Hydrological data UK

1986 YEARBOOK

INSTITUTE OF HYDROLOGY • BRITISH GEOLOGICAL SURVEY

HYDROLOGICAL DATA
UNITED KINGDOM

1986

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An account of
rainfall, river flows, groundwater
levels and river water quality
January to December 1986

Institute of Hydrology **British Geological Survey**

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FOREWORD

In April 1982, care of the United Kingdom national archive of surface water data passed from the Department of the Environment's Water Data Unit (which was disbanded) to the Institute of Hydrology (IH). In a similar move, the Institute of Geological Sciences, subsequently renamed the British Geological Survey (BGS), took over the national groundwater archive. Both IH and BGS are component bodies of the Natural Environment Research Council (NERC). The BGS hydrogeologists are located with IH at Wallingford and close co-operation between the two groups has led, among other things, to the launching – in 1985 – of a new series of yearbooks and reports dealing with nationally archived surface and groundwater data and the use made of them. The work is overseen by a steering committee with representatives of Government departments and the water industry from England, Wales, Scotland and Northern Ireland.

The published series – *Hydrological data UK* – includes an annual yearbook and, every five years, a catalogue of river flow gauging stations and groundwater level recording sites together with statistical summaries. These six volumes of the 5-year cycle are available individually but are also designed to be inserted in a ring binder. Further details of these arrangements are given on page 195.

The series – but not the binder – also includes occasional reports dealing with significant hydrological events and analyses.

Professor W.B. Wilkinson
Director, Institute of Hydrology


HIGHLAND R.P.B.
NORTH EAST R.P.B.
TAY R.P.B.
FORTH R.P.B.
CLYDE R.P.B.
TWEED R.P.B.
SOLWAY R.P.B.
NORTHUMBRIAN W.A.
NORTH WEST W.A.
YORKSHIRE W.A.
SEVERN-TRENT W.A.
ANGLIAN W.A.
WELSH W.A.
THAMES W.A.
SOUTHERN W.A.
WESSEX W.A.
SOUTH WEST W.A.
NORTHERN IRELAND
Water Authority or River Purification Board boundary
Hydrometric area number and boundary

CONTENTS

INTRODUCTION

This volume is the sixth Yearbook published in the Hydrological data UK series and the initial volume in the second five-year cycle (1986–90).

The 1986 Yearbook represents the twenty-seventh edition in the series of surface water publications which began with the 1935–36 Surface Water Yearbook. As a result of the incorporation of groundwater data in the Yearbook, this volume is also the eleventh edition in the series of groundwater data publications which began with the 1964–66 Groundwater Yearbook.

Apart from summary information, surface water and groundwater data on a national basis were published separately prior to the introduction of the Hydrological data UK series. In common with the earlier editions, the 1986 Yearbook brings together the principal data sets relating to river flow, groundwater levels and rainfall throughout the United Kingdom. Also included – for the first time in Yearbooks – are water quality data for a selection of monitoring sites.

A description is given of the surface water and groundwater archives together with the data retrieval facilities which complement this volume.

The last decade has witnessed major changes in river flow measurement and data acquisition practices and procedures. These changes are reviewed in a special article which examines the historical background and considers the impact of new technology with particular reference to the maintenance of hydrometric standards in the UK.

Publication of river flow data for Great Britain started with the series of Surface Water Yearbooks. The first edition, which was published in 1938 for the water year (October-September) 1935–36, also included selected data for the previous fifteen years; the edition for 1936–37 followed in 1939. Both these publications were prepared under the direction of the Inland Water Survey Committee. Assisted by the Scottish Office, the Committee continued to publish hydrological data after the Second World War; the Yearbook for the period 1937–45 being published as a single volume in 1952. Due to economic stringency, the Survey was suspended in 1952 for a period of two years but was then reformed as the Surface Water Survey Centre of Great Britain. A Yearbook covering the years 1945–53 was published in 1955.

In 1964 the Survey was transferred to the Water Resources Board where it remained until 1974 when the work of collecting and publishing surface water information in England and Wales was again transferred, this time to the Water Data Unit of the Department of the Environment. Yearbooks were published jointly each year by these organisations and the Scottish Office for the water years 1953–54 to 1965–66, but thereafter information for the five calendar years 1966 to 1970 was published in one volume in 1974. Following editions were renamed 'Surface Water : United Kingdom' to mark the inclusion of the first records from Northern Ireland and in recognition of the move away from single year volumes. Two volumes of Surface Water : United Kingdom, covering the years 1971–73 and 1974–76 were published jointly by the Water Data Unit, the Scottish Development Department and the Department of the Environment for Northern Ireland.

Following the transfer of the Surface Water Archive to the Natural Environment Research Council in 1982, the final edition of Surface Water : United Kingdom, for the years 1977–80, was prepared by the Institute of Hydrology at the request of the Water Directorate of the Department of the Environment, and published in 1983.

The 1981 and 1982 Yearbooks were prepared concurrently and were, in 1985, the first Yearbooks published by the Natural Environment Research Council. Further Yearbooks – the editions for 1983 and 1984 – were published in 1986 with the 1985 volume following in 1987.

A compilation of 'Groundwater levels in England during 1963' which was produced by the Geological Survey of Great Britain prior to its incorporation into the Institute of Geological Sciences, was the precursor to the publication of groundwater level data on a national basis. The more formal Groundwater Yearbook series was instigated by the Water Resources Board which published the inaugural edition, and a further volume for 1967, both covering England and Wales. In 1975 a third Yearbook, for 1968–70, was published by the Water Data Unit. The Groundwater : United Kingdom series was introduced in 1978 with the production of the 1971–73 volume, also published by the Water Data Unit.

Following the transfer of the Groundwater Archive to the Institute of Geological Sciences (now the British Geological Survey), the second edition of Groundwater: United Kingdom, covering the period 1974–80, was prepared by the Institute of Hydrology at the request of the Water Directorate of the Department of the Environment.

The 1986 Yearbook may be seen as part of the United Kingdom's contribution to UNESCO's International Hydrological Programme in continuing the exchange of hydrological information begun in 1965 for the International Hydrological Decade.

The Natural Environment Research Council acknowledge and extend their appreciation to all who have assisted in the collection of information for this publication.

SCOPE AND SOURCES OF INFORMATION

The format of the 1986 Yearbook follows that of earlier editions in the Hydrological data UK series. However, the rainfall, runoff and groundwater review material – previously compiled in separate sections – has been brought together into a single hydrological review of the year. Data presentation in the new water quality section is consistent with the established Yearbook pattern – data are given both for the featured year and, to provide a suitable perspective, for the preceding period of record.

Emphasis is placed upon ready access to basic data both within the yearbook and through the complementary data retrieval facilities.

A companion publication to the individual Yearbooks – the 'Hydrometric Register and Statistics' volume provides a comprehensive reference source for hydrometric information which does not change materially from year to year; the first edition – for 1981–5 – has recently been published, see page 195.

The Yearbook contents have been abstracted primarily from the Surface Water and Groundwater Archives. Water quality data have been provided from the Harmonised Monitoring Archive (see page 185) which is maintained by Her Majesty's Inspectorate of Pollution (Department of the Environment).

Responsibility for the collection and initial processing of the data featured in this volume currently rests mainly with the ten Water Authorities in England and Wales, the seven River Purification Boards in Scotland and the Department of the Environment for Northern Ireland. These organisations also supplied valuable material relating to significant hydrological events. The majority of the rainfall data, and some of the material incorporated in the hydrological review, has been provided by the Meteorological Office. For historical comparisons of the rainfall over England and Wales, a data set based upon the homogeneous series derived by the Climatic Research Unit of the University of East Anglia has been used.

Additional material has been provided by the Geological Survey of Northern Ireland, the Borders Regional Council and by research bodies and public undertakings.

Most of the rainfall data published in the Hydrological data UK series are in the form of monthly rainfall totals for catchment areas (see page 41). For details of monthly and annual rainfalls associated with individual raingauge sites reference should be made to the 'RAINFALL' series published regularly by the Meteorological Office. Brief details of the contents and availability of this publication, together with a short description of other rainfall and climatological data sets published by the Meteorological Office, are given below.

Some slight variations from the contributors' figures may occur; these may be due to different methods of computation or the need for uniformity in presentation.

Rainfall and Climatical Data

The Meteorological Office maintains the national archives of rainfall and climatological data at its headquarters at Bracknell. Specific items, such as daily and hourly rainfalls from gauges and radar (from the PARAGON system) may be obtained by application to the Advisory Services Branch Met. 0. 3b. Summaries of the data are also published regularly and a list of current titles is given below:

1. *Monthly and Annual Totals of RAINFALL 19__ for the United Kingdom.*
   This contains the values for some 5000 raingauges and is available one year after the title year at a cost of £6.00.
2. *Snow Survey of Great Britain 19__/__*
   This contains the daily and monthly reports of snow conditions from selected stations covering the winter and costs £3.00.
3. *Monthly Weather Report*
   This is published monthly and contains climatological means for more than 550 UK observing stations, in addition an introduction and annual summary are produced yearly. The publication should be available 6 to 9 months after the month concerned, costs around £2 and is only available from Her Majesty's Stationery Office (HMSO) or their stockists.
4. *M.O.R.E.C.S.*
   This is a weekly issue of maps and tables of evaporation, soil moisture deficit, effective rainfall and the weather variables used to calculate them. The data are used to provide values for 40 km squares and various sets of maps and tables are available according to customer requirements.

Further information about these and other publications may be obtained from:

Meteorological Office
Advisory Services
London Road
Bracknell
Berks RG12 2SZ

Summary

1986 was a notably wet year throughout most of the United Kingdom and runoff, overall, was substantially greater than average. The recent tendency towards higher annual rainfall and runoff totals – often coupled with greater flow variability than is typical of the historical record – continued in 1986.

Both the amount and the temporal distribution of rainfall was beneficial from a water resources viewpoint. Although February was very dry, the spring was wet and some exceptionally high rainfall totals were recorded over the October-December period. For much of the summer, rainfall remained a little below average in most regions but unsettled conditions became established in the latter half of August culminating in the remarkably widespread and sustained rainfall associated with an intense depression which tracked across Great Britain in late August (see page 23). Significant localised flooding was associated with this storm but, generally, 1986 was a quiet year for hydrological events with relatively few storms or floods of a notable magnitude. Hydrographs displayed considerable volatility – a feature of runoff patterns in recent years – with a notable range of flows recorded in some regions. Although a number of rivers recorded annual minimum flows in July, the normal seasonality in river flow patterns was less evident in 1986 even in those regions where a distinct winter maximum may be expected as a result of a high baseflow contribution to river flow. Groundwater levels remained around, or above, the average throughout the year in most aquifers; reflecting the normal – if rather discontinuous – replenishment over the winter of 1985/6 and the abundant infiltration which has typified recent winters. The persistence of soil moisture deficits through the dry early autumn served to inhibit infiltration and delay the seasonal upturn in groundwater levels.

Rainfall

Precipitation over the United Kingdom during 1986 totalled 1211 mm; 10 per cent above the 1941–70 average. Although 1986 ranks as the sixth wettest year this century, an identical rainfall total was registered for 1982 and totals approaching 1200 mm were recorded in 1979, 1980 and 1981. Thus five of the fifteen highest annual rainfall totals since 1900 have occurred over the period 1979–86; the last rainfall total to fall significantly below the twentieth century average was that for the drought year of 1976. There is no modern parallel with the recent sequence of wet years. The contrast with average rainfall conditions is most marked in Scotland where each yearly rainfall total since 1977 has fallen within the upper quartile of a rainfall series extending back to 1869.

The apparently persuasive evidence for an increase in annual precipitation, for the UK as a whole, needs to be considered in the perspective provided both by the relatively modest exceedances of the average – 121 mm is the maximum in recent years – and the unstable nature of the average itself; variations of ± 10 per cent over ten-year periods are, for instance, typical of the general rainfall record for England and Wales which commences in 1766. Nonetheless, the ten-year period up to, and including, 1986 remains the wettest this century and forms a notable contrast with the predominantly dry 1970s – the decade commencing in 1969 is the driest on record for the UK. The apparent tendency towards greater precipitation has been associated with a discernible increase in seasonality. Compared to the 1900–71 average, for instance, summer rainfall over the subsequent 15 years has been about 13 per cent lower whereas spring, autumn and winter rainfall has been somewhat higher.

The rainfall pattern throughout the United Kingdom, relative to the 1941–70 average, is illustrated in Figure 1. Eastern Scotland is the only region showing a significant shortfall compared to the average annual rainfall. The normally steep rainfall gradient from west to east was exaggerated in Scotland during 1986 when maximum – in percentage terms – annual rainfall totals were recorded for the mountains of Wester Ross and around Ben More; an interesting reversal of the pattern experienced in 1985. A considerable measure of uniformity characterised the percentage rainfall totals recorded for England and Wales; most areas received between 100 and 110 per cent of the 1941–70 average. Some slight tendency for the spatial distribution to favour the important reservoir gathering grounds in Wales, the Pennines and South West England may be detected. In the Lake District, rainfall was above average but significant local variability, which has typified the rainfall distribution in recent years, was also recognisable.

Figure 2 illustrates actual rainfall totals for 1986; the regional variations conform to the normal pattern but the overall range was substantially greater than in a typical year. Although annual rainfalls below 500 mm were confined to a very restricted area, a minimum annual total of only 450 mm was, nonetheless, recorded near Shoeburyness, north of the

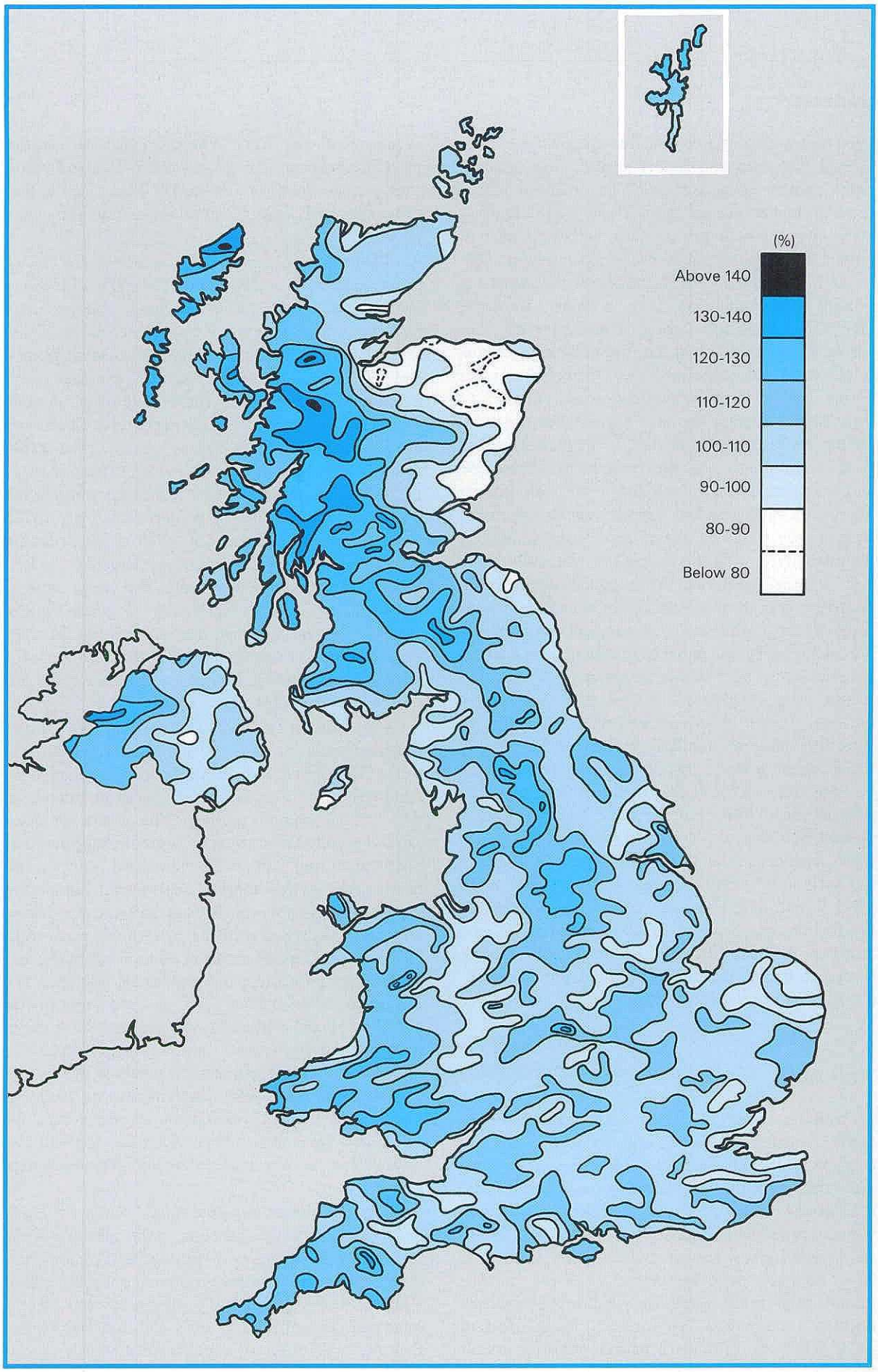


Figure 1. 1986 annual rainfall as a percentage of the 1941–70 average.

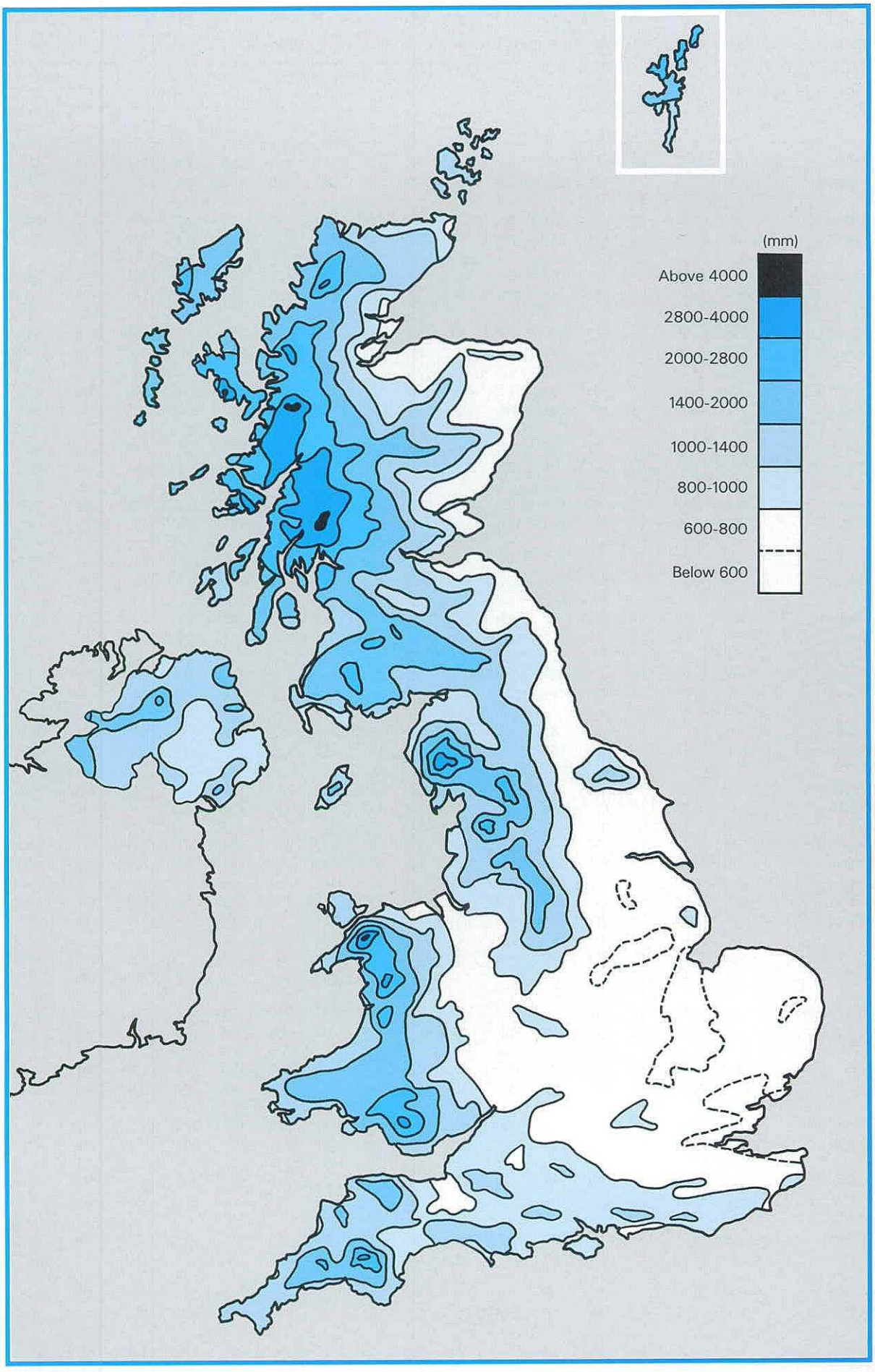


Figure 2. Annual rainfall in 1986.

TABLE 1 1986 RAINFALL IN MM AND AS A PERCENTAGE OF THE 1941–70 AVERAGE

1986		J	F	M	A	M	J	J	A	S	O	N	D	Year	Oct-Mar Rainfall 1985/86	Apr-Sep Rainfall 1986
United Kingdom	mm	145	18	111	84	117	50	66	119	37	117	160	187	1211	579	473
	%	139	23	158	121	155	69	75	115	36	110	142	165	110	99	93
England and Wales	mm	120	17	80	84	85	43	54	117	26	95	124	143	988	470	409
	%	139	26	135	144	126	70	73	129	31	114	127	158	108	98	95
Scotland	mm	192	21	169	80	176	63	87	120	63	161	232	277	1641	801	589
	%	140	20	183	88	193	68	77	93	45	108	163	177	114	103	90
Northern Ireland	mm	155	5	115	106	124	46	74	141	9	102	131	160	1168	508	500
	%	149	6	164	155	169	58	79	136	8	95	128	140	106	89	96
North West Water	mm	147	7	122	88	114	62	73	115	22	164	161	233	1308	616	474
	%	131	8	169	114	139	74	70	91	17	138	133	194	107	99	80
Northumbrian Water	mm	107	43	59	107	89	40	45	155	27	69	74	125	940	414	463
	%	133	65	113	194	139	65	58	153	34	91	78	166	106	94	106
Severn Trent Water	mm	108	15	63	76	75	39	43	112	12	70	99	112	824	402	357
	%	156	28	121	146	117	69	66	138	17	107	125	159	106	104	93
Yorkshire Water	mm	113	31	70	113	95	40	32	120	17	83	84	137	935	433	417
	%	146	48	132	201	155	68	45	133	23	120	94	185	112	102	103
Anglian Water	mm	61	21	53	62	65	23	51	88	25	62	63	71	645	296	314
	%	117	50	133	155	138	47	89	137	48	119	102	134	106	98	102
Thames Water	mm	98	16	57	67	68	21	46	102	31	76	94	80	756	355	335
	%	158	34	124	146	121	40	77	146	50	119	129	121	107	99	97
Southern Water	mm	127	17	71	67	58	23	40	86	37	92	125	102	845	431	311
	%	167	29	136	139	105	45	67	117	52	117	132	125	106	99	87
Wessex Water	mm	131	6	66	73	91	30	51	109	35	85	131	129	937	449	389
	%	155	10	113	135	133	55	82	132	44	103	135	143	107	96	97
South West Water	mm	171	8	107	90	98	102	64	149	37	123	193	201	1343	611	540
	%	132	8	127	126	116	156	76	147	35	108	144	148	112	89	106
Welsh Water	mm	183	6	124	109	116	59	85	155	19	144	228	255	1483	734	543
	%	134	6	142	126	127	71	89	130	15	111	159	175	111	100	91
Highland R.P.B.	mm	242	16	219	78	193	57	99	121	100	203	303	333	1964	1003	648
	%	147	12	192	68	187	51	77	81	63	109	179	169	114	104	85
North East R.P.B.	mm	126	38	58	72	91	65	62	117	38	61	75	151	954	520	445
	%	138	51	93	118	118	92	67	109	43	62	72	148	93	98	90
Tay R.P.B.	mm	168	33	135	64	182	59	65	103	25	117	187	240	1378	701	498
	%	142	35	164	85	191	71	63	87	21	95	157	179	109	105	85
Forth R.P.B.	mm	152	28	124	86	156	64	73	96	41	122	167	209	1318	622	516
	%	153	36	179	126	185	85	74	82	37	115	154	191	117	110	94
Clyde R.P.B.	mm	216	9	229	85	224	66	105	134	70	215	312	360	2025	910	684
	%	134	7	218	82	230	64	80	94	39	117	186	193	121	99	91
Tweed R.P.B.	mm	123	37	72	92	129	64	63	140	28	93	111	159	1111	486	516
	%	132	53	124	150	169	94	70	122	30	105	106	176	110	97	102
Solway R.P.B.	mm	175	7	151	93	193	72	96	129	22	163	217	284	1602	728	605
	%	125	7	165	105	209	79	87	99	14	113	149	188	112	95	91
Western Isles Orkney and Shetland	mm	162	18	169	70	149	48	87	82	99	177	221	236	1518	790	535
	%	119	17	184	84	219	63	183	87	79	123	161	154	117	103	101

Thames Estuary. By contrast precipitation totals were an order of magnitude greater in mountainous parts of the Lake District and Snowdonia – the Crib Goch raingauge recorded a notable total for the year of 5057 mm.

Table 1 provides a breakdown of monthly and half-yearly rainfall totals in 1986 both on a countrywide basis and according to the major administrative divisions within the water industry (see frontispiece). Rainfall is normally fairly evenly distributed throughout the year although a discernible seasonality may be recognised in western regions where less than 40 per cent of annual rainfall usually falls in the period April-September.

January was wet with all regions of the UK receiving above average precipitation but, with high pressure established early in the month, the intense cold of February was associated with very low rainfall totals – less than 5 mm were recorded over large areas of Northern Ireland which experienced its driest February this century. March, however, was wet and any lingering fears regarding the adequacy of water resources were allayed by an inordinately wet spring. The March-May UK rainfall total of 312 mm has been exceeded only twice this century although similarly wet springs were also experienced in 1979 and 1983; remarkably, four of the six wettest spring periods this century have occurred since 1978. Scotland and Northern Ireland both recorded new maximum spring rainfall totals in records extending back 117 and 86 years respectively. The summer witnessed a return to generally drier conditions especially in Scotland. A minor summer drought would have been rather more evident in England and Wales but for the precipitation associated with the slow passage of an intense depression (the remnant of Hurricane Charley) which followed a north-easterly track across Great Britain on the 25th and 26th of August. The former was the wettest day on record over England and Wales (see page 23) and features prominently in the Meteorological Office's listing of 'very rare' daily rainfalls for 1986 (see Table 2); to qualify as 'very rare' a daily rainfall total requires an estimated return period in excess of 160 years.

Dry conditions were re-established in September – Northern Ireland was particularly dry – and by early October consideration was being given to the

TABLE 2 'VERY RARE' DAILY RAINFALL TOTALS IN 1986

Date (Rain-day)	Station Number	Name	Grid Reference	Amount (mm)	Return Period (1 in X years)*
25.08.86	28677	Bar Gap Farm	NY 960107	104.6	190
25.08.86	497993	Gowerton S. Wks	SS 594970	105.5	230
25.08.86	508614	Cosheston	SN 004037	97.3	250
25.08.86	508729	Jeffreston, Millards Farm	SN 076074	99.1	250
25.08.86	509793	Canaston Bridge	SN 066149	101.0	200
25.08.86	532550	Anglesey: Llyn Alaw	SH 376853	93.5	180
25.08.86	534257	Aber, College Farm	SH 656732	134.9	600
25.08.86	540856	Dyserth, Trecastell Tr. Wks	SJ 064793	79.5	180
25.08.86	544636	Vivod	SJ 191424	98.5	170
25.08.86	547250	Loggerheads, Colomendy Centre	SJ 201622	109.0	370
25.08.86	547300	Cilcain Res. No. 2	SJ 162645	95 E	180
25.08.86	547371	Moel-y-crio	SJ 194699	88.4	160
25.08.86	77255	Walshaw Dean Lodge	SD 964336	121.1	320
25.08.86	78475	Wessenden Head	SE 068077	120 E	190
25.08.86	85831	Stocksbridge, Wortley Res.	SK 308998	100 E	250
25.08.86	102521	Ashbourne W. Wks	SK 187459	95 E	260
25.08.86	953635	Killylane Res.	IJ 286986	100.0	160
09.11.86	502167	Waen Sychlwch	SN 804221	147.4	240
01.12.86	667581	Gt. Cumbrae: Millport Res.	NS 158558	95.0	430
01.12.86	891909	Glengyle	NN 388133	203.3	2660
02.12.86	802141	Bhlaraidh Headpond	NH 355184	162 E	1800
29.12.86	521909	Aberangell, Esgairangell	SH 829105	158.0	420
29.12.86	523151	Machynlleth	SH 756045	141.8	210
29.12.86	523417	Glaspwll	SN 733978	170 E	2010

* Based on the methods and findings of the Flood Studies Report Vol II[1] (as implemented on the Meteorological Office computer[2]) whereby a return period can be assigned to the catch at a particular raingauge. Those exceeding a 160 year return period are classified as 'very rare' events (the return periods in Table 2 have been rounded to the nearest 10 years).

E – rainfall total estimated

[1] Flood Studies Report 1975. Natural Environment Research Council (5 vols).

[2] Keers, J.F. and Wescott, P. 1977 A computer-based model for design rainfall in the United Kingdom: Meteorological Office Scientific Paper No. 36.

introduction of measures to conserve reservoir stocks (e.g. by North West Water). In the event, precipitation for the remainder of the year was well above average for most regions of the UK – the combined total for October, November and December was the fourth highest this century.

Evaporation and Soil Moisture Deficits

Annual potential evaporation (PE) in 1986 was somewhat above the average throughout virtually the whole of the United Kingdom with climate stations in Scotland registering particularly high annual PE totals. Figure 3 shows the annual total together with the corresponding percentages of the 1956–75 mean (values are not given when the historical record is either incomplete or short).

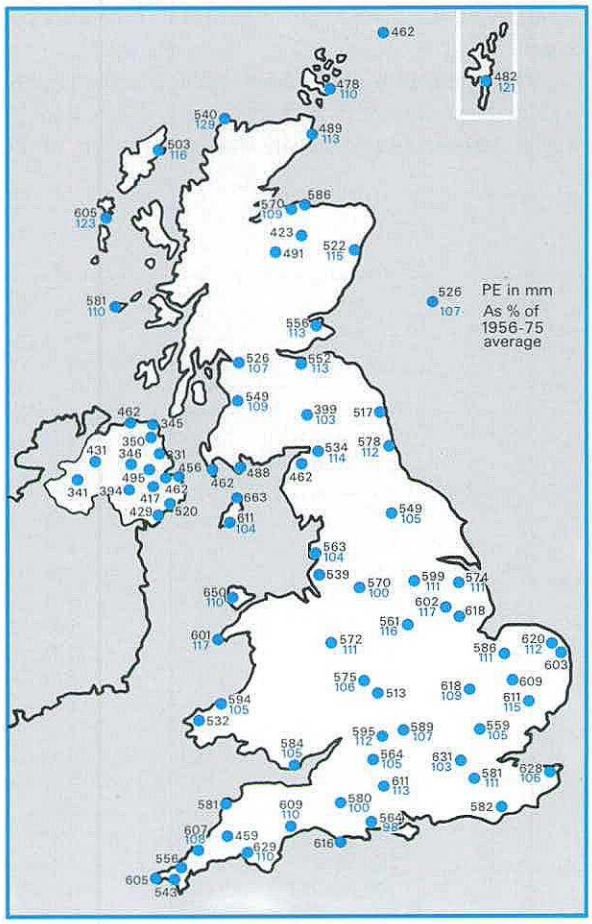


Figure 3. Potential evaporation in 1986—in mm and as a percentage of the long term average.

Maximum soil moisture deficits (SMDs) generally occurred in July throughout much of Scotland but significantly later further south; mid-October maxima were common in the English lowlands. Maximum SMDs were significantly greater than in 1985, especially in eastern Scotland and in Northern Ireland but they were still somewhat more modest than would be expected in a typical year and very much less than the substantial deficits obtaining during early autumn in 1983 and 1984. Figure 4 illustrates the variation in PE, AE (Actual Evaporation) and SMD for three MORECS (Meteorological Office Rainfall and Evaporation Calculation System – see page 2) grid squares for the period 1982–1986. Dry periods during the summer at Renfrew and Swincombe were rather too short for transpiration rates to be greatly inhibited by the limited availability of soil moisture, thus actual evaporation rates remained close to the potential values throughout 1986. At Wittering, however, the soil moisture deficit was a constraining factor throughout much of the autumn.

The difference between catchment rainfall and runoff is known as the 'loss'. Because of the natural and artificial storages available in most catchments, annual 'losses' rarely equate closely to yearly totals of actual evaporation. However, when – as in 1986 – SMDs had been eliminated by the end of the previous year, the loss can be taken as a reasonable guide to the annual evapotranspiration total at least in those catchments where baseflow is limited and the net effect of abstractions and discharges is negligible.

A considerable measure of stability typifies year to year variations in catchment losses. Nonetheless, catchment losses for 1986 were generally higher than average throughout Great Britain (see Table 3) and significantly greater than in the preceding few years. The unusually high figures for 1986 occurred in a year when temperatures, sunshine and wind conditions were not especially conducive to elevated rates of evaporative loss. This suggests that the extended periods during which soil moisture was at, or close to, field capacity were a major factor in sustaining evapotranspiration throughout the year in most regions.

Runoff

Runoff in 1986 for Great Britain totalled approximately 730 mm, some 20 per cent above the long term average – reinforcing the tendency towards higher runoff rates which has been a feature of the last decade. Figure 5 illustrates the post-1976 annual runoff totals for Great Britain expressed as a percentage of the 1961–76 mean; a notable feature is the eight-year sequence of above average runoff commencing in 1979. For several of these years, and for 1977, runoff was substantially greater than the mean reflecting, principally, the elevated discharge rates obtaining through the winter months. Plentiful runoff over the October-March period has been particularly prevalent in Scotland. For England and Wales a rather different picture emerges with annual runoff totals for 1983, 1984 and 1985 all slightly below average.

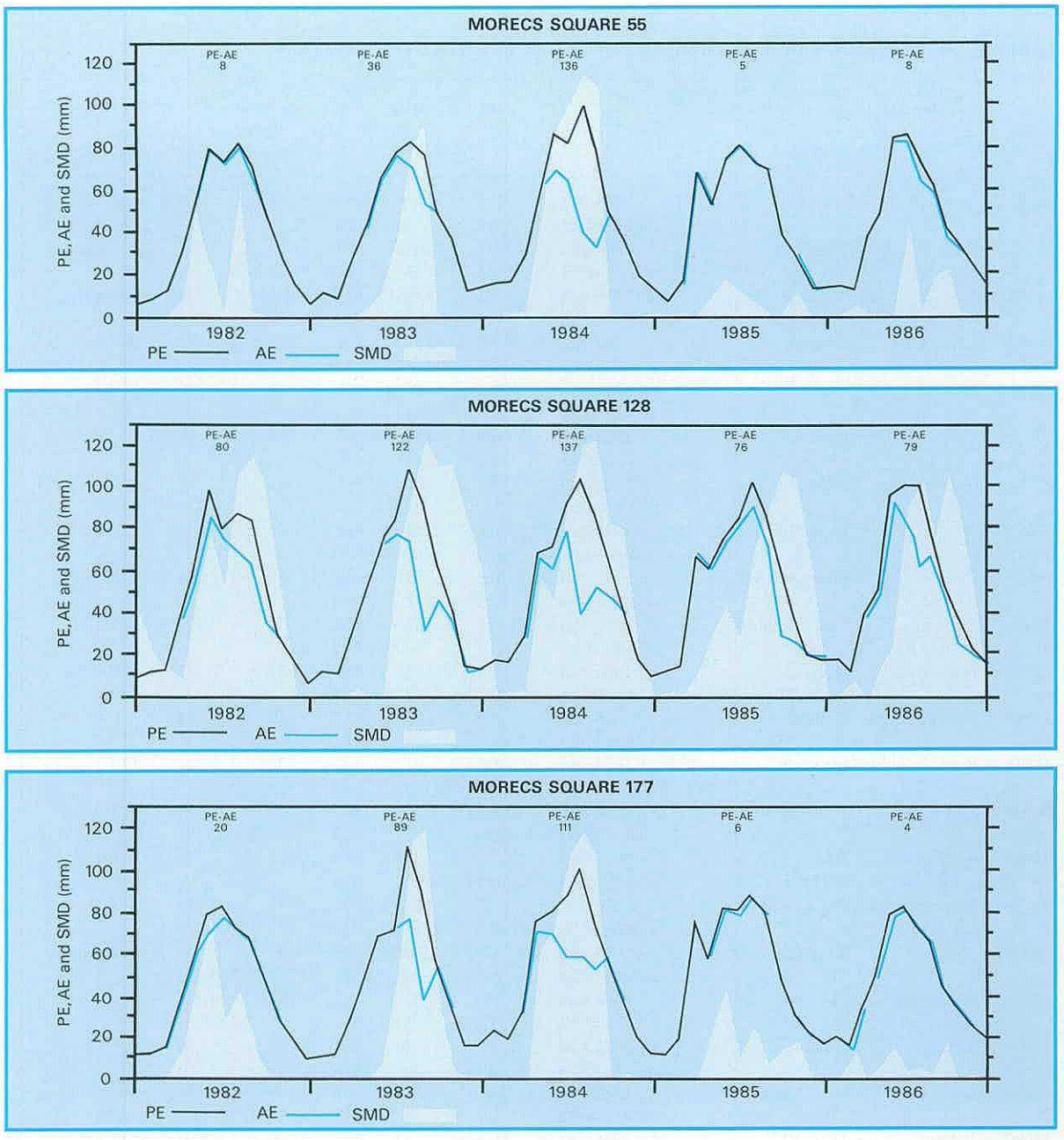
The paucity of catchments with extended river flow records poses problems in determining a reliable long term runoff value for Great Britain; fewer than a dozen gauging stations have sensibly continuous

TABLE 3 1986 WATER BALANCES FOR SELECTED CATCHMENTS IN GREAT BRITAIN

Station Number	River and Station Name			Rainfall	Runoff	Loss	Runoff as % of Rainfall 1986	Runoff as % of Rainfall lta	Abstractions* and Discharges
7002	Findhorn	Forres	1986 mm	1157	756	401	65	69	N
			as a % of lta	105	98	119			
12001	Dee	Woodend	1986 mm	1231	902	329	73	75	N
			as a % of lta	111	107	122			
15006	Tay	Ballathie	1986 mm	1691	1356	335	80	76	S P I H
			as a % of lta	117	122	101			
18001	Allan Water	Kinbuck	1986 mm	1612	1210	402	75	72	N
			as a % of lta	123	127	113			
19001	Almond	Craigiehall	1986 mm	1098	699	399	63	55	P E I
			as a % of lta	125	144	101			
21012	Teviot	Hawick	1986 mm	1449	1068	381	73	68	N
			as a % of lta	124	134	104			
24004	Bedburn Beck	Bedburn	1986 mm	971	610	361	62	57	N
			as a % of lta	112	122	98			
27002	Wharfe	Flint Mill Weir	1986 mm	1366	875	491	64	63	S R P I
			as a % of lta	118	119	115			
28008	Dove	Rocester Weir	1986 mm	1163	733	430	63	56	G E
			as a % of lta	113	125	96			
30001	Witham	Claypole Mill	1986 mm	660	213	447	32	29	R P G I
			as a % of lta	107	116	103			
32001	Nene	Orton	1986 mm	701	236	465	33	31	S P E I
			as a % of lta	112	122	108			
33002	Bedford Ouse	Bedford	1986 mm	704	281	423	39	34	S P G E I
			as a % of lta	109	125	101			
34003	Bure	Ingworth	1986 mm	687	227	460	33	31	G I
			as a % of lta	102	107	99			
36006	Stour	Langham	1986 mm	636	149	487	23	26	R E I
			as a % of lta	109	95	114			
37001	Roding	Redbridge	1986 mm	646	211	435	32	33	S E I
			as a % of lta	104	102	106			
38003	Mimram	Panshanger Park	1986 mm	705	108	597	15	19	G I
			as a % of lta	108	85	114			
39001	Thames	Kingston	1986 mm	777	287	489	36	36	Naturalised
			as a % of lta	109	110	108			
39007	Blackwater	Swallowfield	1986 mm	772	310	462	40	38	E
			as a % of lta	108	113	104			
40003	Medway	Teston	1986 mm	783	286	497	36	36	S P G
			as a % of lta	105	105	104			
42004	Test	Broadlands	1986 mm	874	310	564	35	41	N
			as a % of lta	108	92	120			
44002	Piddle	Baggs Mill	1986 mm	1111	453	658	40	42	I
			as a % of lta	115	110	118			
45001	Exe	Thorverton	1986 mm	1455	1006	449	69	64	P G E I
			as a % of lta	116	124	102			
50001	Taw	Umberleigh	1986 mm	1316	836	480	63	60	S P E
			as a % of lta	116	123	106			
52005	Tone	Bishops Hull	1986 mm	1051	497	554	47	48	S
			as a % of lta	106	102	110			
54005	Severn	Montford	1986 mm	1265	834	431	65	56	S R P
			as a % of lta	109	127	85			
55008	Wye	Cefn Brwyn	1986 mm	2834	2416	418	85	84	N
			as a % of lta	115	116	111			
57004	Cynon	Abercynon	1986 mm	2151	1623	528	75	67	S E
			as a % of lta	121	135	91			
62001	Teifi	Glan Teifi	1986 mm	1547	1150	397	74	74	S P
			as a % of lta	116	117	115			
67015	Dee	Manley Hall	1986 mm	1555	1063	492	68	67	S R P I
			as a % of lta	111	113	107			
68001	Weaver	Ashbrook	1986 mm	751	290	461	38	39	P G E
			as a % of lta	102	100	103			
73005	Kent	Sedgwick	1986 mm	1924	1475	449	76	73	N
			as a % of lta	112	116	99			
84005	Clyde	Blairston	1986 mm	1377	981	396	71	66	N
			as a % of lta	120	129	102			

lta = long term average

* For an explanation of the code letters see page 42



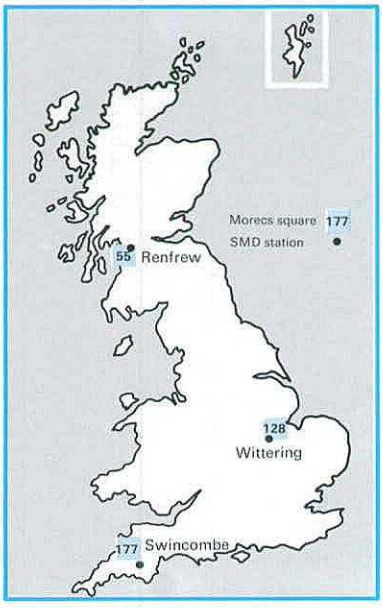


Figure 4. Potential and actual evaporation with soil moisture deficits for three MORECS squares.
(The location of the featured grid squares is shown on the map.)

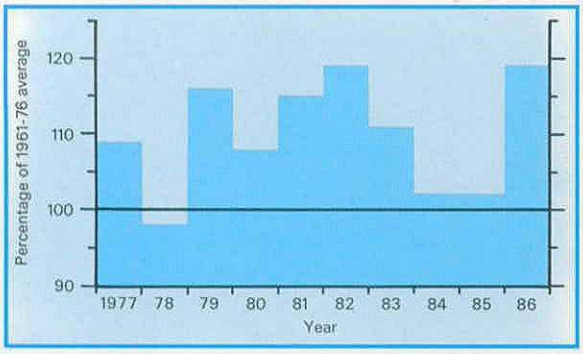


Figure 5. 1977–1986 runoff for Great Britain as a percentage of the 1961–76 average. (Based on 30 representative catchments.)

flow records of fifty years or more. 1961 was selected as the start year for the first standard runoff period in the United Kingdom, not simply in recognition of the rapid growth in the gauging station network at that time but also to allow direct comparisons to be made with rainfall when the Meteorological Office introduces the next thirty-year standard rainfall period (1961–90).

Figure 6 provides a guide to runoff in Great Britain for 1986 expressed as a percentage of the 1961–1985 average. The map is least precise in northern Scotland and in the Welsh mountains where the monitoring network is sparse. Insufficient long term river flow records exist for Northern Ireland (and for the Scottish islands) to allow the drawing of isopleths with any confidence. A significant degree of spatial variability, in terms of percentage runoff, is evident throughout GB; 1986 runoff ranged from less than 80 per cent of the average in parts of East Anglia to more than 150 per cent for some rivers draining southwards from the Pennines and the Brecon Beacons. Away from the north-eastern lowlands, runoff was particularly abundant in Scotland, approximately half the country being enclosed by the 120 per cent isopleth. Regional variations were rather more subdued in England and Wales where the majority of catchments registered between 110–120 percent of their respective averages.

The runoff pattern over the UK reflected the dominant maritime influence on rainfall; by far the greater proportion of precipitation during the year was associated with the passage of Atlantic depressions; this led to an exaggeration in the normal west to east runoff gradient. Those regions which registered below average runoff generally coincide with areas where surface water resources are most vulnerable. However, the high runoff conditions experienced in the west provided plentiful inflows for many strategically important water supply reservoirs. Overall, approximately ten per cent of UK catchments established new maximum annual runoff totals in 1986. Prominent in this category were river basins in the west of Scotland and in Wales where, for instance, the River Dyfi – gauged at Dyfi Bridge – recorded a notable annual runoff total exceeding 1770 mm, the highest yearly total in a record extending back to 1962. Similarly, the annual runoff total for the Eastern Cleddan, in Dyfed was some 10 per cent greater than the previous maximum.

The distribution of runoff throughout the year is illustrated in Figure 7 (a-d). Daily and monthly hydrographs are shown for individual gauging stations in England, Scotland, Wales and Northern Ireland. The monthly mean flows are shown together with the corresponding maximum and minimum flows for the preceding record. The 1986 trace is shown as a solid black line and the solid blue line represents the 30-day running mean for the pre-1986 record. As in 1985, the distribution of river flows throughout 1986 was characterised by several periods of unseasonally low and high flows.

The flow duration curves illustrated in Figure 7 allow the proportion of time that river flows fell below a given threshold to be identified. Both low flows (those flows which are exceeded for 95 per cent of the time) and high flows (those flows which are exceeded for 10 per cent of the time) during 1986 were generally greater than average – a situation similar to 1985 – and in the majority of areas significantly so. In the very highest flow range – corresponding, generally, to bankfull and above – discharge rates in 1986 were also significantly above normal except in the English lowlands where the relative remoteness from maritime influences, and the ameliorating effect of aquifer storage on the flow regimes, resulted in a muted overall flow range.

Exceptions to the general runoff pattern were the north-east of Scotland where high and low flows were little different to the long term average and in the chalk downlands of south-east England where low flows were substantially greater than normal – reflecting the enhanced winter infiltration in recent years. In Devon and north Cornwall, low flows were even more atypical; the flow exceeded 95 per cent of the time for some catchments being more than double the corresponding figure for the preceding record.

