygen to increase the dissolved oxygen level rapidly.”

How does this affect the carp?

“An oxygen crash will put a huge amount of stress on the carp and can lead to mortalities. At first the carp will increase its rate of respiration, pumping more water over the surface of the gills to absorb as much oxygen as possible, this will also mean a reduction in feeding. If things continue to get worse, the carp will begin gasping near the surface to access the most oxygen rich water. The stress this causes means the carp will not last very long at this point and if conditions do not improve mortalities may start to occur within hours.”

Why do some fish go 'belly-up' and others seem less fazed?

“Quite simply it's due to some being healthier, fitter or in better overall condition. Old fish are always going to be less able to cope with extreme conditions, as are fish with other underlying health conditions. The younger, healthier fish will have a better chance of surviving although even these will succumb if dissolved oxygen levels drop to a certain level.