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IN HOT WATER

Simon Cooper learns of a grim outlook for chalkstream salmonids



I'VE TAKEN ONE FOR THE TEAM THIS month in reading, so that you don't have to, the report from the Environment Agency Chief Scientist's Group titled "River water temperature projections for English Chalk Streams" that was published in November. Let me warn you at the outset, the conclusions are bleak and, if accurate, this magazine will cease to be.

I'm usually pretty good at dissecting these reports but this one is in a difficulty class of its own if it was meant for public consumption and understanding. It runs to 54 pages, 26 of which are taken up with the References, List of abbreviations and Appendix. Here's a typical acronym: GAMM Generalized Additive Mixed effect Model. Yes, I've no idea either. But to be fair, like all important reports, it deserves proper presentation, so it is usually the Executive Summary to which scientific dummies like me turn. Let me precis from that what Dr Robert Bradburne, Chief Scientist and his team concluded. As I say, it is bad.

Firstly, this report is required because though we have national projections for river water volumes and flows in England based on climate change data, we have no such equivalent for river water temperatures. So, to rectify this the Group examined water temperature records from 92 sites across the English chalk streams, our groundwater-fed streams selected as the pilot for all rivers because they have a similar nature wherever located, are unique, important for water supply and the conclusions should support a national effort to protect these important habitats.

The result of crunching the data is a monthly mean daytime water temperature model that, when rolled out to 2080 based on existing climate change predictions, will tell us how warm our chalk streams, and by implication all other rivers, will be in 58 years' time.

I'll cut to the chase. Yes, there are regional

differences. The chalk streams of the north-east in Lincolnshire and the Yorkshire Wolds will see the lowest increases whilst those in the vicinity of London, such as the Colne, Lee and Wandle, are projected to see the highest – the amount of urban land in a river catchment drives water temperatures higher. Here is the critical section, reproduced verbatim:

"An important temperature threshold for salmonid egg survival during the winter spawning period of 12 deg C will likely be exceeded at over 85 per cent of sites by 2080 and adult brown trout will continue to be under threat from high summer temperatures with all sites exceeding that species' upper critical temperature range of 19.5 deg C by 2080."

If you are anything like me, you'll have to read the above section two or three times to comprehend the sheer awfulness of the prediction. It effectively portends the end of successful reproduction for the trout, salmon and grayling species in most rivers and a possible summer death for those who manage to reproduce elsewhere.

Is there any hope that Dr Bradburne and his team are wrong? Well, this projection is based on a "high emissions scenario" which implies a rise in average global temperature of 3.5 deg C by 2080, which could be wrong for a whole variety of reasons. However, in the final paragraph of the Executive Summary Dr Bradburne says that because rivers are the bellwethers of climate change, if anything, their temperature predictions are an underestimate.

I wish, to finish this piece, I could find something upbeat or hopeful to say. I simply cannot. ■

Simon Cooper is managing director of Fishing Breaks, the leading chalkstream fishing specialists. He is author of Life of a Chalkstream and The Otters' Tale. Follow his fortnightly blog on saving our rivers at fishingbreaks.co.uk