In a normal year, periods of significantly reduced flow may be expected during the summer months when evapotranspiration is at its highest. During 1986, although low flows did occur, intermittently, over the summer months there were also other significant periods of very modest runoff following steep recessions in those rivers with limited baseflow support. The River Tay (Figure 7a) exemplified conditions throughout much of the UK. Minimum flows – for the time of year – were closely approached in February and in early October whilst, by contrast, very high discharges were recorded at the beginning of the year and in March, May, August

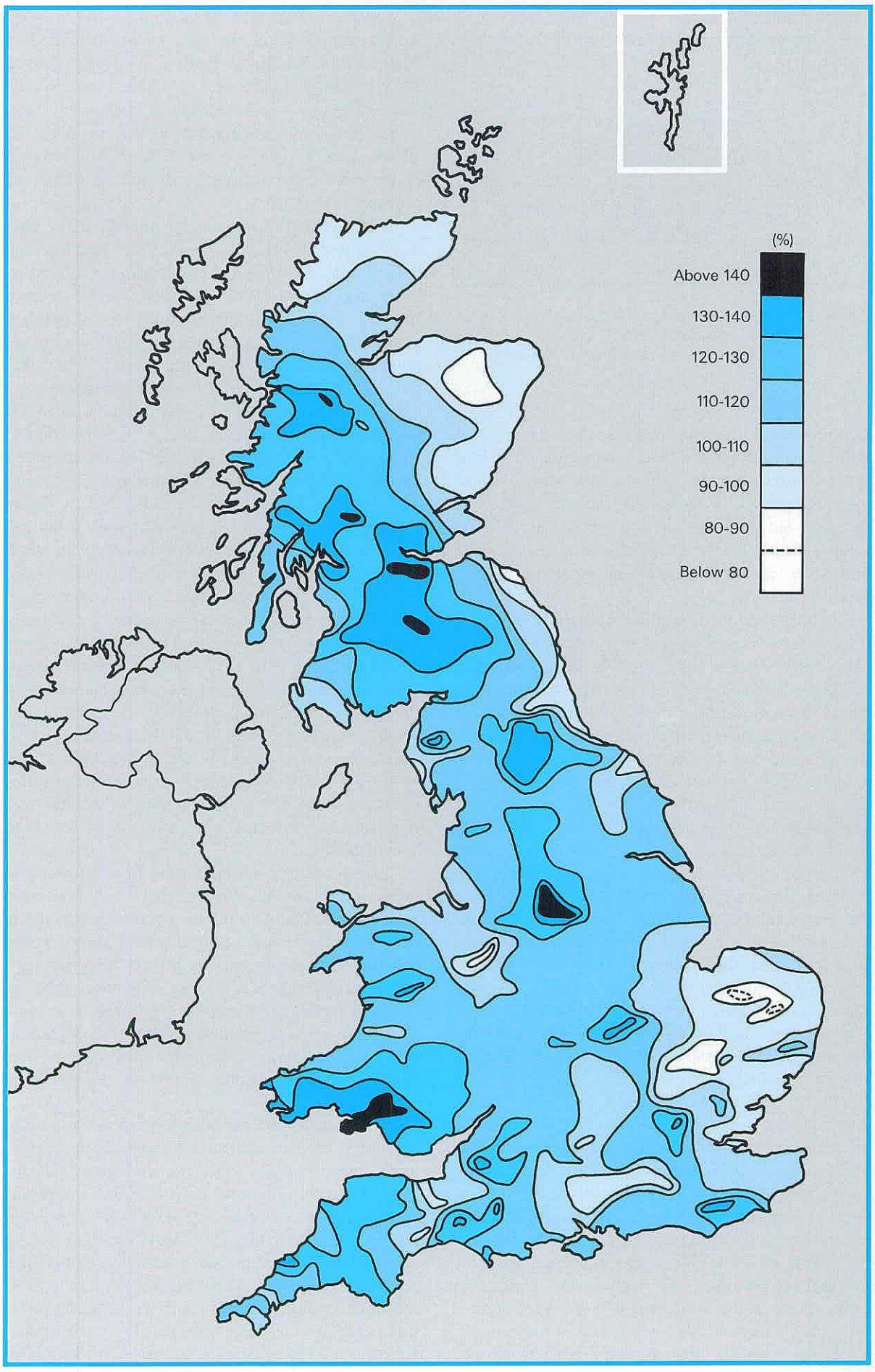


Figure 6. A guide to runoff expressed as a percentage of the the long term average.

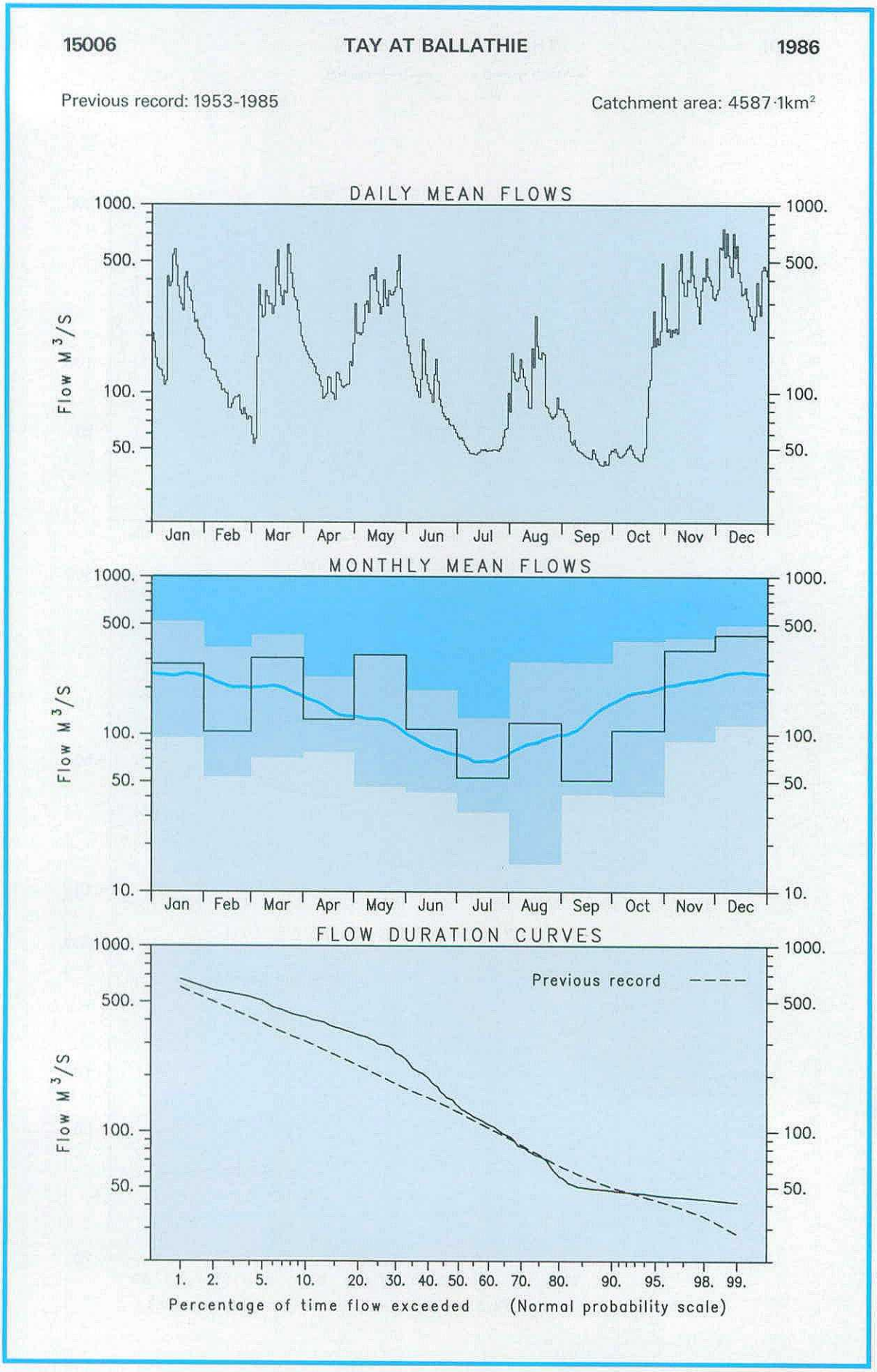


Figure 7(a). River flow patterns: Tay at Ballathie.

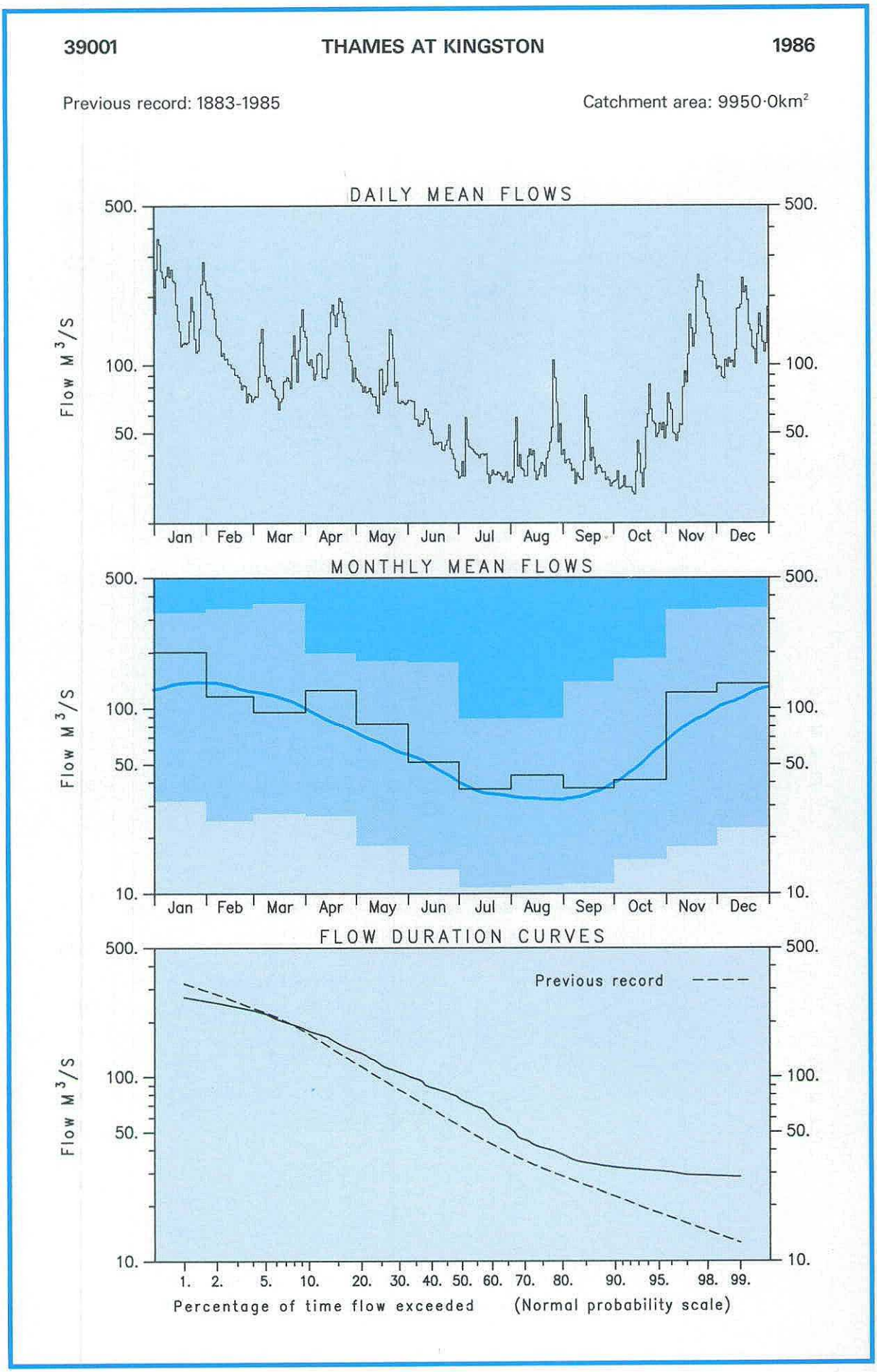


Figure 7(b). River flow patterns: Thames at Kingston.

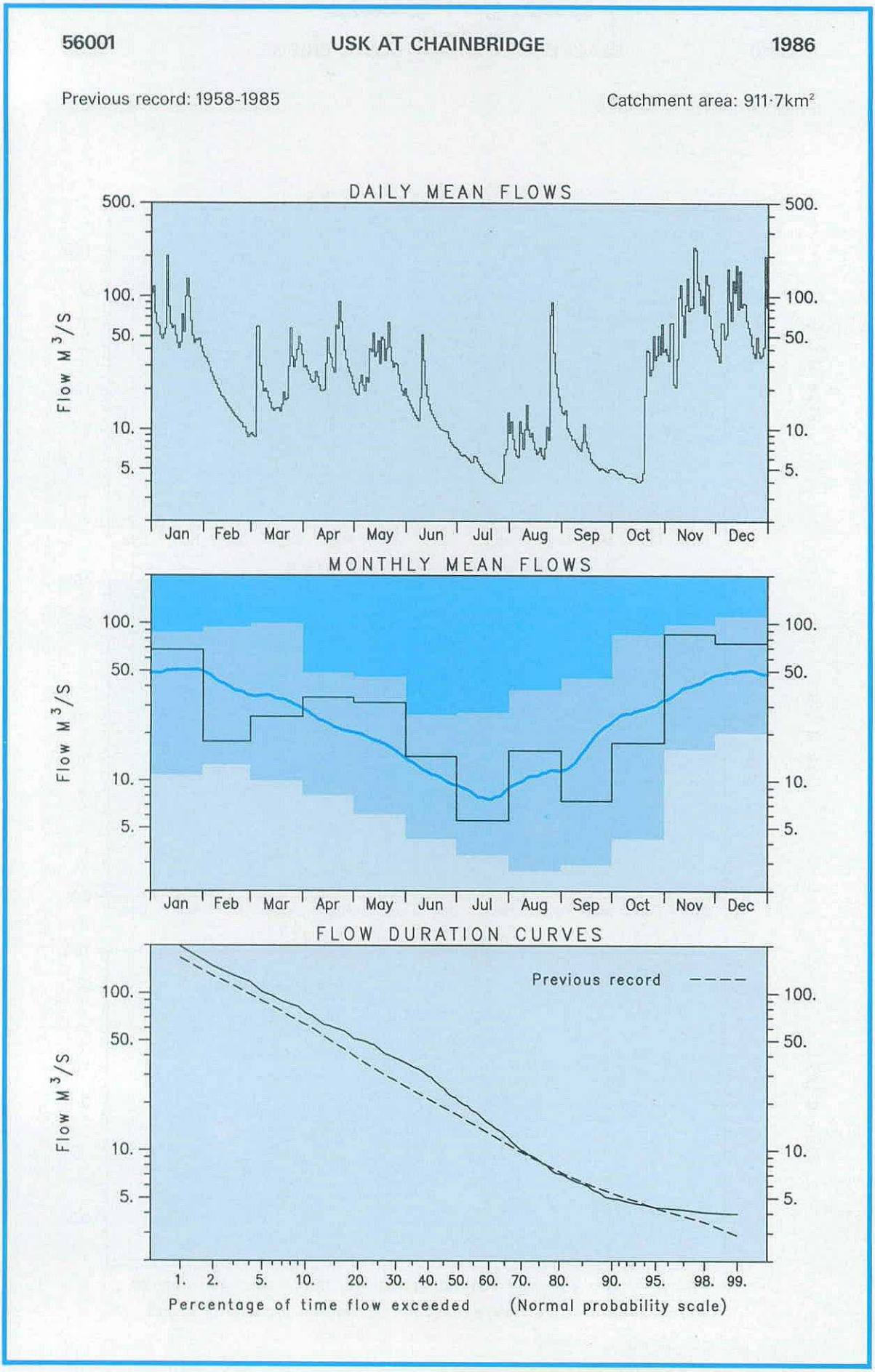


Figure 7(c). River flow patterns: Usk at Chain Bridge.

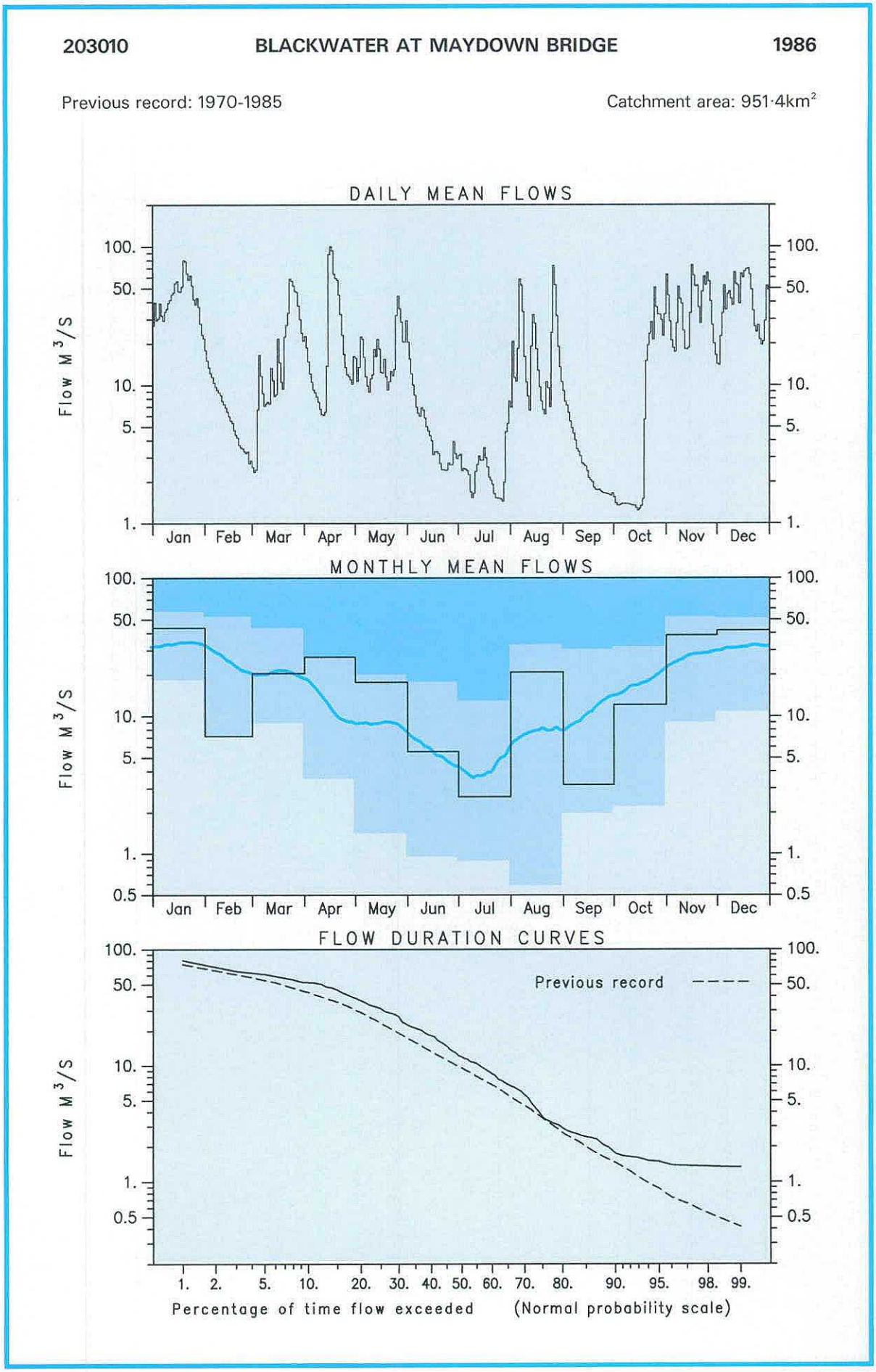


Figure 7(d). River flow patterns: Blackwater at Maydown Bridge.

and from late October until the year's end. However, in regions where runoff includes a high baseflow component, the February and October recessions were unremarkable and monthly runoff totals throughout the year were, in general, reasonably stable.

High seasonal runoff totals typified the spring period (March-May) throughout the UK. In Scotland and the extreme north of England this was principally a consequence of the high discharges sustained during May; several rivers in the east of Scotland, including the Tay, registered new maximum runoff totals for the month. As in the two previous months, snowmelt was a significant contributor to river flow in many catchments and snowpack storage served to disturb any simple relation between precipitation - which can be difficult to assess when a major proportion is in the form of snow - and runoff. Despite the low discharges during February, most of the UK registered runoff totals over the 1985/86 winter half-year close to the average. By April, groundwater and reservoir levels were high and the water resources outlook was reassuring.

Overall, runoff during the summer (June--August) was slightly above average but the flow regime on many rivers exhibited large variations giving greater emphasis to the somewhat atypical distribution of flows throughout the year. The summer ended with most rivers in spate following the passage of 'Hurricane' Charley. New August maximum daily mean discharges were registered over a wide area of Yorkshire and in Northumbria many peak flows were the largest for the year; several were unprecedented.

During the autumn (September-November), runoff tended to be slightly below average in Scotland and the north of England, but above average in Wales and central and southern England. The wetter than average November, throughout most of the country, counterbalanced the fairly dry conditions during the first two months of autumn. This contrast was associated with substantial within-month variability; this reached an extreme expression in some western regions. For example, on the River Dyfi during the four weeks prior to the 17th of October, flows were below the previous minimum for that period. Three days later, however, discharges had recovered from less than 2 cumecs to well over 30 cumecs. By November flows in most rivers were above the seasonal average and the wet December over the UK maintained high runoff rates until the end of the year.

Groundwater

Since the drought of 1976, when unprecedented low groundwater levels were recorded throughout both major and minor aquifers, water tables have generally stood near to average levels. In both 1984 and 1985, levels had generally fallen below the seasonal means by the end of the summer, in the first case following a spring and summer drought, and in the second due to a late onset of infiltration - October 1985 being relatively dry.

The annual rainfall for 1986 was generally near to, or a little above, average for those regions within the United Kingdom most dependent upon groundwater supplies (see page 163). The winter half-year rainfall for 1985-1986 was also close to the average, but it was unevenly distributed with heavy precipitation in December and January, little rainfall in February, and then wet throughout March. At the end of 1986, rainfall was generally above the average from October to the end of December.

Table 1 lists the half-year rainfall totals for the Water Authority and River Purification Board areas. Although the replenishment of aquifers is heavily dependent upon winter rainfall; when losses due to evapotranspiration are limited, the actual pattern of water table fluctuations throughout 1986 also reflects rainfall variability within the seasons to a significant degree.

In 1985, well hydrographs generally showed a continuation of the summer recession into November, or even December. Consistent with the pattern of recent years, steep recoveries in groundwater levels during December and January were widespread. For instance in the Rockley borehole, which penetrates the Chalk of the Marlborough Downs, a rise of about ten metres was recorded - the water level response was delayed slightly by the lag between rainfall and the infiltrate reaching the water table (see page 168). The dry conditions prevalent almost everywhere in February led to a widespread decline in water levels but, apart from a few sites, the ensuing wet spring led to continued replenishment of the aquifers in most areas into May, and possibly in some districts into June.

When the water table is close to the ground surface and where infiltration is rapid, replenishment can take place in the summer months. High rainfall in June 1986 resulted in a slowing of the recession in the Ampney Crucis borehole, near Cirencester, and in a sharp rise in the Redbank borehole (Dumfries). There was a similar reaction to the high August rainfall in Northern Ireland (see the Killyglen hydrograph - page 168). Rainfall over each of the last three months of 1986 was generally either near to or above average, and in some districts well above average. Upturns tended, therefore, to reflect the onset of infiltration in October. In some wells, the lag time delayed the upturn, at Washpit Farm (Norfolk) into December, and at Therfield Rectory,

near Royston, beyond the end of December. By and large, groundwater levels at the end of 1986 were close to the average.

In the 'Hydrometric Register and Statistics 1981–5' (see page 195), a method was proposed which permitted comparisons between groundwater levels in different observation wells and related water table fluctuations in response to aquifer replenishment. Using the same methods, the apparent replenishment for the winter of 1985–86 has been estimated and is shown in the Register of Selected Groundwater Observation Wells (see page 174) as the percentage mean annual recharge; for the main outcrop of the Chalk and Upper Greensand aquifer, the percentage mean annual recharge is also shown areally on Figure 8. Peak groundwater levels in the spring of 1986 fell a little short of those recorded in recent years for the Chalk and Upper Greensand aquifer in many parts of East Anglia. This reflects the late onset of percolation following the dry autumn of 1985 and is considered to be the principal cause of the low percentage replenishments, for the South-East, illustrated in Figure 8. Using the observed groundwater level fluctuations and the unit mean annual replenishment figures from Monkhouse and Richards (1982), the actual volume of recharge for the four major aquifers in England and Wales, has been estimated and is shown in Table 4.

The majority of observation boreholes in the national network monitor the natural variation in groundwater levels. In parts of the United Kingdom, water levels have been influenced, sometimes over long periods, by varying abstraction rates from the aquifer concerned. As a consequence the regional water table may become substantially depressed below the levels obtaining before the widespread exploitation of the resource began. Equally, where such depressions have become established groundwater levels may be expected to rise in response to a decrease in the volume of water extracted. Such is the case with the standing water levels in the confined Chalk and Upper Greensand aquifer below London. Figure 9 confirms that the recovery, first evident about twenty years ago, is continuing. A steady increase of about one metre per year has returned the water table to a level comparable with that following the First World War. When the first deep wells penetrated the Chalk of the London Basin in the late eighteenth century, the artesian conditions ensured that standing water levels were relatively close to the surface but the decline in groundwater levels below Trafalgar Square exceeded 60 metres by 1940. Subsequently, as abstractions switched to piped supplies drawn predominantly from reservoirs in the Thames and Lee basins, groundwater levels gradually stabilised and, from about 1965, began a discernible recovery. The implications of rising groundwater levels range from the more immediate water resources effect on potential groundwater supplies – in terms of both water quantity and quality – to geotechnical problems relating to foundation and tunnel flooding and the design of deep underground structures.

TABLE 4 ANNUAL REPLENISHMENT TO THE MORE IMPORTANT AQUIFERS IN ENGLAND AND WALES FOR THE YEAR 1985-86.

(Units are in m^3 10^6. Figures in parentheses are percentages of the annual mean)

Water Authority	Replenishment mean annual	Replenishment 1985–86
Chalk and Upper Greensand aquifer		
Anglian	953	693 (73)
Southern	1231	1097 (89)
South West	202	119 (59)
Thames	975	837 (86)
Wessex	947	980 (103)
Yorkshire	322	327 (102)
TOTAL	4630	4053 (88)
Lincolnshire Limestone aquifer		
Anglian	86	72 (86)
Permo-Triassic sandstones aquifer		
Northumbrian	123	89 (72)
North West	331	332 (100)
Severn-Trent	528	484 (92)
South West	205	175 (85)
Welsh	27	20 (74)
Wessex	39	37 (95)
Yorkshire	301	354 (118)
TOTAL	1554	1491 (96)
Magnesian Limestone aquifer		
Northumbrian	80	91 (114)
Severn-Trent	40	45 (113)
Yorkshire	127	115 (91)
TOTAL	247	251 (102)

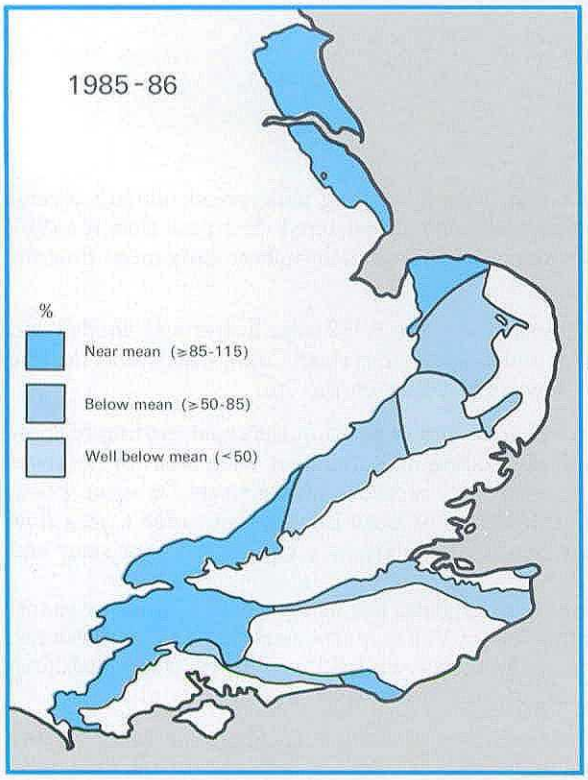


Figure 8. Generalised percentage of the mean annual replenishment to the Chalk and Upper Greensand aquifer 1985–6.

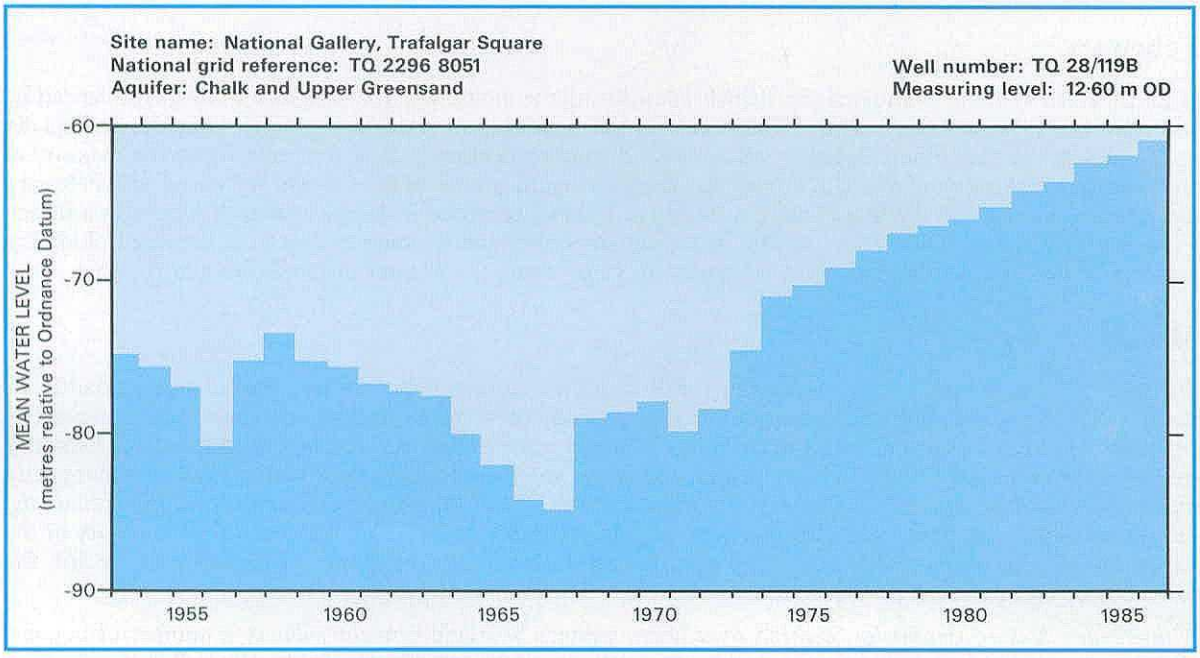


Figure 9. Groundwater level fluctuations in the National Gallery (Trafalgar Sq.) borehole 1953–86.

Hydrological Diary

January

1st-2nd: A depression moved across southern areas of Great Britain bringing widespread rainfall; several localities recorded over 50 mm. Many rivers in the South-East which had registered their peak flow for 1985 late in December remained in spate until early January; a number registered their highest daily mean flow for 1986 on the second day of the year.

7th-8th: The south-west of England was affected by torrential rain; the A382 near Exeter was flooded and hundreds of acres of farmland in Devon and Somerset were under water. The river Culm, which joins the Exe just upstream of Exeter, recorded its highest daily mean flow for the year on the 7th.

10th-12th: A mild westerly airstream brought rainfall to all areas and resulted in the rapid melting of snow accumulations. In response river levels increased and limited flooding occurred over wide areas of Scotland and northern England. Maximum daily mean flows for the year were recorded on the rivers Deveron, Eden, Dean Water and Dighty Water. The Luss Water, a western tributary of Loch Lomond, recorded a peak flow which exceeded the previous maximum by more than 20 cumecs. In Glasgow a child was swept away and drowned when a small burn became a torrent.

Snowmelt was not a significant factor in central and southern England but heavy rainfall increased runoff rates in several regions. Significant flooding occurred in the Severn Valley, particularly around Tewkesbury, when the river equalled its highest recorded January flow. The peak flow on the River Arrow (Herefordshire) was unprecedented and in Somerset, a young child drowned in the swollen river Yeo at Stoford.

28th-29th: Rainfall associated with further frontal activity caused an abrupt discharge increase in many rivers in the basin of the Bristol Avon. The River Frome at Frenchay, in Bristol, recorded a peak flow of 35 cumecs on the 28th – the largest instantaneous flow recorded in January since records began in 1961. Localised flooding disrupted road and rail communications.

February

High pressure systems dominated the British Isles during the month and the UK, as a whole, experienced its second driest February this century. Temperatures throughout the month were also remarkable; in England and Wales it was the coldest February since 1947. A marked decline in flow was evident on the majority of rivers throughout much of the UK during the month; a significant number of rivers registered new February daily mean minima and the Blackwater, in Northern Ireland, recorded its lowest winter discharge in a fifteen year record. The combined effect of frozen supply reservoirs and wastage arising from damaged plumbing systems fuelled concern regarding the adequacy of water resources to meet demands later in the year.

March

3rd-4th: The cold spell which dominated the British Isles during February was broken when Atlantic air penetrated the country. The mild conditions brought a steady thaw and the subsequent runoff was enhanced by significant rainfall in some areas. Many rivers which had experienced steep recessions throughout February peaked early in March. On the River Wye for instance, at the Ddol Farm gauging station, new minimum daily mean flows for March were recorded at the beginning of the month – less than one cumec was registered on the 3rd – on the 4th, the flow increased to greater than fifty cumecs. In Scotland, the Teviot – a tributary of the River Tweed – also recorded a new daily mean minimum discharge for March (7 cumecs) on the 3rd, the following day witnessed a twenty-fold increase at the Ormiston Mill gauging station.

20th-22nd: A deep depression centred over north-western Scotland brought gales to a number of regions. The associated rain, hail and snow resulted in a general upturn in runoff rates. In the Clyde R.P.B. area, peak daily mean flow values for the year were reported for the rivers Eachaig, Gryfe and Endrick on the 22nd.

April

14th-15th: Rivers throughout Northern Ireland were in spate following rainfall associated with a vigorous depression centred over Great Britain; more than 50mm of rain was recorded over a large area. The River Camowen registered a daily mean flow of nearly 60 cumecs (on the 15th) – over twice the maximum daily mean flow previously recorded for April.

17th-20th: A complex Atlantic low pressure system brought rain to all areas. In North Wales runoff increased sharply and record April daily mean flows were established on the rivers Alyn, Aled and Elwy. The succession of fronts during the month gave rise to several particularly wet spells and by the end of April discharge rates were well above average in most regions throughout England, Wales and Northern Ireland. Some monthly runoff totals were also notable, for instance the Blackwater, in Northern Ireland, registered a runoff total which equalled the previous highest April runoff.

May

During the first week of May the Government advised the public to avoid drinking rainwater and streamwater in Scotland and northern England; runoff in these areas was at risk as a result of the north-westward drift of radioactive material following the major accident at the Chernobyl nuclear power plant, in the USSR, on April 26th.

19th-21st: Thunderstorms – particularly in the Midlands – produced some exceptionally intense rainfalls. Several noteworthy three and four-hour precipitation totals were reported including a 60 mm fall in the vicinity of Spalding (Lincolnshire). A return period of 1 in 120 years was ascribed to this event; a few raingauges in south Derbyshire also registered three-hourly totals of a similar rarity. Notwithstanding the very localised nature of the most vigorous storm cells, and the mitigating influence of significant soil moisture deficits, the river flow response was rapid in some catchments. Over 120 properties were inundated in Spalding – the inability of culverts and sewerage networks to cope with the rapid runoff was a primary factor in the flooding. The Rivers Bain and Partney Lymn, in Lincolnshire, recorded their highest daily mean flows for May on the 20th. In Derbyshire, the River Amber recorded a new maximum daily mean flow for May and, below the confluence with the Derwent, local flooding and transport disruption resulted. Peak river flows for the year were not confined to the Midlands. The headwaters of the River Lee – which are mainly fed by baseflow from the Chalk – showed an unusually rapid response to rainfall and the daily mean flow of 1.63 cumecs recorded on the 20th for the heavily urbanised Stevenage Brook catchment has been exceeded on only three occasions.

June

9th-10th: Substantial rainfall totals were recorded as a frontal system crossed the British Isles on a north-easterly track. Among the heaviest falls recorded were 69 mm at Princetown in Devon on the 9th, 55 mm at Rothes, in the Grampian Region, and 66 mm at Penzance, in Cornwall, on the 10th. Runoff rates increased substantially throughout much of Great Britain. Rivers draining Dartmoor and the Brecon Beacons exhibited an abrupt increase in flow interrupting the recessions which, in many areas, had continued since mid-May. On the 10th, the river Taff, at Fiddlers Elbow, recorded its highest June daily mean flow in 13 years and in the Grampians, the Isla, gauged at Grange, registered its maximum daily mean flow for the year.

21st: Frontal activity associated with a complex low-pressure system in the south of England resulted in heavy downpours. The river Gannel, gauged at Gwills, in Cornwall registered the highest summer daily mean flow in a 17-year record.

July

Anticyclonic conditions dominated most of the British Isles until the middle of the month by which time flow recessions in some regions had been established for six weeks. Several rivers – for example the Spey and the Greta (Northumbria) – approached their July minimum flows before recovering strongly at the month-end.

August

11th: In the early hours a short-lived, and very intense, thunderstorm occurred above the Knowstone district of North Devon. No recording raingauges are sited in the area affected, but by using daily gauges and the evidence of local inhabitants, the peak rainfall intensity was estimated at 100 mm per hour for a restricted locality near the headwaters of the Crooked Oak and Lower Silver streams. Streamflow, assessed using wrack marks beside the Crooked Oak stream, was estimated at 80 cumecs – equivalent to a runoff rate of about 17 mm/hr. An event of this magnitude has an extremely long return period – up to 1000 years – but the sudden collapse of a debris dam upstream causing a very transient (but, nonetheless, real) peak may be a source of overestimation. Flooding was very localised and the impact on the rural community limited but local roads and tracks were heavily eroded and some became impassable. Several small bridges and vehicles were destroyed.

22nd-23rd: Instability, associated with a complex area of low pressure crossing southern Britain, was sufficient to generate several vigorous thunderstorms. Daily rainfalls exceeding 60 mm were recorded at Bushey (Herts) and Oakley (Bucks) – such amounts represent about ten per cent of the 1986 total; return periods of about 100 years were ascribed to these events (recording raingauge evidence suggested that virtually all the precipitation fell in a six-hour period).

25th-26th: A deepening intense depression – the remnant of Hurricane Charley – crossed the UK bringing widespread and heavy rainfalls – see 'The Wettest Day on record in England and Wales' (page 23).

September

Dry conditions were re-established during September when the UK was influenced by a sequence of anticyclones. The last two weeks were particularly dry with parts of south-east England having no rain for 28

days following the 16th; only 1959 and 1976, in recent years, have experienced longer dry spells. The consequent flow recessions were widespread, although interrupted in some areas by several wet interludes, and the re-commencement of infiltration to the major aquifers was delayed.

October

October was a month of contrasts. High pressure dominated the weather pattern until the 19th. The dry spell then ended as a series of vigorous frontal systems crossed the UK bringing sustained rainfall, with some thunderstorms, to many places. Precipitation totals were not particularly remarkable but the decline in soil moisture deficits increased the effectiveness of the rainfall and caused flow rates to rise from close to the seasonal minimum to well above average in most regions. Flow in the rivers Dee, Don and Muick rose in response to rainfall associated with a deep depression, which crossed northern areas of Great Britain on the 24th – several days prior to this they had recorded their lowest daily mean flow for the year.

November

9th: A sequence of Atlantic depressions crossed the UK during the month bringing widespread and heavy rainfall. The Waen Sychlwch raingauge, in the Brecon Beacons, registered a 'very rare' rainfall total – 147mm (corresponding to a return period of greater than 200 years) – and recorded 433 mm over the twelve-day period commencing on the 7th November; a precipitation total of this order is comparable to the 1986 rainfall total in some parts of Essex.

18th-21st: Severe storms caused disruption in southern areas; homes were flooded, overhead power cables brought down and cross-channel ferry sailings postponed. Heavy rain affected Wales and south-west England. On the 18th, 79 mm was recorded at Princetown, Devon, and 73 mm at Moel Cynedd, Powys. Houses at Cwmaman, Mid Glamorgan, were cut off for several hours due to floodwater and three properties were overwhelmed when heavy rain triggered a landslide in Graig-y-Merchyd. At Ystalyfera, West Glamorgan, another landslide damaged two houses. In Port Talbot and Neath, roads and some properties were affected by floods. In the Whitland district of Dyfed there was serious flooding and transport disruption; emergency services were fully stretched. Rivers were in spate throughout the area affected and a Red Alert was declared when the rivers Ogmore, Neath, Tawe, Loughor and Gwendraeth reached critical levels for a four-hour period during the night of the 20th. The River Senni recorded a new maximum daily mean flow, for November, in a twenty-year record and the peak flow on the Eastern Cleddau was, with the exception of that on the 25th of August, the highest since 1964.

December

1st-2nd: A depression centred to the north of Scotland resulted in a number of localised storms producing three 'very rare' rainfall events. Two occurred on the 1st – on the Island of Great Cumbrae, in the Firth of Clyde where a daily rainfall of 95 mm was measured and at Glengyle – near Loch Katrine – 203 mm was recorded; the latter total having an estimated return period of over 2600 years. On the 2nd, 162 mm fell at Bhlaraidh Headpond, west of Loch Ness. Subsequently, downstream of the Loch, the river Ness registered its highest daily mean flow of the year.

3rd-5th: A deep mid-Atlantic depression moved north-eastwards whilst its associated frontal system skirted western regions of Great Britain. On the 3rd and 4th, parts of Lancashire received 50–60 mm of rain causing the Garstang Flood Basin to be used for the first time in order to prevent flooding of the St Michaels area. A separate storm, with similar rainfall totals, in North Cumbria on the 4th and 5th caused the River Greta to rise to its highest level of the year posing a serious risk of flooding in Keswick.

28th-30th: A deep Atlantic depression caused torrential rain to sweep across northern and central Wales and northern England resulting in floods which cut off villages, blocked roads and inundated hundreds of acres of low-lying land. In the River Dyfi catchment, a number of 'very rare' daily rainfall totals were recorded including an estimated 170 mm at Glaspwll – the maximum daily rainfall recorded for 1986 in England and Wales. Large areas received over 50 mm and Dolgellau suffered its heaviest rainfall in twenty six years; the nearby village of Pennal was evacuated. The peak discharge on the River Glaslyn was a record for December and the River Conwy, in Gwynedd, overtopped its banks resulting in substantial flooding downstream of Llanrwst. The maximum instantaneous flows on the Rivers Ystwyth and Rheidol had return periods estimated at around ten years; the associated inundation caused considerable concern, as elsewhere in Wales, given the imminence of the lambing season. Rainfall in north-west England was less extreme but several noteworthy flows resulted. The peak discharge monitored at the Rudheath gauging station on the River Dane exceeded the maximum on record by more than 50 m^3s^{-1}. In addition, the two Mersey Flood Basins were used together for the first time to reduce peak river levels and alleviate flooding.

The Wettest Day on record for England and Wales

The most significant meteorological event of the year occurred towards the end of August when a deepening, intense depression – the remnant of Hurricane Charley – followed a north-easterly track from South Wales across the United Kingdom. The slow passage of the depression brought heavy rainfalls accompanied by gale force winds to many areas.

It became clear that the ex-tropical depression would cross the UK over the Bank Holiday as surface pressure fell on the 25th to 990 millibars south west of Ireland. By the following morning the low pressure cell had intensified, 981 millibars being recorded to the north west of London. The associated widespread and sustained frontal rainfall resulted in the highest single day (0900–0900) rainfall total for England and Wales in a record extending back to 1766 (see page 2). Figure 10 illustrates the daily rainfall totals for August the 25th. Almost the whole of England and Wales recorded more than 25 mm of rainfall and the areal average was marginally greater than 40mm; a mean of 61 mm was registered for Wales alone. A feature of the rainfall distribution was the relatively subdued influence exerted by relief on the spatial variation. Daily rainfall totals for seventeen well distributed sites in Great Britain qualified as 'very rare' (see page 7); eight of the rainfall totals exceeded 100 mm and 24-hour rainfall totals greater than 50mm were experienced over wide areas. By contrast in Scotland north of a line from Glasgow to Edinburgh, precipitation amounts were negligible; few districts recorded more than 2 mm over the same period. Some care is necessary in interpreting Figure 10; the somewhat arbitrary nature of the rainfall-day detracts from the significance of the rainfall episode in some regions. For instance, in Northumbria a considerable proportion of the rainfall associated with the frontal system occurred after 0900 hours on the 26th August.

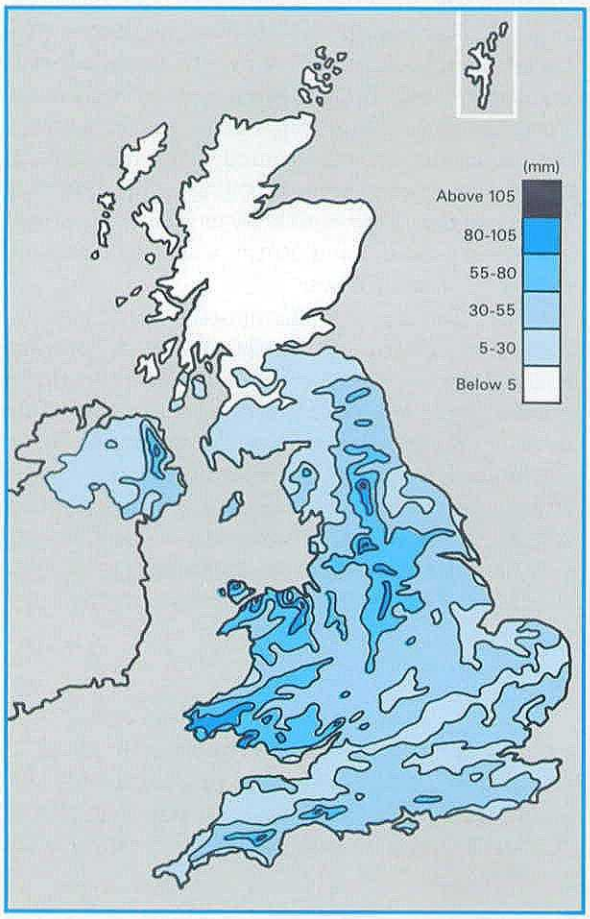
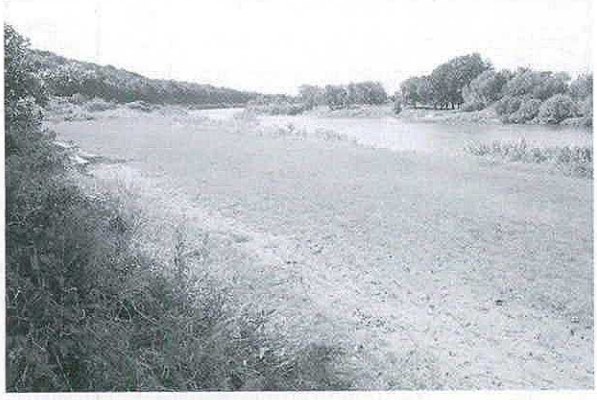


Figure 10. Rainfall for the 25th August (09.00–09.00) 1986.

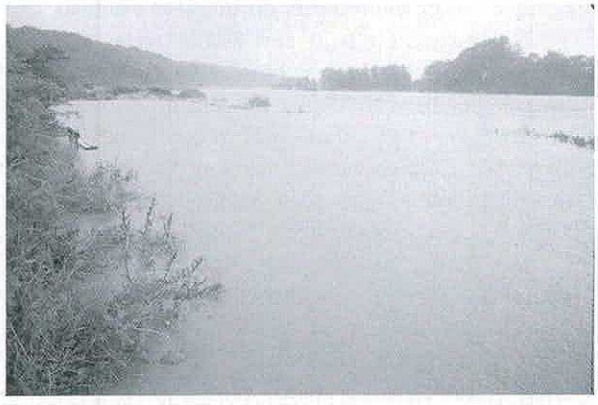
North-east England and Wales were the most severely affected regions both meteorologically and hydrologically. The highest daily rainfall total during this event – 135 mm – was recorded at Aber in Gwynedd. Using evidence from an hourly recording raingauge on Anglesey, it was estimated that the rainfall accumulated over a period of just 18 hours; on this basis the associated return period would approach 600 years. Return periods exceeding 100 years were ascribed to rainfall totals throughout large areas in south Dyfed where precipitation was especially noteworthy in coastal districts. In Northumbria and much of Yorkshire, more than 90 mm of rain was recorded over the 24-hour period beginning late on the 25th in the majority of river catchments; only a few areas received less than 50 mm. The maximum fall in this region – 105 mm – was recorded at Bar Gap Farm near Bowes during the 25th-26th. Rainfall throughout Northern Ireland was only a little less noteworthy with 90 mm reported in Lowtown, County Antrim, on the 25th. Some very intense rainfall episodes were also reported. A peak hourly rainfall amount of 38.2 mm was recorded at Preston, Lancashire, on the 26th and a fall of 27mm in three-quarters of an hour near Burton in the Midlands caused localised flooding in Staffordshire and south Derbyshire.

Substantial soil moisture deficits have normally become established by late summer throughout most of the UK. In August 1986, despite the dryness of the first three weeks, SMDs were lower than expected over much of upland Britain. However the deficits – particularly in the north-east of England, where they were somewhat above expected values – were of sufficient magnitude to ameliorate the impact of the heavy rainfall and to reduce the extent and magnitude of flooding. Following the rainfall over the Bank Holiday weekend, deficits over much of England were reduced by 30 or 40 millimetres and in North Wales deficits exceeding 80 mm – on the 24th – had been eliminated a week later; soils also returned to field capacity in other upland, and a few coastal, areas.

