



**ENVIRONMENT PROTECTION SECTION  
CORNWALL AREA**

**FINAL REPORT**

**Coombe Valley Stream  
RE Non-compliance (BOD)**

**Wet Weather Sampling**

**March 2002**

**2002/01**

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ENVIRONMENT AGENCY

## Information Services Unit

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## **Coombe Valley Stream RE Non-compliance (BOD) Wet Weather Sampling**

### **1. INTRODUCTION**

#### **1.1. Background**

The Coombe Valley Stream near Kilkhampton has a River Ecosystem classification of RE1. There were significant RE failures for BOD in both 1999 and 2000 assessment years.

Previous surveys of the catchment by the Environment Protection Central Team had failed to highlight any potential sources of elevated BOD. The Environment Protection Team requested that wet weather sampling be conducted to identify areas of elevated BOD in the catchment.

#### **1.2. Objectives**

To identify areas of elevated BOD in the Coombe Valley catchment under wet weather conditions, and direct EP Field Team to areas of concern.

### **2. METHODS**

2.1. Undertake wet weather sampling throughout the catchment at agreed sites.

### **3. RESULTS**

Locations of sampling points are shown in Figure 1. Water quality data for all sites are set out in Figures 2 to 3 and tabulated in Figure 4. An OS map of the immediate area is contained in the Appendix.

### **4. DISCUSSION**

Samples were taken on two occasions during wet weather, 30 January 2002, 01 February 2002. There were no significantly high BOD results in any of the sampling runs, however samples taken on 30 January 2002 did result in some elevated readings. See figure 2.

#### **Rainfall**

The closest rain gauges to the catchment are situated in Bude (Daily) (NGR SS208063) and Woolstone Mill (Tipping Bucket) (NGR SS22730181).

The daily rainfall total on 30 January 2002 at Bude was 4ml and 8.6ml at Woolstone Mill. Rainfall commenced shortly after 06:00 and had ceased by 14:00.

Daily totals on 01 February 2002 is unavailable at Bude and 7.8ml at Woolstone Mill, the hourly readings indicated light rain throughout the day.



**30 January 2002**

Cross Cottage North had the highest concentration of BOD, there was also slight elevation of ammonia and suspended solids at this site.

The main stream had elevated BOD at Coombe Mill and Stow Woods but little elevation at Duckpool Cottage. The most likely reason for this is that the body of water with elevated BOD had not yet reached the lower site.

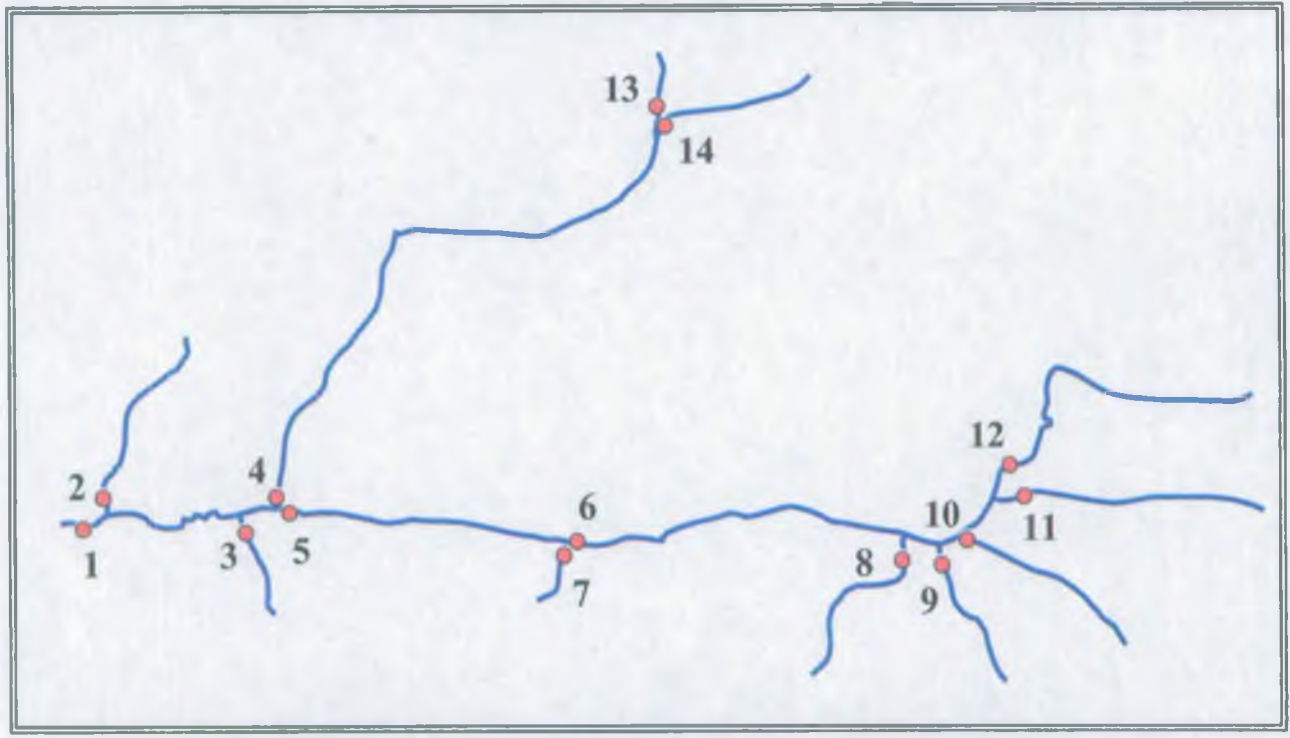
Consideration has not been given to the chemical loading from the tributaries, as flow is unknown. It must also be taken into consideration that rainfall decreased during the second half of the sample run.

