

Cotswold District Council

# Review of the Summer 2007 floods in Cotswold District

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## First Phase Draft Report

18 February 2008

Report no: 0001-NE02933-WXR-03

**Hyder**   
Consulting

Cotswold District Council

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## First Phase Draft Report

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# 1 Introduction

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The devastating floods that hit Gloucestershire on 20 July 2007 affected many people and businesses across the Cotswold District. A survey of flood affected properties has been carried out by Council staff and Members which has revealed that at least 1,150 properties were flooded across the District's 1161 square kilometres.

The Council is still dealing with the aftermath of the flooding and has received a large amount of correspondence regarding land drainage issues. Significant additional workload has been generated by the flooding emergency and the Council are seeking assistance to establish the extent and causes of the problems and to identify and prioritise remedial works as appropriate.

## 1.1 Project Scope

The project scope is divided into two phases. The first phase includes:

- Attendance at Inception Meeting
- Review of Survey and Correspondence
- Review of other studies
- First Phase Summary Report

Subsequent to completion of the first phase (and approval from Cotswold District Council) the second phase will be undertaken. This will include:

- Further Investigation
- Remedial Option Identification

## 2 Flooding Context

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The rainfall during June and July 2007 was unprecedented. Data collected on rainfall and river levels show that the summer 2007 floods were extreme, with only a 1-in-150 chance of this level of flooding occurring in any one year.<sup>Ref1</sup>

A number of studies and reviews have been undertaken to try and understand the circumstances of the flooding and the adequacy of the response. The following reports have been reviewed to provide context to the district-specific information collected by Cotswold District Council:

- "Learning lessons from the 2007 Floods" by Sir Michael Pitt (here on known as the Pitt Report)
- "Review of 2007 summer floods" report by the Environment Agency (here on known as the EA Report)
- "Scrutiny Inquiry into the Summer Emergency 2007" report by Gloucestershire County Council (here on known as the GCC Report)

A summary of the pertinent information is included below in sections 2.1 and 2.2.

### 2.1 What Happened in the Summer of 2007?

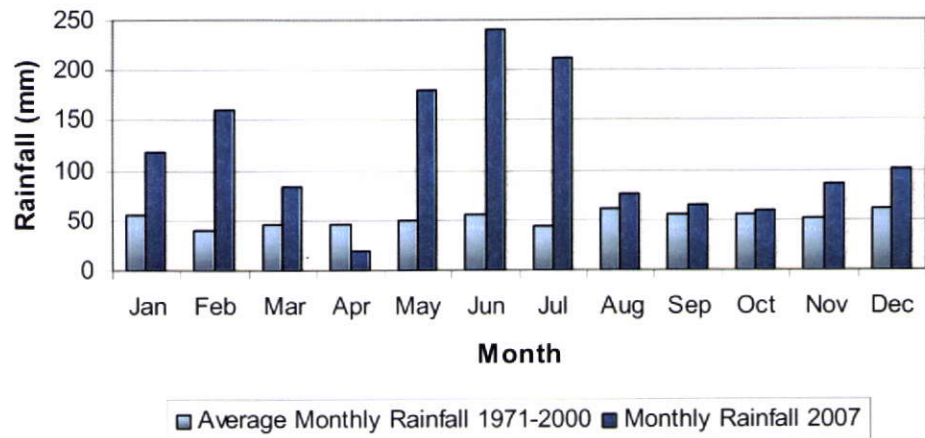
Since collection of rainfall records began in 1766 there has not been a wetter May to July period<sup>Ref2</sup>. Once the ground became saturated by mid-June, any further rainfall could not be absorbed and surface run-off flows were increased. Many reservoirs that would have normally had some capacity to absorb this run-off were also filled by the May and early June rain. Extreme rainfall in late June had already caused flooding where it fell, which then accumulated in rivers to extend the impact to the floodplain.

On the 20 July, heavy rain fell across Gloucestershire County, and throughout the day continuous and at times torrential rain continued to fall, with the Environment Agency reporting that there had been 78mm (over 3 inches) of rain over a 12 hour period<sup>Ref3</sup>. Refer to Figures 1 and 2 for a graphical representation of the rainfall data.

This initial heavy rainfall caused minor rivers to burst their banks and overwhelmed many urban drainage systems producing localised and severe flash flooding. Further flooding occurred from the Rivers Avon, Severn, and Churn in the following days, with some properties experiencing flooding twice over the weekend, initially from flash flooding and then later from rising river levels. In total approximately 4,500 homes and businesses across Gloucestershire County were flooded in July with 1,150 properties in the Cotswold District.

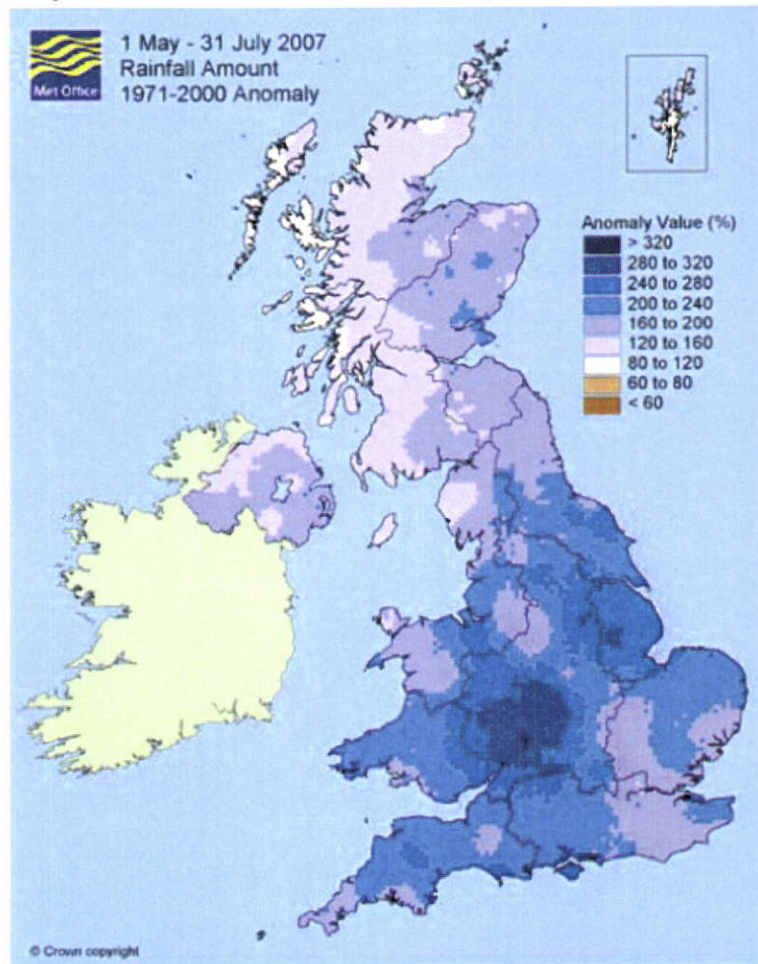
These floods were different in scale and type from recent severe floods. In particular, a much higher proportion of the flooding than normal came from surface water rather than rivers<sup>Ref3</sup>.

Figure 1 – Monthly Rainfall Comparisons



Source: Data from MET Office

Figure 2 – Rainfall Anomaly for Summer 2007



Source: Plan produced by MET Office