Generally, river flows were close to the average in the majority of rivers in England and Wales during



(a)



(b)

Plate 1. River Tyne at Prudhoe—(a) under dry weather flow conditions and (b) at the peak of the 26/8/88 flood.
Photos: Malcolm Newsom.

mid-August with Scotland and Northern Ireland registering slightly above average discharges. By the evening of the 25th, however, flood warnings had been issued on most rivers in South Wales. The Taff together with three tributaries overtopped their banks and the Gronw Stream, reaching a depth of one and half metres, was responsible for severe flooding in the town of Whitland (Dyfed). New absolute peak discharges were recorded at gauging stations on the rivers Taf, Ewenny and East Cleddau, each with flow records exceeding 25 years and, in Clwyd, a young boy was swept away as the river Alyn burst its banks. The impact of the gales and floods was most severe in coastal districts where camping and caravan sites, especially, suffered considerable devastation.

In Northumbria and parts of Yorkshire, river levels rose sharply on the 25th and record flows were established on the Rivers Tees, Greta, and South Tyne. Plate 1 illustrates the contrast between the discharge rate sustained during this event and typical low flow conditions on the Tyne. A return period of 50 years was estimated for to the flood discharge at Haydon Bridge (South Tyne) and a similar magnitude was ascribed to the maximum instantaneous flow recorded at Broken Scar, on the Tees, where the previous peak flow was surpassed by 120 cumecs. At Bywell, the principal gauging station on the Tyne, a highest instantaneous flow greater than 1500 m^3s^{-1} was registered. Such a flow rate exceeds the maximum discharges, stored on the Surface Water Archive, for all other rivers in England and Wales. Even allowing for the margin of uncertainty associated with flow assessments in the higher flood ranges, it is a measure of the remarkable nature of the runoff following the August 25/26th rainfall. On the Greta at Rutherford Bridge – where water levels exceeded the previous maximum by a metre – the return period was assessed at greater than 100 years. The River Snaizeholme which drains from the Pennines, peaked at 15 cumecs, the highest discharge measured in its 14-year record and most rivers in North Yorkshire were in spate. Reservoir replenishment was also extremely rapid – 4 m and 5 m water level increases being recorded at Burnhope Reservoir and Tunstall Reservoir respectively; a few small impoundments filled to overflowing. The artificial storage in the headwaters of several of the most critically affected rivers served to reduce peak levels downstream and ameliorate the extent of flooding – on the river Tees it was estimated that levels would have been almost half a metre higher downstream of Darlington but for the effect of the Pennine reservoirs. This, together with the recently constructed floodbanks on the Coquet and Tees, resulted in few properties being affected although road and rail communications were disrupted over a wide region and considerable areas of farmland were inundated. Small bridges and dry stone walls in the Yorkshire Dales were swept away and rock/debris obstructions in the rivers caused widespread ponding in the shallower valleys. Flooding in the Bowmont Valley, on the border with Scotland, caused the death of a man whose Land Rover was swept into the swollen Bowmont Water.

The damage and disruption caused by the passage of 'Hurricane' Charley was very considerable. However, the costs attributable to fluvial flooding were moderate given the magnitude of the rainfall. In part, this reflects the natural ability of catchments, especially in the summer, to store water and attenuate the runoff response, but in many areas it testifies also to the effectiveness of flood warning and flood alleviation schemes designed to mitigate the threat posed by rare precipitation events.

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THE ACQUISITION AND ARCHIVING OF RIVER FLOW DATA – PAST AND PRESENT

T. J. MARSH

Institute of Hydrology

Background

The rational exploitation and management of water resources depends to a considerable degree on the ready availability of hydrological data. For scientifically based management strategies and optimal engineering design procedures to be developed, large volumes of river flow data need to be collated, organised and analysed. Whether designing a dam or assessing the volume of contaminants which – without detriment to the aquatic environment – may be discharged into a particular river or stream, a detailed knowledge of the expected range of flows is required. The uncertainty associated with the data is also an important factor in determining the limits to which a river system may be managed or the margin of safety which needs to be incorporated into the design of river works. Precision can only be obtained at a cost, of course, and designers of hydrological archives must demonstrate that the resources devoted to data acquisition are justified by the benefits accruing in terms of improved management performance or the prospect thereof based upon the research potential of large hydrological databases.

The processing of river flow data embraces many tasks between the sensing – normally of river levels – on the one hand and the dissemination of information on the other (Figure 11)[1]. The information requirements of managers, planners, researchers and others together with the available instrumentation technology and data handling expertise all have important implications for the optimal system design. The success of any system may normally be judged by its ability to allow for the differing demands of a wide spectrum of data users and, in particular, to ensure that suitably filtered information is available at the right time and at an accuracy level appropriate to the application in hand.

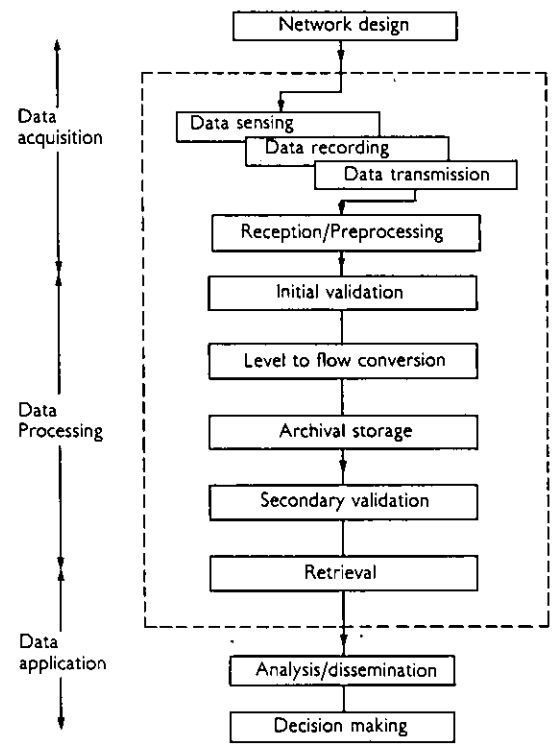

Figure 11. River flow information system flow chart.

The Character of Rivers in the United Kingdom

The data acquisition practices and procedures followed throughout the United Kingdom reflect the characteristics of both the rivers themselves and the catchments they drain. By international standards the UK maintains a relatively dense network of flow measurement stations[2] – approximately one per 150 km^2. This is a necessary response to the diversity of the United Kingdom in terms of its climate, geology, land use and pattern of water utilisation.

UK rivers – mere streams in a global context – are typically short, shallow and subject to substantial artificial disturbance. The total annual discharge of all the rivers in England and Wales barely equates to the average weekly runoff for the Amazon and – nearer to home – the River Rhine contributes a greater input of freshwater into the North Sea than the combined total for all the rivers along our eastern seaboard. With many small basins draining to a convoluted coastline, water resource assessment and

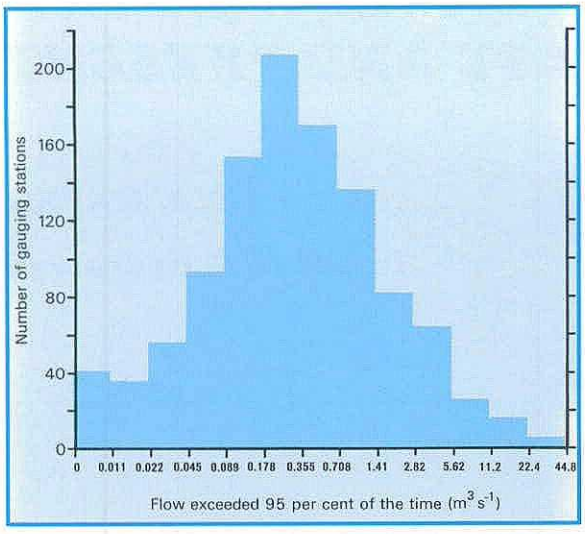

Figure 12. The distribution of 95 per cent exceedence flows for gauging stations in the United Kingdom.

management in the UK inevitably involves considerable monitoring effort – the ten largest rivers in the UK account for only 30 per cent of the overall runoff.

The depth of major international rivers may be measured in a few tens of metres; decimetres are more typical of most UK rivers. This limited water depth places a high premium on reliable instrumentation and rigorous gauging station maintenance procedures to ensure that accurate and representative records of water level – from which river flows are derived – are available. The 95 per cent exceedence flow for more than three-quarters of UK gauging stations is less than one cubic metre per second (see Figure 12). The equivalent water depth for a significant proportion of these stations is below 80 mm – often substantially so – thus any errors resulting from, say, the imprecise setting of the zero of a water level recorder or limitations in the inherent accuracy of the sensing and recording devices may have serious implications (see below).

In order to reduce the uncertainty associated with computed flow values, especially in the low flow range, gauging stations are commonly sited where any significant change in discharge is accompanied by a substantial change in water level; thus, by natural or artificial means, attempts are made to maximise what is termed the 'sensitivity' of the measuring station. Despite some careful documentation of the importance of sensitivity[3] and an enterprising approach to gauging station design, the margin of uncertainty associated with discharge values can remain substantial. Figure 13 illustrates how a modest error in the determination of water depth can result in a substantial error in the computed discharge rate. Notwithstanding the skill with which gauging reaches are selected or measuring weirs designed, the penalties associated with imprecise stage monitoring can remain obdurately severe.

Table 5 lists the percentage errors in discharge arising out of a ten millimetre systematic error in the measurement of water level at a stage corresponding to the 95 per cent exceedence flow (see page 41). Taken together, the featured stations are typical of UK flow measuring conditions but individual gauging stations may not be representative of any particular river or region. Not surprisingly the larger errors tend to correspond with the smaller catchments which, generally, are among the most hydrologically valuable; the flow regimes tending to be little disturbed by artificial influences. It is evident also from Table 5 that hydrometric standards need to be maintained at a high level if confidence is to be placed in flow values particularly those likely to be experienced during periods of drought.

River Flow Measurement

In antiquity, despite the crucial importance of water to all civilisations, river flows were invariably determined on the basis of depth alone; water velocity was ignored even by the Romans whose artefacts testify to a considerable water engineering expertise. Hero of Alexandria is credited with the initial suggestion (circa 100 A.D.) that discharge was, indeed, the product of cross-sectional area and speed of flow; he used a volumetric method to determine the outflow from a spring and to demonstrate the importance of velocity[4]. This fundamental principle was forgotten and practical application awaited its independent discovery by Castelli in 1628[5]. Perhaps inevitably, it fell to Leonardo Da Vinci to demonstrate a measurement technique – employing simple floats – to investigate changes in river velocity[6,7]. With a pioneering understanding of velocity distribution Leonardo was able to appreciate that surface floats suffer from a number of disadvantages – principal among these being the inability to assess the mean velocity in the vertical profile. A more sophisticated approach was heralded by Sartorio's initial design for a flow measuring device[8] and,

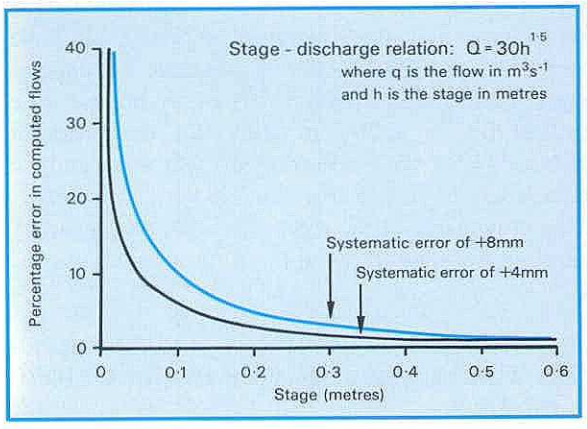

Figure 13. The effect of systematic errors in stage measurement on computed flows.

TABLE 5 THE SENSITIVITY OF UK GAUGING STATIONS

Note: The 'sensitivity error' referred to in this table relates to the percentage change in flow associated with a 10 mm change of water level at a stage corresponding to the 95 per cent exceedence flow. For an explanation of the Station Type codes see page 96.

Station Number	River	Station Type	Catchment Area km²	Mean Flow m³s⁻¹	95%ile Flow m³s⁻¹	Sensitivity Error %
004001	Conon	VA	961.8	45.62	8.59	5.5
007001	Findhorn	VA	415.6	13.22	2.05	13.9
008006	Spey	VA	2861.2	64.61	19.18	4.9
008008	Tromie	VA	130.3	2.40	1.18	7.3
012001	Dee	VA	1370.0	36.40	8.40	5.2
015006	Tay	VA	4587.1	158.10	42.84	1.9
021009	Tweed	VA	4390.0	76.71	14.02	4.5
023001	Tyne	VA	2175.6	43.87	5.44	6.5
024005	Browney	CB	178.5	1.73	0.34	13.7
024009	Wear	FV	1008.3	14.78	3.29	7.8
025019	Leven	FV	14.8	0.20	0.06	25.0
027029	Calder	C VA	341.7	8.74	2.30	5.0
027035	Aire	VA	282.3	6.04	0.52	15.9
027041	Derwent	C	1586.0	17.53	4.92	5.5
027051	Crimple	FV	8.1	0.11	0.01	54.0
027055	Rye	C	131.7	2.36	0.55	22.1
028003	Tame	VA	408.0	5.84	2.70	3.3
028012	Trent	VA	1129.0	12.52	5.04	3.6
028025	Sence	C	169.4	1.51	0.25	22.4
028026	Anker	C VA	368.0	2.82	0.61	13.6
028044	Poulter	C	65.0	0.33	0.17	21.2
031006	Gwash	C	150.0	0.86	0.29	23.3
033012	Kym	CB	137.5	0.63	0.02	65.0
036006	Stour	FL	578.0	2.83	0.50	7.9
037008	Chelmer	EW	190.3	1.02	0.27	15.6
038007	Canons Brk	FL	21.4	0.20	0.05	32.0
039016	Kennet	C	1033.4	9.65	3.98	6.4
039019	Lambourn	C	234.1	1.72	0.79	13.3
039020	Coln	C	106.7	1.34	0.38	21.3
043005	Avon	C	323.7	3.43	1.15	8.9
043006	Nadder	C	220.6	2.88	0.94	18.8
048005	Kenwyn	CC	19.1	0.38	0.05	15.6
049004	Gannel	C	41.0	0.69	0.10	38.2
052004	Isle	C VA	90.1	1.31	0.26	22.7
052010	Brue	C VA	135.2	1.89	0.26	21.5
053017	Boyd	FV	48.0	0.57	0.05	27.5
054004	Sowe	C	262.0	2.94	1.03	8.6
054012	Tern	FV	852.0	7.09	2.41	4.2
054019	Avon	C	347.0	2.50	0.48	15.0
056001	Usk	VA	911.7	27.67	4.34	5.1
065005	Erch	C	18.1	0.60	0.09	45.0
075001	St John's Beck	MIS	40.9	0.88	0.16	12.5
090003	Nevis	VA	76.8	6.28	0.57	8.8

subsequently, the important development work undertaken by Estevao Cabral; the two-hundredth anniversary of his first rotating-vane current meter (see Figure 14) was celebrated in 1986[9]. Considerable further research and refinement has resulted in the modern family of current meters which provide a robust and reliable means of measuring flow except at the very extremes of the velocity range.

Current meters generally provide a measure of flow rate at an instant of time only. For continuous discharge monitoring a relation is required between water level and discharge to permit a continuous, or intermittent, record of river stage to be converted into discharge. A primary objective in selecting gauging stations is thus to locate a reach characterised by its ability to maintain a sensibly unique relation between water level and discharge – where water levels are then determined by a permanent 'control' (see below). World-wide, some 90 per cent of all gauging stations are of the open river section, or velocity-area, type. Consistent with the somewhat singular hydrometric conditions experienced in the UK, simple velocity-area stations make up well below half of the national network. The small size and minimal navigational use of most UK rivers, together with the attraction of grant-aid (until the mid – 1970s), served to stimulate the design and installation of a versatile group of gauging weirs[10].

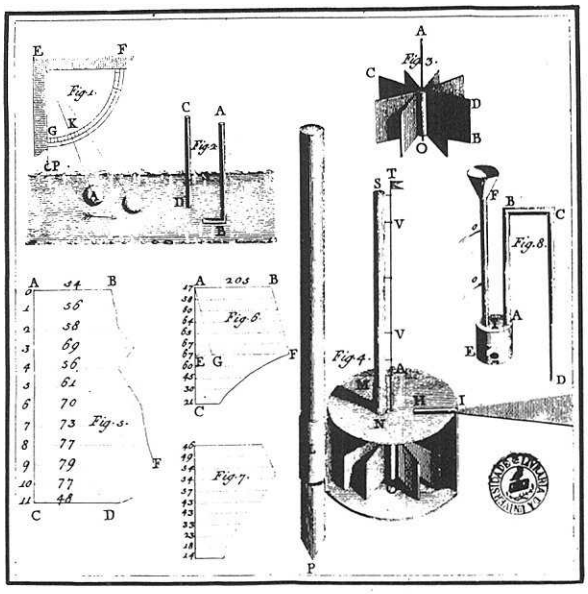

Figure 14. Eighteenth century design sketch for Estavao Cabral's rotating-vane current meter.

Although the requirements of migratory fish and the need to avoid substantial afflux (the increase in upstream water levels resulting from the installation of a weir) were, often, important design constraints, a large proportion of the gauging stations constructed over the last 40 years are weirs with known hydraulic characteristics. Such structures allow a laboratory derived, or theoretical, calibration to be used for the conversion of upstream water level to flow. A wide variety of weirs and flumes, reflecting significant regional preferences, were constructed after the Second World War but a greater measure of uniformity followed the development – in the 1950s – of a triangular profile weir designed by E.S. Crump (see cover)[11]. This robust and easily constructed weir is capable of monitoring flows with considerable precision and is, potentially, able to measure discharges in the non-modular range (when downstream water levels disturb the simple relationship between upstream head and the flow across the structure – see page 35). The desire to increase sensitivity in the low flow range led to two important design innovations[12]. The first involved compounding – providing several crests set at different levels normally separated by divide piers. The second, more aesthetically pleasing, adopted a shallow 'V' profile to achieve a greater depth for a given discharge. Table 6, which provides a breakdown of the different types of flow measurement stations in the United Kingdom, testifies to the success of the Crump profile weir. Whilst measuring structures predominate – this is especially true of England and Wales – it should be noted that the distinction between station categories can, in reality, be rather artificial. Many Flat V weirs, for instance, are effectively river sections (calibrated by current meter) above the lowest flow range; in any case, all types rely on the velocity-area principle. Work on refining the calibration of standard weirs continued in the 1960s and 1970s, mostly government funded and much of it undertaken at the then Hydraulics Research Station; many of the results were subsequently consolidated into a fund of practical guidelines which form the basis of a number of British and International Standards.

By the late 1960s runoff from approximately two-thirds of Britain was gauged, directly, at least once. However, the arrangements for flow measurement remained unsatisfactory in a number of areas; a stable stage-discharge relation cannot be expected where, for example, confluences with other streams, tidal influences, sluice gates and other features such as weedgrowth, limit the range of effectiveness of the station control. The effect of these disturbances tends to be especially severe on rivers with a very shallow bed gradient. A number of novel attempts were made to utilise water surface slope to help determine discharge (see Plate 2) but most encountered formidable practical difficulties – most critically the inability to detect (at that time) very small differences in water level over the measuring reach[13]. Such problems served to stimulate research interest in new flow measurement techniques. Ultrasound appeared to offer considerable promise; by timing acoustic pulses traversing a river section along an oblique path, in both directions, a measure of the mean velocity can be obtained from the differences in the timings of the pulses – flow may then be computed from a knowledge of the cross-sectional area corresponding to a given depth[14]. Much important development work was completed in Britain and a prototype ultrasonic station was installed on the Thames, at Sutton Courtenay, in 1973[15]. Further

TABLE 6 TYPES OF GAUGING STATION IN THE UK

Station Type	Number
Velocity-area	416
Flume	77
Flume/Velocity area	4
Broad-crested weir	24
Compound Broad-crested weir	36
Broad-crested weir/Velocity-area	16
Crump Weir	149
Compound Crump Weir	97
Flat Vee weir	112
Flat Vee weir/Velocity-area	45
Essex Weir	23
Thin-plate weir	56
Thin-plate weir/Velocity-area	5
Ultrasonic	16*
Electromagnetic	5*
Miscellaneous	110
Total	1191

* A significantly larger number of ultrasonic and electromagnetic gauging stations have been, or are being, installed and await final calibration and commissioning.

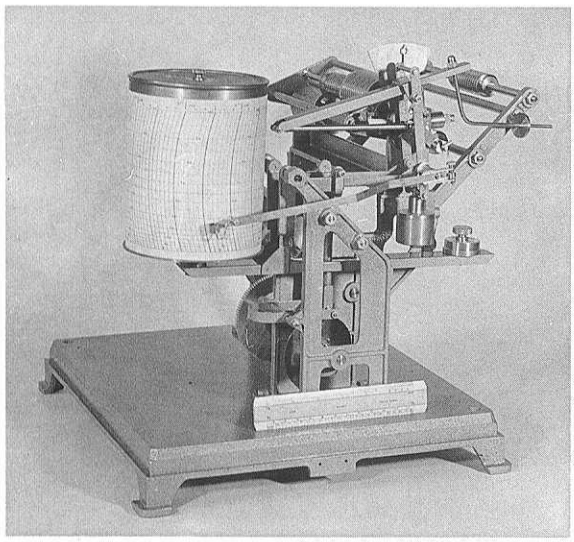

Plate 2. Gradometric Recorder—designed by Thames Conservancy to record flow rate based upon the water surface slope as measured between two stilling wells in the same reach.

research, building on field experience, led to the introduction of more sophisticated, and reliable, multi-path systems backed up by considerable on-site computing capabilities. Following the successful deployment of an early ultrasonic system relying on a single pair of transducers[16], a milestone was passed in 1985 when a multi-path system was commissioned at Kingston on Thames to continue the 100 year flow record derived, until 1975, from the complex barrage of weirs and sluices just downstream at Teddington[17].

The limited range of levels in regulated rivers like the Thames is well suited to the ultrasonic technique but by the late 1970s versatile systems were being deployed on rivers with substantially greater water level variation. Plate 3 illustrates a modern ultrasonic gauging station which incorporates 16 pairs of transducers with an on-site microcomputer to determine mean velocity; a complicating factor at this site is the skewed flow pattern which necessitated the installation of two sets of transducers on each bank in order to make allowance for the non-uniform flow.

A feature of many modern installations is the attention paid, at the design stage, to ensuring – as far as is practicable – a sensibly continuous flow record; access and site facilities are normally excellent with the tranducers and instrumentation amply protected against accidental or deliberate damage; some duplication is also common to provide a measure of security against instrument malfunction. Several modern stations, provide for pairs of transducers to measure velocities beyond bankfull; the magnitude of floodplain discharge rates is often the least convincingly assessed component in the overall flow.

More than 30 ultrasonic stations are currently in operation; the technique has proved particularly successful in rivers subject to intermittent reverse flow (for instance in tidal reaches). However it is not a suitable method for channels affected by heavy weedgrowth or significant bed instability; steep temperature gradients or high concentrations of suspended solids can also degrade performance by refracting, or attenuating, the ultrasound beam albeit for a limited period. Under such circumstances – and where the need for flow data can justify the expense – an electromagnetic gauging station is often a viable alternative. The electromagnetic technique is only an innovation in relation to river applications. The method was first suggested by Michael Faraday[18] and early estimates of the flow through the Straits of Dover relied on the same basic principle – that an emf will be induced in flowing water as it cuts a magnetic field. For hydrometric applications a vertical magnetic field is created by a coil buried in the bed of the river or installed above the measuring section (Plate 4). Considerable refinement – mostly relating to the need to distinguish the very small induced voltage from a background emf – was necessary before a practical river flow measurement technique evolved. A small experimental installation[19] at Princes Marsh on the Rother provided much valuable design information and, over the last decade, a number of primary electromagnetic stations have been installed. Early field experience was a little mixed with a few sites operating unsatisfactorily under very low discharge conditions (when only

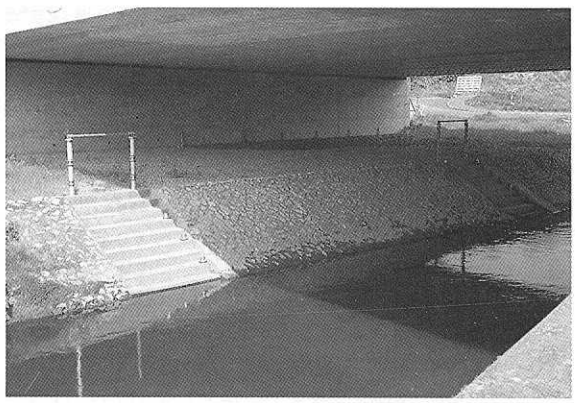

Plate 3. Ultrasonic gauging station on the River Trent at Darleston (Severn–Trent Water). The transducers mounted on the steps are used to access velocity in the channel; those mounted on the gantry help provide a measure of overbank velocity (the ultrasound flightpath extends to a corresponding set of transduces on the bridge abutment).
Note: Following a major flood in 1987 this station is being recommissioned with a different configuration of transduces. Out-of-bank velocities will be measured using a single-path ultrasonic system—the flightpath extending across the full width between the bridge abutments.

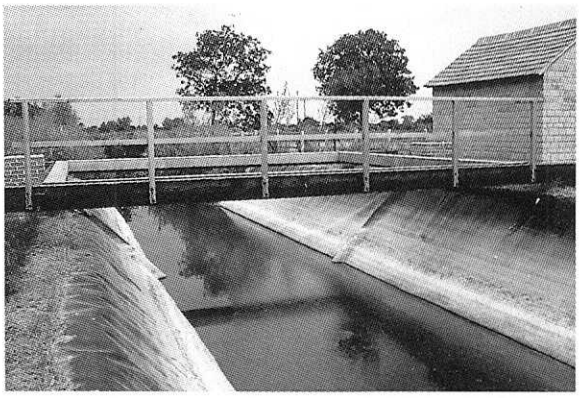

Plate 4. Electromagnetic gauging station on the Swill Brook (Thames Water) showing the overhead coil and bed insulation.

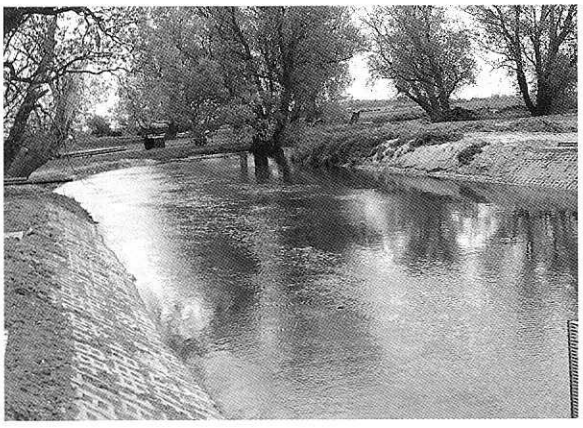

Plate 5. Electromagnetic gauging station on the West Beck (Yorkshire Water) installed with the coil in the bed of the channel; the insulating material is held in place by a concrete-lattice revetment through which vegetation will re-colonise the river banks.

minute voltages are generated). The cost and power consumption have tended, also, to limit the method's application to rivers where other techniques are inappropriate. Nonetheless, the aesthetic advantages of a system which, like the ultrasonic method, can be designed to have very little visual impact (see Plate 5) may well stimulate its wider use especially where the need for bed insulation becomes unnecessary as ever more discriminating means of signal detection are developed.

Stage Sensing

Stage is the elevation of the water surface with respect to the established datum – typically the level of zero flow or the crest of a measuring structure. It is the most fundamental measurement in hydrometry and, in the UK, the uncertainty in the stage measurement largely determines the accuracy of the derived discharge data.

Until the nineteenth century, water level measurement normally involved the direct reading of levels marked on a graduated scale in, or beside, the river. Such measuring devices are considered the oldest hydrometric instruments – records of flood levels on the Nile date back about 5000 years[20]. The sensing mechanism is, of course, the human eye and the use of graduated scales in the form of gauge-boards continues to play a dominant role in hydrometry in many parts of the world. At all but secondary gauging stations in the UK, however, the sensing of stage had, by the 1950s, become entrusted to float-based systems. Normally the float is housed in a stilling well (or tube), to allow the water level to be sensed and recorded by one of a variety of methods undisturbed by surface oscillations or wind effects. Float-activated water level sensing is a simple and reliable technique which has found wide application where stilling well construction is practicable and its cost justifiable; it remains by far the most widely used sensing method in the UK. At a very small number of primary gauging stations – more commonly where only short-term surveillance is involved – water level sensing exploits the relation between water depth and hydrostatic pressure. Pneumatic sensing devices (or 'bubble' gauges) in which a continuous stream of bubbles are emitted through an orifice are normally installed in the river itself; the gas pressure in the tube leading to the orifice is dependent on the water depth. Rather more popular are pressure transducers which allow water levels to be monitored by a semiconductor sensing element which measures the hydrostatic pressure of the water column over a diaphragm transducer and transforms it into an electrical signal. Before the introduction of the ultrasonic gauging method, acoustic level gauges were rarely used for routine hydrometric monitoring. However, at a number of modern installations ultrasound transducers are deployed both to measure water velocity and to determine water depth – the pulse of ultrasound normally being reflected from the water surface allowing the water depth to be determined from the travel time to and from the transducer[21].

Recording

Water level recording technology evolved at a relatively gentle pace until a decade or so ago. Principally this reflects the reliable performance of the instruments which gradually superseded the original manual recording of water levels. The float-driven chart (or analogue) recorder was introduced in the middle of the nineteenth century and, with a number of important refinements, continues to dominate stage recording on a world-wide basis. Over 1200 – of various designs – are still used within the UK. The instrument is essentially simple in principle and in construction; a pen being driven by the angular movement of a pulley which responds to the rise and fall of the float in the stilling well below. Some early recorders were designed with a built-in calibration to allow flows to be registered directly.

By providing a visual record, in trace form, of water levels over a chosen period, typically a week or a month, important information concerning the flow pattern may readily be identified[22]. However, the analogue trace requires the extraction of individual stage values to facilitate the derivation of flows. This digitising phase provides the opportunity to filter out erroneous or unrepresentative levels but it is a labour intensive exercise and can be the source of significant error when untrained personnel are employed.

The introduction of more sophisticated digitising systems – often incorporating a graphical presentation of the abstracted level values – now provide a versatile means of extracting hydrometric data but the perceived need both for greater inherent accuracy and a greater measure of computer capability led to the introduction of the punched tape recorder (PTR); a major technological innovation at the time. The Surface Water Survey and, later, the Water Resources Board encouraged the deployment of the 16-channel punched tape recorder pioneered by the United States Geological Survey. For a time a five channel instrument also found favour in some parts of the UK. Properly installed such recorders are capable of registering water levels to an accuracy of better than ± 5 mm[23]. By 1975 over 800 punched tape recorders had been installed. Such devices are robust, well understood and trusted. As a consequence most measuring authorities, eventually, adopted PTRs as the primary measuring instrument with a suitable analogue device to provide a back-up in case of punched tape recorder malfunction. Although water levels were recorded in digital form, conventionally at 15 minute intervals, the punched paper tape is only nominally computer compatible; custom made 16-channel readers are required to facilitate computer processing.

After a relatively quiescent period a number of factors combined to place the existing data recording facilities under considerable stress. The requirement for accuracy and reliability levels beyond what was achievable using mechanical devices allied to an increasing need, by water management, for near real-time data served to stimulate the search for alternative recording methods. A further factor was the increasing age of the PTRs and the vulnerability of acquisition systems relying on a technology which had declined to a single manufacturer status.

Ten years ago solid state logging equipment began to be deployed for the recording of river level data in the field[21]. A number of design problems were encountered, particularly in relation to logger capacity and battery performance. In addition, attempts to harness electronic loggers to existing PTRs proved an unhappy marriage of somewhat incompatible technologies[21]. Float-driven potentiometer systems (changing water levels producing a varying electrical resistance) offered a greater compatibility but rather limited precision. A far more effective solution involved the use of optical shaft encoders – the incremental version relies on float movement to rotate a disc on which is engraved a pattern that alternatively transmits and obscures a beam from a light source; by accumulating the pulses a record of water level changes may be made.

In the absence of any national co-ordination, considerable experimentation took place over the period 1978–83 and a number of technical backwaters were explored before suitable recording options were identified. However, innovative enterprise and the pressure of user requirements resulted in logger technology rapidly passing through several generations. From costly, unreliable and relatively clumsy devices with limited storage capabilities evolved 'smart' or 'intelligent' field recording units capable of storing a range of variables, undertaking field processing and data validation and controlling, where appropriate, the transmission of data to processing centres. The associated need for suitable software to receive, archive and utilise the data, however, did not always evolve at the same pace so that, initially, the full potential of the new logging systems remained unrealised.

Transmission

Since hydrometric data were first collected, it has almost invariably been the case that the location, or locations, where the flow information was required was removed – often distantly – from the point at which water levels were sensed. The necessary data transmission involving muscle power or, later, the internal combustion engine, has always been an important feature, and often the weakest link, of any data acquisition system. Notwithstanding its inherent unreliability, the 'manual' form of data transmission served the water industry effectively until the growing operational need for data focused attention on the limitations of traditional data gathering procedures. The collection of water level charts or punched tapes in the 1970s was normally scheduled on a routine basis, typically weekly or monthly. It had the important incidental benefit of allowing for regular site inspections and, where necessary, the carrying out of station maintenance and instrument checks. For particular applications, especially those concerned with flood warning or alleviation, however, data accessibility needed to be (sensibly) immediate. This real-time requirement led directly to the introduction of a variety of telemetry arrangements.

Any telemetry system may be regarded as consisting of essentially four elements: the sensor, an encoding device to convert the sensor output to a format suitable for transmission, a transmission system linking the sensor to a receiving station and a data reception and distribution facility[24]. In the United Kingdom, private or public telephone lines and radio links are used for transmission purposes. The dense, and generally reliable, telephone network encouraged the introduction of interrogable, or dial-

out, flood warning facilities at many gauging stations in the 1960s and 1970s. Radio-based systems were also deployed to give wide-area coverage. These developments often resulted in the creation of dual monitoring systems, one for operational purposes (where, commonly, no elaborate provision for the systematic storage of the data was considered appropriate), the other to service archiving needs. Whilst potential advantages of combining the two systems could be readily identified, the complete unification of different acquisition systems (with differing objectives and, often, separately staffed) raised a number of practical problems; in particular reconciling the archiving need for continuous good quality data with the less stringent but urgent operational demands proved difficult until recently.

The last five years has, however, seen new technology exploited successfully to allow single data acquisition systems to meet the full range of user needs. In some areas the current data acquisition instrumentation may be regarded as transitional as strategies for the deployment of unified systems are examined and refined.

Typically the modern system consists of a float-driven shaft encoder interfaced to a logging device linked by the PSTN (Public Switched Telephone Network) to a processing centre – see Plate 6. Provision may be made for immediate alarm conditions to be transmitted from the field but, under normal circumstances, 15 minute water levels are stored on site for cheap overnight transmission to microcomputers where the data await initial validation and conversion to flow. The first such systems were introduced in the early 1980s[25,26] and proved themselves both flexible and reliable. Following initial promise, further deployment was rapid. Between 1983 and 1984, for instance, Severn-Trent Water installed a large number of outstations replacing – among other instruments – all the existing PTRs and, now, well over 200 telemetered outstations comprise the principal method for the routine collection of hydrometric data[26]. A major stimulus towards the wider use of telemetry has been the potential for savings resulting from the reduced need to visit sites on a routine basis to collect chart, tapes or removable loggers. Conceptually, sophisticated loggers are able to help determine maintenance schedules by providing warnings relating to, say, battery performance, or unusual patterns of river levels which require investigation.

Not all gauging authorities are responsible for the same range of operational activities and, as a result, the incentive to introduce telemetry schemes may vary as between, for instance, Water Authorities and River Purification Boards. Even where the responsibilities of measuring authorities are identical, very clear contrasts in the rate of deployment of new data acquisition technology have been identified[27]. Nonetheless, over half the flow data submitted to the Surface Water Archive is now been derived from

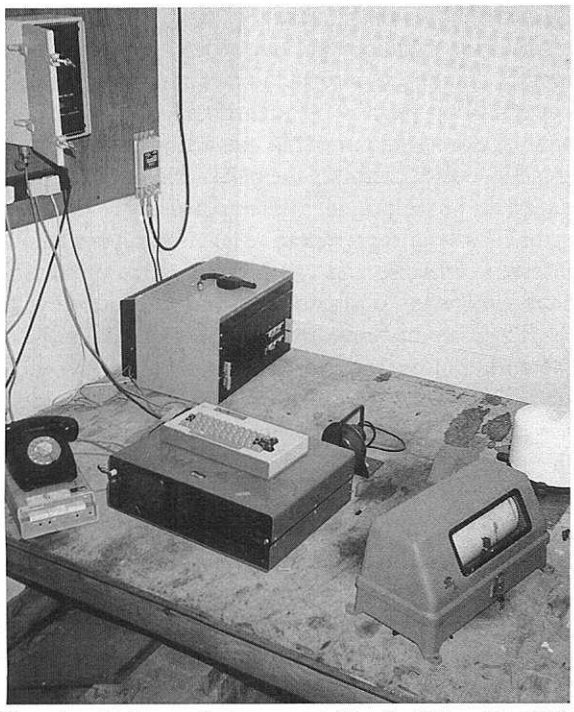

Plate 6. Hydrometric data acquisition facilities at the Spilmersford gauging station on the River Tyne (Forth R.P.B.). The shaft encoder is partially hidden behind an intelligent logger which provides forecasts as part of the Haddington Flood Alleviation Scheme. For the derivation of daily mean flows, 15 minute water levels are transmitted – in batches – to a processing centre in Edinburgh. The analogue recorder (right foreground) provides a back-up to the primary instrumentation.

telemetered water levels (compared with about five per cent, seven years ago) and the PSTN systems in particular are being rapidly extended to embrace most primary monitoring sites. The cost benefits have been clearly demonstrated and evaluated in a number of regions. Generally, PSTN systems have proved more suitable than terrestrial radio links which can be more vulnerable to meteorological conditions and may require unsightly masts to allow line-of-site communication. However, system designers need to keep under review the relative merits of each transmission option. The damage associated with the storms of October 1987 provided a timely reminder of the vulnerability of telephone-based systems. In parts of Kent telecommunication lines were interrupted for up to a week following the near-hurricane force winds on the night of the 15/16th – but river level data were still successfully telemetered from stations provided with a satellite transmission link. Two days later in South Wales, flood warning and flood alleviation procedures were severely hampered when floodwaters from the River Tywi incapacitated the Carmarthen telephone exchange for a critical period.

Data Processing

Most river flow measurement, and the bulk of the data processing, in the United Kingdom is carried

out by regional gauging authorities. Currently these comprise the ten Water Authorities in England and Wales, the seven River Purification Boards in Scotland (see page 192) and the Departments of the Environment and Agriculture which undertake a joint operation in Northern Ireland.

The principal data processing task is to reduce a mass of water level data - over three million data items per month - into discharge values, and to provide storage facilities for all the basic data. An important subsidiary activity involves the assembly, or computation, of other gauging station or catchment information which serve to increase the utility of the flow data. For instance, a catchment boundary needs to be delineated and the basin area established before values of runoff can be assessed. The efficiency with which a processing system handles both time series information (e.g. daily flows) and time invariate or feature information (gauging station type, drainage density, proportion of lake in the catchment etc) is a crucial influence on how successfully the archive can be exploited.

When computer-based hydrometric data processing was first introduced in the UK much of the routine conversion of water level to flow was undertaken at a national centre, the Water Resources Board. This made sense at a time when there was limited hydrological and computing expertise available in the measuring authorities (then the River Authorities in England and Wales). The ensuing two decades have witnessed a migration of processing capability to the regions and, in some areas, thence to local offices and eventually into the field itself[21]. This has brocken down, or circumvented, some of the traditional divisions in the acquisition of river flow data (see Figure 11).

From about 1975 considerable effort was devoted to developing flexible user-friendly processing systems but most were linked to mainframe computers and substantial user frustration resulted from the lack of priority afforded to the development and refinement of software required for hydrometric data processing. A positive development, however, was the rapid spread of microcomputer systems designed to undertake the initial processing and quality control of the river level data, allowing archiving and retrieval to remain a mainframe function. Conceptually this approach has a number of advantages; in particular the expertise of local staff with a sound knowledge of river behaviour can be capitalised on to ensure effective validation of the data at source whereas the data handling and analytical capability of the mainframe has until recently made it the preferred choice for data retrieval and analysis. The advent of cheap, powerful microcomputers encouraged many regional and local initiatives. In a negative sense such initiatives were also born out of the lack of any effective co-ordination and standardisation of processing methods and procedures; in any case off-the-shelf systems were unavailable until recently.

A particular complication for the system designer is the number of different data streams with which any comprehensive system has to contend. The revolution in instrumentation and data transmission facilities has not been an overnight phenomenon; the old technology is yielding in a more or less graceful manner, to the new. Consequently, for extended periods, both traditional and innovative acquisition systems are likely to co-exist and provision has to be made to cater for a diverse set of inputs. In 1987, for instance, the Thames Water system was required to handle data from analogue charts, 16-channel punched tape recorders, PSTN and radio telemetered data (every 15 minutes) and from two different solid state logging systems. At many of the gauging stations the downstream water level and/or crest level is monitored as well as the upstream level to facilitate the conversion to discharge. Additionally, input facilities were required for ultrasonic and electromagnetic stations where flows are directly computed on site. Clearly a flexible data processing system was needed and Thames Water adopted a modular approach to system design. Each individual data stream is treated separately and the data transferred into temporary data files which have a common format. From this stage all data are treated in a common fashion. Consequently if a new type of data input (perhaps to capitalise on satellite telemetry) is required, all that is needed is a new input module[28].

Depending on the scope of the archiving system, a range of additional environmental data may be stored alongside the basic flow data. Provision may be made to store both level and flow data together with short time-interval and catchment average rainfall totals. Of particular importance in relation to some strategically important rivers is the need to allow for the impact of man's activities on the natural flow regime. The heavy, and widespread utilisation of water in the UK, combined with the modest flows typical of most rivers, results in artificial influences having a major impact on the flow regime. In 1986, for instance, water abstracted to meet London's water supply needs reduced the flows measured at the Kingston gauging station by over 20 cumecs on average (equivalent to the mean August discharge); this represents a ten-fold increase over the net abstraction at the beginning of the flow record in 1883. Planning and policy development relating to the exploitation of water may be distorted if account is not taken of the quantifiable variations in flow patterns due to artificial disturbance of the flow regime. Equally, unless determined attempts are made to appraise and categorise the hydrometric characteristics of each gauging station - especially their performance in the low flow and flood ranges - inappropriate or misleading deductions may be drawn from the raw flow data.

Data Quality Control

The UK gauging station network represents a public investment approaching 100 million pounds and considerable resources are devoted to the collection and archiving of hydrological and hydrometric data. A proportion of these resources should be used to ensure that the data are of a quality commensurate with the needs of water management and other data users. The presence of large volumes of erroneous data can easily undermine the confidence of both data suppliers and users in any archiving enterprise.

A hydrometric data archive, as with most databases, depends for its success on the ready availability of sensibly continuous data sets of known accuracy. Network design, instrument performance, staff education, training and motivation all play a part in determining the quality of the archived data. A further significant factor is the priority afforded by management to hydrometric activities. The statutory framework within which flow measurement in the UK is organised is of an enabling nature; no direct obligation to gauge rivers exists beyond that necessarily arising out of the operational responsibilities of the water undertakings*. During periods of economic stringency there are inevitably pressures on measuring authorities to reduce monitoring effort and to critically review the functioning of their gauging station networks[20]. Recently such reviews have led to the closure of stations which - in a national perspective - contributed valuable data to the UK hydrological database. A relaxation in standards is evident at other sites. This may, for instance, take the form of a sharp decline in flood gauging at stations perceived, locally, to exist principally to provide flow information relating only to resource management or pollution control.

The non-hydrological aspects of data quality control are of particular importance during a period when hydrometric data acquisition is in a state of flux with major developments in the instrumentation and data communication fields having a substantial impact on the way river flow data are handled and processed. As with much technological progress, dangers can attend the rapid introduction of new systems into a discipline used to a rather pedestrian pace of change. The ability to sense, record, transmit and process flow data untouched by human hand and, more crucially, unseen by human eye may not represent an unmitigated blessing. The contribution to data quality control made by experienced personnel engaged upon laborious manual data examination and processing has not been easy to fully codify and effectively mimic in computer software form.

It will be clear from the above that the quality control of hydrometric data involves a wide range of activities. If hydrometric data acquisition is considered as a production line, it is useful to recognise four reasonably distinct areas where quality control procedures may be applied to good effect[10].

i. Hydrometric field practice and the recording of water level

Virtually every part of a river flow archiving system depends for its input, either directly or indirectly, on the original measurement process. Errors in depth assessments may be a consequence of poorly set-up, or poorly maintained, instruments or the use of sensing and recording devices inappropriate for the precise measurement of water level. In addition, inadequate site maintenance may result in water levels, however accurately recorded, being unsuitable for direct conversion into river flow. For instance, a weir may have algal or plant growth along the crest which raises upstream water levels - stage increases exceeding a centimetre are not uncommon - whilst the water level recorder faithfully monitors the river level relative to the crest itself.

A continuing commitment to good practice in the field is the only way to ensure that precise and representative river level data are recorded.

ii. The checking of river stage data

Many hydrometric data processing systems in the United Kingdom now incorporate a facility for the automatic checking of water level data. Early systems provided for the examination of water level sequences to ensure that none fell outside a prescribed range. A refinement of this approach involved checking that the difference between consecutive readings remained below a selected threshold. By choosing a threshold value appropriate to the individual gauging stations, this simple method was able to identify most erroneous data sequences other than those which are essentially systematic in nature. Graphical plots of river level hydrographs are now favoured - often being presented for visual scrutiny immediately prior to the conversion of depth to flow; the need to do this explains the continued popularity of chart recorders in some areas. Powerful editing facilities, including the ability to add, subtract or apply a gradually changing adjustment (for instance, to counter the effect of seasonal weedgrowth) are necessary to allow rectification of the many possible sources of anomalous stage values. More sophisticated techniques are available; most capitalise on the high serial correlation normally found in time series of river stage values but their use has generally been restricted to research applications.

The existence of impressive computer software, alone, does little to guarantee the quality of stage

* The obligations to be placed upon the National Rivers Authority (see page 192) in relation to hydrometric data collection are currently under consideration.

data. Error recognition is a computer assisted – not computer controlled – procedure and the integrity of the final data will reflect the expertise, enthusiasm and commitment of the operator together with priority afforded by management to data validation activities.

iii. The stage-discharge relation

After the measurement of stage, the precision of the stage-discharge relation is the most important influence in determining the quality of river flow data. Both the procedures used to derive a calibration and the form in which it is expressed may limit the accuracy of the computed discharges. A knowledge of the physical characteristics and behaviour of the river concerned together with an appreciation of the hydraulic and statistical principles underlying the calibration exercise is necessary to achieve the most productive interaction with computer based rating programs. A failure to detect significant shifts in the stage-discharge relation may seriously threaten the accuracy of a river flow time series. Such a failure is most likely to result from a decline in local current metering programmes and, inevitably reduces the confidence that can be placed in computed flows. To facilitate reprocessing of stage data when rating changes have been detected, and to permit data users to appreciate how historical flow computations have been effected, it is essential that a register of calibrations be maintained preferably within the computer system.

Artificial controls are not subject to the same degree of scour and fill under high flow conditions which commonly alter stage-discharge relations at velocity-area stations. However, the cross-section of the approach channel may be altered by accretion. Sediment build up in this area will result in increased approach velocities to the structure (the opposite is true in the case of scour). Unless allowed for in the calibration, a systematic error in flow computation will result. An examination of Figure 15 reveals that errors in the computed discharges can be large; however, effective monitoring of the accretion and its removal when a suitable threshold is exceeded can ensure that the weir performance is not seriously degraded.

A less tractable problem concerns the computation of flows in the non-modular range. Drowning may result from a number of causes including weedgrowth or poor channel maintenance downstream. In theory, data from an additional recorder – monitoring the head above the crest or downstream of the structure – should enable a suitable flow reduction factor to be chosen. In practice, it has proved difficult to determine the reduction factor with any certainty and flows are consistently overestimated using the modular flow calibration. This problem is known to affect over 150 gauging stations in the UK and may be considered typical of those which can introduce bias into computed flows. Random uncertainties in stage measurements tend to be of much less significance – with 96 readings normally contributing to the daily mean flow, the residual random error will, in general, be very modest.