**01 February 2002.**

Sampling on this day did not identify sources but did confirm the areas highlighted in the previous sampling. See figure 3. The results do give an insight into levels of BOD during a period of persistent rain and could be used for baseline readings in future sampling.

**Anthony Heard**  
**Investigations Officer**

Figure 1: Coombe Valley Stream Sampling Sites



|  |                  |
|--|------------------|
| 1 -Coombe Valley Stream d/s Duckpool Cottage | (SS 20247 11631) |
| 2 -White Oak Trib                            | (SS 20407 11730) |
| 3 -King Williams Bridge Trib                 | (SS 20795 11646) |
| 4 -Coombe Mill Ford                          | (SS 20979 11744) |
| 5 -Coombe Valley Stream at Coombe Mill       | (SS 20995 11660) |
| 6 -Coombe Valley Stream at Stowe Woods       | (SS 22116 11557) |
| 7 -Stibb Trib                                | (SS 22015 11420) |
| 8 -Colliery Farm Trib (W)                    | (SS 23354 11458) |
| 9 -Stanbury Trib                             | (SS 23481 11499) |
| 10-Colliery Wood Trib                        | (SS 23547 11534) |
| 11-Cross Cottage South                       | (SS 23776 11737) |
| 12-Cross Cottage North                       | (SS 23714 11794) |
| 13-Lower Woodford Trib at F/B                | (SS 22403 13144) |
| 14-Lower Woodford d/s Ham Mill               | (SS 22424 13137) |



Figure 2: BOD Results 30 January 2002

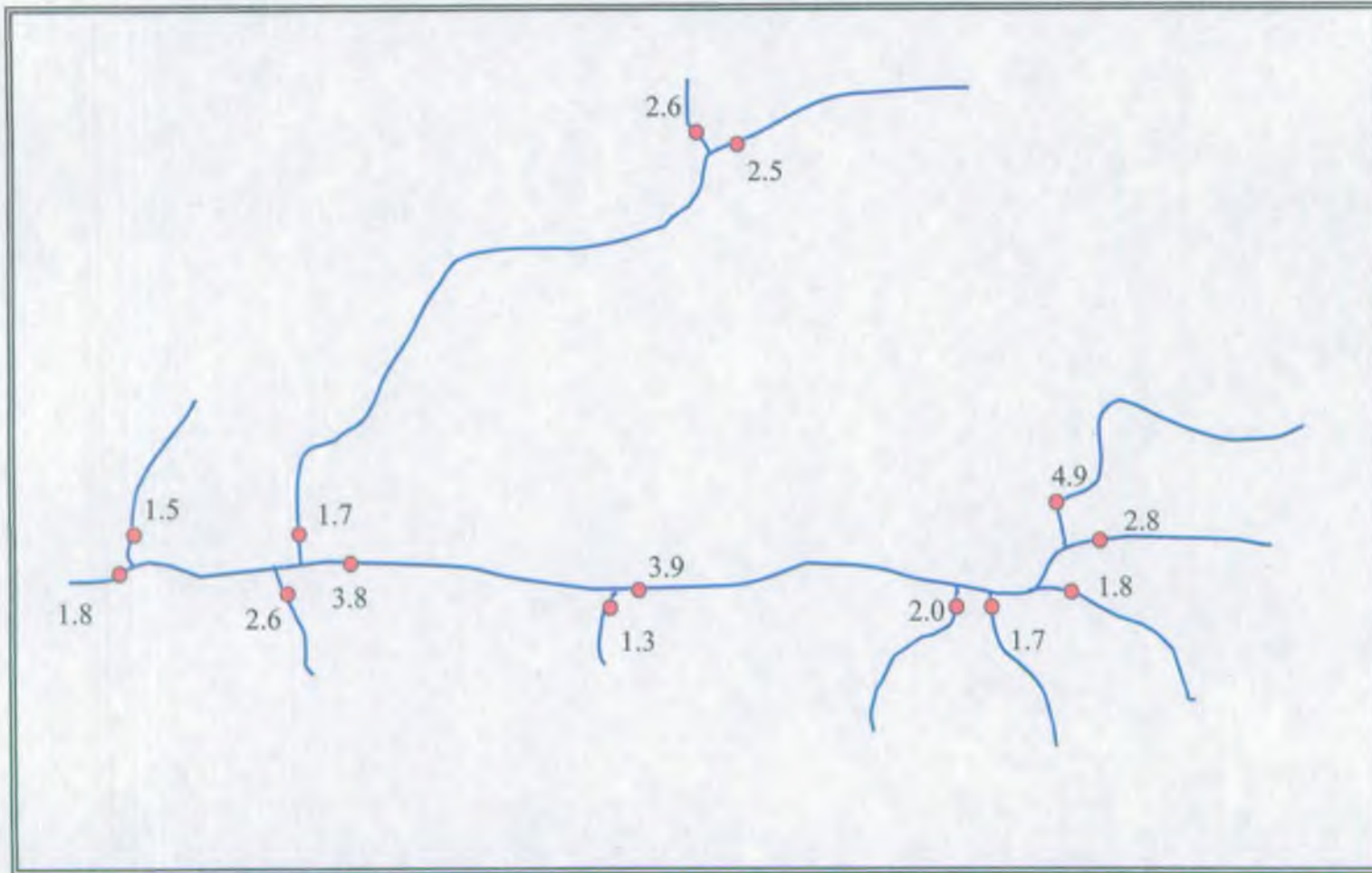
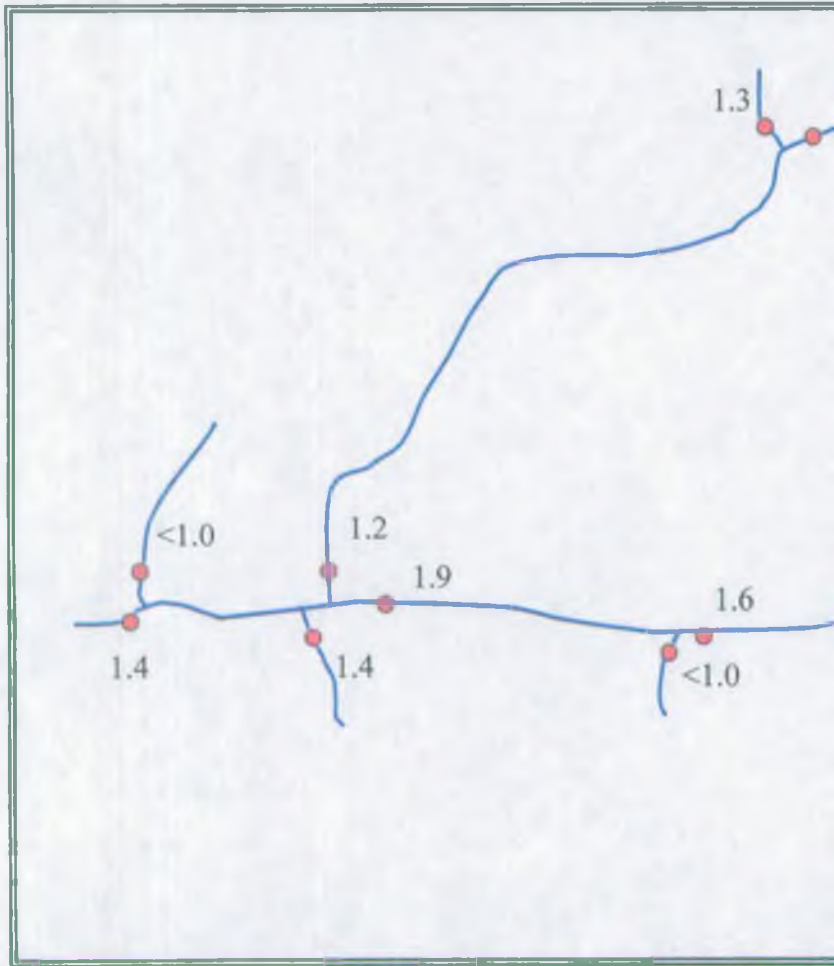