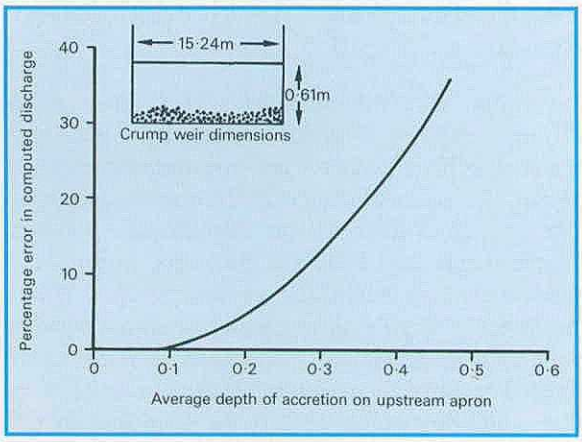

Figure 15. The impact of weir accretion on the accuracy of computed discharges.

iv. The validation and flagging of archived flow data

Hydrological data, along with most categories of environmental data, may be most effectively validated in one, or a combination, of three modes:

a. Temporally: fluctuations in a time series may be examined to ascertain whether they could reasonably be expected in a natural situation given the characteristic behaviour evident from the entire period of record.

b. Spatially: data from adjacent, or analogous, catchments may be examined to check whether they behave sympathetically, within an appropriate tolerance range.

c. By comparison with other related variables. In the case of river flow this is normally rainfall.

Any comprehensive quality control system should attempt to provide for the routine screening of all submitted data to identify obviously erroneous figures. It has been widely recognised that a measure of hydrological validation, involving inter-station comparisons, should form an essential component of any such system[31]. However, a number of data validation systems have met with limited success in the past primarily because they have been too ambitious. A common failing has been the continuing detection of trivial errors which then occupy precious staff time during the error rectification phase. No system will ever identify all possible errors; what is required is a practical, efficient set of procedures

designed to minimise the volume of significant errors on the river flow archive. In the more sophisticated systems, data flagging options may complement the validation procedures in order to better assess the suitability of particular data sets for given applications.

The Surface Water Archive Validation System

River flow data will often have been subjected to differing degrees of initial validation in local and regional offices before they are transferred to a regional or national centre. Additionally the validation applied is likely to vary significantly between contemporary and historical data sets. Such is the case with data submitted to the Surface Water Archive. To handle all categories of data a suite of validation programs and procedures has been developed. The Institute of Hydrology's validation procedures aim to complement those employed in the regions and to provide a systematic check prior to entry onto the national archive. Upon receipt, data are compared with any already held for the same period – it is normal practice for some authorities to forward magnetic tapes containing their entire archive at suitable intervals. Where this comparison reveals differences exceeding a threshold percentage, the new data are automatically queried and the source of the difference investigated prior to archiving. This serves to prevent the overwriting of valid data by corrupted, or inappropriate, data sequences. Although not strictly a component in a validation system, painstaking quality control arrangements may be wasted if attention is not paid to the data security aspects of archive management – it is too easily forgotten that a hydrological database is an irreplaceable resource with a value far outweighing that of the computer system that houses it.

Following security and reference information checks to determine the status of the submitted data the initial quality control phase involves a comparison between the incoming data and a selection of statistical parameters derived from the the historical record for individual gauging stations. Each flow value which falls outside one, or more, of the reference ranges is automatically flagged for subsequent investigation[12]. To avoid querying an unreasonably high proportion of valid daily flows – for instance when flooding occurs extensively – several filters are used to allow the reference limits to be overridden when, say, similar flow patterns are registered by more than 25 per cent of the gauging stations in a given area.

Many of the queries can be rapidly resolved by calling upon the expertise of regional representatives familiar with river behaviour supported by hydrometric and hydrological information collated in a series of complementary computer and manual files. Where further investigation is merited, several hydrographs – normally for the same river system – may be displayed simultaneously in order to better determine the cause of unusual data sequences. Visual checking of flow hydrographs is, perhaps, the most effective method of isolating sequences of dubious flows and is a valuable aid to correcting the queried data.

The considerable effort devoted to data validation by Surface Water Archive staff of the Institute of Hydrology at Wallingford is underpinned by the hydrometric and hydrological expertise – much of it acquired through field visits and regional office discussions – of the team of regional representatives which is responsible for liaison with the gauging authorities. Error rectification normally involves an initial inspection by the appropriate representative prior to the despatch of query forms to the measuring authorities for their comment and, where necessary, the provision of revised flow figures.

Data Dissemination

River flow data archiving is not an end in itself. The value of any archive is, perhaps, best reflected in the volume of usage and the breadth of its application. Data dissemination – to provide for the information needs of a wide spectrum of data users – may be achieved in various ways. In relation to the Surface Water Archive, data are made available through a comprehensive suite of retrieval options (see page 137) and through the Hydrological data UK series of publications.

Effective dissemination facilities allow the data user to concentrate on analysis and interpretation; this requires not simply a sophisticated retrieval system but, also, ready access to specialised advice and guidance regarding the availability, and suitability, of particular data sets for given applications. Without such guidance, the potential of the basic data may go unrealised or, even worse, result in misleading deductions being drawn. Assessments of drought severity, for instance, may be severely jeopardised if the uncertainties associated with low flow measurement at individual gauging stations are not considered and if allowance is not made for the net effect of upstream abstractions and discharges.

A continuing dialogue with the user community is essential to ensure that means of access, and forms of presentation, remain relevant and appropriate to user requirements which may change substantially with time; there is, for instance, a far greater need to address the problem of water quantity and quality interactions than was recognised a decade ago. Equally, continuing development of the national hydrological database is the necessary cornerstone of any attempt to measure the impact of climatic change on water resources and, thence, to assess the implications for water management.

Conclusion

The two decades since the initial computerisation of the national river flow archive have witnessed, perhaps, as much change in methods of hydrometric data acquisition and handling as in the previous two thousand years. The coming twenty years is likely to witness a revolution in the way hydrological data are handled, presented and analysed with particular emphasis placed on the co-ordinated exploitation of a broad range of environmental data. Digital cartography and geographical information systems offer exceptional potential and the growth of microcomputer based analytical packages will greatly increase the power of water managers, and others, to marshall and utilise a formidable amount of environmental data. Faced with such a beguiling prospect it is necessary to remind ourselves that, ultimately, the benefits will only be fully realised if attention is not diverted from the humbler virtues upon which hydrometric monitoring is grounded: accurate field measurements, station maintenance and instrument performance, careful derivation and monitoring of stage discharge relations, and due emphasis on data quality control. Equally it is only by recognising that river flow data have a great intrinsic, and enduring, value with a potential for application extending far beyond the operational requirements of individual collecting agencies[1] that the costs, and the benefits, of data acquisition and archiving can be considered in an appropriate perspective.

Acknowledgement

A review of this type would not have been possible without the help and advice of many individuals engaged upon the collection and archiving of hydrometric data. A source of particularly valuable information was a questionnaire circulated by the Institute of Hydrology to the measuring authorities in connection with the development of a British Standard for hydrometric data management.

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Computation and Accuracy of Gauged Flows

Gauged flows are generally calculated by the conversion of the record of stage, or water level, using a stage-discharge relation, often referred to as the rating or calibration. Stage is measured and recorded against time by instruments usually actuated by a float in a stilling well. The instrument records the level either continuously by pen and chart, or digitally on punched-tape or solid-state logger, generally at regular (normally 15 minute) intervals. These stage data are normally collected routinely, typically at weekly or monthly intervals, and taken to a regional centre for processing. At an increasing number of gauging stations provision is made for the routine transmission of river levels directly to the processing centre, by telephone line or, less commonly, by radio; on occasions, satellites have been used to receive and re-transmit the radio signal. The rapid growth in the use of the public telephone network for the transmission of river level – and, occasionally, river flow – data is enabling hydrometric data acquisition to proceed on a near real-time basis in many areas. Typically, the data are stored on site, using a solid state-logger, and transmitted overnight for initial processing the following day. Often, both digital and analogue recording devices are deployed at gauging stations to provide a measure of security against loss of record caused by instrument malfunction.

The stage-discharge relation is obtained either by installing a gauging structure, usually a weir or flume with known hydraulic characteristics, or by measuring the stream velocity and cross-sectional area at points throughout the range of flow at a site characterised by its ability to maintain the relationship.

The accuracy of the processed gauged flows therefore depends upon several factors:

i. accuracy and reliability in measuring and recording water levels,
ii. accuracy and reliability of the derived stage-discharge relation, and
iii. concurrency of revised ratings and the stage record with respect to changes in the station control.

Flow data from ultrasonic gauging stations are computed on-site where the times are measured for acoustic pulses to traverse a river section along an oblique path in both directions. The mean river velocity is related to the difference in the two timings and the flow is then assessed using the river's cross-sectional area. Accurate computed flows can be expected for stable river sections and within a range in stage that permits good estimates of mean channel velocity to be derived from a velocity traverse set at a single depth, or at a series of fixed depths.

Flow data from electromagnetic gauging stations may also be computed on-site. The technique requires the measurement of the voltage (electromotive force – emf) induced in flowing water as it cuts a vertical magnetic field generated by means of a large coil buried beneath the river bed, or constructed above it. This emf is sensed by electrodes at each side of the river and is directly proportional to the average velocity in the cross-section.

British and International Standards are followed as far as possible in the design, installation and operation of gauging stations. Most of these Standards include a section devoted to accuracy, which results in recommendations for reducing uncertainties in discharge measurements and for estimating the extent of the uncertainties which do arise.

The Surface Water Archive exists to provide not only a central database and retrieval service but also an extra level of hydrological validation. To further this aim, project staff at the Institute of Hydrology liaise with their counterparts in the water industry on a regional basis and, by visiting gauging stations and data processing centres, endeavour to maintain the necessary knowledge of local conditions and problems.

A more detailed review of current data acquisition practices in the UK is given in the article on pages 25 to 38.

Scope of the Flow Data Tabulations

River flow data are presented in two parts. In the first, daily mean gauged flows are tabulated for 49 gauging stations; daily naturalised flows (see page 40) are also tabulated for the River Thames at Kingston. Monthly flow data for a further 160 gauging stations are given in the second part. The featured gauging stations have been selected to give a broad geographical coverage and to typify a wide range of catchment types found throughout the United Kingdom. A map (Figure 16) is provided on page 44 to assist in locating the gauging stations featured in this section.

For each gauging station, basic reference information is given together with comparative average and extreme river flow and rainfall figures based upon the archived record.

Explanatory notes precede the two sets of tables and will assist in the interpretation of particular items. The notes relating to the daily flow tables are given below; those relating to the monthly data are given on page 96.

Part (i) – the daily mean flow tabulations

Station Number

The gauging station number is a unique six-digit reference number which serves as the primary identifier of the station record on the Surface Water Archive. The first digit is a regional identifier being 0 for mainland Britain, 1 for the islands around Britain and 2 for Northern Ireland. This is followed by the hydrometric area number given in the second and third digits. Hydrometric areas are either integral river catchments having one or more outlets to the sea or tidal estuary or, for convenience, they may include several contiguous river catchments having topographical similarity with separate tidal outlets. In Britain they are numbered from 1 to 97 in clockwise order around the coastline commencing in north-east Scotland: Ireland has a unified numbering system from 1 to 40, commencing with the River Foyle catchment and circulating clockwise; not all Irish hydrometric areas, however, have an outlet directly on the coast.

The numbers and boundaries of the United Kingdom hydrometric areas are shown in the frontispiece.

The fourth, fifth and sixth digits comprise the number, usually allocated chronologically, of the gauging station within the hydrometric area.

Where the leading digit, or digits, are zero they may be omitted giving rise to apparent four or five-digit reference numbers.

Measuring Authority

An abbreviation referencing the organisation responsible for the operation of the gauging station. A list of measuring authority codes together with the corresponding names and addresses for all organisations currently contributing data to the Surface Water Archive appears on pages 192 and 193.

Grid Reference

The initial two-letter and two-figure codes each designate the relevant 100 kilometre National Grid square or Irish Grid square (distinguished by the italicised two-figure code); the standard six-figure map reference follows.

Note: The Irish Grid has only one prefix letter but it is common practice to precede it with the letter I to make the identification clear.

Catchment Area

The surface catchment area, in the horizontal plane, draining to the gauging station in square kilometres. There are a few gauging stations where, because of geological considerations, the groundwater catchment area differs appreciably from the surface water catchment area and, in consequence, the baseflow, whether augmented or diminished, may cause the runoff values to appear anomalous.

First Year

The year in which the station started producing daily mean flow data, usually the first year for which data are held on the Surface Water Archive. Earlier data, often of a sporadic nature or of poorer quality, may occasionally be available from the measuring authorities or other sources.

Level of Station

The level of the station is, generally, the level of the gauge zero in metres above Ordnance Datum, or above Malin Head Datum for stations in Northern Ireland. Although gauge zero is usually closely related to zero discharge, it is the practice in some areas for an arbitrary height, typically one metre, to be added to the level of the lowest crest of a measuring structure to avoid the possibility of false recording of negative values by some digital recorders.

Maximum Altitude

The level to the nearest metre of the highest point in the catchment area.

Table of daily mean gauged (or naturalised) discharges

The mean flow in cubic metres per second (abbreviated to $m^3 s^{-1}$ and sometimes also referred to as 'cumecs') in a water-day, normally 0900 am to 0900 am. The naturalised discharge is the gauged discharge adjusted to take account of net abstractions and discharges upstream of the gauging station.

Peak Flow: The highest flow in cubic metres per second for each month. The day of peak generally refers to the water-day but the calendar day is also used, particularly in Scotland. Normally the peak flow corresponds to the highest fifteen-minute flow where water levels are recorded digitally, or the highest instantaneous flow associated with maximum stage where analogue recorders are used.

Runoff: The notional depth of water in millimetres over the catchment equivalent to the mean flow for the month as measured at the gauging station. It is computed using the relationship:

$$\text{Runoff in mm} = \frac{\text{Average Flow in Cumecs} \times 86.4 \times n}{\text{Catchment Area (km}^2\text{)}}$$

where n is the number of days in the month. The runoff total is rounded to the nearest millimetre.

Runoff is computed on the basis of naturalised flows (see 'Factors affecting the flow regime') for the minority of catchments where daily, or monthly, naturalised flows are available.

Rainfall: The rainfall over the catchment in millimetres for each month. Each areal rainfall total is derived from a one kilometre square grid of rainfall values generated from all available daily and monthly rainfall data - these data are provided by the Meteorological Office. Validation procedures allow for the rejection of obviously erroneous raingauge observations prior to the gridding exercise. A computer program then calculates catchment rainfall by averaging the values at the grid points lying within the digitised boundary of the catchment.

Statistics of monthly data for previous record

Only complete monthly records are used in the derivation of the average, low and high values of river flow, runoff and rainfall. The rainfall and runoff statistics are normally directly comparable but full equivalence will not obtain where the pattern of missing data differs between the archived rainfall and runoff data sets.

Where applicable, a guide to the amount of missing data is given following the section heading.

Summary statistics

Current year flow statistics are tabulated alongside the corresponding values for the previous record. Where appropriate, the current year figures are expressed as a percentage of the preceding average.

Mean Flow: The mean flow for the record preceding 1986 is the average - weighted to account for the different number of days per month - of the mean monthly flows.

Lowest Daily Mean: The value and date of occurrence of the lowest mean flow in cubic metres per second in a water-day during the term indicated. In a record in which the value recurs, the date is that of the last occasion.

It should be emphasised that river flow measurement tends to become more imprecise at very low discharges. Very low velocities, heavy weed growth and the insensitivity of stage-discharge relations combine with the difficulty of accurately measuring limited water depths to reduce the accuracy of computed flows.

The reliability of both the lowest daily mean flow and the 95 percentile flows (see below) as representative measures of low flow must be considered carefully and the values used with caution in view of the increasing proportional variability between the natural flow and the artificial influences, such as abstractions, discharges, and storage changes as the river flow diminishes.

Peak: The peak flow in cubic metres per second during the term indicated. The date of occurrence, normally the water-day, is also indicated. Generally, the peak flows are derived from the record of monthly instantaneous maximum flows stored on the Surface Water Archive. As a result of particular flow measurement difficulties in the flood range, this peak flow series is often incomplete. Consequently, in some cases, the peak flow from the previous period of record has been abstracted from Volume IV of the Flood Studies Report[1]. Reference to this report should be made to check for historical flood events which may exceed the peak falling within the gauged flow record.

10 Percentile: The flow in cubic metres per second which was equalled or exceeded for 10 per cent of the specified term - a high flow parameter which, when compared with the mean may give a measure of the variability, or 'flashiness', of the flow regime. The 10 percentile is computed using daily flow data only for those years with ten days, or less, missing on the Surface Water Archive.

50 Percentile: The flow in cubic metres per second which was equalled or exceeded for 50 per cent of the specified term - the median value. The same conditions for completeness of the annual records apply as for the 10 percentile flow.

95 Percentile: The flow in cubic metres per second which was equalled or exceeded for 95 per cent of the specified term - a significant low flow parameter relevant in the assessment of river water quality consent conditions. The same conditions for completeness of the annual records apply as for the 10 percentile flow.

Factors affecting flow regime

An indication of the various types of abstractions from, and discharges to, the river operating within the catchment which alter the natural flow is given by a standard set of abbreviated descriptions. In Part (ii) - the monthly flow data - each description is shortened to a code letter. An explanation of the abbreviated descriptions and the code letters is given below. With the exception of the induced loss in surface flow resulting from underlying groundwater abstraction, these codes and descriptions refer to quantifiable variations and do not include the progressive, and difficult to measure, modifications in the regime related to land-use changes.

Except for a small set of gauging stations for which

[1] Flood Studies Report 1975. Natural Environment Research Council (5 vols.).

CODE	EXPLANATION	ABBREVIATED DESCRIPTION
N	Natural, i.e. there are no abstractions and discharges or the variation due to them is so limited that the gauged flow is within 10% of the natural flow at, or in excess of, the 95 percentile flow.	Natural within 10% at the 95 percentile flow.
	Storage or impounding reservoir. Natural river flows will be affected by water stored in a reservoir situated in, and supplied from, the catchment above the gauging station.	Reservoirs in catchment.
	Regulated river. Under certain flow conditions the river will be augmented from surface water and/or groundwater storage upstream of the gauging station.	Augmentation from surface water and/or groundwater.
	Public water supplies. Natural river flows are reduced by the quantity abstracted from a reservoir or by a river intake if the water is conveyed outside the gauging station's catchment area.	Abstraction for public water supply.
	Groundwater abstraction. Natural river flow may be reduced or augmented by groundwater abstraction or recharge. This category includes catchments where mine-water discharges influence the flow regime.	Flows influenced by groundwater abstraction and/or recharge.
	Effluent return. Outflows from sewage treatment works will augment the river flow if the effluents originate from outside the catchment.	Augmentation from effluent returns.
	Industrial and agricultural abstractions. Direct industrial and agricultural abstractions from surface water and from groundwater may reduce the natural river flow.	Flow reduced by industrial and/or agricultural abstraction.
H	Hydro-electric power. The river flow is regulated to suit the need for power generation.	Regulation for HEP.

the net variation, i.e. the sum of abstractions and discharges, is assessed in order to derive the 'naturalised' flow from the gauged flow (see page 40), the record of individual abstractions, discharges and changes in storage as indicated in the code above is not held centrally.

Station and catchment description

A short commentary providing a guide to the characteristics of the station, its flow record and the catchment it commands; refer to page 196 for an explanatory listing of the abbreviations and acronyms used. The objectives of this summary information are to assist data users in the selection of gauging station records appropriate to their needs and to assist in the interpretation of flow variability at individual gauging stations particularly where the natural flow pattern is significantly disturbed by artificial influences.

The descriptive material will be updated and revised to reflect the availability of more information and in response both to changing hydrometric conditions at the measuring site and changing patterns of land use and water utilisation in the catchment.

A comprehensive set of gauging station and catchment descriptions is provided in the 'Hydrometric Register and Statistics 1981–5' (see page 195).

Comment

A summary of any important factors influencing the accuracy of the current year's flow data specifically; for instance, the reconstruction of a gauging station or the use of extrapolated stage-discharge relations during periods of very low or very high flows.

STATIONS FOR WHICH DAILY OR MONTHLY DATA ARE GIVEN IN THE RIVER FLOW SECTION

continued on p. 45

Figure 16. Gauging station location map.

A 'D' indicates that the featured station is in the daily flow section

008006 Spey at Boat o Brig 1986

Measuring authority: NERPB
First year: 1952
Grid reference: 38 (NJ) 318 518
Level stn. (m OD): 43 10
Catchment area (sq km): 2861.2
Max alt. (m OD): 1309

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	72 270	48 420	23.190	50.740	149 200	70 780	27 370	56 400	65 790	27.720	91 610	61 090
2	62 320	46.100	25.270	52 630	126 000	62 740	26 550	57 770	52.650	26.580	68 270	60 450
3	52 140	44.730	26 700	52.990	107 600	58 150	25 880	54 940	48 570	26 170	58 470	113 000
4	45 620	43.590	113 300	51 650	101 200	56.680	25 390	57 500	43 520	25 730	53 950	140 400
5	43 450	42.510	196 400	51 980	102 600	62 540	24 860	64 950	39.280	25 160	50 310	162 200
6	40 210	39 830	120 000	49 120	98.820	58 770	24.260	51.520	36 650	24 830	51 840	126 300
7	37 080	38.510	89.970	44 580	100 300	47 790	23 740	119 700	35 580	25.000	47 630	224 800
8	38 240	38 210	98.770	40 470	108 100	43 240	23 690	132 300	35 580	25.740	54 660	195.600
9	40 610	37 200	130 900	39 450	87 890	45 280	23.190	67 740	34 440	25 240	126.500	149 600
10	149 000	35.900	123.300	39 860	99 940	167 800	23 270	49 550	33.970	24.390	184 200	100 100
11	132.700	33.760	102.500	42.180	133 400	137.900	23.070	41 660	38 180	23 600	124 900	160 700
12	135 400	33.350	114 500	55.960	111 000	82 880	22 520	43 360	47 720	23.100	92.950	117 800
13	191.400	31.670	90.610	50 470	126 100	65 290	22 270	35 600	37 070	22.590	75 020	123 700
14	287 100	32 950	91 060	47 610	103 700	57 340	22 080	40 690	39 010	22 430	80 180	90 380
15	257.500	32 410	189.500	45 360	85 100	52 860	21 550	41 540	39 670	22 110	96.050	71 820
16	154.200	32.620	196 800	50 680	78 100	49 120	21 290	68 690	38 890	21 950	99 170	61 030
17	113 700	32.150	144 700	46 530	63 850	83.830	20 910	65 590	35 810	21 720	97 030	55 460
18	114.900	31.460	99 710	46 750	78 270	114 300	20 570	50 480	34 560	21.610	73.630	70 710
19	94 820	31 050	75 300	51.320	85 390	69.430	20.510	53 180	31 500	21 690	60 750	64 320
20	106 900	30 440	68 730	77 110	73 940	54 490	20 310	50 830	29.860	22.590	52 010	59 500
21	159.100	30 020	72.850	68 390	75 490	47.140	19 960	43 570	28 600	24.550	46 120	61 600
22	109 800	28.700	161 700	84 660	69.800	42 410	20 750	39 420	28 380	30 850	46 720	51 970
23	88.960	28 200	180.600	76 680	67 600	39 200	22.790	38.190	27 950	34 120	79 350	51 090
24	72.770	28.160	138.000	69 200	66 780	37.150	23 470	39.990	27 330	33 720	87 080	102.700
25	63 510	27 440	102.500	63 070	64 810	36 130	22 680	36 830	26 990	89.710	107.700	180 700
26	61 330	25 070	84.530	66.240	88 430	34 790	21 620	33 700	32.590	95 970	98 670	100 300
27	63 910	23.460	76 630	75 360	98 650	33 070	20 840	52 810	32.700	73 180	80 380	75 050
28	59 580	22 390	75 200	79 490	94 810	31 610	22 040	125 500	29 960	71 820	73 350	130 600
29	55 750		67.110	70 920	86 370	29 970	23 280	176 600	29 680	67.340	61.240	177 900
30	54 270		61.840	77 730	76 040	28 490	24 940	116 800	29 190	158 900	58 180	129.600
31	51 000		55.130		81 810		63 010	79 660		131 700		101 000
Average	97 080	33 940	103.100	57 310	93 260	60 040	24.150	64 080	36 220	41.670	79 260	108 800
Lowest	37 080	22 390	23 190	39 450	63 850	28 490	19 960	33 700	26 990	21 610	46 120	51 090
Highest	287 100	48 420	196.800	84 660	149 200	167 800	63 010	176 600	65 790	158 900	184.200	224 800
Peak flow	392 400	49 540	243 600	123.500	165 600	326 900	92.940	228 300	74 950	203 800	225 600	275 600
Day of peak	14	1	22	30	1	10	31	7	1	30	9	7
Monthly total (million cu m)	260 00	82.11	276.20	148.50	249.80	155 60	64 68	171 60	93 89	111 60	205 50	291 30
Runoff (mm)	91	29	97	52	87	54	23	60	33	39	72	102
Rainfall (mm)	185	36	101	67	110	70	66	130	40	99	120	190

Statistics of monthly data for previous record (Oct 1952 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	84 990	71 250	73 070	69 450	58 330	41 790	39 910	48 870	50.670	69.460	77 110	88 070
	Low	41 070	26 470	35 750	33 580	26 910	17 890	17 910	11 310	14 090	13 340	30 140	38 790
	(year)	1979	1963	1964	1974	1960	1961	1984	1955	1972	1972	1958	1976
	High	145 900	159.100	145 300	135.200	103 400	103 000	79 860	119 600	105 500	153 900	147 000	198 600
	(year)	1983	1962	1978	1979	1968	1966	1980	1956	1965	1981	1984	1954
Runoff:	Avg.	80	61	68	63	55	38	37	46	46	65	70	82
	Low	38	22	33	30	25	16	17	11	13	12	27	36
	High	137	135	136	122	97	93	75	112	96	144	133	186
Rainfall	Avg	107	70	80	64	77	74	87	98	98	125	112	114
	Low	38	26	29	19	24	30	20	19	21	30	12	11
	High	183	123	179	128	146	181	158	188	178	335	213	211

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	66 930		64 410		104
Lowest yearly mean			44 200	1972	
Highest yearly mean			82 810	1954	
Lowest monthly mean	24 150	Jul	11 310	Aug 1955	
Highest monthly mean	108.800	Dec	198 600	Dec 1954	
Lowest daily mean	19.960	21 Jul	9.311	16 Aug 1955	
Highest daily mean	287.100	14 Jan	1089 000	17 Aug 1970	
Peak	392 400	14 Jan	1675 000	17 Aug 1970	
10 %ile	126.800		120 600		105
50 %ile	54.530		49 680		110
95 %ile	22 270		19 180		116
Annual total (million cu m)	2111 00		2033 00		104
Annual runoff (mm)	738		710		104
Annual rainfall (mm)	1214		1106		110
[1941-70 rainfall average (mm)			1168]		

Factors affecting flow regime

- Regulation for HEP.

Station and catchment description

Lowest station currently operating on the Spey. Cableway rated 65m wide section with natural control, extreme floods bypass station on left bank. 380 sq km developed for hydro-power with diversions and storage. Mainly granites and Moinian metamorphics. Some Dalradian and a little Old Red Sandstone. Mountain (includes all northern slopes of Cairngorms), moorland, hill grazing and some arable. Forestry

012001 Dee at Woodend 1986

Measuring authority: NERPB
First year: 1929
Grid reference: 37 (NO) 635 956
Level stn (m OD): 70.50
Catchment area (sq km): 1370.0
Max alt (m OD): 1310

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	28.920	23.930	10.170	26.110	162.800	54.520	13.500	20.620	28.680	8.534	27.710	27.810
2	29.210	22.480	10.350	25.880	112.100	48.170	12.910	61.710	21.500	8.228	21.550	26.300
3	23.550	22.550	12.660	26.290	90.800	43.830	12.470	34.480	18.900	7.958	20.530	66.020
4	19.780	22.100	34.180	25.120	95.180	38.930	12.080	37.730	17.080	7.801	19.430	71.500
5	21.630	21.070	99.530	24.510	95.500	37.440	11.670	34.850	15.210	7.666	18.930	120.500
6	19.490	19.340	55.630	23.130	93.100	33.270	10.990	26.160	13.860	7.616	20.110	56.350
7	18.760	19.720	43.050	22.850	112.200	28.870	10.340	73.760	13.520	7.556	19.000	173.600
8	19.280	19.720	59.300	21.230	104.000	27.340	10.120	64.240	13.380	7.641	24.560	85.040
9	20.450	18.820	93.660	20.530	74.470	37.290	9.867	36.170	12.490	7.442	113.000	64.070
10	125.400	17.620	89.420	20.790	129.700	93.280	9.801	26.640	12.010	7.354	146.600	51.910
11	62.120	16.220	69.350	19.720	121.100	72.580	10.050	21.540	11.940	7.082	59.170	140.400
12	55.210	16.920	83.080	26.540	102.900	48.040	9.426	18.290	12.410	6.794	41.700	83.820
13	111.800	15.780	61.590	26.770	117.800	42.560	9.105	16.290	11.870	6.587	44.400	97.020
14	139.800	16.280	87.110	27.920	76.200	39.660	8.835	27.610	12.370	6.460	84.750	48.660
15	107.500	15.050	231.800	26.510	61.730	36.710	8.607	21.180	11.930	6.557	71.880	41.170
16	57.990	15.840	215.100	30.120	58.640	33.590	8.419	43.270	11.640	6.435	110.700	35.740
17	47.880	15.720	94.510	27.450	55.370	56.230	8.585	28.250	11.020	6.339	59.550	33.730
18	48.500	15.230	61.370	29.930	95.530	59.510	8.443	22.010	10.900	6.341	42.840	37.070
19	40.900	15.110	47.900	33.400	76.660	35.610	8.043	19.370	10.310	6.653	34.170	28.560
20	64.620	14.700	64.220	65.230	64.240	29.780	7.819	18.970	10.000	6.722	28.190	25.910
21	75.600	14.060	56.020	52.810	84.600	25.850	7.412	16.960	9.641	7.002	23.790	26.610
22	45.650	13.410	178.300	47.320	64.620	23.070	7.249	17.100	9.328	8.198	39.190	23.830
23	36.450	13.630	98.110	37.930	52.900	21.300	7.920	15.340	9.278	7.762	59.010	25.060
24	27.140	14.070	57.290	38.280	50.850	20.160	9.620	15.000	8.932	8.472	51.010	47.500
25	24.750	13.270	48.010	43.060	53.550	20.520	8.747	14.040	8.697	64.950	67.630	97.140
26	25.600	11.920	41.470	48.840	91.170	19.580	8.231	13.370	8.780	39.530	41.130	42.980
27	26.030	10.900	40.050	56.220	115.500	17.720	7.708	17.770	9.231	30.580	33.270	32.320
28	26.900	10.410	36.970	68.840	72.190	16.520	9.056	45.090	8.756	27.850	34.470	77.630
29	25.600		33.640	56.160	61.840	15.370	11.200	56.120	9.742	23.970	29.100	76.710
30	27.350		32.720	78.090	53.670	14.370	11.430	42.680	9.415	100.400	27.900	45.610
31	25.340		28.770		63.560		26.830	31.220		43.740		41.460
Average	46.100	16.640	70.170	35.920	85.950	36.390	10.210	30.250	12.430	16.330	47.180	59.740
Lowest	18.760	10.410	10.170	19.720	50.850	14.370	7.249	13.370	8.697	6.339	18.930	23.830
Highest	139.800	23.930	231.800	78.090	162.800	93.280	26.830	73.760	28.680	100.400	146.600	173.600
Peak flow	215.800	24.920	273.900	155.100	188.600	162.500	47.540	103.600	32.580	144.300	225.200	288.900
Day of peak	14	1	22	30	1	10	31	2	1	30	9	7
Monthly total (million cu m)	123.50	40.25	187.90	93.10	230.20	94.32	27.34	81.03	32.21	43.74	122.30	160.00
Runoff (mm)	90	29	137	68	168	69	20	59	24	32	89	117
Rainfall (mm)	186	57	96	88	135	68	49	128	24	80	126	194

Statistics of monthly data for previous record (Oct 1929 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	47.850	40.490	42.000	45.170	35.550	22.280	18.370	22.380	26.250	39.760	47.370	49.530
	Low	15.450	13.420	15.160	11.370	12.130	7.342	7.258	5.141	6.491	6.798	12.230	22.020
	(year)	1940	1947	1973	1938	1946	1940	1984	1984	1972	1972	1983	1976
	High	127.800	90.110	88.680	113.300	77.100	56.080	36.710	63.860	71.820	138.200	127.500	108.400
	(year)	1937	1945	1977	1947	1951	1948	1958	1948	1930	1982	1984	1954
Runoff:	Avg.	94	72	82	85	70	42	36	44	50	78	90	97
	Low	30	24	30	22	24	14	14	10	12	13	23	43
	High	250	159	173	214	151	106	72	125	136	270	241	212
Rainfall:	Avg	119	75	76	69	80	67	89	95	96	119	115	119
	Low	36	10	16	12	21	16	24	13	13	8	22	43
	High	374	148	175	196	179	160	206	185	227	310	320	282

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	39.190		36.400		108
Lowest yearly mean			24.190	1973	
Highest yearly mean			49.050	1982	
Lowest monthly mean	10.210	Jul	5.141	Aug 1984	
Highest monthly mean	85.950	May	138.200	Oct 1982	
Lowest daily mean	6.339	17 Oct	3.536	27 Aug 1976	
Highest daily mean	231.800	15 Mar	648.500	24 Jan 1937	
Peak	288.900	7 Dec	1133.000	24 Jan 1937	
10 %ile	88.750		72.620		122
50 %ile	27.070		25.530		106
95 %ile	7.651		8.396		91
Annual total (million cu m)	1236.00		1149.00		108
Annual runoff (mm)	902		838		108
Annual rainfall (mm)	1231		1119		110
[1941-70 rainfall average (mm)			1156]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Cableway rated, fairly stable natural control. Present station, built in 1972, replaced earlier station (flow records from 1929, chart records from 1934) on same reach (Cairnton; c/m measurements at Woodend) - established by Capt. McClean. Earlier staff gauge record dates from 1911. No regulation, little natural storage, minor abstractions. Dalradian and Moinian metamorphic along most of the valley, flanked by igneous intrusive. Mountain, moorland, forestry, pastoral and some arable in the valley bottom.

015006 Tay at Ballathie 1986

Measuring authority: TRPB
First year: 1952
Grid reference: 37 (NO) 147 367
Level stn. (m OD) 26 30
Catchment area (sq km): 4587 1
Max alt. (m OD) 1214

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	206.848	159.853	59.283	176 827	298 499	178 797	57 871	78 914	81 835	48 532	250 571	339 051
2	186 319	151.569	53 095	166.365	207 294	163 399	56 423	162 532	77 420	50 235	213 357	358 459
3	151 544	150.390	56.583	159 014	209 111	142 475	57 535	129 151	74 713	47 860	219 854	598 414
4	136 015	144 987	155 255	152 209	203.425	129 981	55 416	118.114	70.779	45 750	199 899	585 034
5	132 826	132.715	374 031	149 020	209.110	120 748	52 313	115 350	62.236	44.950	217.876	748 963
6	131 633	131.896	291 772	142 584	235 521	110 283	50 845	120 440	54 778	45 262	211.415	531.134
7	121.953	130.424	251.607	137 270	295.390	101.545	49 124	151.248	52 850	46 302	221.156	712 669
8	109 447	120.212	256.748	126 563	307 666	94 355	47 382	134 888	55 776	47.427	208.145	542.540
9	115 373	114.796	347.955	123.879	267.074	117 669	47 112	121 219	51 469	49 639	450 022	470 244
10	414 574	111 199	325 424	115 948	418.253	192 647	47.255	108.602	49.239	50 623	553.160	418 998
11	367.193	102 777	296.408	107.715	424.585	167 957	46 724	103 784	48 450	52 595	389.139	707 664
12	385 819	103 683	297 907	92 793	402 091	124 677	46 365	83 261	47 857	49 684	331 158	526 674
13	539 168	99 561	262.178	95 136	462.635	112 207	47 627	82 733	47 170	46 970	330.876	609 959
14	578 202	98.773	288 953	98 562	346 180	103 664	48 155	172 816	45 991	45 149	401 766	440 796
15	473 642	82 827	463 599	121 065	296 717	98 950	49 569	136 761	45 214	44 971	393.130	393 610
16	366.609	82.359	573 465	119.739	262 174	88.854	48 998	256 138	44 990	44 004	569 768	333 527
17	318.648	86.771	373 624	100 279	287 010	124 922	49.728	177.783	44.338	43.261	426.722	339.141
18	294.982	92.293	327.590	98.438	398 882	150 550	48 653	153 214	44 285	43 208	366.537	364.123
19	272 972	94 717	292 394	91 713	318.151	115.280	48 856	151.440	49 779	47 175	325.271	316 868
20	408.447	94.291	347.150	128 554	289 740	92 321	49 068	164 137	47 255	50 656	290 672	288.685
21	436.222	96.422	339.221	125 391	349 784	84 507	48.839	160.596	44.223	74 110	236 390	260 935
22	359 412	80.060	613 774	116.724	333.251	77 853	49 621	85 048	42 883	107 825	353 006	244 821
23	347.193	76 131	549 219	108 261	331 113	74 755	49 432	83.367	41.199	117 995	413.898	218 574
24	307 585	82.198	431 173	105.961	345 554	71 639	49 360	78 051	40 922	176 947	396 119	258 571
25	265 865	76 514	359.913	108 369	365.166	72 704	48 692	74 821	40 738	273 158	524 103	387 902
26	236 681	71 457	322 480	110 419	446 146	67 791	50 187	72 801	43 013	177 961	418.328	296 302
27	242.071	74.365	310.960	110 816	540 536	66 814	52 274	74 645	41 066	196 741	401 581	260 924
28	218 761	73.522	274 457	146 043	358 537	66 946	57 819	76 939	41 217	181.637	375.848	451.603
29	210 487		235 071	138 730	292 498	63 700	63 650	94.420	47 060	214.813	323.236	474.424
30	202 079		199 920	182 395	253 253	60 711	64 431	82 166	49 208	490 115	314 864	453 437
31	192.755		186.486		199 442		99 720	81.571		330 610		423 502
Average	281 700	104.200	307 000	125 200	321.100	108 000	52 870	118 900	50 930	106 000	344.300	430.900
Lowest	109 447	71.457	53 095	91 713	199 442	60 711	46 365	72.801	40 738	43 208	199.899	218 574
Highest	578.202	159.853	613.774	182.395	540.536	192.647	99 720	256 138	81 835	490 115	569.768	748 963
Peak flow	748.322	185 330	906 082	291 918	685 896	307 880	114 663	344 097	82 931	617 302	743.960	896 270
Day of peak	13	1	22	30	27	10	31	16	1	30	16	6
Monthly total (million cu m)	754 40	252.00	822 30	324.60	860 10	279.80	141 60	318.60	132 00	283 90	892 30	1154 00
Runoff (mm)	164	55	179	71	188	61	31	69	29	62	195	252
Rainfall (mm)	211	29	190	61	214	57	68	111	33	159	254	304

Statistics of monthly data for previous record (Oct 1952 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	235.200	202.900	198 000	144.700	117.200	80.650	67 350	85.860	122 700	187 700	212 700	244 200
	Low	92 910	52 560	69 380	75 210	45.500	42 080	31 390	14.690	40 650	39 680	89.160	112 800
	(year)	1963	1963	1953	1974	1980	1957	1984	1955	1955	1972	1972	1952
	High	515.800	353.700	424.800	231.200	230 800	190 400	126 000	286.100	283 900	390 500	407.700	491 400
	(year)	1974	1962	1967	1960	1983	1966	1985	1985	1985	1982	1984	1954
Runoff:	Avg.	137	108	116	82	68	46	39	50	69	110	120	143
	Low	54	28	41	43	27	24	18	9	23	23	50	66
	High	301	187	248	131	135	108	74	167	160	228	230	287
Rainfall:	Avg.	154	101	115	72	97	84	94	107	135	149	146	167
	Low	33	31	39	10	26	49	21	14	11	63	38	64
	High	393	182	224	150	200	181	169	250	266	269	311	271

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	197.100		158.100		125
Lowest yearly mean			107 300	1955	
Highest yearly mean			207.900	1954	
Lowest monthly mean	50 930	Sep	14 690	Aug 1955	
Highest monthly mean	430 900	Dec	515 800	Jan 1974	
Lowest daily mean	40.738	25 Sep	11 460	6 Aug 1955	
Highest daily mean	748.963	5 Dec	1223 000	27 Nov 1954	
Peak	906.082	22 Mar	1570 000	30 Jan 1974	
10 %ile	416.400		307.400		135
50 %ile	136 900		127 600		107
95 %ile	45 500		42 840		106
Annual total (million cu m)	6216.00		4989 00		125
Annual runoff (mm)	1355		1088		125
Annual rainfall (mm)	1691		1421		119
[1941-70 rainfall average (mm)			1442]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Regulation for HEP.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Velocity-area station with cableway. 90m wide. The most d/s station on the Tay, records highest mean flow in UK. Since end of 1957, 1980 sq km (43%) controlled for HEP; there was some control prior to this. 73 sq km controlled for water supply. Catchment is mostly steep, comprising mountains and moorland; exceptions are lower valleys. Mainly rough grazing and forestry. Geology: mainly metamorphics and granites, but lower 20% (Isla valley) is Old Red Sandstone

019001 Almond at Craigiehall 1986

Measuring authority: FRPB
First year: 1957
Grid reference: 36 (NT) 165 752
Level stn. (m OD): 22.90
Catchment area (sq km): 369 0
Max alt (m OD): 518

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5 679	12 136	2 253	4.652	7 430	3.274	1 453	3 613	1 379	1.165	6 396	5 030
2	8.259	8.359	2 015	4.170	5 320	2 914	1 439	3.553	7 733	1 127	4.562	40 329
3	4.526	8 815	2.394	3.860	4 663	2.583	1 437	3 092	17 493	1 096	4 733	45 335
4	3.731	7.984	51 959	3 581	4 323	2 254	1 506	3.507	4.907	1 027	4 067	31 118
5	3.506	6 395	24 486	3.362	5.268	2 018	1 417	4 554	3 624	1 042	10.720	51 945
6	3.095	5.388	14 654	3 289	5 369	1 885	1 290	19.373	9.373	1 113	6 076	16 646
7	2.934	4 821	9.608	3.261	50 641	1 825	1 349	19 886	4 064	1 127	15 414	11 013
8	2 955	4 397	7.103	3 226	17 569	1 776	1 369	7 856	2.853	1 163	23 040	20 046
9	9.545	4 073	5 813	3 051	15 024	2 836	1 322	4 303	2.314	1 141	19.783	28 923
10	44.929	3 862	5.388	2.845	38 854	28 124	1 311	3 180	1.941	1 073	10 936	11 746
11	49.378	3 420	4 574	2.596	12 512	8 239	1 285	2 502	1 736	0 936	7 250	11 879
12	28 010	3 250	3 953	2 492	10 437	5 042	1 243	2 220	1.609	0 867	5 791	10 152
13	27.263	3 156	4 045	2.536	8 068	4.748	1 266	2 692	1 423	0 935	9 309	9 690
14	30 293	3 039	3.921	2.639	6 440	3.533	1 248	2 904	1 364	1.140	12 798	7 148
15	13.967	2.848	3 593	11.797	5.503	2.982	1 371	7 934	1.285	1 078	9.680	9 719
16	8.788	2.782	3 332	37.986	4.105	2.604	1.505	14 530	1.208	0.918	8 529	10 132
17	7.437	2 808	3 268	25 050	3 613	9 337	1 365	5 787	1 193	0 851	11 624	37 400
18	14 404	2 831	3 168	21.786	3.712	7.938	1 249	5 406	1.180	0 834	14 800	15 465
19	24.253	2.788	3 224	19.731	3 163	4.295	1 227	4 403	1 113	2 757	8 441	10 825
20	23 604	2.800	10 715	28 891	3.023	3 136	1 290	3.967	1.129	3 776	6 046	7.974
21	18 776	2.628	9 637	13 384	3.497	2 663	1 188	2 893	1.110	20 152	5 073	6 307
22	24 000	2 541	29 338	15 339	3 718	2 379	1.212	2 990	1 167	18.434	11 525	5 097
23	16.773	2 555	35 821	18 520	3.421	2 235	1 194	2 292	1 145	9 970	13 181	4 411
24	9.202	2 524	20 283	12 100	2 857	2 131	1 045	1 901	1 137	8.802	25 962	10 895
25	6 163	2 564	14 329	8 842	3 695	2 068	1 032	1 802	1 051	12.169	36 606	11 753
26	5 627	2.303	9 349	7 292	8.695	1 875	0 937	4 866	1.272	5 698	12 587	7 872
27	6 577	2 250	8 429	6.017	9.083	1 685	1 155	2.973	1 218	11 840	8 660	7 385
28	5 552	2 401	6 604	5 663	5.951	1 510	5 355	2.121	1.161	13 994	6 491	11 349
29	5 060		6 651	5.271	3 829	1 509	9.941	1 757	1 179	16.059	5 556	20 939
30	18.180		6 421	11 982	3 123	1 451	4 961	1 494	1 206	30 795	4 988	94 417
31	19.976		5 572		3.353		5 751	1 349		11 792		42 748
Average	14.530	4.133	10 380	9.840	8.589	4 028	1 958	4.894	2 686	5 899	11 020	19 860
Lowest	2.934	2 250	2 015	2.492	2.857	1 451	0 937	1.349	1.051	0 834	4 067	4 411
Highest	49.378	12 136	51.959	37.986	50 641	28.124	9.941	19 886	17 493	30.795	36 606	94 417
Peak flow	64.165	15.499	80 477	44.194	87 796	64 514	17 701	39.820	40 987	41 035	61 863	166 047
Day of peak	10	1	4	20	10	10	29	6	3	30	25	30
Monthly total (million cu m)	38.92	10 00	27.81	25 51	23 00	10 44	5.25	13.11	6 96	15.80	28 57	53 20
Runoff (mm)	105	27	75	69	62	28	14	36	19	43	77	144
Rainfall (mm)	123	28	83	89	109	62	70	99	42	101	113	179

Statistics of monthly data for previous record (Jan 1957 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	8.863	7 402	6 226	4.065	3 029	2 360	2 292	3 069	4 665	6 185	9 430	8 953
	Low	3.574	1 782	1.918	1.409	1 091	0.817	0 951	0 869	0 668	0.668	1 862	3 016
	(year)	1963	1963	1973	1974	1961	1961	1960	1983	1959	1972	1972	1975
	High	16 300	15 450	14 300	8 374	11 '70	8 572	9 224	8 568	20 360	15.120	21 660	16.280
	(year)	1984	'984	1979	1972	1968	1966	1958	1985	1985	1981	1963	1974
Runoff:	Avg	64	49	45	29	22	17	17	22	33	45	66	65
	Low	26	12	14	10	8	6	7	6	5	5	13	22
	High	118	105	104	59	81	60	67	62	143	110	152	118
Rainfall:	Avg	78	55	66	49	61	60	72	82	91	87	93	83
	Low	28	17	22	8	16	24	23	19	14	23	19	21
	High	145	107	127	88	123	136	173	142	195	177	190	154

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	8.199		5 536		148
Lowest yearly mean			2.890	1973	
Highest yearly mean			7 519	1985	
Lowest monthly mean	1.958	Jul	0 668	Sep 1959	
Highest monthly mean	19 860	Dec	21.660	Nov 1963	
Lowest daily mean	0 834	18 Oct	0 241	9 Oct 1959	
Highest daily mean	94.417	30 Dec	142 300	21 Sep 1985	
Peak	166.047	30 Dec	199.600	3 Nov 1984	
10 %ile	:9 890		12 650		157
50 %ile	4 386		2.761		159
95 %ile	1 121		0 858		131
Annual total (million cu m)	258 60		174 70		148
Annual runoff (mm)	701		473		148
Annual rainfall (mm)	1098		877		125
(1941-70 rainfall average (mm)			914)		

Factors affecting flow regime

- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from effluent returns

Station and catchment description

The recorder is well sited on a straight even reach with steep banks which have contained all recorded floods. Stable rating over the period of record. Some adjustment to stage is required to accommodate weed growth in the summer. Low flows are substantially affected by sewage effluent especially from Mid Calder. There is an abstraction at Almondell to feed a canal. A number of storage reservoirs are situated in the catchment. Geology - predominantly Carboniferous rocks. Land use - rural with several small mining towns.