Figure 3: BOD Results 01 February 2002



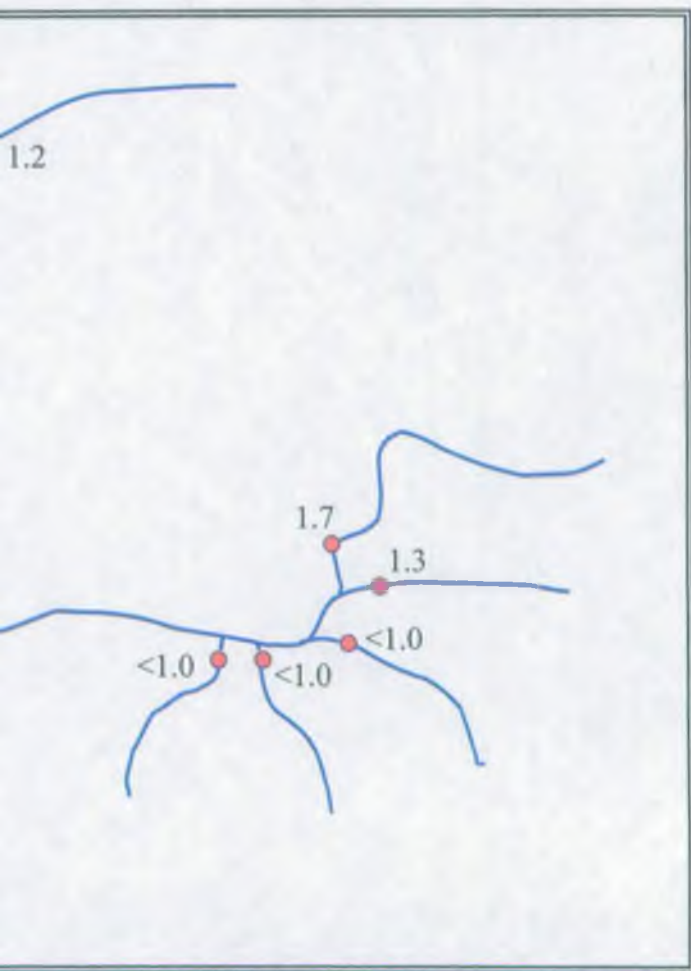
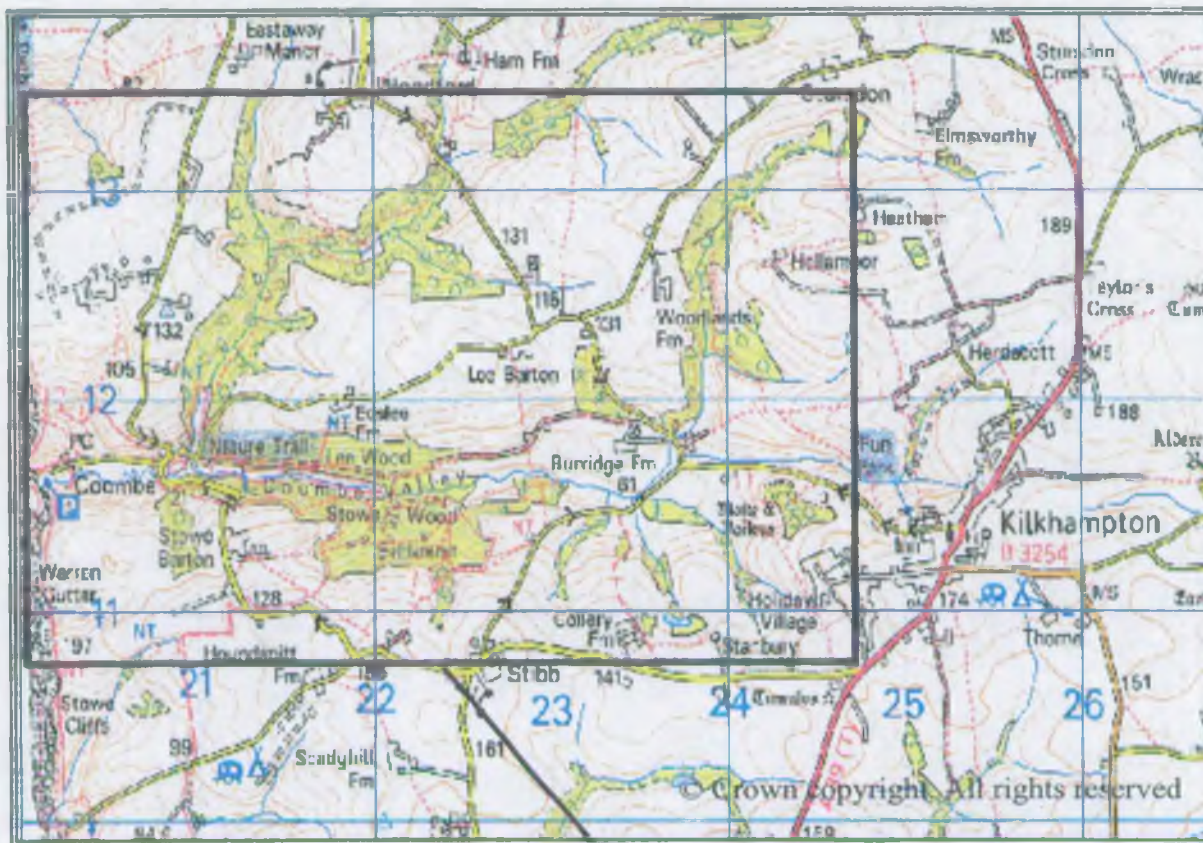