021009 Tweed at Norham 1986

Measuring authority: TWRP
First year: 1962
Grid reference: 36 (NT) 898 477
Level stn. (m OD): 4.30
Catchment area (sq km): 4390.0
† Max alt. (m OD): 839

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	90.834	133.835	29 792	64 005	82.699	66 962	23 866	41.326	56.659	21 683	87 073	80 193
2	106 130	107 413	27 611	60 391	66 065	59.185	22.291	46.512	52 356	21.977	72 331	97 331
3	91.358	114.218	27.288	60 577	57.996	55 862	21.593	54.604	164.915	19.658	68 195	163 453
4	69.316	102.977	333.473	62 256	53.710	51 256	21 396	39.866	89 803	19 151	61 631	157 165
5	65.832	88.071	511.151	55 273	51.414	47 568	21 859	42.615	66 640	24.088	72 096	353 318
6	61.209	78.038	218.132	51 768	62.194	42 401	21 202	63 876	58 466	23.387	69 168	182 108
7	54.727	70.497	139.117	53 242	231 048	40 257	20 053	96.879	52 288	19 074	85.527	189 689
8	52.011	65.004	117 051	55 211	149 330	36 633	19 136	71.168	46.670	19.300	160 000	373 963
9	54.515	60.426	121.581	48 795	101 755	55.849	18.860	51.706	42.562	19 303	237 354	356 708
10	378 992	56 208	110 398	45.071	140 532	135 558	18 664	41 592	40 477	19 928	308 483	199 332
11	224.830	47.630	96 180	41 370	121 730	105 224	19.254	34.700	36 761	20 508	168 683	290 575
12	185.655	49.445	82 403	41.510	103 663	64 750	18 279	31 103	35 597	18 701	130 723	207 904
13	208.665	48.034	72 526	42 930	142 399	57.056	17.418	29.139	33.847	17 995	136 477	359 254
14	284 854	45 288	65 318	46 778	114 110	50 367	17 328	30 269	32 392	17 691	150 670	193 141
15	214.351	43.128	80 532	141 683	92 734	44 079	17 094	90 274	30.563	18 542	162 737	254 715
16	141.242	41 377	79 457	340 558	77.427	39 675	17 517	79 175	29 081	19 601	161 719	190 271
17	113.569	40.060	78 242	258 826	70 023	75 207	16 439	57.310	28.192	17 002	137 756	217 117
18	123 554	39 410	63 892	172 565	128 283	130 447	16.575	49 167	27 209	17 331	127 620	227 850
19	210.837	39.978	65 765	143 849	86 832	69 862	16 084	70 539	27.509	20 162	121 913	160 290
20	212.979	37 031	109 208	236 963	72 676	55 268	15 258	68 022	25 396	27 347	99 848	132 508
21	233.959	37.229	106 839	176 506	130 269	47 712	15.050	53 286	24 473	40 334	86 054	121 967
22	212 397	33 102	182 480	142 698	152 726	42 859	14 695	51 810	24 340	74 736	145 432	107 838
23	168.191	33.180	258 082	141 150	117 775	40 122	16 383	45 861	23.783	81 295	189 057	93 467
24	138 516	33 475	153 618	119 787	94 532	37 527	16 509	39 814	25 050	55 671	136 992	90 285
25	106.941	34.238	117.772	101 403	195 242	37 422	14 518	37.388	24.285	166.793	363 900	158 805
26	91.905	29 984	100 493	89 472	176 460	34 544	14 036	339 483	22 292	87 055	190 222	107 982
27	92.900	28.398	100.304	78 813	153.603	30 904	13 694	338 681	22 106	98 600	136.141	94 835
28	85.570	31.423	98.122	71 161	129 475	28 670	16 110	158.885	21 491	102.519	113 708	96 949
29	80 039		97.407	71 254	103 652	26 896	40 713	94.950	21 348	102.451	98 988	139 487
30	137.515		84 835	74 227	80 537	25 216	35 284	72 977	21 361	177.554	87 796	388 791
31	175 304		71 853		75 567		63 295	60 857		121.184		331 121
Average	144.200	56.040	122.600	103 000	110 200	54 510	20 660	76.900	40 260	48.730	138 900	197 400
Lowest	52 011	28.398	27.288	41 370	51 414	25.216	13 694	29.139	21 348	17 002	61 631	80 193
Highest	378.992	133 835	511.151	340 558	231 048	135.558	63.295	339 483	164.915	177.554	363 900	388 791
Peak flow	578 506	155.957	694.331	428.942	359 616	244 763	95 083	520 018	209 880	274.949	481.348	543 566
Day of peak	10	1	5	15	7	10	31	26	3	30	25	30
Monthly total (million cu m)	386.10	135 80	328 40	267 00	295 20	141 30	55.33	206 00	104 40	130 50	360 10	528 60
Runoff (mm)	88	31	75	61	67	32	13	47	24	30	82	120
Rainfall (mm)	123	36	80	93	133	61	64	142	27	98	122	172

Statistics of monthly data for previous record (Oct 1962 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	120 200	102.200	102 700	67 440	56 320	36 670	31 250	42 670	56 000	80 160	112 700	113 400
	Low	50 320	37.180	26 290	25 180	17 950	15 550	11 640	9 883	10 990	10 180	24 710	40 700
	(year)	1973	1963	1973	1974	1980	1974	1984	1976	1972	1972	1973	1975
	High	249 700	173.300	236 400	142 200	153 300	66 210	85 330	146 300	179 900	176.300	271 700	197 900
	(year)	1982	1978	1963	1979	1967	1981	1985	1985	1985	1967	1963	1979
Runoff	Avg	73	57	63	40	34	22	19	26	33	49	67	69
	Low	31	20	16	15	11	9	7	6	6	6	15	25
	High	152	99	144	84	94	39	52	89	106	108	160	121
Rainfall:	Avg.	94	64	82	58	75	69	73	88	98	92	102	91
	Low	45	15	21	12	22	25	24	21	19	25	16	23
	High	165	125	138	98	181	129	160	188	164	163	224	175

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	93.180		76.710		121
Lowest yearly mean			33 910	1973	
Highest yearly mean			102 400	1963	
Lowest monthly mean	20.660	Jul	9.883	Aug 1976	
Highest monthly mean	197 400	Dec	271 700	Nov 1963	
Lowest daily mean	13 694	27 Jul	7 427	28 Aug 1976	
Highest daily mean	511.151	5 Mar	1138 000	4 Jan 1982	
Peak	694.331	5 Mar	1518 000	4 Jan 1982	
10 %ile	191 300		163 300		117
50 %ile	69.740		51 360		136
95 %ile	17.660		14 020		126
Annual total (million cu m)	2939.00		2421 00		121
Annual runoff (mm)	669		551		121
Annual rainfall (mm)	1151		986		117
[1941-70 rainfall average (mm)			1039]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.

Station and catchment description

Lowest station on River Tweed. Velocity-area station at very wide natural section. Complex control. Moderate seasonal weed growth effects on rating. Reservoirs in headwaters have only a small impact on the flow regime - monthly naturalised flows available. Geology: mixed but principally impervious Palaeozoic formations. Moorland and hill pasture predominates; improved grasslands and arable farming below Melrose.

022001 Coquet at Morwick 1986

Measuring authority: NWA
First year: 1963
Grid reference: 46 (NU) 234 044
Level stn. (m OD) 5.20
Catchment area (sq km): 569 8
Max alt. (m OD) 776

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	12.560	17.143	4.155	5.544	6.127	4.278	1.982	4.175	8.064	1.984	5.473	4.174
2	39.605	16.011	3.965	5.501	5.534	3.865	1.931	4.000	18.015	1.915	6.474	3.844
3	17.278	22.277	3.765	6.221	5.095	3.705	1.801	4.638	44.900	1.896	4.647	4.004
4	10.472	14.705	63.115	6.267	4.777	4.375	1.775	3.292	13.909	1.894	3.972	4.626
5	9.159	11.042	77.600	5.402	4.674	3.888	1.793	3.366	9.283	1.894	3.516	10.430
6	9.375	9.359	24.595	5.194	5.957	3.505	1.834	5.514	7.582	1.907	3.189	6.748
7	8.091	8.420	15.313	5.625	33.970	3.462	1.782	9.505	6.117	1.909	2.957	8.444
8	7.752	7.841	12.582	6.304	12.820	3.194	1.706	6.556	5.221	1.854	11.938	31.944
9	9.006	7.330	11.568	5.651	7.919	2.952	1.702	4.669	4.701	1.848	6.521	29.279
10	44.070	6.499	11.596	5.170	6.912	7.461	1.664	3.592	4.281	1.861	7.194	12.950
11	21.674	4.975	10.477	4.663	5.839	7.735	1.671	2.978	3.931	1.921	5.671	18.600
12	15.003	5.794	9.286	4.996	5.258	4.400	1.702	2.618	3.718	1.907	5.420	13.931
13	15.936	5.480	8.025	5.223	4.930	3.640	1.702	2.376	3.530	1.851	4.742	37.810
14	15.744	5.225	7.068	6.831	4.612	3.413	1.689	2.331	3.343	1.778	5.742	14.697
15	11.742	4.947	10.561	75.160	4.429	3.033	1.660	2.338	3.038	1.775	6.599	22.096
16	8.974	4.819	9.801	65.060	4.702	2.762	1.660	2.810	2.873	1.775	5.058	21.042
17	8.208	4.789	7.945	50.910	4.420	4.470	1.591	2.412	2.781	1.775	4.450	22.665
18	10.138	4.685	6.713	28.560	5.893	5.785	1.500	2.131	2.713	1.778	4.509	22.701
19	30.849	4.792	7.087	19.430	4.929	4.425	1.497	2.352	2.606	2.020	6.243	12.848
20	20.811	4.634	7.778	43.650	5.952	3.666	1.497	3.963	2.481	2.258	5.253	9.974
21	22.807	4.609	7.371	26.010	11.820	3.271	1.496	3.484	2.403	2.079	4.439	12.442
22	17.590	4.230	7.847	25.140	7.384	2.970	1.434	3.475	2.432	2.212	7.625	13.443
23	16.263	4.291	16.511	17.850	5.619	3.526	1.510	3.371	2.423	2.551	13.532	12.165
24	10.763	4.275	11.076	13.770	4.729	2.096	1.550	2.612	2.298	2.510	7.567	11.510
25	8.028	4.390	11.364	11.970	6.588	2.696	1.502	2.491	2.235	5.981	8.287	18.027
26	7.361	4.047	8.674	10.150	5.850	2.540	1.465	162.181	2.199	4.436	8.056	9.746
27	7.454	4.006	7.672	8.775	4.836	2.334	1.442	88.499	2.180	3.055	6.158	7.973
28	6.867	4.155	7.671	7.876	5.187	2.222	1.543	27.362	2.130	3.576	5.221	7.634
29	7.753		7.882	7.051	5.056	2.106	3.807	14.160	2.070	5.234	4.764	18.617
30	33.770		6.931	6.253	4.339	2.026	3.054	10.041	2.002	8.325	4.517	67.768
31	23.348		5.979		4.403		3.729	8.203		6.147		31.263
Average	15.760	7.313	13.290	16.540	6.792	3.660	1.828	12.950	5.849	2.707	5.991	16.880
Lowest	6.867	4.006	3.765	4.663	4.339	2.026	1.434	2.131	2.002	1.775	2.957	3.844
Highest	44.070	22.277	77.600	75.160	33.970	7.735	3.807	162.181	44.900	8.325	13.532	67.768
Peak flow	57.914	24.552	136.963	150.900	49.680	15.700		234.412	79.761	16.197	20.687	93.604
Day of peak	10	3	5	15	7	10		26	3	30	23	30
Monthly total (million cu m)	42.20	17.69	35.59	42.87	18.19	9.49	4.90	34.69	15.16	7.25	15.53	45.22
Runoff (mm)	74	31	62	75	32	17	9	61	27	13	27	79
Rainfall (mm)	98	53	47	116	82	39	55	161	32	54	56	125

Statistics of monthly data for previous record (Nov 1963 to Dec 1985—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	15.010	13.470	12.940	8.315	5.925	3.751	3.281	3.971	4.765	7.671	12.590	13.130
	Low	5.421	2.673	1.730	2.928	2.038	1.141	1.168	1.232	1.418	1.083	1.926	4.563
	(year)	1973	1973	1973	1974	1984	1970	1984	1983	1972	1972	1973	1971
	High	32.310	26.350	31.390	15.810	15.410	6.355	7.969	12.720	14.240	26.860	31.370	33.340
	(year)	1982	1978	1979	1983	1983	1969	1968	1966	1965	1976	1965	1978
Runoff:	Avg.	71	58	61	38	28	17	15	19	22	36	57	62
	Low	25	11	8	13	10	5	5	6	6	5	9	21
	High	152	112	148	72	72	29	37	60	65	126	143	157
Rainfall: (1966-1985)	Avg.	90	59	82	52	67	57	65	71	82	74	89	84
	Low	38	15	18	8	18	8	19	18	15	19	19	31
	High	140	120	144	118	127	129	108	132	215	176	214	251

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	9.157		8.715		105
Lowest yearly mean			3.716	1973	
Highest yearly mean			11.380	1969	
Lowest monthly mean	1.828	Jul	1.083	Oct 1972	
Highest monthly mean	16.880	Dec	33.340	Dec 1978	
Lowest daily mean	1.434	22 Jul	0.721	20 Jun 1970	
Highest daily mean	162.181	26 Aug	203.200	3 Jan 1982	
Peak	234.412	26 Aug	289.700	4 Jan 1982	
10 %ile	18.160		19.010		96
50 %ile	5.233		4.991		105
95 %ile	1.692		1.360		124
Annual total (million cu m)	288.80		275.00		105
Annual runoff (mm)	507		483		105
Annual rainfall (mm)	918		872		105
[1941-70 rainfall average (mm)			880]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Velocity-area station with 34m wide concrete Flat V weir made with pre-cast segments (installed 1969). Cableway. Fairly straight section with high banks. Replaced earlier station at Guyzance. Natural catchment.

023006 South Tyne at Featherstone 1986

Measuring authority: NWA
First year: 1966
Grid reference 35 (NY) 672 611
Level stn (m OD) 131 70
Catchment area (sq km) 321.9
Max alt. (m OD) 893

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.810	6 186	1 968	9 517	7 003	4 857	1 634	7 335	11 799	1 577	35 351	7 509
2	7 209	5 971	2 929	8 190	5 096	4 204	1 513	9 975	35 893	1 621	12 461	24 516
3	4.488	5 988	2.538	8 803	4 559	4 215	1 470	5 401	26 214	1 559	19.736	63 403
4	4.271	5 226	105 863	8 066	3 744	3 919	1 526	4 643	8 444	1 479	9 475	46 362
5	4 191	4 720	42 049	7 352	4 557	4 247	1 535	3 474	6 104	1 448	18 665	39 857
6	3.332	4.371	13 841	6 637	10 650	3 422	1 510	10 683	6 301	1 458	9 211	12 904
7	3.450	4 205	11 567	7 894	42 830	3 115	1 499	32 300	4 865	2 628	30 938	16 376
8	3 702	3 960	10 479	8 190	10 130	2.821	1 572	9 853	4 004	1 950	25 066	54.790
9	18.535	3 729	11 016	10 400	6 405	3 192	1 561	5 550	3 470	1 995	18 692	17 775
10	58.923	3 037	10 240	6 844	8 011	41 200	1 585	3 846	3 118	2 842	15 407	10 685
11	13.913	3 207	8 770	6.011	7 487	8 563	1 460	3 131	2 863	2 019	16 536	40 213
12	48 606	3 267	8 302	9 388	12 540	4 980	1 418	2 759	2 656	1 777	9 455	27 242
13	61.654	3.045	5 768	7 982	10 510	4 434	1 410	2 753	2 507	1 677	14 143	22 621
14	21 789	3 035	9 949	7 752	8 591	3 895	1 398	3 059	2 340	1 623	23 957	9 824
15	12.386	2 906	15 848	48 690	8 269	3 176	1 476	12 057	2 200	1 554	12 620	23 730
16	7.504	2.797	11 695	20 860	5 808	2 791	1 390	6 691	2 086	1 483	9 297	13 860
17	8 350	2 721	6 737	16 640	5 467	2 747	1 343	4 665	2 034	1 431	12 893	37 214
18	31.929	2.668	5 872	11 560	6 774	2 773	1 322	4 731	1 965	3 384	26 071	19 621
19	54 520	2 603	5 547	19 770	4 473	2 558	1 333	10 222	1 886	9 833	15 964	12 362
20	92.885	2.304	9 376	53 350	12 300	2 360	1 521	6 086	1 833	14 603	9 132	8 883
21	27.964	2.651	12 333	18 320	17 690	2 196	1 378	6 528	1 800	44 712	6 865	7 349
22	63.315	2 428	84 153	13 180	7 713	2 129	1 384	14 176	1 962	19 453	41 046	6 099
23	15 674	2 311	23 381	10 020	5 202	2 161	1 720	6 737	1 870	15 148	40 075	5 594
24	8 534	2 540	10 596	8 679	23 590	2 393	1 626	4 405	1 778	35 678	56 916	39 248
25	6 024	2 242	17 871	8 108	23 130	2 204	1 867	37 559	1 715	67 811	66 657	24 324
26	5 832	1 954	17 835	7 009	10 220	1 991	1 676	132 745	1 671	14 173	32 305	9 363
27	6 023	2 335	22 433	5 670	7 660	1 873	1 513	35 335	1 645	27 046	13 622	14 382
28	5 232	2.232	24 416	5 842	14 730	1 813	10 227	12 865	1 708	35 561	9 279	13 395
29	5 291		19 402	5 014	8 211	1 690	9 678	8 281	1 710	23 371	7 303	84 365
30	8 045		11 590	9 111	5 371	1 645	10 340	6 316	1 672	41 243	6 245	62 777
31	8 423		10 885		5 473		11 902	6 270		20 385		54 435
Average	20 250	3 380	17 910	12 490	10 140	4 452	2 671	13 560	5 004	12 980	20 850	26 810
Lowest	3 332	1 954	1 968	5 014	3 744	1 645	1 322	2 753	1 645	1 431	6 245	5 594
Highest	92 885	6 186	105 863	53 350	42.830	41 200	11 902	132 745	35 893	67 811	66 657	84 365
Peak flow	164 731	6.864	89 607	104 000	107 900	129 000	41 522	297 252	111 724	164 091	169 459	186 896
Day of peak	18	1	22	20	24	10	28	26	2	24	25	3
Monthly total (million cu m)	54.24	8 18	47 97	32 39	27 15	11 54	7 15	36 33	12 97	34 78	54 03	71 80
Runoff (mm)	169	25	149	101	84	36	22	113	40	108	168	223
Rainfall (mm)	190	33	134	114	138	53	89	169	44	185	188	253

Statistics of monthly data for previous record (Oct 1966 to Dec 1985—incomplete or missing months total 0 2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	15 660	11 740	13 190	8 642	6 248	5 136	4 704	6 530	9 882	12 370	15 820	14 890
	Low	7.739	5 122	5 860	1 850	1 311	1 465	1 755	0 960	1 467	1 181	6 616	5 110
	(year)	1985	1968	1975	1974	1980	1978	1984	1976	1972	1972	1983	1971
	High	25 510	19 760	30 210	16 210	13 850	12 740	9 889	19 240	23 670	30 330	24 670	28 810
	(year)	1975	1974	1979	1979	1983	1980	1985	1985	1985	1967	1984	1974
Runoff	Avg	130	89	110	70	52	41	39	54	80	103	127	124
	Low	64	40	49	15	11	12	10	8	12	10	53	43
	High	212	148	251	131	115	103	82	160	191	252	199	240
Rainfall	Avg	133	82	117	72	85	92	95	111	134	134	146	130
	Low	74	28	44	11	40	44	43	25	40	27	63	42
	High	213	166	199	133	178	215	165	248	239	331	245	215

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	12 640		10 400		122
Lowest yearly mean			7 630	1971	
Highest yearly mean			12 920	1979	
Lowest monthly mean	2 671	Jul	0 960	Aug 1976	
Highest monthly mean	26 810	Dec	30 330	Oct 1967	
Lowest daily mean	1 322	18 Jul	0 713	26 Aug 1976	
Highest daily mean	132 745	26 Aug	177 200	21 Sep 1985	
Peak	297 252	26 Aug	309 900	3 Nov 1984	
10 %ile	34 940		24 540		142
50 %ile	6 740		5 271		128
95 %ile	1 496		1 363		110
Annual total (million cu m)	398 60		328 20		121
Annual runoff (mm)	1238		1020		121
Annual rainfall (mm)	1590		1331		119
(1941-70 rainfall average (mm)			1464)		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow

Station and catchment description

Compound Crump weir Lower crest 15 2m, upper crest 29 5m Theoretical rating Natural flow regime

025001 Tees at Broken Scar 1986

Measuring authority: NWA
First year: 1956
Grid reference: 45 (NZ) 259 137
Level stn. (m OD): 37.20
Catchment area (sq km): 818.4
Max alt. (m OD): 893

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	17.926	20 390	3 486	17.100	18.240	9 262	3 190	4 693	13 582	3.374	86.481	18 690
2	33 221	24 316	3 722	13.860	14 120	8 032	3 323	11 605	11 762	3 315	26 573	19 912
3	17.687	22.190	4 510	11 640	11 630	6 850	3 516	5 587	39.767	3 090	24 053	45 469
4	10 447	17 292	126.409	9.577	9.988	6 937	3 064	4.177	14 250	3 677	16 722	80 374
5	9.670	13.953	128 366	9 092	13 420	6 494	3 187	4 055	9.144	3 607	14 633	95 115
6	7.948	12 165	44 562	10 200	16 920	5 522	3 208	5 006	6 527	3 277	12 725	30 669
7	5.470	10 990	27 714	15 230	96 350	5.041	3 236	21 745	6.135	3 695	16 870	37 011
8	5.606	8 965	23 79:	29.230	38 680	4 964	3 115	9 346	4.856	3 730	36.386	106 235
9	5 987	8 246	20 167	31.020	21 570	4 869	3 031	5 346	4 165	3 358	27 000	49 010
10	140.485	7.202	19 563	24 040	23 190	40 400	3 031	4 105	4 305	5 060	51 015	27 183
11	45.656	7.032	19.227	17 580	17 620	16.750	3 318	3.588	4.094	8.179	40 645	69 950
12	49.144	8 041	16 640	25.610	25 360	7 969	3 552	3.619	3 964	7 364	24.691	42 878
13	117 890	7 050	12 627	21.470	24.950	5 099	3 146	3 511	3 679	3 631	23 248	74 761
14	47.366	5 376	10 504	22.120	15 550	4 653	3 085	4 177	4.111	3.355	33 697	29 196
15	33.410	4 955	29.782	194.500	18 260	4 320	2.999	6 134	4 172	3.153	30 449	67 718
16	21.450	5 592	24.136	67.450	15.390	4 022	3 279	5 857	4 062	3.614	22.729	37 488
17	14.666	4 954	15.728	85 410	17 280	4 203	3 177	5 211	3.902	3.242	23 322	75 412
18	39.229	4 706	10 415	37.490	25.300	4 199	3 293	5 411	3 814	3.362	43.774	49 257
19	120.787	4 556	11.385	28.000	13.950	4 111	3 677	15 019	3 584	6 426	46 807	30 853
20	152 584	4 074	19.450	87 440	31 350	3 931	3.808	9.180	3.738	7.794	22 709	25 067
21	91.397	4 708	21.412	53.510	39 020	3 865	3 394	5 756	3 871	17 087	18 747	24 657
22	92.389	5 007	104 834	38 990	27 450	3.834	3 456	17 504	3.370	17.250	59 613	19 832
23	47 709	4 327	68 510	28 470	14.240	3 899	3 871	9 769	3.278	18 388	84 732	16 469
24	25.266	5 474	28.615	32 370	9 818	4 199	3 729	6 355	3 053	11 981	61 682	18 697
25	18 668	4 249	43 595	34 590	56.220	3 495	3 518	36 550	2.915	53 587	95 345	49 820
26	17.268	3 441	56 952	25 080	23 490	2 992	3 709	309 790	3.323	16 771	64.366	19 133
27	16 000	5 041	86.943	19 000	16 120	3 604	3 697	54 425	3 395	17 890	35 163	20 984
28	13.916	4 347	42 567	17 580	17.940	3 486	4 626	26 594	3 668	21 842	23 862	29 370
29	15.327		44 796	16 570	16 050	3 394	10 355	18 260	3.589	14 612	20 730	41 311
30	18.651		27 403	16 950	10 280	3 243	4 500	15 035	3 491	38 293	18.667	119 525
31	25 090		22.126		11.610		11 383	13 183		23 481		107.926
Average	41.240	8 523	36.130	34 710	22 950	6 455	3 918	20 990	6 252	10 890	36 910	47 740
Lowest	5.470	3 441	3.486	9 092	9 818	2.992	2 999	3.511	2 915	3 090	12 725	16 469
Highest	152.584	24.316	128 366	194.500	96.350	40 400	11 383	309 790	39.767	53.587	95 345	119 525
Peak flow	321.273	27 937	311.224	350 900	181 100	94.630	26 401	709 829	71.351	121.927	166 327	221 902
Day of peak	20	2	4	15	7	10	31	26	3	31	25	8
Monthly total (million cu m)	110.40	20.62	96.76	89 96	61 46	16.73	10 50	56 21	16 21	29.16	95 68	127.90
Runoff (mm)	135	25	118	110	75	20	13	69	20	36	117	156
Rainfall (mm)	166	48	109	116	128	38	43	176	26	110	127	210

Statistics of monthly data for previous record (Oct 1956 to Dec 1985—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	28.600	23.100	22 640	17 930	10.250	6 427	6 206	9 831	11.300	17 590	22 570	27 760
	Low	2.906	2.804	5 482	2 539	2.007	0 502	1 794	0 458	0 638	2 707	4 060	5 778
	(year)	1963	1963	1975	1957	1959	1957	1969	1959	1959	1969	1958	1971
	High	50 240	51 540	68 660	60 870	27.020	15 270	15 090	28.520	25.800	53 940	51 580	50 040
	(year)	1982	1966	1979	1977	1967	1972	1961	1985	1985	1967	1963	1979
Runoff:	Avg.	94	69	74	57	34	20	20	32	36	58	71	91
	Low	10	8	18	8	7	2	6	2	2	9	13	19
	High	164	152	225	193	88	48	49	93	82	177	163	164
Rainfall:	Avg.	119	84	95	75	79	75	82	100	101	102	114	121
	Low	51	16	29	10	18	22	28	23	19	27	25	43
	High	183	175	224	150	167	182	150	190	222	226	221	268

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	23 200		17 000		136
Lowest yearly mean			9.382	1973	
Highest yearly mean			23.220	1979	
Lowest monthly mean	3 918	Jul	0 458	Aug 1959	
Highest monthly mean	47.740	Dec	68 660	Mar 1979	
Lowest daily mean	2 915	25 Sep	0 023	16 Oct 1959	
Highest daily mean	309 790	26 Aug	391 500	3 Jan 1982	
Peak	709 829	26 Aug	679 300	23 Mar 1968	
10 %ile	53 440		42 700		125
50 %ile	14 140		7 985		177
95 %ile	3 264		1 349		242
Annual total (million cu m)	731 60		536 50		136
Annual runoff (mm)	894		656		136
Annual rainfall (mm)	1297		1147		113
[1941-70 rainfall average (mm)			1226]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies
- Augmentation from surface water and/or groundwater.

Station and catchment description

Compound Crump weir with total crest length of 63 9m. Two low-flow crests total 9.1m. Theoretical rating. Substantial artificial influences. Contains Cow Green and 5 smaller reservoirs on Lune and Balder. Major intake just above gauge site. Occasional transfers from Tyne (Kielder) at Eggleston. Mainly Millstone Grit, Upper- and Middle-Limestone.

027002 Wharfe at Flint Mill Weir 1986

Measuring authority: YWA
First year: 1937
Grid reference: 44 (SE) 422 473
Level stn (m OD): 13 70
Catchment area (sq km) 758 9
Max alt (m OD) 704

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	24 800	27.230	4.881	26.720	12.290	8 235	3 000	5 940	6 740	2.546	82.690	12.540
2	23 510	29 080	4 674	22.320	10.750	7 384	2.890	6.891	7 398	2 442	31 680	12 090
3	16 370	24 010	4 914	17.400	12 660	6 873	2 846	7 051	24 250	2 384	24 050	18 740
4	12.280	19.530	49 660	13.750	14.320	6 173	2.747	4 797	13 830	2 524	18 400	71 810
5	11.070	15.720	127.700	12.110	12 390	5.793	2 894	4 308	8 622	2 674	21.730	54 540
6	9.845	13.540	39.390	12 390	15 470	5 407	2.957	4 205	6.713	2 383	21 250	31 260
7	8 630	12 040	21.820	14.650	60.880	5 172	2 868	14 820	5 871	2 484	14 450	19 850
8	8.369	10.800	17 270	32 630	40.790	4.953	2.701	10 300	5 374	4 227	16 120	57.930
9	8.456	10.080	17.260	23 610	23.790	4 823	2.699	6 181	4 995	3.524	14 570	48 760
10	89.280	9.151	16.950	22.530	21 400	23 540	2.544	4 800	4 497	4 744	34 750	26 650
11	51.270	8.206	15.620	14 910	24.240	24 750	2.502	3.718	4.137	5 511	23 830	61 540
12	35 370	8.011	13.240	14.780	27 480	13.600	2 578	3 206	3 875	3 760	18 150	42 860
13	73.070	7 569	11 670	16.110	20.570	8.979	2.599	3 073	3.649	3 289	14 900	86 470
14	56.940	7.258	10 040	17 550	15 190	7 579	2 531	3.028	3 501	3.164	25 420	35 190
15	40 440	6.955	14.100	130.900	16.760	6 514	2 514	3 002	3 361	3 934	30 700	78 230
16	22.160	6.616	17 020	82 040	13 020	5 720	2 706	3 016	3.256	3 894	19 680	55.190
17	16.220	6.422	17.250	121.800	11.600	5.272	2 305	3 694	3 195	3 185	22.690	80 920
18	35 600	5 806	12.420	62.870	23.670	4.847	2.316	3.870	3 119	2.969	46 450	66 670
19	91.920	5.336	13.590	36.970	13.980	4.509	2 310	3 587	2 989	8.111	73 420	47 460
20	69 120	5 560	14 430	67 830	28 680	4 221	2 252	2.975	2.999	22 160	30 170	35.260
21	114 800	5.568	15 640	50 230	37.340	3 948	2 358	2 748	2 964	45 300	27 800	29.220
22	69 230	5.570	33.470	46 020	25 710	3 855	2 301	3 040	3 001	40 830	26.400	23 620
23	54.540	5 542	83.110	31 450	16.620	4.278	2 456	3.147	2 853	31.030	57 730	18 300
24	32 090	5 372	35.490	25 390	13 440	5 775	2 570	3 079	2.796	19 370	58.160	15 590
25	21 680	5.434	35.530	23 880	44.380	4.266	2 278	7 452	2 759	56 590	76 200	74 810
26	16.540	5.152	38.580	20 350	24 800	3.942	2 235	136 500	2 742	27 980	70 910	32 750
27	15 160	4 947	67 130	18 020	16 010	3 531	2.183	42.030	2.591	46 070	39 310	25 960
28	14.470	5 113	36 570	14 400	13 860	3 162	2 254	19 560	2 576	56 200	24 130	41 940
29	19.830		45 360	13 450	11 230	3 241	2 419	12 260	2 599	30 380	17 860	40 630
30	32.400		29 050	11.470	9.257	3 131	5 205	8 965	2 571	29 050	14 340	101 800
31	33.860		28 380		8 646		6 135	7 642		23.250		81 130
Average	36 430	10.060	28 780	33.940	20 680	6 782	2 747	11 250	4 994	16 000	33 260	46 120
Lowest	8 369	4 947	4 674	11.470	8 646	3 131	2.183	2 748	2 571	2 383	14 340	12 090
Highest	114 800	29 080	127 700	130 900	60.880	24 750	6 135	136 500	24 250	56 590	82 690	101.800
Peak flow	157 000	31 050	191 800	181 800	92 050	52 890	8 980	172 500	37 590	98.700	138 300	137.500
Day of peak	21	2	5	15	25	10	31	26	3	27	19	13
Monthly total (million cu m)	97 57	24.33	77 09	87 98	55 40	17 58	7 36	30 14	12 94	42 85	86 22	123 50
Runoff (mm)	129	32	102	116	73	23	10	40	17	56	114	163
Rainfall (mm)	182	26	118	147	122	46	46	141	22	158	142	216

Statistics of monthly data for previous record (Jan 1937 to Dec 1985—incomplete or missing months total 17.7 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	27 470	23 750	21 050	15 480	11.190	7.65	7.722	11.700	13.590	18 120	23 070	27 200
	Low	4.471	2.974	6 741	4.389	2 312	1 546	1 675	0 992	1 420	3 026	5 027	10 230
	(year)	1963	1963	1961	1982	1980	1957	1976	1976	1959	1972	1937	1963
	High	42.880	54.590	53 940	35 240	26 750	18 520	16 440	41 340	33 520	54 000	51 090	62 090
	(year)	1984	1966	1981	1970	1967	1972	1963	1956	1968	1967	1963	1965
Runoff	Avg	97	76	74	53	39	26	27	41	46	64	79	96
	Low	16	9	24	15	8	5	6	4	5	11	17	36
	High	151	174	190	120	94	63	58	146	115	191	174	219
Rainfall	Avg	114	83	86	72	78	76	84	98	104	108	112	121
	Low	41	14	28	8	13	18	20	18	8	32	33	41
	High	217	194	222	147	181	183	185	226	241	229	211	233

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	21.020		17 310		121
Lowest yearly mean			11 420	1975	
Highest yearly mean			23 300	1966	
Lowest monthly mean	2.747	Jul	0.992	Aug 1976	
Highest monthly mean	46.120	Dec	62.090	Dec 1965	
Lowest daily mean	2 183	27 Jul	0 425	23 Jun 1957	
Highest daily mean	136.500	26 Aug	233 600	4 Dec 1960	
Peak	191.800	5 Mar	380.000	3 Jan 1982	
10 %ile	54 650		41.210		133
50 %ile	13 420		9 671		139
95 %ile	2.517		2.177		116
Annual total (million cu m)	662 90		546.30		121
Annual runoff (mm)	873		720		121
Annual rainfall (mm)	1366		1136		120
[1941-70 rainfall average (mm)			1161]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.

Station and catchment description

The control is a broad-crested masonry weir 47m wide with a current meter cableway 1.5km upstream. Insensitive at low flows. Headwaters contain numerous reservoirs which exert a substantial influence on flows. Mixed geology comprising mainly Carboniferous Limestone, grits and Coal Measures with some Permian sand and Magnesian Limestone and marls in the lower catchment. Predominantly rural catchment with moorland headwaters.

027035 Aire at Kildwick Bridge 1986

Measuring authority: YWA
First year: 1968
Grid reference: 44 (SE) 013 457
Level stn. (m OD): 87.30
Catchment area (sq km): 282.3
Max alt. (m OD): 594

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	17.260	9.800	1 505	10 930	3 391	2 456	0 870	1.255	2 064	0 574	26 590	6 316
2	13.160	10 080	1 480	7.650	2 912	2 245	0 870	1 271	3 057	0 554	11.310	5.374
3	7.951	8.261	1 461	5 930	7 614	2.099	0 742	1 013	10 820	0 540	8 909	17 730
4	6 192	6 998	21 190	4.857	5 462	1 864	0 859	0 938	3 938	0 541	6.689	26.900
5	5.481	5.732	25 730	4 393	5.118	1.723	1 051	0 946	2 681	0.640	7 398	19 170
6	4.560	4.922	9 475	4 009	5 217	1.622	0 880	2.197	2 145	0.572	6 221	11 970
7	4 007	4 325	6 381	5.182	25 750	1 511	0 829	4 080	1 743	0 759	5.589	10 310
8	3 760	4 058	5 031	6 361	13 200	1 436	0 761	1 937	1 503	0 814	6 015	24 050
9	7.177	3 901	5 821	4 743	9 046	1 639	0 691	1 332	1 305	0 712	9 611	18.810
10	41 960	3 328	5.433	3.632	7 978	7 623	0 699	1 056	1 201	0 819	14.940	11 280
11	18.670	3 036	4 458	3 053	9 200	7 114	0 678	0 951	1 094	0 790	12 750	25.180
12	13 680	2.811	3 770	2.889	8 155	3 398	0 696	0 862	1 026	0 689	8.046	15.320
13	23 420	2 653	3 200	3 187	5 739	2 779	0 685	1 012	0 988	0 659	8.193	19 670
14	19.250	2 581	2 775	7 666	5 316	2 341	0 656	0 962	0 942	0 696	10 810	11 620
15	12 760	2 429	2.790	51.850	5 779	1.909	0 635	0 927	0 888	0 794	9.457	30.770
16	8 528	2 320	3 207	25 600	4 262	1 768	0 624	0 902	0 855	0 690	7 818	25 240
17	7.475	2.208	3 057	39 830	5 870	1.611	0 619	0 864	0 779	0 664	8.486	32.770
18	21 440	2 080	2.871	17 480	5 534	1 509	0 728	0 805	0 725	0 790	26.810	30 340
19	40.680	2 015	3 374	11 350	4 041	1 401	0 656	0 688	0.681	2 496	28.680	27.040
20	35 250	1.973	3.188	27 890	8 385	1.313	0 589	0 728	0 680	5 835	15.830	18 670
21	44 800	1.929	2.805	17 410	9 669	1 236	0 691	0 680	0 664	20 350	15.350	12.690
22	37.100	1 829	15.350	15 140	6 534	1.325	0 710	0 767	0 694	17.230	15 040	8.612
23	27 040	1 732	19 350	10 360	4 509	1 558	0 647	0 730	0.693	12 890	21 950	7 008
24	15 070	1 636	13.050	12 430	3 786	2 011	0 654	0 663	0 663	9 490	21.770	7 802
25	9 430	1.588	15 790	10 210	8 227	1 386	0 683	9.741	0 643	26 130	33 090	17.060
26	7 692	1.555	12 710	7 739	5 226	1 162	0 618	29 440	0 633	10 530	28 550	9 639
27	7.355	1.508	16.830	6 044	3 849	1 092	0 575	8 237	0 604	16 970	15.780	10 930
28	6 613	1.519	10 120	5 376	3 294	1 023	0 666	4 860	0 595	22 310	10.380	11.260
29	8 606		13 000	4 740	2.745	0 930	0 853	3 478	0 607	13 510	7 903	15 430
30	18.330		10 360	4 034	2 511	0 901	1 383	2 554	0.604	15 780	6 443	42 010
31	13 210		12.940		2 561		1 884	2 028		15 320		27.620
Average	16 380	3.529	8.339	11 400	6 480	2 066	0.780	2 836	1 517	6 488	13 880	18 020
Lowest	3 760	1.508	1.461	2 889	2 511	0 901	0 575	0 663	0 595	0 540	5 589	5 374
Highest	44 800	10 080	25 730	51 850	25.750	7 623	1 884	29 440	10 820	26 130	33 090	42 010
Peak flow	59 490	11 000	47.340	64 870	35 210	13 680	2.607	50.350	19 880	44 700	54 460	47.950
Day of peak	20	1	22	15	7	10	31	26	3	31	18	30
Monthly total (million cu m)	43.88	8.54	22 33	29 55	17.36	5.35	2 09	7.59	3 93	17 38	35 98	48 26
Runoff (mm)	155	30	79	105	61	19	7	27	14	62	127	171
Rainfall (mm)	161	13	113	130	112	47	49	113	22	159	141	217

Statistics of monthly data for previous record (Dec 1968 to Dec 1985—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	10.570	8 022	7.407	4 606	2.930	2 434	1 683	3 049	3.863	6 992	10 440	10 580
	Low	4 463	3 818	2 390	0 922	0 611	0 604	0 298	0 289	1.147	0 788	3.583	3 175
	(year)	1973	1985	1985	1974	1974	1970	1984	1976	1971	1972	1975	1971
	High	18.580	13.220	22.520	9 586	8 174	6 416	5 927	11 410	10 360	17.570	16.540	20 820
	(year)	1984	1984	1981	1970	1983	1982	1973	1985	1974	1981	1984	1979
Runoff	Avg.	100	69	70	42	28	22	16	29	35	66	96	100
	Low	42	33	23	8	6	6	3	3	11	7	33	30
	High	176	117	214	88	78	59	56	108	95	167	152	198
Rainfall	Avg	122	74	102	67	75	78	73	92	116	111	132	120
	Low	67	14	44	3	10	23	17	17	27	37	55	42
	High	222	139	233	135	142	155	151	171	250	213	187	238

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	7 681		6 041		127
Lowest yearly mean			3 655	1971	
Highest yearly mean			8 060	1981	
Lowest monthly mean	0 780	Jul	0 289	Aug 1976	
Highest monthly mean	18 020	Dec	22.520	Mar 1981	
Lowest daily mean	0 540	3 Oct	0 180	23 Aug 1976	
Highest daily mean	51.850	15 Apr	79.900	27 Oct 1980	
Peak	64 870	15 Apr	98.130	5 Dec 1972	
10 %ile	19 970		15 260		131
50 %ile	4 102		3 055		134
95 %ile	0 650		0 516		126
Annual total (million cu m)	242 20		190 70		127
Annual runoff (mm)	858		675		127
Annual rainfall (mm)	1277		1162		110
(1941-70 rainfall average (mm)			1134)		

Factors affecting flow regime

- Reservoir(s) in catchment.

Station and catchment description

Velocity-area station rated by current meter cableway 150m downstream. Low flow control is the sill of the bridge. Washland storage and headwater reservoirs influence the flow pattern. Geology is mainly Carboniferous Limestone. Rural catchment.

027041 Derwent at Buttercrambe 1986

Measuring authority: YWA
First year: 1973
Grid reference: 44 (SE) 731 587
Level stn. (m OD): 9 50
Catchment area (sq km): 1586.0
Max alt. (m OD): 454

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	36 820	35 210	13.600	26.120	22 230	16 270	8 762	7 642	10 490	5 907	17 700	9 453
2	48 060	59 290	13 180	23 350	21 190	15 810	8 770	6 972	10 680	5 861	21.400	9.162
3	49 650	64 460	12 950	23.460	20 250	17 110	8.493	6.802	21 250	5.849	11 790	9 055
4	34 100	50 370	21.160	20.140	19 380	16 610	8 266	6 735	27 120	5 871	9 433	8 957
5	27 480	39 690	54 340	19 120	18 870	15 460	8 232	6 694	14 570	6 069	8 500	9.451
6	25 080	32 880	60 720	18.370	19.670	15 080	8 215	6 722	11 120	6 033	8 076	8 996
7	23 430	29 070	40 560	22.590	43 680	14 990	8.047	6.585	9.720	5.851	7 539	8 582
8	21.940	26.950	27.210	50 490	39.270	14 260	8 096	6.969	8.939	5 727	7 375	10 850
9	21 810	25 400	24 230	44 070	26 320	13.950	8 107	7 050	8 310	5 727	7 231	23 330
10	44 250	23 890	22 170	33 570	23 210	18 310	7 852	6.587	8.039	5.732	9 629	15.500
11	55.750	21.920	21 650	25.500	20 880	20 770	7 457	6 404	7 707	5 606	10.580	23.890
12	39 890	21.730	20.530	26 060	19 400	15.560	7 363	6 472	7 519	5.564	9 141	32 040
13	32.110	20 480	18 760	24 680	18 570	14 230	7.361	6 502	7.339	5.597	8.377	44.930
14	29 430	19.730	17.250	27.600	17 860	13 620	7 252	6 552	7 323	5 691	10 270	44 750
15	24.420	19 020	18 270	42.220	21 530	13 090	6 997	6 627	7 257	5 756	16.830	39.490
16	22.900	18.330	18 900	61 130	19.980	12 730	6 812	6 435	7 065	5 717	13.420	47.610
17	20 990	17.960	18.990	58.670	17 720	12.350	6 643	6.165	6 952	5 598	10 470	35 520
18	21.430	17.730	17 130	73 730	18 290	12 050	6 577	6 152	6 839	5 703	10 080	32.740
19	25 040	17 240	20 160	66 490	16 560	11 800	6 615	6.341	6 746	6 080	21 870	28.690
20	26.800	16.760	18 850	60.600	38 920	11 380	6 629	6.601	6 663	6 531	16 530	23.370
21	27.260	16 110	17 040	59.000	73 750	10 970	6.578	6.390	6.563	6 476	13 800	22 250
22	25.340	16.200	16 110	52.490	62 760	10 790	6.473	6.468	6 548	6 485	13 230	39 250
23	23.770	15 3'0	16 060	43.170	39 160	10 770	6 554	6.570	6 585	6 244	11 860	41 820
24	20.720	14 750	28 410	43 000	26 100	10 850	6 698	6 404	6 511	6 052	10 690	39 620
25	18.300	14 750	33 220	40.640	22 340	10 590	6.739	7.181	6.432	6 044	10 790	38 990
26	17.190	14.050	32 300	33.880	20 470	9 995	6 584	18 490	6 321	6 135	15.730	35 820
27	17.370	13.810	37 450	29.810	19.050	9 510	6 441	40 990	6 319	6 490	13 610	26 120
28	17 260	13 960	32 610	27 440	18 140	9 234	6 432	33 130	6 259	7 219	11 260	23.550
29	32 740		28 740	25 300	17 500	8.973	6 681	16.160	6.062	6.938	10 310	24 410
30	42 080		25 750	23.440	16 740	8 833	7 022	11 560	5.916	6 721	9 717	49.960
31	38 030		25.990		16 380		7.793	10 240		6 772		61 010
Average	29 400	24 890	24.980	37 540	25.680	13 200	7 308	9.567	8 839	6 066	11 910	28 040
Lowest	17.190	13.810	12.950	18.370	16.380	8 833	6 432	6 152	5.916	5 564	7 231	8.582
Highest	55 750	64 460	60 720	73.730	73 750	20 770	8 770	40 990	27 120	7 219	21 870	61.010
Peak flow	59.660	68 140	64 390	78 820	75 710	25 790	8 859	42.720	35 330	7 726	29 490	63.590
Day of peak	11	3	6	18	21	10	1	27	3	31	1	31
Monthly total (million cu m)	78 75	60 22	66.90	97.30	68.79	34 21	19 57	25 63	22 91	16 25	30 87	75 10
Runoff (mm)	50	38	42	61	43	22	12	16	14	10	19	47
Rainfall (mm)	82	46	58	113	92	35	33	112	27	61	57	118

Statistics of monthly data for previous record (Oct 1973 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	30.670	28 280	27 000	19 270	15 260	10 640	7 634	8 024	8 053	14 110	16 040	25.760
	Low	16.780	15 260	8 799	6 927	7.852	5 342	3 884	3 215	4.730	5 554	7 404	13 460
	(year)	1983	1982	1976	1976	1982	1974	1976	1976	1975	1975	1978	1984
	High	48.190	49 290	56.110	33 670	29 840	21 260	11 810	15.440	14.710	36 810	25 220	42 740
	(year)	1977	1978	1979	1979	1979	1979	1981	1980	1976	1976	1980	1978
Runoff:	Avg	52	44	46	31	26	17	13	14	13	24	26	43
	Low	28	23	15	11	13	9	7	5	8	9	12	23
	High	81	75	95	55	50	35	20	26	24	62	41	72
Rainfall:	Avg	80	47	72	48	61	55	60	64	77	77	69	85
	Low	34	5	6	11	22	11	18	10	21	21	28	36
	High	132	101	143	102	142	149	123	126	192	158	111	180

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	18 910		17 530		108
Lowest yearly mean			11.720	1975	
Highest yearly mean			25 320	1979	
Lowest monthly mean	6 066	Oct	3 215	Aug 1976	
Highest monthly mean	37 540	Apr	56.110	Mar 1979	
Lowest daily mean	5.564	12 Oct	2.697	23 Aug 1976	
Highest daily mean	73.750	21 May	121 400	29 Dec 1978	
Peak	78 820	18 Apr	124 800	5 Jan 1982	
10 %ile	39 660		35 060		113
50 %ile	15.600		12 980		120
95 %ile	6 013		4.921		122
Annual total (million cu m)	596.30		553 20		108
Annual runoff (mm)	376		349		108
Annual rainfall (mm)	834		795		105
[1941-70 rainfall average (mm)			784]		

Factors affecting flow regime

- Abstraction for public water supplies.

Station and catchment description

Compound Crump weir, 20m wide, with current meter rating for high flows. Supersedes 27015. Peak flows from the headwaters upstream of Forge Valley (8% catchment) are diverted down the Sea Cut (27033). Mixed geology of clays, shales and limestone. Rural catchment draining the North York Moors.