Figure 4: Coombe Valley Wet Weather Sampling

| Sample Points                             | Site Code | Time<br>GMT | BOD  | Ammonia<br>as N | Ammonia<br>un-ion | Suspended<br>Solids | Suspended<br>Solids non<br>volatile | Turbidity | pH    | Conductivity | Temp.  | DO |
|---|-----------|-------------|------|-----------------|-------------------|---------------------|-------------------------------------|-----------|-------|--------------|--------|----|
|   |           |             | mg/l | mg/l            | mg/l              | mg/l                | FTU                                 | pH units  | µS/cm | °C           | % sat. |    |
| <b>30-Jan-02</b>                          |           |             |      |                 |                   |                     |                                     |           |       |              |        |    |
| Coombe Valley Stream d/s Duckpool Cottage | 1         | 11:00       | 1.8  | 0.03            | 0.0001            | 56.1                | 47                                  | 48.5      | 7.34  | 251          | 10.2   | 94 |
| White Oak Trib                            | 2         | 11:10       | 1.5  | 0.05            | 0.0006            | 53.6                | 46                                  | 30.7      | 7.84  | 445          | 10.3   | 95 |
| King Williams Bridge Trib                 | 3         | 11:15       | 2.6  | 0.043           | 0.0003            | 107                 | 90                                  | 103       | 7.54  | 233          | 10.1   | 94 |
| Coombe Mill Ford                          | 4         | 11:25       | 1.7  | 0.033           | 0.0002            | 45.7                | 40                                  | 50.1      | 7.51  | 228          | 10     | 95 |
| Coombe Valley Stream at Coombe Mill       | 5         | 12:30       | 3.8  | 0.11            | 0.0005            | 106                 | 90                                  | 94.2      | 7.37  | 218          | 10     | 93 |
| Coombe Valley Stream at Stowe Woods       | 6         | 12:10       | 3.9  | 0.118           | 0.0004            | 90.9                | 75                                  | 81.9      | 7.3   | 202          | 9.9    | 87 |
| Stibb Trib                                | 7         | 12:00       | 1.3  | <0.03           | <0.0002           | 26.3                | 22                                  | 19.5      | 7.6   | 297          | 9.9    | 88 |
| Colliery Farm Trib (W)                    | 8         | 12:40       | 2    | <0.03           | <0.0001           | 37.7                | 32                                  | 61.2      | 7.38  | 195          | 9.8    | 93 |
| Stanbury Trib                             | 9         | 12:55       | 1.7  | <0.03           | <0.0001           | 35.3                | 30                                  | 41.4      | 7.31  | 199          | 9.8    | 93 |
| Colliery Wood Trib                        | 10        | 13:00       | 1.8  | <0.03           | <0.0001           | 35.3                | 29                                  | 37.4      | 7.21  | 181          | 9.8    | 91 |
| Cross Cottage South                       | 11        | 13:10       | 2.8  | 0.087           | 0.0003            | 31.6                | 24                                  | 34.6      | 7.26  | 207          | 9.8    | 92 |
| Cross Cottage North                       | 12        | 13:15       | 4.9  | 0.206           | 0.0007            | 55.7                | 44                                  | 54.7      | 7.3   | 188          | 9.8    | 92 |
| Lower Woodford Trib at F/B                | 13        | 13:30       | 2.6  | 0.093           | 0.0004            | 37.7                | 29                                  | 46.5      | 7.32  | 198          | 9.9    | 93 |