027053 Nidd at Birstwith 1986

Measuring authority: YWA
First year: 1975
Grid reference: 44 (SE) 230 603
Level stn (m OD): 67 40
Catchment area (sq km): 217 6
Max alt. (m OD): 705

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4.465	8.169	1.385	4 288	2.384	2.033	1.100	1.106	2 083	1 056	18.700	3 246
2	7.166	7.524	1 368	3.777	2.304	1.907	0.990	1.108	2.258	1 048	12 080	3 101
3	3 959	5 708	1.389	6.299	2 241	1.889	1 016	1 045	3 884	1 039	11.140	4.075
4	3.191	4 791	22.940	3 174	2.179	1.812	1 063	1.062	2 288	1 050	5.729	8 602
5	3 097	4.258	19 770	2 747	2.879	1.770	1 059	1 030	2 030	1 051	5 361	8 611
6	2.919	3 917	11.910	2 667	3 207	1 743	1 038	1 241	1 938	1 049	4.775	7 522
7	2 831	3.650	6 546	3 184	9 204	1.703	1 063	1 494	1 858	1 086	4 613	4 241
8	2 810	3 459	3.192	8.087	5 970	1 695	1 076	1 107	1 832	1 066	4.783	11 180
9	6.551	3 321	2 408	5.939	3 707	1.753	1 063	1 039	1 793.	1 057	6 065	11 350
10	27.350	3 101	2.263	5.617	3 456	3 493	1 046	0 998	1 430	1 059	6.069	10.550
11	15.950	3 051	2.052	5.375	4 019	2.703	1 038	0.991	1 193	1 041	5.652	20.980
12	14 470	2.930	1 949	5 316	3.867	1.984	1 057	0 985	1.169	1.045	5 729	17 280
13	23.240	2 861	4.898	4 077	3 436	1 811	1 042	1 040	1 154	1 074	7.167	37 110
14	24 020	2 823	3 592	6 184	3.139	1.744	1 017	1.001	1 147	1 097	9 958	13 650
15	13 320	2 754	1.994	80 120	3 449	1 654	1 008	0.972	1 143	1 052	7.496	47 880
16	11 440	2 703	2.016	32.220	2 643	1 634	0.990	0 980	1 131	1 045	6.490	23 760
17	6 979	2 649	1 848	87 540	2.702	1 613	0 962	0 964	1 116	1.038	6 736	31 990
18	7 836	2 594	1.747	20 810	3 035	1.569	0 965	0 962	1 109	1 119	14.390	23.320
19	20.900	1.916	1.797	12 340	2 399	1.540	0 973	0.951	1 099	1.489	13 340	17 120
20	53.920	1 657	6 968	20 670	8 347	1.526	0 963	0.934	1 091	1.675	12 230	13 550
21	46 540	1.612	3.524	13 320	10 330	1 508	0 958	0.948	1 089	4 808	9.529	13 950
22	28 770	1.574	7.039	10 010	7 555	1.505	0 962	1.181	1 100	3.343	9.415	7 484
23	20 370	1 543	11 320	8 466	4.547	1.516	0 997	1 061	1.093	3.325	12 910	6 142
24	12.860	1 519	11.760	6 983	3 469	1.537	0 978	0.956	1 082	2.673	12.820	7.385
25	11.350	1.502	17.920	6 314	5 492	1 473	0 960	10 570	1 083	4 861	17 580	7 939
26	7.097	1 452	14 110	5 803	4 679	' 429	0 952	18 940	1 072	2 946	14 940	8 643
27	6 320	1 435	22.240	3 774	3 599	1 412	0 941	6.992	1 064	5 778	12 190	10.570
28	6 104	1.427	14 490	2 966	2 883	1 387	1.067	5 458	1'059	7 310	7.218	10 590
29	4.411		13.640	2 653	2 339	1 365	1 069	4 999	1 064	6 380	4 692	12 660
30	5.115		12 370	2.506	2 114	1 363	1 150	4 786	1 062	6 284	3 638	20 760
31	8.205		9 646		2 115		1 146	2 811		12.990		15 110
Average	13.340	3.068	7.745	12.770	3.990	1.736	1 023	2 571	1.450	2 675	9 114	14 200
Lowest	2.810	1 427	1.368	2.506	2.114	1 363	0 941	0.934	1 059	1 038	3 638	3 101
Highest	53.920	8.169	22.940	87 540	10 330	3 493	1 150	18 940	3 884	12 990	18.700	47 880
Peak flow	150.300	10 090	39 760	154.700	13 100	4 754	1 367	37.810	6 154	44 020	34 120	66 560
Day of peak	20	2	4	15	21	10	1	25	3	31	1	13
Monthly total (million cu m)	35 73	7 42	20.74	33 11	10 69	4.50	2 74	6 89	3 76	7.16	23 62	38 05
Runoff (mm)	164	34	95	152	49	21	13	32	17	33	109	175
Rainfall (mm)	210	39	132	165	120	41	43	159	22	163	149	219

Statistics of monthly data for previous record (Apr 1975 to Dec 1985—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	9.546	8 030	8.510	3 699	3 061	1.951	1 222	1 823	2 203	5.109	7 274	10 200
	Low	4.432	3 215	1 916	1 681	1.064	1 015	0 815	0.655	1.263	1 508	1 893	3 612
	(year)	1985	1982	1985	1984	1984	1975	1984	1984	1977	1978	1975	1975
	High	15.960	16.010	21 140	7.247	7 061	3 131	1 556	5.690	3 955	15 120	12.830	20 280
	(year)	1984	1984	1979	1979	1983	1982	1982	1985	1985	1976	1984	1979
Runoff	Avg.	117	91	105	44	38	23	15	22	26	63	87	126
	Low	55	36	24	20	13	12	10	8	15	19	23	44
	High	196	184	260	86	87	37	19	70	47	186	153	250
Rainfall: (1976-1985)	Avg.	145	88	133	67	87	83	53	102	128	132	140	163
	Low	106	16	75	11	27	16	18	22	80	36	62	80
	High	250	182	243	144	149	185	114	192	253	223	208	258

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	6 165		5 214		118
Lowest yearly mean			4 024	1985	
Highest yearly mean			7 148	1979	
Lowest monthly mean	1 023	Jul	0.655	Aug 1984	
Highest monthly mean	14 200	Dec	21 140	Mar 1979	
Lowest daily mean	0.934	20 Aug	0 392	21 Aug 1984	
Highest daily mean	87.540	17 Apr	109 400	28 Dec 1978	
Peak	154.700	15 Apr	204 400	13 Jan 1984	
10 %ile	13 880		12.670		110
50 %ile	2 917		2.655		110
95 %ile	0 984		1 009		98
Annual total (million cu m)	194 40		164 60		118
Annual runoff (mm)	893		756		118
Annual rainfall (mm)	1462		1321		111
[1941-70 rainfall average (mm)			]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Velocity-area station approximately 17m wide, with current metering from bridge at the section. Heavily reservoired with substantial effect on flows. Geology is mostly Millstone Grit. Rural catchment.

028009 Trent at Colwick 1986

Measuring authority: STWA
First year: 1958
Grid reference: 43 (SK) 620 399
Level stn (m OD): 16.00
Catchment area (sq km): 7486.0
Max alt. (m OD): 636

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	97.054	321.376	56.867	165.196	79.447	60.629	37.515	47.020	49.632	31.956	104.250	97.273
2	171.367	333.753	54.949	143.128	73.298	58.364	36.957	41.146	47.178	31.587	121.630	90.244
3	207.966	324.286	50.503	116.859	71.327	59.290	35.838	39.588	49.071	31.707	77.440	82.293
4	141.677	264.874	59.797	98.120	69.672	63.646	35.469	41.736	49.071	31.163	63.138	79.084
5	130.573	192.298	191.507	86.706	68.224	55.872	37.484	39.346	43.307	31.734	54.442	85.370
6	111.381	154.266	146.835	80.979	67.816	53.533	36.427	38.642	41.365	30.323	50.934	96.368
7	97.630	129.997	101.569	83.202	81.149	52.285	35.087	35.746	38.220	31.243	47.728	81.298
8	100.480	114.016	84.415	105.741	80.657	50.696	35.521	35.332	38.572	31.185	56.021	121.517
9	103.616	103.704	78.062	95.345	79.977	50.746	35.235	34.819	37.250	30.960	67.897	198.078
10	285.985	96.267	76.311	83.229	76.973	91.992	33.919	33.915	38.237	31.931	66.682	156.940
11	433.003	88.634	74.623	72.705	73.235	95.532	34.793	66.347	37.276	31.821	65.860	148.183
12	431.807	88.049	70.152	71.148	77.966	63.249	37.100	67.769	37.210	30.443	61.534	179.360
13	368.086	81.175	66.632	70.811	77.615	54.448	36.787	46.531	38.283	31.171	59.577	218.397
14	281.572	79.012	62.948	83.005	75.938	50.948	34.974	40.141	44.206	31.925	101.607	220.396
15	219.072	75.167	60.334	205.890	120.830	48.006	35.072	36.929	40.645	33.898	131.367	219.888
16	172.899	72.711	62.438	301.423	106.561	46.691	34.638	34.854	37.770	32.231	108.487	279.381
17	139.847	75.035	66.423	337.219	80.283	45.767	32.280	32.626	36.835	30.538	87.698	210.856
18	143.458	73.300	65.252	309.922	88.281	44.717	31.796	32.973	36.742	30.776	119.916	228.456
19	201.488	71.708	83.578	202.268	76.934	44.325	32.372	41.362	35.068	34.512	203.799	286.897
20	221.806	63.616	79.620	242.194	243.608	42.380	32.662	38.158	35.520	58.275	175.062	254.299
21	211.401	62.290	70.238	252.917	276.735	41.700	34.538	36.220	34.674	67.948	248.616	225.032
22	208.453	58.711	63.395	226.932	191.280	41.140	33.429	35.148	34.172	65.585	223.210	201.782
23	209.641	56.323	80.912	220.617	126.155	44.227	36.747	45.147	33.461	51.427	184.874	155.915
24	182.262	58.035	130.526	184.986	101.238	65.836	42.273	37.527	33.055	50.490	178.994	131.400
25	132.455	56.563	149.190	157.608	87.605	57.864	40.798	59.283	32.785	48.723	157.381	136.268
26	109.678	55.152	125.393	130.866	80.613	47.598	41.089	220.570	33.267	59.712	271.894	145.800
27	108.460	53.518	139.582	114.787	73.394	42.651	36.090	217.676	32.412	58.248	253.891	129.702
28	125.808	55.956	143.275	102.857	67.860	41.017	38.735	158.535	31.720	77.351	169.892	119.077
29	195.678		150.969	95.524	61.759	39.189	45.590	96.897	32.187	58.664	126.227	120.834
30	300.948		154.310	86.594	58.036	37.478	51.093	67.298	32.245	50.522	107.097	278.517
31	328.718		161.497		58.319		60.512	56.937		55.914		398.733
Average	199.200	116.300	95.550	151.000	95.250	53.060	37.510	59.880	38.050	42.060	124.900	173.500
Lowest	97.054	53.518	50.503	70.811	58.036	37.478	31.796	32.626	31.720	30.323	47.728	79.084
Highest	433.003	333.753	191.507	337.219	276.735	95.532	60.512	220.570	49.632	77.351	271.894	398.733
Peak flow	450.456	343.185	225.561	359.593	303.924	121.633	65.624	263.709	66.254	91.363	299.791	430.039
Day of peak	12	3	5	17	21	10	31	26	1	28	27	31
Monthly total (million cu m)	533.50	281.30	255.90	391.30	255.10	137.50	100.50	160.40	98.62	112.70	323.80	464.60
Runoff (mm)	71	38	34	52	34	18	13	21	13	15	43	62
Rainfall (mm)	109	18	65	76	76	40	48	110	12	76	91	120

Statistics of monthly data for previous record (Oct 1958 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	138.200	134.300	111.200	89.860	72.830	54.950	44.840	46.900	50.630	66.300	89.490	124.600
	Low	52.910	49.980	47.180	35.240	32.250	24.690	19.450	18.450	23.080	25.270	34.170	46.260
	(year)	1963	1976	1976	1976	1976	1976	1976	1976	1959	1959	1975	1975
	High	210.900	384.000	227.600	179.500	175.100	87.220	104.100	76.470	121.100	187.000	231.700	351.600
	(year)	1959	1977	1981	1966	1969	1982	1968	1966	1965	1960	1960	1965
Runoff:	Avg.	49	44	40	31	26	19	16	17	18	24	31	45
	Low	19	17	17	12	12	9	7	7	8	9	12	17
	High	75	124	81	62	63	30	37	27	42	67	80	126
Rainfall:	Avg.	72	54	59	57	62	60	56	70	68	64	74	78
	Low	23	8	13	9	18	14	18	21	3	12	38	15
	High	138	175	116	116	144	148	114	120	149	141	145	173

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	98.780		85.140		116
Lowest yearly mean			47.020	1976	
Highest yearly mean			124.000	1966	
Lowest monthly mean	37.510	Jul	18.450	Aug 1976	
Highest monthly mean	199.200	Jan	384.000	Feb 1977	
Lowest daily mean	30.323	6 Oct	14.700	23 Aug 1976	
Highest daily mean	433.003	11 Jan	854.910	26 Feb 1977	
Peak	450.456	12 Jan	956.684	25 Feb 1977	
10 %ile	217.100		168.200		129
50 %ile	69.130		60.580		114
95 %ile	31.990		28.540		112
Annual total (million cu m)	3115.00		2687.00		116
Annual runoff (mm)	416		359		116
Annual rainfall (mm)	841		774		109
(1941-70 rainfall average (mm)			776)		

Factors affecting flow regime

- Reservoir(s) in catchment
- Flow influenced by groundwater abstraction and/or recharge
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station in the navigable Trent. Main channel approx 62m; cableway span 99m. Holme sluices 750m u/s affect water levels up to medium flows. Bypassed at high flows on rb when gravel workings inundated. Very substantial flow modifications owing to imports, WRW's, cooling water and industrial usage. Very large catchment with the gamut of land usage. Predominantly impervious - glacial clays and Triassic Marls, but some sandstones and limestones. Extensive terrace gravels and alluvium maintain baseflow

028010 Derwent at Longbridge/St Mary's Bridge 1986

Measuring authority: STWA
First year: 1936
Grid reference 43 (SK) 356 363
Level stn. (m OD) 44 40
Catchment area (sq km) 1054 0
Max alt (m OD) 636

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	20.401	49 077	9.737	37 010	19.361	13 457	6 682	5.533	7 826	4 369	29 073	27.273
2	36 867	59 096	9 558	35 143	15.910	12 975	6.447	5 323	7.342	4 228	17.927	26 104
3	30.211	49 119	9.777	29 289	15 702	13 056	6 420	5.064	7 910	4.213	14 037	23 493
4	23 146	37 979	19 927	24 968	15.514	12.550	6.525	5 265	6 718	4 277	11.838	22 487
5	21.580	30 826	64 657	22 155	15 440	12 111	6 584	4 952	6 404	4 380	10 587	20 829
6	18.188	28.728	40 925	19.915	15 351	11 625	6.675	4 694	6 443	4 386	10 299	18.978
7	16.749	23.723	30 646	22 475	20 473	11 179	6 539	4.832	6.145	4.590	9 452	18 075
8	16 244	21.962	25.703	24.461	17 269	10 967	6.338	5 238	5 813	4 343	9 974	34 478
9	16.426	19 593	23 635	22 094	16 630	11 332	6 079	5 031	5 697	4 348	9 915	36 000
10	124.278	18.595	20 411	19.310	16.578	18 501	6 085	5 124	5 609	4 432	10 560	28 658
11	66 216	17.235	18 880	16.692	18 470	13 784	6.107	6 200	5 516	4 189	10 025	38 582
12	53.542	16.745	17 215	16 461	21.774	11 760	6 426	4.931	5 706	4 178	9 335	38 609
13	78.251	16.114	16 165	16 189	23 447	10 833	6 274	5.148	5 513	4.603	10 754	67 891
14	66.531	15.700	15 032	16.779	24.532	10 337	6 275	4.841	5 247	4 667	14.433	47 855
15	66.867	14 903	15 517	63 801	29 365	10 142	6.266	4 605	5 216	4.365	19 031	71 712
16	47.335	14.413	15.845	56 958	21.760	10 006	5.955	4.840	4 993	4.427	15 636	54.794
17	38.732	14 042	15 943	93 129	18.661	9 876	5 270	4 753	4 944	4 311	14.821	56 918
18	48 144	13 419	15 870	58 227	18 120	9.671	5 164	4 810	4 713	4.937	27 620	80 149
19	64 653	12.988	16.862	43.518	20.316	9 028	5 080	4.840	4 815	5.335	41.818	77 333
20	57 693	12.800	15 511	61.713	65 858	8 927	5.518	5 000	4 856	6 816	37 726	67.388
21	61 191	11.802	14 366	50 067	42.325	8 739	5 167	4 594	4 888	6.702	49 022	61 302
22	55 155	11.493	14 016	45.758	36.499	9 155	5.002	4 660	4 962	6 190	36 914	47.717
23	64 850	11.235	28 776	39 363	30 827	9 581	5 877	4.633	4 767	8 474	48 979	39 870
24	52 149	10 787	43 590	37 194	27.694	11 382	6.354	4 381	4 699	8 804	44.834	33 749
25	36.202	10 497	31 900	32.768	25 356	9 688	5 753	17 265	4 536	12 462	57 857	34 864
26	30 290	10.190	36 095	29 759	24 021	8 790	5.506	55 996	4 670	13 277	70 486	32 429
27	32.930	9.999	42 664	28.306	21.910	7.957	5 050	18.938	4.667	11.605	46 124	32 846
28	38.043	9 908	38 120	26 938	17.755	7 414	6 130	12.464	4.574	10.115	37 199	34 307
29	48.727		39 066	25 235	14.667	7 158	6 325	9 735	4 435	8 623	32.291	38 913
30	69 670		38 625	23.282	13.703	7 158	7.207	8.775	4 390	8 870	28.928	103 971
31	58.611		37 458		13 811		6 424	8 061		8 883		98 332
Average	47 090	20.390	25 240	34.630	22 550	10 620	6 049	8 081	5 467	6 303	26.250	45 670
Lowest	16 244	9.908	9 558	16.189	13 703	7 158	5 002	4 381	4 390	4.178	9.335	18 075
Highest	124.278	59 096	64.657	93 129	65 858	18 501	7 207	55 996	7 910	13 277	70 486	103.971
Peak flow	170 506	62 568	70 244	108 889	100.121	21 835	8 786	80 094	10 524	19 904	103 075	123 806
Day of peak	10	2	5	17	20	10	30	26	26	25	25	30
Monthly total (million cu m)	126.10	49.33	67 61	89 77	60 40	27 53	16 20	21.65	14 17	16.88	68 04	122.30
Runoff (mm)	120	47	64	85	57	26	15	21	13	16	65	116
Rainfall (mm)	188	37	98	107	102	48	48	121	13	111	129	200

Statistics of monthly data for previous record (Jan 1936 to Dec 1985—incomplete or missing months total 0.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	29 420	28.970	22 570	17.590	12 860	10 230	8 801	9 213	10 640	13 630	21 920	26 170
	Low	9.751	8 086	9 110	7 677	6 284	4 806	4 211	3 648	3 957	4.156	4 302	8 480
	(year)	1963	1963	1976	1976	1976	1976	1976	1976	1959	1959	1975	1975
	High	67 000	76.780	69 530	39.590	26 410	18.010	28 660	33.840	32 940	35 130	54 320	88 690
	(year)	1939	1977	1947	1966	1967	1969	1958	1956	1946	1960	1940	1965
Runoff:	Avg.	75	67	57	43	33	25	22	23	26	35	54	67
	Low	25	19	23	19	16	12	11	9	10	11	11	22
	High	170	176	177	97	67	44	73	86	81	89	134	225
Rainfall:	Avg.	104	79	74	65	70	69	77	84	83	87	106	100
	Low	33	8	16	8	15	15	16	10	3	17	16	20
	High	215	236	185	132	163	188	158	185	199	178	232	246

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	21.560		17 610		122
Lowest yearly mean			9 625	1976	
Highest yearly mean			25 200	1966	
Lowest monthly mean	5 467	Sep	3 648	Aug 1976	
Highest monthly mean	47 090	Jan	88 690	Dec 1965	
Lowest daily mean	4.178	12 Oct	1 819	30 Aug 1952	
Highest daily mean	124.278	10 Jan	334.177	10 Dec 1965	
Peak	170 506	10 Jan			
10 %ile	49 280		35 860		137
50 %ile	14.750		11.970		123
95 %ile	4.529		4 992		91
Annual total (million cu m)	679.90		555 70		122
Annual runoff (mm)	645		527		122
Annual rainfall (mm)	1202		998		120
[1941-70 rainfall average (mm)			1020]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater
- Augmentation from effluent returns.

Comment

From July, flows measured using the new multi-path ultrasonic gauging station at St Mary's Bridge; grid reference 43 (SK) 355 368

Station and catchment description

Long, curved broad-crested masonry weir in Derby - complex rating history, much reprocessing. Very insensitive. At high flows Derby may flood but bypassing small. Weir narrowed in 1971. Substantial flow modification owing to Derwent reservoirs, milling and PWS abstractions. Superseded by 28085 July '86. Large, predominantly upland catchment draining Millstone Grit and Carb. Lst. Lower reaches drain Coal Measures on the lb and Triassic sandstones and marls on the rb. Peat moorland headwaters; forestry, pasture and some arable.

030001 Witham at Claypole Mill 1986

Measuring authority: AWA
First year: 1959
Grid reference: 43 (SK) 842 480
Level stn (m OD): 16.90
Catchment area (sq km): 297.9
Max alt. (m OD): 158

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.546	4.382	1.790	2.289	3.593	2.239	1.208	0.646	0.613	0.597	0.797	0.851
2	2.692	13.598	1.778	2.128	3.454	2.133	1.157	0.676	0.732	0.589	0.615	0.782
3	3.190	10.138	1.821	2.001	3.417	2.220	1.148	0.841	0.799	0.581	0.611	0.777
4	2.401	6.510	2.268	1.876	3.318	2.027	1.163	1.030	0.753	0.549	0.614	0.793
5	2.487	5.108	3.017	1.849	3.520	1.944	1.224	0.696	0.700	0.575	0.590	0.879
6	2.232	4.322	2.458	1.782	3.846	1.901	1.238	0.580	0.680	0.608	0.607	0.807
7	1.974	3.885	2.048	2.119	7.517	1.868	1.212	0.579	0.651	0.595	0.594	0.770
8	2.047	3.734	1.906	2.654	4.818	1.792	1.202	0.499	0.609	0.586	0.816	0.943
9	2.056	3.505	1.783	2.368	4.196	1.740	1.181	0.465	0.653	0.597	0.605	0.931
10	13.891	3.224	1.791	2.085	3.796	1.839	1.135	0.581	0.467	0.557	0.596	0.930
11	7.623	3.107	1.738	1.937	3.586	1.697	1.061	1.592	0.590	0.538	0.627	1.126
12	4.611	2.998	1.735	2.061	3.397	1.499	1.341	0.922	0.524	0.536	0.602	1.467
13	3.696	2.931	1.721	2.013	3.151	1.438	1.292	0.672	0.552	0.554	0.604	2.029
14	3.369	2.899	1.669	2.187	3.567	1.425	1.308	0.599	0.717	0.561	0.712	1.821
15	2.911	2.812	1.579	7.516	7.277	1.446	1.166	0.536	0.538	0.560	0.918	2.221
16	2.720	2.698	1.671	8.628	4.615	1.464	1.010	0.618	0.581	0.559	0.759	2.485
17	2.574	2.531	1.572	13.698	3.720	1.408	0.679	0.656	0.585	0.613	0.582	1.748
18	2.572	2.463	1.647	9.147	3.372	1.425	0.611	0.681	0.551	0.634	1.087	2.131
19	2.601	2.338	2.186	5.956	3.126	1.371	0.546	0.934	0.495	0.579	1.162	2.348
20	2.451	2.275	2.069	8.746	4.368	1.366	0.593	0.862	0.529	1.065	1.403	1.918
21	2.560	2.238	1.836	6.916	5.344	1.307	0.485	0.668	0.597	0.646	3.178	1.622
22	2.587	2.128	1.860	6.669	4.214	1.282	0.550	0.536	0.607	0.530	1.675	1.492
23	2.605	2.041	1.879	6.920	3.300	1.377	0.638	0.599	0.636	0.576	1.272	1.440
24	2.267	1.985	2.496	6.188	2.849	1.586	0.878	0.581	0.602	0.574	1.071	1.348
25	1.990	1.937	2.290	5.699	2.702	1.304	0.826	1.224	0.509	0.599	1.037	1.441
26	1.982	1.846	2.079	4.965	2.406	1.271	0.621	3.203	0.590	0.562	1.470	1.486
27	2.010	1.816	2.069	4.508	2.392	1.235	0.549	1.996	0.573	0.578	1.311	1.428
28	1.979	1.817	2.234	4.079	2.320	1.241	0.739	1.009	0.512	0.591	1.089	1.373
29	4.381		2.094	3.800	2.257	1.208	0.804	0.869	0.413	0.562	0.966	1.418
30	7.813		2.209	3.607	2.193	1.238	0.894	0.722	0.648	0.594	0.856	3.601
31	4.832		2.354		2.215		1.129	0.648		0.578		3.642
Average	3.369	3.617	1.989	4.546	3.672	1.576	0.954	0.862	0.600	0.594	0.961	1.550
Lowest	1.546	1.816	1.572	1.782	2.193	1.208	0.485	0.465	0.413	0.530	0.582	0.770
Highest	13.891	13.598	3.017	13.698	7.517	2.239	1.341	3.203	0.799	1.065	3.178	3.642
Peak flow	15.494	15.193	3.244	14.697	9.749	2.620	1.904	4.672	1.105	1.944	4.056	5.132
Day of peak	10	2	5	17	7	3	30	25	9	20	21	30
Monthly total (million cu m)	9.02	8.75	5.33	11.78	9.84	4.09	2.56	2.31	1.55	1.59	2.49	4.15
Runoff (mm)	30	29	18	40	33	14	9	8	5	5	8	14
Rainfall (mm)	65	30	44	86	86	23	50	98	11	37	61	69

Statistics of monthly data for previous record (May 1959 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	2.807	3.267	2.973	2.285	1.748	1.124	0.781	0.786	0.725	0.917	1.417	2.160
	Low	0.673	0.491	0.453	0.364	0.311	0.184	0.062	0.136	0.232	0.218	0.278	0.311
	(year)	1965	1976	1976	1976	1976	1976	1976	1976	1959	1959	1959	1964
	High	5.527	10.690	6.995	5.748	4.695	3.141	2.119	2.376	2.886	3.906	6.526	7.879
	(year)	1961	1977	1979	1979	1983	1985	1968	1980	1968	1960	1960	1965
Runoff:	Avg.	25	27	27	20	16	10	7	7	6	8	12	19
	Low	6	4	4	3	3	2	1	1	2	2	2	3
	High	50	87	63	50	42	27	19	21	25	35	57	71
Rainfall:	Avg.	53	40	49	49	52	53	50	62	52	48	57	57
	Low	20	3	8	10	11	3	9	5	3	5	24	13
	High	117	140	92	103	130	148	132	127	127	137	115	142

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	2.012		1.742		115
Lowest yearly mean			0.594	1976	
Highest yearly mean			2.807	1979	
Lowest monthly mean	0.594	Oct	0.062	Jul 1976	
Highest monthly mean	4.546	Apr	10.690	Feb 1977	
Lowest daily mean	0.413	29 Sep	0.021	24 Jul 1976	
Highest daily mean	13.891	10 Jan	31.600	11 Feb 1977	
Peak	15.494	10 Jan	37.540	11 Feb 1977	
10 %ile	3.812		3.805		100
50 %ile	1.479		1.026		144
95 %ile	0.546		0.335		163
Annual total (million cu m)	63.45		54.97		115
Annual runoff (mm)	213		185		115
Annual rainfall (mm)	660		622		106
(1941-70 rainfall average (mm)			625)		

Factors affecting flow regime

- Abstraction for public water supplies

Station and catchment description

An old weir at three levels with a total width of 24.99m converted into a standard Lea designed broad-crested weir. It is rated theoretically and there is no bypassing or drowning. Low flows in summer are moderately influenced by transfer of water from Rutland Water and abstractions for public supply at Saltersford. The catchment is clay (50%) with limestone (40%) and gravel, and is largely rural.

032001 Nene at Orton 1986

Measuring authority: AWA
First year: 1939

Grid reference: 52 (TL) 166 972
Level stn (m OD): 3.40

Catchment area (sq km): 1634.3
Max alt. (m OD): 224

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	14 702	19 665	7 445	28 688	11 359	9.252	2 269	4 831	3.185	4 373	5 513	9.190
2	31.504	39.316	7.192	21 463	12 706	8 781	2 223	3 699	4 032	5 108	7 118	10 196
3	38.401	51.201	7 076	14 095	11 688	8 690	2 775	3.434	3 605	5 042	7 768	10 068
4	31.744	47 535	7 701	14 247	11.445	8 788	3 790	4.606	4 257	3 754	7 061	9.642
5	24.258	36.786	17 638	10 705	11 150	8 546	2 419	5.330	4 020	4 369	6.411	9 256
6	32.261	27.795	23 455	12 387	10.551	7 167	2 327	3.607	3 707	4 382	5 939	8.593
7	21.583	17.755	13 662	15.115	13 432	7.650	4 244	2.311	3 638	4 217	5 974	8 546
8	21 766	15.702	12 364	33.960	11.919	6.815	4.904	2.994	3.361	4 157	5.936	8 633
9	18.907	13 069	10 663	30 357	11 126	6 610	3 958	4.153	4 045	4.358	6.301	9.645
10	53 059	12.975	10 343	20.965	11.192	5.020	2.356	4.329	3 850	4.360	6 147	10 631
11	54 429	14 706	6.081	12.125	9 184	7 379	1 999	7 874	4 128	4.168	6 231	10 919
12	57 851	13 061	9.297	14.537	10 431	4 885	2 466	9 842	4 221	4.134	6 759	15 189
13	55 914	13.472	8 316	13.812	10 228	4.932	2 547	4.946	5.923	4 139	6 910	18.763
14	46.240	13 459	6 487	11.756	10 093	7.588	2 396	3.155	7 734	3.920	7 827	22.187
15	35 051	12.972	7 327	16.551	24 501	4.198	2.574	3.292	7.633	3 665	12 548	22.222
16	15.153	12.100	6 447	33.068	22 057	4.183	3 721	3.212	3 637	3 669	15.597	31 045
17	19.678	11.772	4 292	38.643	13 466	4.718	4.054	3 632	3.625	3 809	10 092	28.813
18	17 441	11 625	6.975	38 194	11 345	4.559	3 931	4.185	3 839	3 881	10 849	22 445
19	18.241	11.617	9 889	37.513	10 877	4.064	3 606	4 413	3 894	3 987	17 988	24 249
20	18 801	11 195	19.651	34 464	29 717	3.852	3 704	4.377	3 897	6 060	28 592	15 106
21	19.232	10 504	10.720	42 983	57 928	5 371	3 826	3.730	3.822	6.941	32 081	14.553
22	17.148	10 529	9 472	41 012	44 838	6.052	3.645	3.797	4.536	6 944	35 119	12.284
23	21 001	10 009	9 475	40.162	17 412	5 798	3 799	3.922	4 475	6.432	30 879	13.243
24	27.434	8.727	11.429	41.839	17 987	3.881	3.898	3 639	4 304	5.739	16 476	11 594
25	12.833	4.356	17 399	29.396	12 439	4.439	4 068	4 359	4 138	5.653	18 919	11.395
26	11 187	9.290	12 854	23 249	12.160	4 215	4 004	21.631	4 368	5.358	15 940	12 408
27	12.425	5.780	12 455	19 501	11.012	3.037	4 017	18.585	4 257	5 221	19 562	12 471
28	13.243	7 596	17 340	15 628	10 403	2.903	3 451	7.546	4 205	5 394	17 584	10.683
29	13.765		29.499	16.709	10 578	2.548	2 664	7 028	4 391	5 150	10 023	9.970
30	23.097		24 991	11.648	9 769	2 345	3.551	5 700	4 315	5 258	12 890	22.061
31	23.356		28.074		9 000		4 462	4.170		5.207		37.970
Average	26.510	16.950	12 450	24.490	15.550	5.608	3.343	5 559	4 301	4.802	13.230	15.290
Lowest	11 187	4 356	4 292	10.705	9 000	2.345	1 999	2.311	3.185	3 665	5.513	8.546
Highest	57.851	51 201	29 499	42.983	57 928	9 252	4.904	21 631	7.734	6.944	35 119	37.970
Peak flow	59 016	55.721	41 277	46.990	62.447	11 025	5 219	30 537	10 463	8 033	40 652	41.850
Day of peak	13	3	29	21	21	14	7	26	16	2	20	31
Monthly total (million cu m)	71 00	41 00	33 35	63.48	41 64	14 54	8 95	14 89	11 15	12.86	34 30	40.95
Runoff (mm)	43	25	20	39	25	9	5	9	7	8	21	25
Rainfall (mm)	69	25	58	69	77	18	44	122	26	51	71	71

Statistics of monthly data for previous record (Jan 1939 to Dec 1985—incomplete or missing months total 1 3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	16 980	18 210	16.360	10 170	7 350	5.108	3 736	3.690	3 214	4 423	9 246	12 990
	Low	2 020	1.608	1 440	1 299	0 915	0 536	0 842	0 482	0 738	1.013	1 141	1 641
	(year)	1939	1939	1939	1939	1939	1944	1943	1944	1943	1947	1947	1947
	High	48.170	49.750	79 640	35 040	27 690	13 010	20 060	20 470	20 090	22.120	40 560	42 550
	(year)	1959	1977	1947	1979	1983	1977	1968	1980	1968	1960	1960	1954
Runoff:	Avg	28	27	27	16	12	8	6	6	5	7	15	21
	Low	3	2	2	2	2	1	1	1	1	2	2	3
	High	79	74	131	56	45	21	33	34	32	36	64	70
Rainfall (1940-1985)	Avg.	55	41	48	42	54	55	51	63	53	51	61	56
	Low	20	3	5	8	10	5	6	3	3	5	10	13
	High	109	111	132	91	117	156	123	110	127	130	155	124

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	12.310		9 248		133
Lowest yearly mean			2 774	1944	
Highest yearly mean			16 170	1979	
Lowest monthly mean	3.343	Jul	0 482	Aug 1944	
Highest monthly mean	26 510	Jan	79 640	Mar 1947	
Lowest daily mean	1.999	11 Jul	0 085	29 Jul 1948	
Highest daily mean	57 928	21 May	319.813	18 Mar 1947	
Peak	62.447	21 May	382.300	18 Mar 1947	
10 %ile	28.520		24.380		117
50 %ile	9.141		4.600		199
95 %ile	3 110		1.079		288
Annual total (million cu m)	388 20		293 80		133
Annual runoff (mm)	238		179		133
Annual rainfall (mm)	701		630		111
(1941-70 rainfall average (mm)			624)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from effluent returns

Station and catchment description

Series of sluices, weirs and a lock. Ratings revised and historical data altered in 1975 and 1983. Ultrasonic gauge tested in 1976 but abandoned. Flows above 17 cumecs measured at Wansford (32010) 12km upstream and corrected for smaller area. Wansford is a rated section, and ratings and data were revised in 1981. Water abstracted at Wansford and sent to Rutland Water, with significant effect on low flows. Lowest gauging point on Nene. Mostly clay (72%) and rural, but includes some towns and several small reservoirs.

033002 Bedford Ouse at Bedford 1986

Measuring authority: AWA
First year: 1933
Grid reference: 52 (TL) 055 495
Level stn. (m OD): 24.70
Catchment area (sq km) 1460 0
Max alt (m OD) 247

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19.400	28 800	6 200	31 000	12 600	7 200	3 200	3 000	3.700	2 400	5 800	9 900
2	31.300	43 500	6.000	24 100	9.400	7 400	3 000	2 900	3 500	2 500	10 500	9 600
3	50 600	51.800	6.200	38 000	10.600	7 100	3 000	3.100	3 600	2.500	10 800	8 800
4	47.000	45.800	8.100	43 500	10.200	7.100	3.200	4 800	3 400	2 900	7 700	8 500
5	38.000	32 000	34.800	28 300	10 100	6 800	3 400	4 800	3 100	2.600	6 300	8 500
6	40.200	25.700	34 900	21.900	11 000	6.000	6 000	4 200	2.900	2 500	5 600	9 000
7	29.200	21.900	21.200	19.800	11 000	5 700	5 400	3 600	3 000	2 500	5 600	9.500
8	29.200	19.500	13.600	26.100	10 600	5.700	4 100	3 000	3 000	2 500	5 200	9 300
9	39.100	16 300	13 000	27.800	10.600	5.400	3.700	2.900	2.500	2 500	5 400	9 300
10	58.200	14.400	12.100	20 900	10 000	5 400	3 400	3 400	2.500	2.500	6 000	9 300
11	66.200	13.400	11.200	16.000	9 600	5 600	3 500	4 300	2.300	2.500	6 800	9 100
12	80 700	12 600	10 600	14.300	9.200	5.600	3.900	7 100	2 300	2.500	9 900	13 800
13	67.500	11.900	9 800	13 900	8 900	5.100	4 800	5.300	3 000	2 500	10 500	18 800
14	33.900	11.600	8.500	16 000	8.900	4.400	4 500	3 900	5 500	2.500	11 500	27.500
15	25.700	11.000	7 500	25 000	13 300	5.100	3.900	3 300	7 600	2 500	15 400	26 100
16	24 100	10 000	7.600	38 600	16 600	4 900	3.500	3 000	4 900	2.500	20.900	34 900
17	19 400	9 800	7.400	40 200	12.900	4.100	3.200	2.700	3.700	2.600	15 200	41 300
18	16.900	8 500	7 600	39 100	11.400	4.300	3 000	3.100	3.300	2 600	12 800	31 000
19	17.200	8 500	10.200	37.000	10 600	4 200	2.800	3 500	2 600	2 700	16 200	29.200
20	16.800	8.100	14.200	33.900	32 200	3.900	2.500	5 100	2.700	3 300	25 200	21 900
21	14.900	7.800	13.000	50.600	47.000	3 000	2 800	4 300	2.500	6 500	25 800	16 600
22	17.900	7.600	11.100	43.500	45.800	3.600	2 800	3 500	2 500	8 900	33.800	14 900
23	27 600	7 200	9 900	37 000	24 400	4.000	2.700	3 400	2 500	8 700	27.300	13 600
24	22.600	6.500	11.400	32 900	14 700	4 900	2 600	3 300	2 500	6 500	21.800	11 700
25	16.200	6 900	13.800	28.300	11.100	4.900	2.600	3 800	2 400	5 200	18.400	12.700
26	12.700	5.800	11.700	24 100	9 500	3 900	2 600	7 400	2 400	4 800	16 800	21.200
27	12 800	5.400	13 000	20.500	8.700	3.500	2 700	14 100	2 400	4 800	20 900	23.900
28	14 800	6 000	24.300	14.400	7.800	3 600	3.200	10 700	2 240	4.900	19 300	17 800
29	16.100		38 600	13 800	6.900	3 400	2 900	5.900	2 240	5 100	14 200	15 600
30	26.700		34 900	12 300	6 800	3 300	2 150	4 900	2 300	5 300	12 300	25 200
31	31.100		39.100		5.900		2 600	3 900		5 400		48 200
Average	31 100	16 370	15.210	27.760	13 820	4 970	3 344	4 587	3 103	3 797	14 130	18.280
Lowest	12.700	5 400	6.000	12 300	5 900	3 000	2 150	2 700	2 240	2 400	5 200	8.500
Highest	80 700	51 800	39 100	50 600	47.000	7.400	6 000	14.100	7 600	8 900	33 800	48 200
Peak flow	86 400	53 100	44 700	55 600	53 100	8.500	6.900	14.700	8 400	9 300		
Day of peak	12	3	6	21	22	2	6	27	14	22		
Monthly total (million cu m)	83 29	39 60	40.74	71 95	37 00	12 88	8 95	12 29	8 04	10 17	36 62	48 96
Runoff (mm)	57	27	28	49	25	9	6	8	6	7	25	34
Rainfall (mm)	75	21	60	68	69	21	45	106	27	63	75	74

Statistics of monthly data for previous record (Jan 1933 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	19.280	20 240	17 250	10 770	7 147	4 474	3 111	2 741	2 767	5 100	11 050	15 400
	Low	2 606	2.233	2 409	1.994	1.412	0 484	0 098	0 038	0 270	0 452	1 149	1 532
	(year)	1934	1965	1944	1976	1934	1934	1934	1934	1934	1934	1934	1964
	High	55.190	53.300	62 020	31 460	28 290	14 280	19 080	14.400	18 000	26 410	43 790	40 400
	(year)	1939	1977	1947	1951	1983	1985	1968	1980	1968	1966	1960	1960
Runoff:	Avg.	35	34	32	19	13	8	6	5	5	9	20	28
	Low	5	4	4	4	3	1	0	0	0	1	2	3
	High	101	88	114	56	52	25	35	26	32	48	78	74
Rainfall: (1934-1985)	Avg.	58	42	49	44	56	53	52	61	54	58	64	60
	Low	15	3	5	3	10	8	5	3	3	4	10	13
	High	124	111	140	96	113	119	120	138	110	137	178	128

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	13 020		9 896		132
Lowest yearly mean			2.401	1934	
Highest yearly mean			18.890	1937	
Lowest monthly mean	3.103	Sep	0 038	Aug 1934	
Highest monthly mean	31 100	Jan	62 020	Mar 1947	
Lowest daily mean	2 150	30 Jul	0 008	31 Aug 1934	
Highest daily mean	80.700	12 Jan	278.100	15 Mar 1947	
Peak	86 400	12 Jan			
10 %ile	32.130		26 100		123
50 %ile	8 541		4 435		193
95 %ile	2 540		0 903		281
Annual total (million cu m)	410 60		312.30		131
Annual runoff (mm)	281		214		131
Annual rainfall (mm)	704		651		108
(1941-70 rainfall average (mm)			650)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from effluent returns

Station and catchment description

3 broad-crested weirs, 30m, 20m and 12m wide supplemented by 3 vertical sluice gates which are either fully open or shut. High flow rating confirmed by current meter measurements. Records before 1959 based on daily gauge board readings and gate openings. In 1972, station built at Roxton (d/s) - to achieve a better record. Significant surface water and groundwater abstractions in catchment for PWS. Geology - predominantly clay. Land use - agricultural with substantial urban development over last 15 years (inc Milton Keynes).

034006 Waveney at Needham Mill 1986

Measuring authority: AWA
First year: 1963
Grid reference 62 (TM) 229 811
Level stn. (m OD): 16.50
Catchment area (sq km): 370.0
Max alt. (m OD) 65

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.545	1 940	0 759	1.912	1 103	0 764	0.349	0 405	0 447	0 372	2.085	1.417
2	7 910	3 923	0.781	2 293	1 147	0 719	0 345	0 388	0 456	0 376	1 996	1 301
3	6.957	6.587	0 808	5.220	1 169	0 773	0 342	0 469	0 469	0 372	1 368	1.201
4	4 640	4 438	1.323	3 914	1 039	1 158	0 349	0 773	0 479	0 364	1.215	1 043
5	7.005	3.382	2 474	2.869	0 966	0 987	0 782	0 764	0 447	0 349	1 103	1.176
6	5 866	2 619	2 295	2.360	1 049	0 810	1 380	0 611	0 405	0 345	0 966	1.417
7	4.821	2 100	1.716	4 446	1 825	0 702	0 755	0 540	0 384	0 365	0.838	1 354
8	6.368	1.861	1 406	7 055	1 320	0 616	0 600	0 461	0 372	0 372	0 966	1.354
9	9.268	1.706	1.361	4 857	1 226	0 590	0 773	0 430	0 372	0 368	1.192	1 258
10	10 892	1.477	1 351	3 116	1 203	0 569	0 600	0 401	0 372	0 368	1 081	1.043
11	10 650	1.243	1.815	2 341	1.049	0 605	0.511	0.426	0 372	0 361	1 060	1 006
12	5 764	1.297	1.617	2.183	0 987	0 693	0.488	0 585	0.372	0 342	0.997	1 046
13	4 719	1 317	1.477	1.745	0.956	0.569	0.474	0.540	0 405	0 349	0 987	2 280
14	4 015	1.378	1.228	2 059	0 867	0 511	0 471	0 456	0 555	0 405	0.987	2 884
15	3 000	1.312	1.108	2 075	0 976	0 474	0 447	0.421	0 600	0.711	1.581	3 767
16	2 314	1.185	1.102	1 973	0 936	0 465	0 443	0.392	0 511	0 746	2 146	5 117
17	2 037	1.156	1.081	2 324	0.782	0 474	0.413	0.349	0 465	0 545	2 055	3 842
18	2 878	1 109	1 064	3 259	0 764	0 456	0.392	0 327	0 426	0 492	2 542	6 525
19	5 952	1 052	1 736	2 378	0 702	0 430	0 401	0.338	0 409	0 469	4 545	5 479
20	5 206	1.009	2.179	4.881	0 711	0 421	0.405	0 345	0 401	0 997	3 596	3 486
21	5 121	1 018	1 901	5 967	0 801	0 417	0 409	0 345	0 384	1 380	7 616	2 651
22	5 438	0 961	1 915	4 118	0 737	0 405	0 417	0.388	0 372	2 460	5 254	2 112
23	5.536	0 885	2 477	2.884	0 728	0 535	0.421	0 447	0 376	1 634	3.523	2 132
24	3.574	0 846	7 030	2 501	0 702	0.555	0 422	0.520	0 376	0 946	3 164	2 380
25	2.426	0.831	7 012	2 002	0 605	0 479	0.461	0 516	0 372	0.782	3 252	9 274
26	2.032	0 749	3 864	1.656	0 585	0.430	0 535	1 504	0 372	0 685	2.900	10 831
27	2 084	0 710	4.167	1 777	0 545	0 417	0.492	1.296	0 368	0.685	2 222	5 440
28	2 043	0.712	3 804	1.536	0 555	0 392	0 428	0 782	0 349	0.857	1 853	3 908
29	1.978		3.211	1.329	0.545	0 361	0 417	0 611	0 338	0 997	1.674	3 349
30	1.913		2.719	1 188	0 530	0 345	0 413	0 545	0 342	0 926	1.568	11 867
31	1 770		2 586		0.564		0 439	0 474		0 896		14 873
Average	4 733	1.743	2.238	2 941	0 893	0 571	0 502	0 543	0 412	0 688	2 211	3.768
Lowest	1 770	0 710	0 759	1.188	0 530	0 345	0 342	0 327	0 338	0 342	0.838	1 006
Highest	10 892	6 587	7.030	7 055	1 825	1 158	1.380	1 504	0 600	2 460	7 616	14 873
Peak flow	13.191	7 296	9.215	8.323	2 100	1 192	1 634	2 055	0 651	2 953	8.791	16 245
Day of peak	10	3	24	8	7	4	5	26	14	22	21	31
Monthly total (million cu m)	12 68	4 22	5 99	7 62	2 39	1 48	1 35	1 46	1 07	1 84	5.73	10 09
Runoff (mm)	34	11	16	21	6	4	4	4	3	5	15	27.
Rainfall (mm)	64	16	55	56	52	31	65	88	28	82	57	74

Statistics of monthly data for previous record (Dec 1963 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	3 816	3.544	2.561	1.986	1 191	0 801	0.510	0 496	0 886	0.848	1 821	2.922
	Low	0 609	0 722	0 591	0 487	0 369	0 285	0 285	0 282	0 261	0 352	0.397	0 492
	(year)	1973	1965	1973	1974	1974	1974	1974	1973	1964	1964	1964	1964
	High	7 132	10 670	7 666	5.646	3 255	4 302	0 912	1 250	9 754	2.912	8.852	8 380
	(year)	1969	1979	1981	1983	1969	1985	1985	1968	1968	1974	1974	1965
Runoff:	Avg	28	23	19	14	9	6	4	4	6	6	13	21
	Low	4	5	4	3	3	2	2	2	2	3	3	4
	High	52	70	55	40	24	30	7	9	68	21	62	61
Rainfall:	Avg.	51	38	43	43	48	52	44	47	55	49	64	55
	Low	16	10	10	9	10	10	11	7	2	4	25	18
	High	90	72	96	86	97	132	92	101	161	116	150	100

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	1.773		1 773		100
Lowest yearly mean			0.537	1973	
Highest yearly mean			2.730	1969	
Lowest monthly mean	0 412	Sep	0 261	Sep 1964	
Highest monthly mean	4 733	Jan	10 670	Feb 1979	
Lowest daily mean	0 327	18 Aug	0 189	23 Aug 1973	
Highest daily mean	14.873	31 Dec	89 760	16 Sep 1968	
Peak	16.245	31 Dec	113.300	16 Sep 1968	
10 %ile	4.427		4 130		107
50 %ile	1 007		0.772		130
95 %ile	0 359		0.323		111
Annual total (million cu m)	55 91		55 95		100
Annual runoff (mm)	151		151		100
Annual rainfall (mm)	668		589		113
(1941-70 rainfall average (mm)			603)		

Factors affecting flow regime

- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.

Station and catchment description

A compound Crump weir 8.5 m wide in the main channel with a single crested Crump in the mill bypass. Sluice action at a mill 2.4 km upstream is infrequent but is evident in flow records. Surface water abstractions, and the use of river gravels as an aquifer, influence flows but the overall impact is minimal. Predominantly a Boulder Clay catchment with largely rural land use.

036006 Stour at Langham 1986

Measuring authority: AWA
First year: 1962
Grid reference: 62 (TM) 020 344
Level stn. (m OD): 6.40
Catchment area (sq km): 578.0
Max alt. (m OD): 128

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.921	4.788	1.498	4.884	2.335	1.643	0.521	0.736	0.877	1.269	1.528	2.161
2	7.272	7.616	1.643	4.729	2.510	1.556	0.674	0.514	0.990	1.168	3.737	1.959
3	12.492	11.299	1.596	3.684	2.581	1.605	0.971	0.964	0.890	0.984	1.413	1.947
4	6.743	7.437	2.991	4.057	2.333	1.562	1.006	1.230	0.905	0.896	1.958	1.810
5	4.777	5.118	3.717	3.387	2.217	1.354	2.718	1.124	0.941	0.980	1.607	1.917
6	5.501	4.381	4.650	3.208	2.405	1.240	3.105	0.831	0.877	1.036	1.549	3.297
7	4.074	3.483	2.924	3.307	2.495	1.126	1.415	0.685	0.828	0.921	1.468	3.141
8	6.481	2.457	2.408	4.704	2.700	1.055	1.152	0.729	0.806	0.975	1.374	2.990
9	11.853	2.858	1.754	4.584	2.305	1.001	1.032	0.711	0.774	0.992	1.948	2.391
10	10.797	2.315	2.231	4.022	2.161	0.928	1.056	0.667	1.062	0.975	2.286	2.226
11	12.212	2.456	1.934	2.770	2.160	1.117	1.161	1.112	0.885	0.947	1.888	1.804
12	6.547	2.049	1.883	2.785	1.864	1.173	1.325	0.846	0.841	0.850	1.619	1.906
13	4.938	2.274	1.875	2.689	1.797	1.151	1.335	0.892	1.026	0.882	1.517	2.423
14	4.067	1.534	1.720	2.924	1.843	1.144	1.289	0.767	1.472	1.186	1.577	3.761
15	3.118	2.491	1.617	3.907	1.819	1.038	1.200	0.649	1.456	1.519	3.545	3.602
16	2.812	1.752	1.706	6.154	1.840	0.768	1.175	0.700	1.250	1.492	4.832	7.070
17	2.281	2.098	1.648	8.035	1.690	0.680	1.100	0.699	1.119	1.031	3.232	4.405
18	2.589	1.925	1.873	8.822	1.635	0.824	1.050	0.663	0.915	1.041	2.422	7.992
19	3.179	1.895	1.978	5.599	1.460	0.816	1.045	0.697	0.955	1.176	7.729	7.207
20	4.537	1.645	2.321	8.303	1.591	0.790	1.113	0.724	0.946	2.115	6.924	4.586
21	3.986	1.669	2.129	14.242	1.521	0.821	1.062	0.751	0.912	3.363	10.797	2.724
22	6.001	1.652	2.080	10.272	1.378	0.841	1.322	0.821	0.897	4.970	11.892	2.928
23	8.000	1.653	2.288	6.761	1.420	1.000	1.357	0.803	1.005	3.349	6.880	2.135
24	5.495	1.618	4.416	4.583	1.456	0.738	1.428	0.820	1.132	1.941	8.995	2.240
25	3.113	1.532	5.013	3.533	1.444	0.913	1.429	1.048	0.931	1.734	4.999	7.866
26	2.203	1.425	2.981	6.917	1.330	0.868	1.211	2.875	1.027	1.215	4.123	16.328
27	2.730	1.447	3.128	5.504	1.439	0.833	1.152	1.944	1.011	1.253	3.225	7.591
28	2.912	1.525	4.580	3.737	1.022	0.781	0.979	1.374	1.046	0.963	1.916	4.721
29	2.910		4.478	3.152	1.038	0.767	1.026	0.696	1.034	1.233	2.673	4.364
30	8.996		3.842	2.739	1.138	0.697	1.025	0.906	0.924	1.425	2.168	13.541
31	5.990		4.831		1.356		1.037	0.867		1.372		21.530
Average	5.532	3.014	2.701	5.133	1.816	1.028	1.241	0.930	0.991	1.460	3.727	4.986
Lowest	2.203	1.425	1.498	2.689	1.022	0.680	0.521	0.514	0.774	0.850	1.374	1.804
Highest	12.492	11.299	5.013	14.242	2.700	1.643	3.105	2.875	1.472	4.970	11.892	21.530
Peak flow	17.627	12.544	8.510	16.607	2.849	1.740	5.908	3.589	2.100	6.081	15.778	23.310
Day of peak	2	3	25	21	8	2	5	26	14	22	22	31
Monthly total (million cu m)	14.82	7.29	7.23	13.31	4.86	2.66	3.32	2.49	2.57	3.91	9.66	13.35
Runoff (mm)	26	13	13	23	8	5	6	4	4	7	17	23
Rainfall (mm)	59	15	50	57	47	19	63	84	27	85	61	69

Statistics of monthly data for previous record (Oct 1962 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	5.309	5.094	4.788	3.509	2.494	1.487	0.989	0.968	1.067	1.559	2.721	4.100
	Low	1.398	0.884	1.597	1.218	0.757	0.453	0.190	0.209	0.395	0.509	0.578	0.693
	(year)	1965	1965	1976	1974	1974	1965	1976	1976	1964	1970	1964	1964
	High	9.262	12.980	9.774	9.335	7.253	3.017	1.672	2.108	4.944	6.237	11.340	10.550
	(year)	1971	1979	1981	1983	1983	1985	1985	1968	1968	1982	1974	1965
Runoff:	Avg.	25	22	22	16	12	7	5	4	5	7	12	19
	Low	6	4	7	5	4	2	1	1	2	2	3	3
	High	43	54	45	42	34	14	8	10	22	29	51	49
Rainfall:	Avg	48	35	46	44	49	52	43	49	52	47	61	53
	Low	15	13	12	11	12	10	8	11	1	3	20	13
	High	85	63	93	99	100	116	87	105	118	128	155	107

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	2.711		2.830		96
Lowest yearly mean			1.428	1973	
Highest yearly mean			4.077	1979	
Lowest monthly mean	0.930	Aug	0.190	Jul 1976	
Highest monthly mean	5.532	Jan	12.980	Feb 1979	
Lowest daily mean	0.514	2 Aug	0.094	9 Jul 1976	
Highest daily mean	21.530	31 Dec	42.940	31 Dec 1981	
Peak	23.310	31 Dec	91.000	17 Sep 1968	
10 %ile	5.964		6.210		96
50 %ile	1.700		1.604		106
95 %ile	0.751		0.505		149
Annual total (million cu m)	85.49		89.31		96
Annual runoff (mm)	148		155		96
Annual rainfall (mm)	636		579		110
(1941-70 rainfall average (mm)			601)		

Factors affecting flow regime

- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns

Station and catchment description

Twin-trapezoidal flume with throat tapping. Spillway channel with weir constructed Dec.85 takes some flow above 1.45m. Bypassing also occurs over opposite bank above 1.85m. Additional bypassing possible from 0.5km u/s during extreme events. Naturalised flows up to Sept.76. Flow augmented by intermittent pumping from Ely/Ouse Transfer Scheme and occasional SAGS borehole pumping. Predominantly rural catchment underlain by Chalk - outcropping in N, London Clay in S, all covered by semi-pervious Boulder Clay.

038003 Mimram at Panshanger Park 1986

Measuring authority: TWA
First year: 1952
Grid reference: 52 (TL) 282 133
Level stn. (m OD): 47 10
Catchment area (sq km): 133 9
Max alt. (m OD): 193

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0 510	0.505	0.436	0 441	0 509	0.649	0 425	0 387	0 448	0 327	0 456	0 418
2	0 488	0 513	0 433	0 564	0 584	0 570	0 425	0 382	0 455	0 326	0 364	0 433
3	0 424	0 474	0 430	0 460	0 560	0 583	0 417	0 632	0 448	0 326	0 413	0 417
4	0 455	0 464	0.500	0 442	0 541	0.544	0 522	0 494	0 421	0 321	0 362	0 413
5	0 412	0 477	0 463	0.469	0 559	0 536	0 788	0 423	0 407	0.317	0 355	0 509
6	0 406	0 481	0.453	0 473	0.547	0.539	0 520	0 394	0 399	0 311	0 342	0 426
7	0 462	0 465	0 439	0 576	0 566	0 554	0 463	0 387	0 375	0.304	0 349	0 427
8	0 550	0 461	0 433	0 493	0 586	0.547	0 573	0.376	0 351	0 296	0 422	0 440
9	0 444	0 453	0.435	0.477	0 579	0.550	0 463	0 370	0 348	0 296	0 350	0 431
10	0 532	0 448	0 435	0.483	0 560	0 550	0 486	0 440	0 348	0.298	0 396	0 418
11	0 447	0 449	0 427	0.482	0 556	0 589	0 502	0 398	0 349	0 296	0 373	0 481
12	0 432	0 446	0.428	0 531	0 532	0.551	0 556	0 397	0 344	0 302	0 347	0 470
13	0 443	0 449	0 426	0 522	0 516	0 536	0.487	0.383	0 569	0 302	0 396	0 505
14	0 423	0 448	0 422	0 535	0 554	0.506	0.460	0.383	0 453	0 554	0 522	0 436
15	0 428	0 446	0 417	0 560	0.532	0 507	0 442	0 372	0 411	0 397	0 415	0 623
16	0 413	0 438	0 414	0.552	0 515	0 492	0 428	0 378	0 371	0 329	0.391	0 474
17	0 424	0 443	0.406	0.550	0.550	0.482	0.426	0 390	0 365	0 330	0 420	0 578
18	0 429	0 445	0 512	0 516	0.520	0 464	0.425	0 476	0 353	0 350	0 563	0 491
19	0 455	0 441	0.473	0.553	0 509	0 460	0.421	0 423	0 352	0 406	0 510	0 465
20	0 418	0 439	0 445	0 598	1.510	0 464	0.430	0.397	0 362	0 685	0 609	0 457
21	0 453	0 438	0.416	0.622	0 758	0 458	0 423	0 414	0 355	0 638	0 503	0 456
22	0.511	0 437	0 447	0.547	0 624	0.483	0 419	0.699	0 340	0 439	0 453	0 451
23	0 439	0 438	0.495	0.595	0 621	0 495	0 430	0 478	0 336	0 382	0 465	0 446
24	0 420	0 439	0 487	0 620	0 608	0 469	0 417	0 440	0 333	0 382	0 465	0 460
25	0 412	0 431	0 439	0 559	0 609	0.457	0 425	1 020	0 332	0 359	0 450	0 600
26	0 410	0 427	0.463	0.551	0 601	0 454	0 430	0 644	0 332	0 345	0 433	0 476
27	0 513	0 427	0.508	0.557	0 588	0 446	0 419	0 505	0 333	0 380	0 421	0 467
28	0 459	0 429	0 474	0.549	0 605	0 437	0 410	0 468	0 332	0 376	0 418	0 466
29	0 504		0 479	0.531	0 603	0 431	0 397	0 458	0 326	0 337	0 420	0 586
30	0 482		0.512	0 517	0 593	0 427	0 389	0.463	0 328	0 342	0 420	0 623
31	0 447		0 464		0 684		0.390	0 454		0 406		0 575
Average	0 453	0 452	0.452	0.531	0 606	0 508	0 458	0 462	0 376	0 370	0 427	0 481
Lowest	0 406	0 427	0.406	0 441	0 509	0 427	0 389	0 370	0 326	0 296	0 342	0 413
Highest	0 550	0 513	0 512	0 622	1 510	0.649	0.788	1.020	0 569	0 685	0 609	0 623
Peak flow	0 917	0 586	0.830	0 975	3 060	0 810	1 390	2 170	0 823	1 800	1 080	1 040
Day of peak	1	2	23	23	20	17	5	25	13	20	20	31
Monthly total (million cu m)	1 21	1 09	1 21	1 38	1.62	1 32	1.23	1 24	0 97	0 99	1 11	1 29
Runoff (mm)	9	8	9	10	12	10	9	9	7	7	8	10
Rainfall (mm)	77	19	55	76	65	14	57	87	34	82	72	67

Statistics of monthly data for previous record (Dec 1952 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	0 583	0 645	0 672	0 658	0 620	0 563	0 488	0 450	0 423	0 412	0 448	0 505
	Low	0 244	0 289	0 258	0 260	0 216	0 186	0 163	0 144	0 195	0 175	0 176	0 189
	(year)	1974	1973	1973	1973	1976	1976	1976	1976	1973	1973	1973	1973
	High	1 '02	' 167	1 119	1 050	1 084	0 97'	0 803	0 764	0 632	0 638	0 739	1 005
	(year)	1961	1961	1961	1979	1979	1979	1979	1979	1968	1968	1960	1960
Runoff:	Avg.	12	12	13	13	12	11	10	9	8	8	9	10
	Low	5	5	5	5	4	4	3	3	4	4	3	4
	High	22	21	22	20	22	19	16	15	12	13	14	20
Rainfall	Avg	55	42	49	44	52	60	53	57	56	58	62	63
	Low	17	3	3	5	15	5	5	7	5	5	20	13
	High	102	96	116	105	115	122	123	127	121	142	151	119

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	0.465		0.538		86
Lowest yearly mean			0 231	1973	
Highest yearly mean			0 767	1961	
Lowest monthly mean	0 370	Oct	0.144	Aug 1976	
Highest monthly mean	0.606	May	1.167	Feb 1961	
Lowest daily mean	0.296	8 Oct	0 135	21 Aug 1976	
Highest daily mean	1 510	20 May	1 810	15 Sep 1968	
Peak	3 060	20 May	3 541	30 May 1979	
10 %ile	0 574		0 792		72
50 %ile	0.449		0.513		88
95 %ile	0.332		0.238		140
Annual total (million cu m)	14.65		16.99		86
Annual runoff (mm)	109		127		86
Annual rainfall (mm)	705		651		108
[1941-70 rainfall average (mm)			641]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Critical-depth flume; 5m overall width. Theoretical calibration confirmed by gaugings. All flows contained. Slight diminution of flows due to groundwater abstraction. Very high baseflow component. A predominantly permeable catchment (Upper Chalk - overlain by glacial deposits near headwaters); mainly rural but some urbanisation in the lower valley.

039001 Thames at Kingston 1986

Measuring authority: TWA
First year: 1883
Grid reference: 51 (TQ) 177 698
Level stn. (m OD): 4 70
Catchment area (sq km): 9948.0
Max alt. (m OD): 330

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	147.000	193 000	49 800	110 000	68.700	53 000	10 500	10 600	24 200	14.200	33 800	70 500
2	237.000	186 000	51.800	79 500	65 800	53.100	15 800	10 200	19.900	15 500	55 300	75.900
3	337 000	189 000	44 400	76.900	63.700	52 400	15 800	22 300	21 700	10 100	42.900	70 300
4	316 000	179 000	60.900	83.300	61 200	51 600	10 500	31 100	24 500	8 200	37.500	56.200
5	237 000	156 000	94.200	78.600	57.100	40 300	32 200	9 780	35 500	10 200	23.200	55 300
6	221 000	139 000	113 000	66 800	64 700	39.900	20 400	13 700	28.600	19 000	24 000	72 600
7	195 000	109 000	68 300	70 600	60 900	31 500	17 200	11 700	17 800	17 400	16 400	65 200
8	221 000	108 000	57 800	89 300	62 200	31 400	17 000	10 600	9.230	11 900	20 100	75.100
9	245 000	104.000	52.400	91 800	65.300	31 000	32 300	8 950	12 200	12 000	25 200	69 800
10	218 000	87 000	57.300	93.200	61 400	31 800	35.900	9 030	9 810	14 600	24 000	71.700
11	237 000	90.900	54.200	76 000	59.200	44 500	27 300	16 800	15 400	16 100	52.300	65 800
12	210 000	85.700	51.600	78.600	57 200	40 800	13 200	23 500	17 300	15 800	66 600	85 900
13	205 000	83.800	50 000	76 900	52 600	33 400	12 100	21 500	27 000	13 500	57.200	145 000
14	158 000	78.200	48.500	85.700	37 700	30 400	12 300	17 500	59 600	17.900	85 800	145 000
15	131.000	80 300	47.300	127.000	70 800	27 200	14 200	10 600	45 000	30 400	144 000	152 000
16	116.000	77 300	38.200	161.000	71 800	22 900	14 000	11 000	40.300	24 200	128 000	210 000
17	98.800	78.200	46 000	169 000	49 900	25 900	9 530	12 500	21 400	12.100	104 000	179 000
18	105.000	69 600	47.200	145.000	52 700	22 100	11 200	14 200	25 600	8 190	121 000	194 000
19	106.000	69.100	58.100	126 000	57.200	22 900	10 900	16 400	22 600	14 600	197 000	166 000
20	105.000	66.100	58.200	147.000	79 500	22 300	12.400	15 500	16 500	36 500	231 000	124.000
21	109.000	64.300	59.800	182.000	117 000	19 600	12.100	16 700	18 900	43 100	216 000	114.000
22	135 000	58 600	54.500	178 000	112 000	19.700	10 700	14 900	20 600	60 900	214 000	96 900
23	183.000	61.500	52 200	158 000	81 300	22 100	9 380	17 700	18 600	46 200	180 000	95 800
24	157.000	59 700	89.700	149.000	55.900	24 300	11 900	21 200	17 100	39 300	167 000	81.500
25	115 000	48 400	113 000	123 000	59 400	36 000	12 600	28 700	16 100	33 900	141 000	116 000
26	97.600	58.300	89 500	114 000	44 400	24 600	10 600	84 200	15 200	26 300	132 000	147.000
27	98.800	56 200	62.200	96 900	42 900	15 800	11 000	69 700	14 900	35 800	120 000	128.000
28	124 000	50 100	89.300	92 000	43 900	13 200	11 500	51 000	14 600	39 700	106.000	110 000
29	209 000		122.000	72 300	46 400	10 500	12 600	27 100	11 600	32 500	81.200	99 900
30	267 000		153.000	79 500	50 100	9 470	10 200	36 500	13 800	35 300	74.900	109 000
31	217 000		1:8 000		51 600		9 990	21 700		27 300		164 000
Average	:79 300	95.940	69.430	109 200	62 080	30 120	15 070	22 140	21 850	23 960	97.380	110 000
Lowest	97 600	48 400	38.200	66 800	37.700	9 470	9 380	8 950	9 230	8 190	16 400	55 300
Highest	337 000	193.000	153 000	182 000	117.000	53 100	35 900	84 200	59 600	60 900	231 000	210 000
Peak flow	370 000	211 000	180 000	202 000	142.000	63 800	52 600	115 000	75 600	72 300	248 000	236 000
Day of peak	3	1	30	21	21	2	5	27	14	22	20	16
Monthly total (million cu m)	480.20	232.10	186 00	283.10	166 30	78 08	40.37	59 30	56 64	64 17	252 40	294.70
Runoff (mm)	48	23	19	28	17	8	4	6	6	6	25	30
Rainfall (mm)	100	15	60	66	71	22	44	105	32	76	99	87

Statistics of monthly data for previous record (Jan 1883 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	127.000	124 100	105.400	74.790	54 080	37 600	23 730	22 230	23 710	38.530	72 440	102 300
	Low	18 570	12.310	9.434	8 981	4 383	3 301	2 080	1 894	0 691	3.157	7 484	10 210
	(year)	1976	1976	1976	1976	1976	1976	1921	1976	1976	1934	1921	1933
	High	325.300	342 000	359.500	188.800	171.700	171 600	72 280	79 330	123 900	179 800	334 000	333.900
	(year)	1915	1904	1947	1916	1932	1903	1968	1931	1927	1903	1894	1929
Runoff	Avg.	34	30	28	19	15	10	6	6	6	10	19	28
	Low	5	3	3	2	1	1	1	1	0	1	2	3
	High	88	86	97	49	46	45	19	21	32	48	87	90
Rainfall	Avg.	64	49	52	48	55	52	58	64	58	72	72	73
	Low	18	3	3	3	8	3	8	3	3	5	8	13
	High	137	127	142	104	137	137	130	147	157	188	188	185

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre 1986
Mean flow (m^3s^{-1})	69 550		66.890		104
Lowest yearly mean			20 410	1934	
Highest yearly mean			120.000	1951	
Lowest monthly mean	15 070	Jul	0 691	Sep 1976	
Highest monthly mean	179.300	Jan	359.500	Mar 1947	
Lowest daily mean	8.190	18 Oct	0.010	11 Oct 1976	
Highest daily mean	337 000	3 Jan	1059.000	18 Nov 1894	
Peak	370.000	3 Jan			
10 %ile	157.900		162 000		97
50 %ile	53 680		42.170		127
95 %ile	10 540		9.170		115
Annual total (million cu m)	2193.00		2111 00		104
Annual runoff (mm)	220		212		104
Annual rainfall (mm)	777		717		108
[1941-70 rainfall average (mm)			723]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Comment

The ultrasonic gauging station was not operational between 26/12/85 and 18/1/86. Over this period flows were derived using the Teddington Weir record

Station and catchment description

Ultrasonic gauging station commissioned in 1974; multi-path operation from 1986. Full range. Pre-1974 flows derived from Teddington weir complex (70m wide); significant structural improvements have been made since 1883. US data led to revision of 1951-74 flows (in 1981). Substantial baseflow - sustained from the Chalk and the Oolites. Daily naturalised flows available for POR - allowance is made for major PWS abstractions only. Diverse topography, geology and land use which has undergone important historical changes

039007 Blackwater at Swallowfield 1986

Measuring authority: TWA
First year: 1952
Grid reference: 41 (SU) 731 648
Level stn (m OD): 42 30
Catchment area (sq km): 354 8
Max alt (m OD): 225

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	6 090	6 040	2 620	3 800	2 830	2 610	1 480	1 370	1 750	1 550	2 850	2 920
2	15 700	7 250	2 670	4 350	2 910	2 360	1 490	1 360	1 710	1 550	2 460	2 720
3	22 200	6 920	2 650	4 320	2 640	2 490	1 490	3 100	1 760	1 510	2 390	2 710
4	10 700	5 300	5 890	3 670	2 630	2 380	1 500	3 180	1 590	1 490	2 390	2 690
5	9 600	4 780	5 900	3 500	2 710	2 190	2 870	2 050	1 620	1 430	2 220	4 850
6	6 370	4 850	4 440	3 640	2 610	2 140	2 170	1 660	1 560	1 480	2 160	4 300
7	6 770	4 610	3 880	4 610	2 560	2 080	1 790	1 580	1 570	1 420	2 170	3 760
8	11 600	4 330	3 580	5 620	2 890	2 010	1 890	1 520	1 640	1 470	2 940	4 130
9	6 780	3 880	3 370	4 250	2 630	2 030	2 000	1 490	1 540	1 490	2 350	3 680
10	7 900	3 600	3 380	3 560	2 600	2 150	1 810	1 550	1 470	1 480	3 540	3 280
11	6 630	3 490	3 210	3 210	2 500	3 070	2 160	1 710	1 510	1 470	5 240	4 300
12	5 440	3 490	3 000	3 450	2 640	2 240	1 900	1 930	1 440	1 460	3 130	4 080
13	4 610	3 410	2 860	3 460	2 440	2 030	1 830	1 570	2 080	1 500	3 880	7 500
14	4 160	3 270	3 620	4 760	2 460	1 960	1 760	1 510	2 610	2 370	6 340	4 780
15	3 810	3 200	3 770	7 840	2 740	1 900	1 710	1 470	2 330	4 350	6 440	8 730
16	3 500	3 210	3 780	8 180	2 380	1 880	1 630	1 430	2 110	1 990	4 710	5 930
17	3 580	3 150	3 550	7 870	2 740	1 850	1 570	1 410	1 820	1 860	4 880	6 060
18	3 700	3 010	4 110	6 120	2 750	1 780	1 510	1 560	1 670	1 950	10 700	6 210
19	3 910	2 950	4 760	5 330	2 440	1 750	1 460	1 710	1 640	2 080	14 300	4 670
20	3 550	2 910	4 560	7 920	8 550	1 680	1 490	1 590	1 590	3 110	9 450	3 900
21	5 110	2 840	3 300	7 240	6 030	1 670	1 520	1 530	1 550	3 290	9 290	3 850
22	8 120	2 760	3 310	5 940	4 170	1 750	1 470	1 730	1 550	5 040	6 280	3 440
23	6 730	2 730	3 410	5 220	3 610	1 880	1 640	1 840	1 550	2 730	5 730	3 290
24	4 700	2 680	6 180	4 580	3 080	2 070	1 960	1 700	1 530	2 610	4 490	3 190
25	3 830	2 580	3 990	4 050	2 770	1 820	1 640	3 400	1 500	3 240	4 230	6 700
26	3 470	2 520	3 770	3 820	2 620	1 680	1 530	6 380	1 490	2 350	4 250	4 910
27	5 310	2 540	3 650	3 520	2 470	1 600	1 470	2 840	1 530	3 080	3 590	3 980
28	6 840	2 530	4 420	3 320	2 430	1 580	1 480	2 240	1 520	2 930	3 290	3 690
29	17 900		4 510	3 100	2 330	1 530	1 570	1 920	1 520	2 800	3 180	3 570
30	9 540		4 730	2 890	2 220	1 520	1 490	1 870	1 530	2 500	2 990	6 810
31	6 650		4 490		2 340		1 410	1 820		2 390		6 460
Average	7 252	3 744	3 915	4 771	2 991	1 988	1 700	2 001	1 676	2 257	4 729	4 551
Lowest	3 470	2 520	2 620	2 890	2 220	1 520	1 410	1 360	1 440	1 420	2 160	2 690
Highest	22 200	7 250	6 180	8 180	8 550	3 020	2 870	6 380	2 610	5 040	14 300	8 730
Peak flow	25 600	8 090	8 740	10 100	11 000	3 660	3 800	8 210	3 340	7 740	17 500	12 700
Day of peak	3	2	24	16	20	11	5	26	14	15	18	15
Monthly total (million cu m)	19 42	9 06	10 49	12 37	8 01	5 15	4 55	5 36	4 34	6 04	12 26	12 19
Runoff (mm)	55	26	30	35	23	15	13	15	12	17	35	34
Rainfall (mm)	122	20	52	69	60	23	46	92	25	77	102	84

Statistics of monthly data for previous record (Oct 1952 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	4 646	4 102	3 841	3 039	2 575	2 023	1 459	1 503	1 815	2 488	3 336	4 056
	Low	1 758	1 687	1 323	1 521	1 081	0 766	0 711	0 723	0 638	0 907	1 262	1 298
	(year)	1954	1965	1953	1976	1956	1953	1953	1953	1959	1959	1964	1953
	High	8 000	7 292	6 898	5 600	5 946	6 472	2 316	2 622	6 609	7 613	8 019	7 022
	(year)	1975	1966	1979	1966	1978	1971	1968	1977	1968	1960	1960	1960
Runoff	Avg	35	28	29	22	19	15	11	11	13	19	24	31
	Low	13	12	10	11	8	6	5	5	5	7	9	10
	High	60	50	52	41	45	47	17	20	48	57	59	53
Rainfall	Avg	66	44	54	44	57	53	54	59	67	69	73	74
	Low	15	5	3	3	8	5	18	17	3	6	18	18
	High	124	108	125	106	128	144	104	117	167	208	179	167

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	3 464		2 902		119
Lowest yearly mean			1 466	1953	
Highest yearly mean			3 777	1982	
Lowest monthly mean	1 676	Sep	0 638	Sep 1959	
Highest monthly mean	7 252	Jan	8 019	Nov 1960	
Lowest daily mean	1 360	2 Aug	0 464	18 Aug 1953	
Highest daily mean	22 200	3 Jan	39 200	16 Sep 1968	
Peak	25 600	3 Jan	41 000	16 Sep 1968	
10 %ile	6 279		5 497		114
50 %ile	2 821		2 126		133
95 %ile	1 483		0 869		171
Annual total (million cu m)	109 20		91 58		119
Annual runoff (mm)	308		258		119
Annual rainfall (mm)	772		714		108
(1941-70 rainfall average (mm)			710)		

Factors affecting flow regime

- Augmentation from effluent returns

Station and catchment description

Two Crump weirs (main 4 6m, side 2 7m wide) superseded original flume, plus side-spilling weir, in 1970. Minor bypassing of the side weir in flood conditions; overflows more frequent pre-1970. Some net import of water - sewage effluent augments flows. Exact delineation of the hydrological catchment is difficult. Chalk in the headwaters, clay, sands and alluvium in the valley. Substantial and expanding urban development in the catchment but large rural tracts remain; significant areas of heath and woodland

039020 Coln at Bibury 1986

Measuring authority: TWA
First year: 1963
Grid reference: 42 (SP) 122 062
Level stn (m OD) 100.60
Catchment area (sq km) 106.7
Max alt (m OD) 330

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.810	2.880	1.920	1.790	2.010	1.720	1.050	0.764	0.751	0.613	0.688	2.470
2	2.840	3.010	1.890	1.830	1.980	1.680	1.030	0.748	0.740	0.614	0.699	2.410
3	2.740	3.070	1.840	1.860	1.930	1.650	1.030	0.767	0.730	0.623	0.712	2.320
4	2.820	3.080	1.900	1.880	1.920	1.610	1.020	0.769	0.711	0.615	0.711	2.250
5	2.860	3.100	1.870	1.890	1.900	1.560	1.040	0.735	0.706	0.623	0.737	2.210
6	2.860	3.080	1.800	1.910	1.860	1.510	1.050	0.720	0.700	0.617	0.729	2.150
7	2.940	3.020	1.760	1.930	1.840	1.500	1.010	0.715	0.703	0.610	0.719	2.100
8	3.000	3.000	1.750	2.020	1.820	1.460	0.980	0.723	0.707	0.607	0.733	2.210
9	2.970	2.950	1.730	1.950	1.780	1.470	0.945	0.714	0.689	0.606	0.809	2.130
10	3.040	2.890	1.670	1.890	1.750	1.470	0.928	0.762	0.678	0.603	0.879	2.040
11	3.040	2.860	1.680	1.870	1.700	1.430	0.924	0.843	0.677	0.602	0.881	2.200
12	3.070	2.810	1.620	1.860	1.700	1.380	0.932	0.790	0.667	0.603	0.860	2.260
13	3.090	2.740	1.600	1.860	1.650	1.360	0.905	0.749	0.702	0.607	0.898	2.410
14	3.120	2.670	1.590	1.850	1.740	1.330	0.898	0.751	0.717	0.593	1.050	2.470
15	3.070	2.660	1.560	1.820	1.830	1.310	0.908	0.724	0.697	0.568	1.150	2.820
16	3.020	2.610	1.550	1.810	1.700	1.290	0.860	0.727	0.674	0.559	1.210	2.810
17	2.940	2.510	1.530	1.740	1.710	1.300	0.854	0.721	0.668	0.564	1.350	3.020
18	2.890	2.450	1.520	1.790	1.680	1.280	0.850	0.726	0.667	0.575	1.520	3.150
19	2.850	2.390	1.500	1.820	1.630	1.260	0.842	0.704	0.662	0.595	1.680	3.180
20	2.760	2.330	1.480	1.930	1.780	1.230	0.838	0.694	0.657	0.632	1.800	3.200
21	2.680	2.250	1.450	1.940	1.770	1.220	0.804	0.695	0.658	0.667	2.080	3.180
22	2.680	2.230	1.450	2.030	1.730	1.220	0.800	0.696	0.659	0.684	2.270	3.050
23	2.570	2.180	1.480	2.050	1.710	1.200	0.804	0.694	0.645	0.606	2.400	2.990
24	2.460	2.130	1.650	2.090	1.730	1.190	0.798	0.685	0.640	0.667	2.510	2.910
25	2.420	2.100	1.510	2.090	1.740	1.140	0.786	0.824	0.644	0.670	2.640	2.880
26	2.410	2.090	1.490	2.110	1.760	1.090	0.777	0.904	0.640	0.663	2.690	2.780
27	2.430	2.060	1.530	2.100	1.780	1.080	0.773	0.865	0.645	0.660	2.650	2.680
28	2.500	2.040	1.730	2.100	1.810	1.070	0.782	0.811	0.638	0.658	2.610	2.600
29	2.690		1.760	2.090	1.780	1.050	0.783	0.796	0.644	0.651	2.540	2.560
30	2.660		1.790	2.070	1.740	1.040	0.791	0.782	0.624	0.663	2.520	2.640
31	2.730		1.810		1.730		0.784	0.766		0.681		2.570
Average	2.805	2.614	1.658	1.932	1.780	1.337	0.889	0.754	0.678	0.622	1.491	2.602
Lowest	2.410	2.040	1.450	1.740	1.630	1.040	0.773	0.685	0.624	0.559	0.688	2.040
Highest	3.120	3.100	1.920	2.110	2.010	1.720	1.050	0.904	0.751	0.684	2.690	3.200
Peak flow	3.240	3.130	2.000	2.140	2.080	1.750	1.110	0.924	0.775	0.756	3.040	3.330
Day of peak	9	4	1	28	1	1	6	25	2	25	23	21
Monthly total (million cu m)	7.51	6.32	4.44	5.01	4.77	3.46	2.38	2.02	1.76	1.67	3.86	6.97
Runoff (mm)	70	59	42	47	45	32	22	19	16	16	36	65
Rainfall (mm)	110	13	73	82	100	21	48	131	20	72	115	110

Statistics of monthly data for previous record (Oct 1963 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	2.030	2.333	2.180	1.747	1.329	1.139	0.867	0.688	0.596	0.660	1.001	1.582
	Low	0.374	0.380	0.383	0.371	0.334	0.290	0.243	0.207	0.202	0.259	0.344	0.375
	(year)	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1973	1975
	High	3.196	3.616	3.385	3.415	2.599	2.290	1.397	1.085	0.908	1.299	2.714	3.016
	(year)	1982	1977	1977	1979	1983	1979	1985	1985	1968	1968	1967	1965
Runoff	Avg	51	53	55	42	33	28	22	17	14	17	24	40
	Low	9	9	10	9	8	7	6	5	5	7	8	9
	High	80	82	85	83	65	56	35	27	22	33	66	76
Rain'fall	Avg	73	59	68	49	71	62	57	68	72	61	75	87
	Low	18	8	19	5	23	9	15	23	17	8	34	25
	High	126	159	143	109	161	158	120	149	149	171	163	159

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	1.591		1.341		119
Lowest yearly mean			0.399	1976	
Highest yearly mean			1.771	1966	
Lowest monthly mean	0.622	Oct	0.202	Sep 1976	
Highest monthly mean	2.805	Jan	3.616	Feb 1977	
Lowest daily mean	0.559	16 Oct	0.190	23 Aug 1976	
Highest daily mean	3.200	20 Dec	4.870	22 Dec 1965	
Peak	3.330	21 Dec	5.000	22 Dec 1965	
10 %ile	2.824		2.610		108
50 %ile	1.622		1.094		148
95 %ile	0.620		0.384		161
Annual total (million cu m)	50.17		42.32		119
Annual runoff (mm)	470		397		119
Annual rainfall (mm)	895		802		112
[1941-70 rainfall average (mm)			823]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.

Station and catchment description

Crump weir (9.1m broad). Modular throughout the range. Some overspill onto floodplain before design capacity reached. Very limited impact of artificial influences on river flows. Baseflow dominated flow regime. Pervious (Oolitic Limestone) catchment on the dip-slope of the Cotswolds, predominantly rural.

040003 Medway at Teston 1986

Measuring authority: SWA
First year: 1956
Grid reference: 51 (TQ) 708 530
Level stn (m OD): 7.00
Catchment area (sq km): 1256.1
Max alt. (m OD): 267

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	22.720	30 281	4.841	19 419	8.200	6 775	2.309	1.896	2 149	1 862	6 624	6.922
2	102.100	38 123	5 234	13 971	8 347	4.357	2 455	1 763	2.167	1 999	6 771	6 043
3	127.116	22.354	4.824	10 802	7.310	4 844	3.566	3.449	2 089	1.928	3 170	5.716
4	86 320	21.786	15 505	9 090	6 659	4.302	2.941	4 459	2 014	1.803	5 923	5 788
5	70 960	17.566	34.429	8 844	6.972	3 969	3.184	2.437	1.937	1 694	2 549	10 726
6	40 130	15.000	23.420	8 620	7.904	3 106	3.861	1.813	1.795	1.785	2 625	21 597
7	28.350	12.969	13 504	15 700	7 819	3.413	3 114	2 026	1 809	2 629	3 504	12 660
8	56 300	11.742	10.470	21.675	6 942	3 142	2 705	1.891	1.793	2 550	4 758	10 837
9	41 070	10 494	9 504	14 257	6 620	3.192	2 734	1 756	1 895	2 104	5 467	8 908
10	55 240	8 907	10.898	11.407	6 864	3 919	2 617	1.799	1.787	1 617	4 915	7 455
11	30 360	8 663	7.946	8 628	6 775	6.032	2 837	2 212	1 795	1 783	7 723	8 704
12	20 310	8 348	7 298	8 777	6 046	3 632	2 788	1.599	1.708	1 885	5 684	9 123
13	16.480	8.204	6.166	9 421	6 481	3 064	2.343	2.403	2 447	2 034	6 589	36 664
14	13.530	8 320	5 767	10 620	5 870	3.982	2 381	1 790	4 268	3 485	10 111	20 406
15	11 480	7.582	4 635	16 588	5 822	2 843	2 238	1 452	5.060	8 443	19 933	43 612
16	10 170	7.156	5.012	18 671	5 151	2 843	2.103	1.690	5 526	2 675	13.368	35 937
17	9 862	7 088	4 503	23 176	5 246	2.915	1.906	1 734	2 472	2 186	20 780	26 459
18	10 140	6 750	4 452	23 709	4 834	2 866	1 887	1.830	2.247	2 479	32 720	39 047
19	11 550	6.34'	8.051	15 092	4 796	2 883	1 821	2.040	1 981	2 826	84 222	22 038
20	10 640	5.982	6 906	41 948	5 156	2.898	1.873	1 834	1 893	5 615	86 953	14 457
21	11 870	5.746	7 112	26 497	5 961	2.761	1 845	2 063	1 989	5 987	121 086	11 288
22	23.110	5.156	7 849	38 479	5 640	2 934	2 560	1.950	1.906	11 837	87 425	9.400
23	24 090	5.482	11.152	27 220	6 719	3 274	1 530	2.307	1 919	7 276	34 918	8 632
24	13 670	5.362	42 268	22 704	5 849	3 013	2 365	2 450	1.920	4 066	23 015	7 863
25	9.737	5.089	17.250	15 290	4 435	3 024	1.680	6.854	1 914	9 368	16.871	25 762
26	8.905	4 590	11.336	14 040	4 135	2 850	1.996	10.295	1 874	5 365	14.919	25.484
27	12.950	4.411	11 364	22 963	3 863	2 684	1 962	4 200	1.678	3 370	11 158	15 414
28	22.320	4.793	18 382	16 071	3.936	3 003	2 291	2 300	1.639	5 544	9 488	11 960
29	71.720		16 777	10 468	4 354	2 176	1 944	2.347	1.781	11 960	8 396	10 990
30	88.520		26.693	9 097	4 286	2 796	2.403	2 139	1 865	5 381	7 542	17 187
31	43.240		31 499		4 689		1 635	2.084		3 450		21 301
Average	35 640	10.870	12.740	17.110	5.925	3 450	2.383	2.608	2 244	4 096	22.310	16 720
Lowest	8.905	4.411	4.452	8 620	3 863	2 176	1.530	1.452	1 639	1 617	2.549	5 716
Highest	127.116	38.123	42.266	41.948	8 347	6.775	3 861	10 295	5.526	11 960	121 086	43 612
Peak flow												
Day of peak												
Monthly total (million cu m)	95 47	26.29	34 13	44 34	15 87	8 94	6 38	6.99	5 82	10.97	57 82	44 79
Runoff (mm)	76	21	27	35	13	7	5	6	5	9	46	36
Rainfall (mm)	120	20	64	69	49	19	39	74	39	90	116	84

Statistics of monthly data for previous record (Oct 1956 to Dec 1985—incomplete or missing months total 1.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	22.370	19 290	14 930	10 500	7 140	4 891	2 870	3.387	5 098	7 477	15 570	19 940
	Low	4.910	5.298	3.381	2 326	1 749	1 139	1 116	0 577	1 066	1 402	2 341	4 361
	(year)	1973	1981	1976	1976	1976	1976	1976	1976	1959	1972	1978	1971
	High	45.360	49 150	31 600	23 470	20 820	21 690	7 550	9 877	30 080	37 860	66 830	37 330
	(year)	1975	1957	1975	1983	1978	'964	'980	1985	1968	1960	1960	1965
Runoff:	Avg	48	37	32	22	15	10	6	7	11	16	32	43
	Low	10	10	7	5	4	2	2	1	2	3	5	9
	High	97	95	67	48	44	45	16	21	62	81	138	80
Rainfall:	Avg	72	50	57	48	55	55	52	59	72	73	82	84
	Low	13	3	3	7	21	8	20	10	5	5	14	23
	High	135	123	113	108	112	127	103	122	183	185	169	168

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	11.350		11 080		102
Lowest yearly mean			7.584	1962	
Highest yearly mean			19.330	1960	
Lowest monthly mean	2.244	Sep	0 577	Aug 1976	
Highest monthly mean	35 640	Jan	66 830	Nov 1960	
Lowest daily mean	1.452	15 Aug	0 220	4 Sep 1973	
Highest daily mean	127.116	3 Jan	269 300	4 Nov 1960	
Peak			294 500	4 Nov 1960	
10 %ile	24 960		25.150		99
50 %ile	5.836		5.121		114
95 %ile	1.783		1 453		123
Annual total (million cu m)	357 90		349.70		102
Annual runoff (mm)	285		278		102
Annual rainfall (mm)	783		759		103
[1941-70 rainfall average (mm)			758]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.

Station and catchment description

Crump weir plus a sharp-crested weir (the top of a flood gate) - superseded an insensitive broad-crested weir. Flows in excess of about 27 cumecs are measured at a well calibrated velocity-area section 2km d/s (East Farleigh). The Teston calibration makes an allowance for lock spills. Some monthly naturalised flows available (1956-68, accounting for the operation of Weir Wood reservoir). A predominately impervious (Hastings Beds) catchment; very responsive to rainfall. Mixed land use with significant areas of woodland and orchard

041016 Cuckmere at Cowbeech 1986

Measuring authority: SWA
First year: 1939
Grid reference: 51 (TQ) 611 150
Level stn (m OD): 29.80
Catchment area (sq km): 18.7
Max alt. (m OD): 183

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.747	0.446	0.115	0.548	0.218	0.108	0.040	0.027	0.027	0.029	0.210	0.162
2	5.461	0.584	0.105	0.391	0.209	0.096	0.039	0.025	0.027	0.024	0.100	0.157
3	2.670	0.450	0.101	0.372	0.200	0.104	0.035	0.040	0.026	0.024	0.070	0.139
4	1.467	0.364	0.959	0.358	0.190	0.090	0.036	0.031	0.024	0.024	0.068	0.129
5	4.454	0.330	0.918	0.345	0.181	0.079	0.044	0.028	0.023	0.026	0.055	0.257
6	0.755	0.303	0.435	0.332	0.172	0.075	0.041	0.027	0.023	0.024	0.050	0.272
7	1.428	0.284	0.293	0.320	0.156	0.073	0.038	0.030	0.023	0.024	0.042	0.221
8	1.738	0.270	0.251	0.308	0.139	0.071	0.037	0.027	0.022	0.024	0.079	0.193
9	0.769	0.228	0.243	0.297	0.143	0.070	0.035	0.026	0.027	0.024	0.066	0.201
10	1.389	0.218	0.219	0.285	0.149	0.068	0.041	0.025	0.023	0.024	0.059	0.199
11	0.671	0.216	0.196	0.275	0.135	0.102	0.047	0.026	0.022	0.024	0.091	0.220
12	0.516	0.208	0.193	0.265	0.154	0.074	0.038	0.026	0.022	0.025	0.068	0.269
13	0.471	0.195	0.196	0.256	0.138	0.068	0.036	0.026	0.034	0.024	0.107	1.171
14	0.381	0.197	0.178	0.248	0.128	0.060	0.034	0.026	0.032	0.088	0.136	0.772
15	0.303	0.176	0.166	0.240	0.136	0.057	0.033	0.025	0.074	0.073	0.204	2.071
16	0.272	0.174	0.175	0.228	0.118	0.055	0.031	0.025	0.041	0.034	0.155	0.630
17	0.272	0.175	0.170	0.200	0.117	0.056	0.030	0.025	0.035	0.030	0.270	0.856
18	0.252	0.164	0.183	0.196	0.113	0.050	0.030	0.026	0.032	0.027	1.231	0.721
19	0.485	0.146	0.191	0.832	0.107	0.048	0.030	0.026	0.028	0.026	3.077	0.423
20	0.319	0.149	0.220	0.845	0.117	0.045	0.031	0.024	0.027	0.099	3.989	0.310
21	0.748	0.125	0.181	0.576	0.112	0.044	0.031	0.025	0.027	0.092	1.032	0.274
22	0.953	0.137	0.345	0.459	0.103	0.049	0.031	0.026	0.027	0.126	0.390	0.237
23	0.583	0.133	0.627	0.326	0.139	0.052	0.033	0.027	0.027	0.049	0.421	0.202
24	0.358	0.122	1.223	0.301	0.107	0.047	0.030	0.026	0.025	0.045	0.378	0.179
25	0.294	0.111	0.403	0.286	0.099	0.043	0.032	0.090	0.024	0.089	0.366	0.804
26	0.270	0.102	0.271	0.272	0.095	0.041	0.033	0.063	0.025	0.045	0.283	0.376
27	0.325	0.111	0.428	0.260	0.091	0.038	0.032	0.037	0.025	0.067	0.220	0.260
28	0.358	0.110	0.669	0.249	0.129	0.038	0.031	0.034	0.026	0.159	0.196	0.236
29	1.788		0.564	0.238	0.100	0.038	0.030	0.031	0.029	0.105	0.183	0.218
30	0.906		1.474	0.228	0.090	0.038	0.028	0.030	0.030	0.080	0.163	1.236
31	0.436		1.460		0.097		0.028	0.028		0.088		1.072
Average	1.059	0.222	0.424	0.344	0.135	0.063	0.034	0.031	0.029	0.053	0.459	0.467
Lowest	0.252	0.102	0.101	0.196	0.090	0.038	0.028	0.024	0.022	0.024	0.042	0.129
Highest	5.461	0.584	1.474	0.845	0.218	0.108	0.044	0.090	0.074	0.159	3.989	2.071
Peak flow	15.530	0.698	4.024	2.332	0.223	0.142	0.059	0.195	0.132	0.341	18.769	5.299
Day of peak	5	2	23	19	1	11	10	25	15	28	20	15
Monthly total (million cu m)	2.84	0.54	1.14	0.89	0.36	0.16	0.09	0.08	0.07	0.14	1.19	1.25
Runoff (mm)	152	29	61	48	19	9	5	4	4	8	64	67
Rainfall (mm)	168	23	98	64	51	18	24	64	41	120	156	117

Statistics of monthly data for previous record (Jan 1968 to Dec 1985—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	0.425	0.348	0.266	0.159	0.110	0.074	0.048	0.044	0.066	0.149	0.279	0.342
	Low	0.087	0.068	0.053	0.027	0.018	0.009	0.013	0.009	0.013	0.014	0.013	0.031
	(year)	1973	1981	1973	1976	1976	1976	1976	1976	1978	1978	1973	1971
	High	0.803	0.755	0.574	0.363	0.286	0.393	0.322	0.230	0.394	0.500	0.854	0.695
	(year)	1984	1974	1981	1983	1983	1971	1980	1985	1974	1982	1974	1984
Runoff	Avg	61	45	38	22	16	10	7	6	9	21	39	49
	Low	13	9	8	4	3	1	2	1	2	2	2	4
	High	115	98	82	50	41	54	46	33	55	72	118	100
Rainfall	Avg	90	61	68	48	60	65	54	65	85	83	101	94
	Low	25	26	22	3	21	12	16	7	9	5	19	21
	High	168	155	137	109	114	155	119	144	222	195	199	184

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	0.278		0.197		145
Lowest yearly mean			0.050	1973	
Highest yearly mean			0.278	1974	
Lowest monthly mean	0.029	Sep	0.009	Jun 1976	
Highest monthly mean	1.059	Jan	0.854	Nov 1974	
Lowest daily mean	0.022	8 Sep	0.003	21 Jun 1976	
Highest daily mean	5.461	2 Jan	6.658	14 Jan 1968	
Peak	18.769	20 Nov	17.790	27 Dec 1979	
10 %ile	0.632		0.442		143
50 %ile	0.118		0.081		146
95 %ile	0.025		0.012		206
Annual total (million cu m)	8.76		6.05		145
Annual runoff (mm)	468		324		145
Annual rainfall (mm)	944		874		108
[1941-70 rainfall average (mm)			821]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies

Station and catchment description

Asymmetrical compound Crump weir (crests: 2.13m and 2.97m broad) with crest tapping - not currently used. Structure capacity exceeded in large floods. Early data (1939-67) is of poorer quality and relates to low flows only. Catchment is substantially natural but flows are diminished by water supply offtake upstream of the gauging station. A rural catchment developed on mixed geology (Hastings Beds predominate).