| Lower Woodford d/s Ham Mill               | 14        | 13:35       | 2.5  | 0.131           | 0.0004            | 47.7                | 39                                  | 63.2      | 7.24  | 200          | 9.9    | 93 |
| <b>01-Feb-02</b>                          |           |             |      |                 |                   |                     |                                     |           |       |              |        |    |
| Coombe Valley Stream d/s Duckpool Cottage | 1         | 09:00       | 1.4  | 0.038           | 0.0001            | 33.1                | 29                                  | 34        | 7.3   | 248          | 10.1   | 97 |
| White Oak Trib                            | 2         | 09:10       | <1   | 0.05            | 0.0007            | 45                  | 39                                  | 27.6      | 7.87  | 475          | 10.5   | 97 |
| King Williams Bridge Trib                 | 3         | 09:20       | 1.4  | 0.04            | 0.0002            | 17.6                | <20                                 | 18.5      | 7.34  | 260          | 10.2   | 94 |
| Coombe Mill Ford                          | 4         | 09:30       | 1.2  | 0.045           | 0.0002            | 15                  | <20                                 | 17.4      | 7.45  | 233          | 10     | 97 |
| Coombe Valley Stream at Coombe Mill       | 5         | 09:40       | 1.9  | 0.069           | 0.0003            | 25.2                | 20                                  | 23.4      | 7.38  | 232          | 10.1   | 95 |
| Coombe Valley Stream at Stowe Woods       | 6         | 10:10       | 1.6  | 0.066           | 0.0003            | 16.9                | <20                                 | 19.8      | 7.44  | 219          | 10     | 87 |
| Stibb Trib                                | 7         | 10:00       | <1   | <0.03           | <0.0002           | 10.4                | <20                                 | 9.3       | 7.6   | 301          | 10     | 93 |
| Colliery Farm Trib (W)                    | 8         | 10:30       | <1   | <0.03           | <0.0002           | 12.7                | <20                                 | 17.6      | 7.55  | 220          | 10     | 96 |
| Stanbury Trib                             | 9         | 10:40       | <1   | <0.03           | <0.0002           | 14.6                | <20                                 | 19.7      | 7.46  | 210          | 9.9    | 95 |
| Colliery Wood Trib                        | 10        | 10:45       | <1   | <0.03           | <0.0001           | 12.9                | <20                                 | 12.8      | 7.35  | 204          | 10     | 95 |
| Cross Cottage South                       | 11        | 10:50       | 1.3  | <0.03           | 0.0001            | 9.7                 | <20                                 | 10.2      | 7.38  | 246          | 10.1   | 95 |
| Cross Cottage North                       | 12        | 11:00       | 1.7  | 0.081           | 0.0004            | 11.6                | <20                                 | 13.2      | 7.42  | 213          | 10     | 96 |
| Lower Woodford Trib at F/B                | 13        | 11:10       | 1.3  | 0.124           | 0.0005            | 15.9                | <20                                 | 19.9      | 7.29  | 215          | 10.1   | 96 |
| Lower Woodford d/s Ham Mill               | 14        | 11:15       | 1.2  | 0.072           | 0.0003            | 10.6                | <20                                 | 13.4      | 7.32  | 213          | 10     | 96 |

Appendix: OS map highlighting Coombe Valley Stream catchment



Catchment shown in Figures 1-3