042010 Itchen at Highbridge+Allbrook 1986

Measuring authority: SWA
First year: 1958

Grid reference 41 (SU) 467 213
Level stn (m OD) 17 10

Catchment area (sq km) 360 0
Max alt (m OD) 208

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	6.479	8 124	6 951	6.414	5 710	5 614	4 160	4 070	4 037	3 328	3 686	5 114
2	7.779	8 137	6 914	6 247	5 622	5 432	4 089	4 096	3 974	3 356	3 599	5 325
3	7 562	7 998	6 790	6 303	5 795	5 393	4 067	4 639	3 937	3 343	3 582	5 280
4	7.092	7 833	7 073	6.206	5 918	5 373	4 067	4 519	3 846	3 305	3 574	5 277
5	7.248	7 775	7 244	6 146	6 011	5 206	4 849	4 280	3 803	3 312	3 534	5 534
6	7 006	7 806	6 940	6 175	6 013	5 182	5 018	4 125	3 795	3 275	3 437	5 594
7	7 218	7 870	6 831	6 159	5 837	5 167	4 476	4 333	3 775	3 219	3 479	5 550
8	7 836	7 802	6 795	6 242	5 905	5 142	4 602	4 121	3 704	3 276	3 578	5.839
9	7 398	7 661	6 777	6 127	5 902	5 111	4 511	3 975	3 713	3 307	3 587	5 824
10	8 398	7 569	6 693	6 039	5 879	5 130	4 490	4 042	3 618	3 318	4 161	5.691
11	8 042	7 453	6 644	5 905	5 877	5 231	4 464	3 899	3 661	3 245	4 355	6 188
12	7 833	7 473	6 531	5 961	5 876	5 140	4 488	3 864	3 681	3 329	4 090	6 136
13	7 636	7 514	6 455	6 015	5.831	5 014	4 430	3 798	3 876	3 313	4 466	6 723
14	7 669	7 570	6 329	6 274	5 790	4 839	4 412	3 772	3 944	3 536	4 636	6 245
15	7 660	7 550	6 265	6 339	6.004	4 696	4 276	3 690	4 125	3 915	4 627	7 419
16	7 704	7.536	6 272	6 312	5 672	4 587	4 340	3 637	3 864	3 508	4 563	6 989
17	7.748	7 518	6 261	6 182	5 871	4 546	4.026	3 628	3 671	3 400	4 606	6 976
18	7 769	7 487	6 295	6 080	5 868	4 636	4 081	3 679	3 474	3 412	5 464	7 165
19	7 772	7.354	6 459	6 058	5 626	4 577	3 992	3 757	3 529	3 498	6 723	6 806
20	7.789	7 262	6 523	6 536	6 585	4 469	4 091	3 721	3 544	3 472	6 137	6 700
21	8.017	7 273	6 402	6.679	6 449	4 581	4 110	3 686	3 531	4 186	6 239	6 769
22	8.841	7 266	6 373	6 502	6 130	4 669	4 019	3 714	3 576	3 974	5 793	6 746
23	8 676	7 200	6 521	6 461	6 038	4 834	4 053	3 958	3 654	3 774	5 699	6 875
24	8 197	7.123	6 995	6 265	5 839	4 926	4 251	4 024	3 554	3 834	5 608	6 807
25	7.907	7.087	6 632	6 116	5 795	4 785	4 118	5 271	3 347	4 001	5 672	7 437
26	7.753	7 019	6 305	5 965	5 757	4 499	4 026	5.718	3 434	3 751	5 604	7 228
27	7 739	6 929	6 383	5 894	5 582	4 346	4 024	4 648	3 407	3 856	5 448	6 952
28	8 042	6 888	6 491	5 843	5 575	4 257	4 106	4 433	3 435	3 670	5 355	6 878
29	8 966		6 527	5 824	5 547	4 237	4 070	4 285	3 362	3 607	5 366	7 070
30	8 643		6.689	5 815	5 446	4 134	4 216	4 090	3 337	3 622	5 340	7 522
31	8 213		6 497		5 548		4 154	4 056		3 619		7 777
Average	7 827	7 503	6 608	6 169	5 848	4 858	4 261	4 114	3 674	3 534	4 734	6 466
Lowest	6 479	6 888	6 261	5 815	5 446	4 134	3 992	3 628	3 337	3 219	3 437	5 114
Highest	8 966	8 137	7 244	6 679	6 585	5 614	5 018	5 718	4 125	4 186	6 723	7 777
Peak flow												
Day of peak												
Monthly total (million cu m)	20 96	18 15	17 70	15 99	15 66	12 59	11 41	11 02	9 52	9 47	12 27	17.32
Runoff (mm)	58	50	49	44	44	35	32	31	26	26	34	48
Rainfall (mm)	133	12	66	70	77	23	50	108	25	89	143	121

Statistics of monthly data for previous record (Oct 1958 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	6 574	7 213	7 054	6 539	5 752	4 893	4 169	3 874	3 743	4.163	4 865	5 752
	Low	4 208	4 162	3 644	3 203	3 093	2 582	2 474	2 331	2 669	2 702	2 840	3 136
	(year)	'976	1964	1976	1976	1976	1976	1976	1976	'973	1959	1973	1973
	High	10 520	10 850	9 923	8 521	7 312	6 550	5 219	5 245	5 128	7 867	9 857	10 860
	(year)	'969	1969	1977	'969	1966	1979	1979	1979	1968	1960	1960	1960
Runoff:	Avg	49	49	52	47	43	35	31	29	27	31	35	43
	Low	31	29	27	23	23	19	18	17	19	20	20	23
	High	78	73	74	61	54	47	39	39	37	59	71	81
Rainfall (1971-1985)	Avg	92	56	83	43	72	63	55	58	86	72	80	91
	Low	39	19	24	2	19	10	22	18	19	30	31	25
	High	159	'37	172	97	131	113	87	120	'95	177	197	153

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre 1986
Mean flow (m^3s^{-1})	5 456		5 373		102
Lowest yearly mean			3 708	1973	
Highest yearly mean			6 594	1960	
Lowest monthly mean	3 534	Oct	2 331	Aug 1976	
Highest monthly mean	7 827	Jan	10 860	Dec 1960	
Lowest daily mean	3 219	7 Oct	2 167	24 Aug 1976	
Highest daily mean	8 966	29 Jan	12 800	29 Jan 1969	
Peak					
10 %ile	7 572		7 778		97
50 %ile	5 556		4 940		112
95 %ile	3 396		3.097		110
Annual total (million cu m)	172 10		169 60		101
Annual runoff (mm)	478		471		101
Annual rainfall (mm)	917		851		108
(1941-70 rainfall average (mm)			876)		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Augmentation from surface water and/or groundwater

Station and catchment description

Crump weir (crest 7.75m broad) installed in 1971 (superseded a velocity-area station which suffered severely from weedgrowth) plus a rectangular thin-plate weir at Allbrook. Peak flows not derived. Local bypassing occurs at Allbrook during exceptional discharges. The groundwater catchment substantially exceeds the topographical catchment area. Artificial influences have a minor impact on flows, small net export of water. Very permeable catchment (90% Chalk). Land use is mainly arable with scattered urban settlements.

043005 Avon at Amesbury 1986

Measuring authority: WWA
First year: 1965
Grid reference: 41 (SU) 151 413
Level stn. (m OD): 67.10
Catchment area (sq km): 323.7
Max alt. (m OD): 294

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.382	7.877	4.891	4.485	3.919	3.783	2.518	1.855	1.795	1.504	1.692	3.559
2	6.831	7.662	4.824	4.405	3.997	3.714	2.479	1.774	1.773	1.465	1.778	3.566
3	5.930	7.633	4.736	4.448	4.077	3.719	2.446	1.968	1.762	1.465	1.721	3.565
4	5.590	7.348	4.806	4.312	4.270	3.691	2.534	2.053	1.710	1.467	1.643	3.555
5	6.635	7.222	4.863	4.161	4.479	3.657	2.743	1.929	1.686	1.440	1.626	3.631
6	5.893	7.170	4.787	4.147	4.466	3.623	2.678	1.914	1.696	1.426	1.619	3.837
7	5.684	7.083	4.686	4.220	4.513	3.556	2.581	1.879	1.649	1.387	1.589	3.853
8	5.987	6.981	4.618	4.247	4.529	3.522	2.548	1.820	1.719	1.416	1.602	4.634
9	5.826	6.871	4.672	4.109	4.396	3.489	2.504	1.793	1.636	1.400	1.694	5.223
10	6.710	6.766	4.696	4.000	3.911	3.562	2.484	1.835	1.574	1.424	1.845	4.581
11	6.832	6.665	4.582	3.890	3.663	3.631	2.486	1.831	1.587	1.401	2.280	5.287
12	6.427	6.627	4.515	3.911	3.643	3.549	2.501	1.875	1.554	1.408	2.279	5.875
13	6.288	6.566	4.457	3.951	3.603	3.465	2.450	1.858	1.780	1.406	2.296	6.150
14	6.230	6.454	4.395	4.151	3.726	3.331	2.404	1.822	2.007	1.452	2.928	5.780
15	6.048	6.327	4.377	4.760	4.396	3.245	2.341	1.769	2.107	1.446	4.238	6.758
16	6.053	6.223	4.354	4.736	3.938	3.131	2.262	1.744	1.910	1.420	3.203	8.304
17	6.093	6.098	4.269	4.617	3.944	3.107	2.088	1.713	1.774	1.407	2.860	7.079
18	6.129	5.924	4.245	4.559	4.269	3.061	2.172	1.770	1.626	1.423	3.182	7.267
19	6.129	5.789	4.282	4.452	4.076	3.057	2.095	1.729	1.595	1.471	4.173	7.027
20	5.931	5.721	4.276	4.831	5.156	3.025	2.083	1.662	1.572	1.590	4.217	6.819
21	6.168	5.633	4.165	4.865	5.327	2.975	2.091	1.680	1.559	1.651	5.076	6.739
22	6.859	5.477	4.210	4.758	4.800	2.975	1.998	1.700	1.559	1.944	4.417	6.659
23	7.356	5.416	4.365	4.570	4.390	3.002	2.086	1.812	1.559	2.022	4.249	6.564
24	6.700	5.289	5.274	4.429	4.190	2.981	2.044	1.784	1.566	1.830	4.236	6.561
25	6.217	5.091	4.642	4.321	4.059	2.996	2.063	2.224	1.515	1.738	3.890	7.415
26	5.970	5.027	4.511	4.194	3.976	2.914	2.038	2.780	1.513	1.680	4.399	7.620
27	6.144	4.934	4.493	4.065	3.888	2.656	1.997	2.591	1.492	1.550	4.176	7.050
28	6.492	4.933	4.596	3.990	3.808	2.861	2.001	2.240	1.492	1.698	3.839	6.853
29	9.406		4.596	3.936	3.745	2.693	1.863	2.117	1.482	1.687	3.731	6.796
30	10.289		4.758	3.807	3.707	2.539	1.861	1.973	1.504	1.674	3.633	7.279
31	9.025		4.728		3.743		1.854	1.890		1.659		7.338
Average	6.557	6.314	4.570	4.311	4.149	3.250	2.268	1.916	1.658	1.547	3.004	5.910
Lowest	5.382	4.933	4.165	3.807	3.603	2.539	1.854	1.662	1.482	1.387	1.589	3.555
Highest	10.289	7.877	5.274	4.865	5.327	3.783	2.743	2.780	2.107	2.022	5.076	8.304
Peak flow	12.095	8.241	5.976	5.358	5.794	3.794	4.561	3.405	2.204	2.147	5.575	9.575
Day of peak	30	1	24	15	20	1	29	26	15	23	21	16
Monthly total (million cu m)	17.56	15.27	12.24	11.17	11.11	8.42	6.07	5.13	4.30	4.14	7.79	15.83
Runoff (mm)	54	47	38	35	34	26	19	16	13	13	24	49
Rainfall (mm)	114	9	63	64	89	21	47	107	41	74	118	114

Statistics of monthly data for previous record (Feb 1965 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.287	5.955	5.605	4.525	3.482	2.703	2.014	1.709	1.606	1.910	2.577	3.941
	Low	1.199	1.187	1.158	1.039	0.834	0.626	0.475	0.372	0.644	1.149	1.090	1.385
	(year)	1976	1976	1976	1976	1976	1976	1976	1976	1976	1970	1973	1975
	High	8.555	9.686	8.352	7.587	5.146	4.260	3.021	2.362	2.528	3.521	6.440	7.260
	(year)	1982	1977	1972	1979	1979	1979	1971	1979	1974	1966	1974	1982
Runoff:	Avg	44	45	46	36	29	22	17	14	13	16	21	33
	Low	10	9	10	8	7	5	4	3	5	10	9	11
	High	71	72	69	61	43	34	25	20	20	29	52	60
Rainfall:	Avg.	78	54	68	44	62	58	49	62	71	66	75	88
	Low	18	6	14	1	24	3	15	22	11	4	31	26
	High	134	134	150	100	121	143	113	152	179	161	185	160

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	3.775		3.430		110
Lowest yearly mean			1.431	1976	
Highest yearly mean			4.476	1977	
Lowest monthly mean	1.547	Oct	0.372	Aug 1976	
Highest monthly mean	6.557	Jan	9.686	Feb 1977	
Lowest daily mean	1.387	7 Oct	0.175	22 Aug 1976	
Highest daily mean	10.289	30 Jan	15.540	25 Feb 1977	
Peak	12.095	30 Jan	17.330	16 Mar 1982	
10 %ile	6.616		6.609		100
50 %ile	3.769		2.823		134
95 %ile	1.480		1.153		128
Annual total (million cu m)	119.00		108.20		110
Annual runoff (mm)	368		334		110
Annual rainfall (mm)	861		775		111
(1941-70 rainfall average (mm)			764)		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Compound structure: Crump crest (9.14m broad) flanked by broad-crested weirs. Small bypass channel approx 2m upstream of weir - included in rating. Full range station. Bankfull - 1.37m. During the summer flows are naturally augmented from groundwater draining from the northern half of the River Bourne catchment. Topographical and groundwater catchment areas do not coincide. Predominantly permeable (Chalk) catchment with a small inlier of Upper Greensand and Gault. Land use - rural.

045001 Exe at Thorverton 1986

Measuring authority: SWWA
First year: 1956
Grid reference 21 (SS) 936 016
Level stn (m OD): 25 90
Catchment area (sq km): 600 9
Max alt (m OD): 519

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	38.812	19 770	4.077	29 051	11.337	7 065	4 403	3.838	11 067	3 438	38 575	24.090
2	35 589	18 295	3.712	25 143	10 420	6 453	3 974	4 230	10 150	3 284	30.918	20 514
3	30 533	16 835	3.853	20 866	9 945	6 151	3 720	3 531	10 468	3 150	28 008	17 106
4	37 731	14 968	11 932	17 275	12 792	5 756	4 148	3 701	8 184	3 082	22.502	15 393
5	34 622	13 878	17.066	14.990	9 847	5 380	5 657	4 303	7 381	3 024	20.331	15 260
6	32 676	12 840	8 844	13.981	8 683	5 071	4 232	4 018	6 907	2 955	17.654	13.620
7	60 424	11.731	7.490	15 531	8 401	4 896	3 672	6 334	6 270	2 919	16.953	17 003
8	52.578	10.563	6.876	20 300	9 015	4 650	3.558	5 261	5 794	2 858	17 370	41 547
9	42 653	9 665	9 046	17 409	8 249	10 330	3 307	4 610	5 311	2 900	22.233	33 504
10	84 496	9 073	7.997	15.908	8 432	24 999	3 271	17 146	4 990	3.338	25 145	30 549
11	65.263	8 459	7 171	14.720	7 872	25 326	3 448	21 876	4 757	3.145	23.643	50 894
12	51 206	8 142	6.753	14.076	8 460	17.918	3.431	9 653	4 482	3 008	20 527	41.784
13	47 297	7.910	6 398	14.178	8.285	15 457	3 166	7.918	11 035	2.993	31.847	53.728
14	43.925	7 045	6.209	20.666	26 342	13 446	2.977	7 054	10 581	3.020	98.274	41 236
15	37 747	6.663	6 034	29.534	27 655	11 723	2 840	5 922	7.451	2 865	52 052	73.401
16	33.485	6.439	6 714	24.768	23.695	10 334	2 672	5 279	6.338	2 810	41.671	58.480
17	29.678	6 018	6.300	23 814	28 874	9 047	2.554	4 975	5 598	2 877	38.538	58 956
18	33 286	5.594	6 564	20 423	22.783	7 994	2 476	12 942	5 114	3 026	80 457	55 318
19	31.661	5 349	6 629	21 395	19 530	7 374	2.540	8 783	4 812	4 438	135.298	59 774
20	27.712	5.205	8 223	32 939	18.968	6 718	2 548	6 652	4 611	18 369	92 187	51 584
21	34.862	4.899	7 066	42 132	18 114	7 902	2 538	6.564	4 476	31 528	68 137	41.063
22	56 968	4 713	8 634	40 739	14 917	7 405	2.464	9 405	4 300	43 773	57.080	33 239
23	67 825	4.527	18 212	39.187	13 188	6 444	2 338	9 242	4 210	37 343	60 072	27.556
24	51.793	4.262	37.401	33.847	12 040	6 452	2 396	8.995	4 050	32.582	58.037	23 112
25	40 803	4 202	27.302	28.730	10 962	5 778	2.654	37 078	3 866	41.621	66 420	36 417
26	34.008	3.740	26 328	23 907	10 187	5 092	2 825	35.856	3 764	33.766	67.738	26 109
27	30.593	3.784	28 379	20 100	9 329	4 603	2.643	26.103	3 686	50 036	51.878	22 807
28	31.313	3 902	34.333	17.401	8 676	4 354	3.056	21 548	3 620	60 254	41.167	22 912
29	28.887		34.823	14.826	7.768	5 291	3.626	17 103	3 513	45.335	33.285	24 718
30	23 486		40 234	12 705	7 412	5 269	4.516	14 100	3 438	39 814	27.150	52 011
31	20.784		34 696		8 302		5 115	12.108		35 191		59 090
Average	41 050	8.517	14.360	22.680	13 240	8 823	3.315	11.170	6 007	17 060	46 170	36 860
Lowest	20.784	3 740	3 712	12.705	7 412	4 354	2 338	3.531	3 438	2 810	16 953	13 620
Highest	84.496	19 770	40 234	42.132	28 874	25 326	5.657	37 078	11 067	60.254	135.298	73 401
Peak flow	136.334	20 460	61 997	50.809	62.622	53 099	6 681	94.936	21 567	83 688	191.199	115 909
Day of peak	10	1	24	20	15	10	31	11	14	28	19	15
Monthly total (million cu m)	110 00	20 60	38 47	58 80	35 47	22 87	8 88	29 91	15 57	45 68	119.70	98 74
Runoff (mm)	183	34	64	98	59	38	15	50	26	76	199	164
Rainfall (mm)	191	7	124	113	105	93	62	141	40	160	207	212

Statistics of monthly data for previous record (May 1956 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	29.130	26 060	18.690	12.770	8.855	5 606	4.568	6 538	9 275	16 470	21 840	30 850
	Low	5 438	6 451	6.376	4 340	2.593	1.989	1 153	0.695	1 699	1 561	5.297	12 460
	(year)	1963	1965	1962	1974	1976	1975	1976	1976	1972	1978	1978	1963
	High	57 190	47 220	49.630	28 800	29 380	15 870	19 770	20 550	35 830	59.830	44 000	68 440
	(year)	1984	1957	1981	1966	1983	1958	1968	1985	1974	1960	1970	1965
Runoff:	Avg.	130	106	83	55	39	24	20	29	40	73	94	138
	Low	24	26	28	19	12	9	5	3	7	7	23	56
	High	255	190	221	124	131	68	88	92	155	267	190	305
Rainfall:	Avg.	145	102	102	72	79	72	80	98	113	121	130	155
	Low	30	8	18	7	25	9	19	31	13	13	48	51
	High	297	196	222	163	175	160	174	181	254	300	239	321

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	19 170		15.850		121
Lowest yearly mean			9 698	1964	
Highest yearly mean			22.600	1960	
Lowest monthly mean	3 315	Jul	0.695	Aug 1976	
Highest monthly mean	46.170	Nov	68 440	Dec 1965	
Lowest daily mean	2 338	23 Jul	0 440	28 Aug 1976	
Highest daily mean	135 298	19 Nov	282.200	4 Dec 1960	
Peak	191 199	19 Nov	492 600	4 Dec 1960	
10 %ile	42.670		37 510		114
50 %ile	11 100		9 632		115
95 %ile	2 910		1 871		156
Annual total (million cu m)	604.50		500 20		121
Annual runoff (mm)	1006		832		121
Annual rainfall (mm)	1455		1269		115
(1941-70 rainfall average (mm)			1326)		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station with cableway. Flat V Crump weir constructed in 1973 due to unstable bed condition. Minor culvert flow through mill u/s of station included in rating. Significant abstractions for PWS. Control point for Wimbleball Reservoir operational releases. Headwaters drain Exmoor. Geology predominantly Devonian sandstones and Carboniferous Culm Measures, with subordinate Permian sandstones in the east. Moorland, forestry and a range of agriculture.

047001 Tamar at Gunnislake 1986

Measuring authority: SWWA
First year: 1956

Grid reference 20 (SX) 426 725
Level stn (m OD) 8.20

Catchment area (sq km) 916.9
Max alt (m OD) 586

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	74 498	25 168	5 289	28 670	15 004	9 646	7 154	6 958	24 903	5 502	39 944	27 244
2	72 377	22 610	5.104	25 346	14 141	8 765	6 190	7 564	21 871	5 412	28 188	26 445
3	46 829	20 624	4 894	21 626	13 281	8 351	5 782	5 685	22 008	5 199	26 737	21 922
4	49 547	18 279	6 644	18 488	16 701	7 936	5 914	5 814	16 858	4 958	23 745	19 654
5	44 403	16 699	15 595	16 519	14 359	7 445	16 676	7 526	15 005	4 825	22 778	23 150
6	34 971	15 441	9 310	15 093	12 439	6 957	11 475	9 967	13 570	4 674	23 716	20 824
7	56 320	14 184	7.364	16 221	16 986	6 732	7 773	9 072	12 330	4 598	21 295	35 975
8	43 148	12 850	6 648	20 050	19 348	6 550	7 358	7 499	11 436	4 526	32 343	126 878
9	35 814	11 793	7.956	15 140	14 580	11 934	6 810	7 031	10 542	4.509	62 625	58 225
10	99 604	11 215	7 507	13 160	14 950	24 187	6 216	9 597	9 734	4 930	58 896	49 795
11	57 513	10 755	6 668	11 823	13 470	22 367	6 128	9 353	9 135	4 629	41 918	140 245
12	46 800	10 502	6.415	11 655	14 461	11 988	5 974	7 745	8 596	4 291	33 436	100 283
13	39 837	10 296	6 127	11 785	13.429	9 718	5 650	7 372	14 598	4.251	59 888	121 490
14	37 272	9 646	5.971	26 195	68 943	8 785	5 417	7 138	18 934	4 210	130.436	82 334
15	31 684	8 975	5 843	31 751	40 442	8 122	5 230	6 564	12 119	4 066	57 289	149 000
16	31 467	8 761	6 648	27 104	27 043	7 609	4 809	6 178	10 842	3 892	55 194	99 230
17	37 990	8 293	6.716	20 623	49 908	7 070	4 557	5 970	9 501	3 788	57.780	88 230
18	30 046	7 722	6 611	17 808	35 060	6 666	4 314	12 316	8 735	4 030	154 737	84 427
19	32 963	7 270	7 301	18 472	28 637	6 368	4 143	10 398	8 193	4 949	254 204	67 873
20	27 482	7 104	8 717	53 209	24 507	6 825	4 142	7 533	7 946	15 775	136 033	54 969
21	51 383	6 946	7 599	43 021	23 582	8 545	4 249	8 054	7 728	29 300	106 594	46 400
22	87 658	6 499	7 925	44 568	19 029	10 525	4 049	33 317	7 508	53 338	79 048	37 249
23	86 874	6 498	14 541	55 751	16 931	12 756	3 818	50 172	7 196	31 002	65 817	33 087
24	53 039	5 915	42 468	41 051	14 965	12 020	3 718	47 143	6 939	25 854	64 550	30 094
25	40 580	5 816	22 570	33 008	13 819	9 393	3 853	144 025	6 594	32 106	81 940	98 418
26	35 563	5 387	20 250	27 851	12 846	7 828	4 354	97 369	6 365	24 053	79 770	49 530
27	35 532	5 079	24 481	24 219	11 814	7 028	4 114	58 241	6 147	43 533	51 404	37.923
28	38 648	5 321	36 400	21 380	11 087	6 713	5 605	89 834	5 953	60 480	41 235	39.804
29	45 748		26 669	18 786	10 151	7 110	6 324	49 219	5 764	41 311	33 985	35 930
30	33 096		43 844	16 428	9 604	8 578	6 723	36 672	5 563	36 438	28 821	85 405
31	28 233		36 441		11 220		7 841	29 216		31 554		81.478
Average	47 320	10 920	13 760	24 890	20 090	9 484	6 012	25 820	11 090	16 520	65 140	63 660
Lowest	27 482	5 079	4 894	11 655	9 604	6 368	3 718	5 685	5 563	3 788	21 295	19 654
Highest	99 604	25 168	43 844	55 751	68 943	24 187	16 676	144 025	24 903	60 480	254 204	149 000
Peak flow	163 121	27 800	82 754	93 870	154 478	46 016	23 017	238 049	31 200	88 886	363 991	234 505
Day of peak	10	1	24	20	15	10	5	26	14	22	19	11
Monthly total (million cu m)	126.70	26 41	36 85	64 52	53 80	24 58	16 10	69 17	28 74	44 24	168 90	170 50
Runoff (mm)	138	29	40	70	59	27	18	75	31	48	184	186
Rainfall (mm)	154	4	103	97	112	94	73	177	35	128	204	231

Statistics of monthly data for previous record (Jul 1956 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	46 130	37 020	25 930	16 400	11 640	6 942	6 072	8 326	12 270	21 970	34 220	45.770
	Low	8 476	9.161	11 250	6 420	3 488	1 995	1 181	0 757	1 118	1 540	4 213	18 350
	(year)	1964	1965	1961	1974	1976	1976	1976	1976	1959	1978	1978	1963
	High	89 410	84 270	65 520	35 200	32.370	20 630	28 730	42 100	59 840	65 080	78 760	91 690
	(year)	1974	1974	1981	1985	1983	1972	1968	1958	1974	1981	1959	1959
Runoff:	Avg.	135	98	76	46	34	20	18	24	35	64	97	134
	Low	25	24	33	18	10	6	3	2	3	5	12	54
	High	261	222	191	100	95	58	84	123	169	190	223	268
Rainfall:	Avg.	146	98	98	67	74	70	81	93	108	119	136	146
	Low	23	3	14	7	25	11	13	18	10	12	58	41
	High	301	206	219	151	149	167	160	179	251	258	274	266

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	26 330		22 680		116
Lowest yearly mean			12 520	1964	
Highest yearly mean			34 890	1974	
Lowest monthly mean	6.012	Jul	0 757	Aug 1976	
Highest monthly mean	65 140	Nov	91 690	Dec 1959	
Lowest daily mean	3 718	24 Jul	0 580	23 Aug 1976	
Highest daily mean	254 204	19 Nov	482 300	27 Dec 1979	
Peak	363 991	19 Nov	714 600	28 Dec 1979	
10 %ile	58 440		55 370		106
50 %ile	14 530		12 410		117
95 %ile	4 517		1 809		250
Annual total (million cu m)	830 30		715 80		116
Annual runoff (mm)	906		781		116
Annual rainfall (mm)	1412		1236		114
[1941-70 rainfall average (mm)			1230]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from surface water and/or groundwater
- Augmentation from effluent returns

Station and catchment description

Velocity-area station, wide, shallow channel. Cableway span 46.9m. Low flows measured at another, narrower, site. High flow gaugings difficult owing to standing waves. Some gaps in the record. Moderate influence from PWS and diversions. Rural catchment of moderate relief, draining very disturbed lower Carboniferous slates, shales, grits and volcanics. Significant alluvial flats in middle reaches. Devonian slates low down. Fairly responsive. A range of agriculture, grazing and forestry as land use.

050001 Taw at Umberleigh 1986

Measuring authority: SWWA
First year: 1958

Grid reference: 21 (SS) 608 237
Level stn (m OD): 14.10

Catchment area (sq km): 826.2
Max alt. (m OD): 604

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	45.922	16.995	3.441	31.022	11.699	6.458	4.707	3.768	15.832	3.336	42.287	24.618
2	45.671	15.510	3.541	26.433	10.648	5.673	3.970	3.945	13.766	3.249	31.469	22.266
3	33.091	14.188	3.499	21.680	9.470	5.371	3.617	3.033	13.607	3.018	28.826	18.010
4	37.836	12.495	9.708	18.030	12.338	5.018	4.544	9.236	10.314	2.861	23.480	16.196
5	33.756	11.366	21.279	15.390	10.182	4.621	8.672	5.398	9.181	2.784	22.010	21.573
6	28.560	10.417	10.379	13.834	8.294	4.282	5.403	5.377	8.412	2.708	19.850	18.573
7	62.257	9.347	8.387	14.586	8.795	4.127	4.203	7.406	7.693	2.657	19.707	24.982
8	47.415	8.383	7.546	19.408	8.632	3.935	4.538	5.801	7.056	2.578	23.696	68.161
9	33.912	7.508	10.315	14.122	8.156	12.460	3.770	4.976	6.326	2.552	29.678	47.764
10	70.537	7.249	9.515	11.702	8.123	36.598	3.414	12.831	5.789	2.663	37.135	37.830
11	59.483	6.796	7.739	10.316	7.324	37.555	3.788	45.093	5.434	2.570	31.705	69.360
12	51.120	6.554	7.043	10.111	7.486	20.524	3.544	14.651	5.058	2.405	25.056	49.886
13	44.068	6.389	6.513	11.176	7.135	16.077	3.184	11.316	17.067	2.403	40.841	68.780
14	40.020	5.735	6.018	21.978	44.508	13.286	2.978	9.582	21.159	2.423	127.383	50.837
15	36.337	5.361	5.758	31.328	37.785	11.171	2.812	7.743	11.432	2.325	57.152	89.636
16	32.208	5.179	6.368	25.399	25.283	9.558	2.468	6.513	9.663	2.147	47.402	75.175
17	31.718	4.861	5.915	22.478	27.619	8.339	2.272	5.821	7.866	2.037	48.472	66.340
18	36.256	4.414	6.608	19.092	21.358	7.399	2.158	21.257	6.809	2.156	109.704	60.550
19	38.588	4.223	7.124	23.908	17.116	6.633	2.062	13.415	6.159	3.303	176.727	63.493
20	32.951	4.099	7.807	43.695	16.262	5.986	2.131	9.174	5.758	19.324	104.940	60.592
21	52.741	3.944	6.475	50.704	15.449	7.548	2.236	8.659	5.431	29.031	80.859	48.165
22	74.491	3.726	7.247	44.683	12.802	8.406	2.109	20.983	5.104	55.352	66.497	36.562
23	89.088	3.903	14.096	47.316	11.208	6.503	1.941	20.255	4.871	45.550	68.009	29.293
24	80.162	3.641	37.112	41.624	10.076	7.160	1.861	20.968	4.563	34.370	63.318	25.077
25	44.132	4.131	23.093	34.778	9.168	5.670	1.992	70.828	4.244	45.962	71.424	67.277
26	34.841	4.976	22.505	27.679	8.483	4.666	2.253	57.460	4.032	34.072	75.556	43.610
27	30.785	4.649	29.560	22.322	7.809	4.137	2.141	44.335	3.899	56.152	56.160	37.013
28	30.342	4.296	45.032	18.819	7.208	3.957	2.764	38.560	3.790	77.885	43.063	34.930
29	26.791		42.048	15.700	6.561	6.983	3.030	29.169	3.607	60.458	33.020	32.123
30	21.077		49.238	13.274	6.330	6.086	3.301	22.587	3.408	47.819	26.239	70.373
31	18.521		39.862		8.266		4.837	18.122		37.569		79.128
Average	42.730	7.155	15.190	24.090	13.280	9.540	3.313	18.010	7.911	19.150	54.320	47.040
Lowest	18.521	3.641	3.441	10.111	6.330	3.935	1.861	3.033	3.408	2.037	19.707	16.196
Highest	89.088	16.995	49.238	50.704	44.508	37.555	8.672	70.828	21.159	77.885	176.727	89.636
Peak flow	108.526	18.283	60.897	65.314	99.689	79.066	10.853	124.530	41.049	97.651	251.996	123.938
Day of peak	10	1	24	21	15	10	5	11	14	28	19	15
Monthly total (million cu m)	114.50	17.31	40.67	62.43	35.56	24.73	8.87	48.23	20.51	51.30	140.80	126.00
Runoff (mm)	139	21	49	76	43	30	11	58	25	62	170	152
Rainfall (mm)	148	3	106	97	93	97	65	151	39	138	183	196

Statistics of monthly data for previous record (Oct 1958 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	35.970	28.910	20.510	13.710	9.688	5.213	4.628	5.676	7.776	18.720	28.260	37.230
	Low	6.657	3.244	7.449	3.889	2.073	1.329	0.793	0.423	0.861	1.043	3.653	13.210
	(year)	1963	1959	1984	1974	1976	1984	1984	1976	1959	1978	1978	1963
	High	62.100	54.760	52.140	32.800	37.000	16.630	23.390	19.130	47.670	77.360	58.500	73.670
	(year)	1984	1970	1981	1966	1983	1972	1968	1985	1974	1960	1963	1965
Runoff:	Avg.	117	85	67	43	31	16	15	18	24	61	89	121
	Low	22	10	24	12	7	4	3	1	3	3	11	43
	High	201	160	169	103	120	52	76	62	150	251	184	239
Rainfall:	Avg.	132	86	90	69	72	66	71	87	95	112	128	140
	Low	28	5	18	8	28	10	23	24	14	14	56	41
	High	242	173	183	145	146	164	152	160	247	278	239	271

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	21.910		17.990		122
Lowest yearly mean			11.310	1964	
Highest yearly mean			27.590	1960	
Lowest monthly mean	3.313	Jul	0.423	Aug 1976	
Highest monthly mean	54.320	Nov	77.360	Oct 1960	
Lowest daily mean	1.861	24 Jul	0.200	28 Aug 1976	
Highest daily mean	176.727	19 Nov	363.800	4 Dec 1960	
Peak	251.996	19 Nov	644.900	4 Dec 1960	
10 %ile	53.770		46.690		115
50 %ile	11.450		9.291		123
95 %ile	2.472		1.174		211
Annual total (million cu m)	691.00		567.70		122
Annual runoff (mm)	836		687		122
Annual rainfall (mm)	1316		1148		115
(1941-70 rainfall average (mm)			1183)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station, main channel 34m wide, cableway span 54.9m. Rock step d/s forms the control. Bypassing begins at about 3.7m on the rb, but a good rating accommodates this. Significant modification to flows owing to PWS abstraction. Some naturalised flow data available. Large rural catchment - drains both Dartmoor (granite) to the south and Devonian shales and sandstones of Exmoor to the north. Central area is underlain mainly by Culm shales and sandstones (Carboniferous). Agriculture is conditioned by the grade 3 and 4 soils.

052005 Tone at Bishops Hull 1986

Measuring authority: WWA
First year: 1961
Grid reference: 31 (ST) 206 250
Level stn. (m OD): 16.20
Catchment area (sq km): 202.0
Max alt. (m OD): 409

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	9.292	4.644	1.465	3.645	2.870	1.834	1.087	0.908	0.899	0.846	3.261	4.130
2	7.863	4.372	1.438	3.331	2.700	1.742	1.106	0.870	0.908	0.820	2.439	3.792
3	6.049	4.200	1.431	3.005	2.787	1.610	0.984	0.887	0.932	0.827	2.288	3.495
4	7.875	3.793	1.749	2.733	3.333	1.503	1.096	0.905	0.843	0.798	2.132	3.216
5	7.124	3.580	2.184	2.555	2.940	1.474	1.517	0.846	0.847	0.789	2.011	3.198
6	6.487	3.325	1.672	2.568	2.674	1.397	1.077	0.899	0.849	0.830	1.868	2.996
7	23.799	3.076	1.546	3.911	2.930	1.376	0.964	0.847	0.830	0.799	1.831	3.421
8	12.191	2.880	1.515	6.097	2.917	1.363	1.002	0.847	0.808	0.803	1.810	9.471
9	8.348	2.735	1.682	3.584	2.639	1.733	0.919	0.847	0.776	0.797	1.943	4.838
10	21.482	2.612	1.598	2.948	2.412	2.987	0.924	0.847	0.788	0.868	2.625	4.190
11	12.053	2.491	1.512	2.834	2.242	2.596	1.046	0.871	0.787	0.818	2.742	10.983
12	9.461	2.466	1.439	2.933	2.181	1.675	1.075	0.837	0.781	0.820	2.220	7.109
13	8.157	2.414	1.417	3.041	1.934	1.495	1.009	0.809	2.500	0.836	3.729	9.493
14	7.510	2.300	1.389	4.093	6.821	1.445	0.977	0.775	2.234	0.860	9.075	6.280
15	6.262	2.142	1.381	4.952	4.378	1.375	0.898	0.707	1.392	0.788	4.192	12.424
16	5.471	2.084	1.539	4.891	2.897	1.304	0.878	0.701	1.144	0.778	4.054	9.913
17	5.126	2.024	1.461	4.688	4.344	1.328	0.833	0.721	1.025	0.753	4.345	9.744
18	4.880	1.906	1.456	3.998	3.356	1.269	0.837	1.545	0.967	0.782	18.462	8.596
19	4.614	1.855	1.409	3.813	3.054	1.213	0.829	0.997	0.941	0.976	18.349	9.999
20	4.040	1.838	1.591	4.878	3.253	1.207	0.823	0.835	0.934	2.415	12.675	8.329
21	5.715	1.760	1.408	6.838	3.241	1.356	0.816	0.910	0.908	2.284	9.411	7.003
22	10.898	1.734	1.531	6.228	2.729	1.369	0.773	1.751	0.866	3.063	7.689	5.966
23	9.811	1.678	2.477	6.305	2.491	1.266	0.789	1.265	0.881	2.323	9.750	5.270
24	7.416	1.624	5.647	6.263	2.371	1.282	0.774	1.205	0.869	2.120	7.083	4.729
25	6.349	1.568	2.697	5.289	2.244	1.193	0.776	3.374	0.836	2.909	7.238	5.096
26	5.771	1.452	2.596	4.608	2.142	1.081	0.782	1.972	0.841	2.199	7.790	4.488
27	5.433	1.460	3.009	4.086	2.070	1.076	0.757	1.237	0.830	2.633	6.499	3.942
28	10.126	1.506	4.165	3.698	1.984	1.067	0.828	1.069	0.819	2.912	5.691	3.809
29	8.152		4.093	3.370	1.861	1.309	0.829	0.971	0.836	2.536	5.011	3.875
30	5.680		5.840	3.102	1.902	1.151	1.167	0.913	0.834	2.643	4.490	8.279
31	4.949		4.366		2.038		0.971	0.895		2.623		9.190
Average	8.335	2.483	2.216	4.143	2.830	1.469	0.940	1.067	0.990	1.492	5.757	6.363
Lowest	4.040	1.452	1.381	2.555	1.861	1.067	0.757	0.701	0.776	0.753	1.810	2.996
Highest	23.799	4.644	5.840	6.838	6.821	2.987	1.517	3.374	2.500	3.063	18.462	12.424
Peak flow	47.770	4.733	11.733	8.214	16.516	5.043	2.457	6.623	4.364	4.931	47.103	22.673
Day of peak	7	1	24	8	14	10	5	25	13	21	18	31
Monthly total (million cu m)	22.32	6.01	5.94	10.74	7.58	3.81	2.52	2.86	2.57	4.00	14.92	17.04
Runoff (mm)	111	30	29	53	38	19	12	14	13	20	74	84
Rainfall (mm)	154	7	81	87	87	59	45	100	43	100	139	149

Statistics of monthly data for previous record (Feb 1961 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	6.084	6.193	4.452	2.907	2.156	1.431	1.200	0.968	1.239	2.018	3.282	5.223
	Low	1.246	1.746	1.552	1.177	0.735	0.456	0.326	0.265	0.501	0.580	0.651	1.821
	(year)	1976	1965	1962	1976	1976	1976	1976	1976	1964	1978	1978	1975
	High	14.560	14.000	9.259	6.655	6.562	2.770	5.628	1.686	4.892	9.872	7.611	11.280
	(year)	1984	1978	1981	1966	1983	1972	1968	1965	1974	1976	1982	1965
Runoff:	Avg.	81	75	59	37	29	18	16	13	16	27	42	69
	Low	17	21	21	15	10	6	4	4	6	8	8	24
	High	193	168	123	85	87	36	75	22	63	131	98	150
Rainfall:	Avg.	114	83	85	60	69	59	57	70	84	87	98	115
	Low	25	6	5	6	25	8	16	19	8	8	41	40
	High	250	170	170	150	137	147	144	126	202	249	192	205

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	3.180		3.082		103
Lowest yearly mean			1.600	1964	
Highest yearly mean			4.084	1974	
Lowest monthly mean	0.940	Jul	0.265	Aug 1976	
Highest monthly mean	8.335	Jan	14.560	Jan 1984	
Lowest daily mean	0.701	16 Aug	0.179	22 Aug 1976	
Highest daily mean	23.799	7 Jan	84.200	23 Feb 1978	
Peak	47.770	7 Jan	112.730	11 Jul 1968	
10 %ile	7.160		6.678		107
50 %ile	2.119		1.799		118
95 %ile	0.795		0.641		124
Annual total (million cu m)	100.30		97.26		103
Annual runoff (mm)	496		481		103
Annual rainfall (mm)	1051		981		107
(1941-70 rainfall average (mm)			993)		

Factors affecting flow regime

- Reservoir(s) in catchment.

Station and catchment description

Crump weir (breadth 12.2m) with crest tapping. Full range station. Pre-March 1968: velocity-area station; flows inaccurate below 1.42 cumecs. Clatworthy and smaller Luxhay Reservoir in headwaters. Compensation flow maintains low flows. Reservoirs not large enough to influence fairly rapid response to rainfall. Minor surface water and groundwater abstractions. Catchment geology - predominantly sandstones and marl. Land use - rural.

053006 Frome(Bristol) at Frenchay 1986

Measuring authority: WWA
First year: 1961
Grid reference: 31 (ST) 637 772
Level stn. (m OD): 20.00
Catchment area (sq km): 148.9
Max alt. (m OD): 193

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	7.629	4.972	0.535	1.902	1.042	0.788	0.313	0.380	0.403	0.229	2.882	2.445
2	8.145	4.567	0.505	1.682	1.010	0.685	0.290	0.320	0.391	0.229	1.446	2.452
3	4.894	3.882	0.543	1.440	1.050	0.675	0.290	0.430	0.421	0.228	1.031	1.955
4	4.493	2.843	0.702	1.198	1.153	0.603	0.370	0.350	0.325	0.201	0.840	1.665
5	4.219	2.310	1.437	1.066	1.193	0.581	0.520	0.280	0.314	0.188	0.734	2.427
6	2.828	1.929	0.948	1.142	1.093	0.546	0.370	0.350	0.310	0.189	0.629	2.139
7	3.005	1.633	0.771	1.772	1.319	0.528	0.310	0.430	0.303	0.206	0.602	2.876
8	4.827	1.394	0.723	2.408	1.075	0.489	0.420	0.260	0.289	0.228	0.651	6.911
9	3.354	1.265	0.767	1.607	0.969	0.777	0.320	0.230	0.279	0.202	1.339	3.584
10	12.444	1.203	0.675	1.180	0.887	1.395	0.400	1.660	0.279	0.260	2.772	2.430
11	5.516	1.109	0.840	1.013	0.826	1.074	0.530	0.800	0.277	0.180	2.320	7.512
12	3.551	1.094	0.598	1.001	0.841	0.597	0.540	0.430	0.273	0.178	1.360	5.337
13	2.781	0.963	0.592	1.179	0.863	0.519	0.330	0.345	1.606	0.188	4.731	8.294
14	2.250	0.959	0.558	1.862	7.463	0.486	0.500	0.299	0.851	0.206	5.322	4.052
15	1.755	0.918	0.560	2.828	6.621	0.460	0.300	0.255	0.525	0.179	3.210	10.955
16	1.563	0.828	0.714	3.530	2.199	0.445	0.270	0.236	0.395	0.172	3.344	6.289
17	1.524	0.826	0.574	2.463	3.620	0.415	0.250	0.232	0.339	0.177	3.684	5.473
18	1.545	0.812	1.070	2.033	2.669	0.394	0.230	0.485	0.294	0.380	11.065	4.701
19	2.134	0.749	1.259	1.776	3.503	0.390	0.230	0.434	0.280	0.707	13.513	2.997
20	1.731	0.729	1.175	2.776	7.630	0.375	0.220	0.313	0.271	1.610	12.524	2.307
21	2.737	0.675	0.996	2.774	4.323	0.368	0.220	0.296	0.268	1.880	12.816	1.968
22	9.676	0.647	1.067	4.923	2.485	0.377	0.220	1.438	0.273	2.540	14.995	1.647
23	4.734	0.606	2.475	4.379	1.765	0.354	0.230	0.772	0.282	1.170	14.613	1.427
24	2.677	0.628	5.480	3.765	1.398	0.353	0.210	0.531	0.280	0.930	6.915	1.369
25	1.949	0.554	2.252	2.741	1.200	0.332	0.220	2.633	0.280	1.280	7.004	2.252
26	1.689	0.511	1.889	2.267	1.047	0.312	0.250	2.059	0.280	0.760	9.669	1.897
27	3.331	0.589	3.444	1.746	0.962	0.307	0.250	1.037	0.263	0.970	4.730	1.582
28	13.662	0.594	8.026	1.413	0.917	0.292	0.460	0.714	0.234	1.640	3.240	1.396
29	19.772		4.495	1.215	0.797	0.288	0.390	0.547	0.227	1.510	2.474	2.368
30	10.857		3.835	1.126	0.751	0.292	1.200	0.462	0.229	1.273	2.043	9.415
31	7.749		2.621		0.889		0.530	0.394		1.289		6.661
Average	5.130	1.421	1.675	2.074	2.050	0.517	0.361	0.626	0.368	0.689	5.067	3.832
Lowest	1.524	0.511	0.505	1.001	0.751	0.288	0.210	0.230	0.227	0.172	0.602	1.369
Highest	19.772	4.972	8.026	4.923	7.630	1.395	1.200	2.633	1.606	2.540	14.995	10.955
Peak flow	35.055	5.278	9.355	6.651	15.962	2.379	3.000	5.957	4.707	4.200	22.947	15.496
Day of peak	28	1	24	22	14	10	30	25	13	20	20	31
Monthly total (million cu m)	13.74	3.44	4.49	5.37	5.49	1.34	0.97	1.68	0.95	1.85	13.13	10.26
Runoff (mm)	92	23	30	36	37	9	6	11	6	12	88	69
Rainfall (mm)	115	7	63	65	88	26	54	100	29	81	122	106

Statistics of monthly data for previous record (Sep 1961 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	3.379	2.857	2.379	1.351	1.226	0.829	0.635	0.568	0.767	1.184	2.106	3.210
	Low	0.670	0.613	0.636	0.476	0.290	0.220	0.122	0.139	0.208	0.162	0.211	0.820
	(year)	1976	1965	1973	1976	1976	1976	1976	1976	1978	1978	1978	1973
	High	6.152	6.040	5.762	3.434	5.028	2.973	3.516	2.398	5.113	4.691	5.434	9.807
	(year)	1962	1977	1981	1966	1983	1971	1968	1985	1974	1967	1963	1965
Runoff:	Avg.	61	47	43	24	22	14	11	10	13	21	37	58
	Low	12	10	11	8	5	4	2	3	4	3	4	15
	High	111	98	104	60	90	52	63	43	89	84	95	176
Rainfall	Avg.	75	53	65	48	67	64	53	70	77	65	76	88
	Low	18	3	21	5	19	6	12	26	21	5	35	25
	High	137	127	146	97	147	139	129	127	182	183	165	208

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	1.988		1.704		117
Lowest yearly mean			0.804	1973	
Highest yearly mean			2.255	1974	
Lowest monthly mean	0.361	Jul	0.122	Jul 1976	
Highest monthly mean	5.130	Jan	9.807	Dec 1965	
Lowest daily mean	0.172	16 Oct	0.075	10 Aug 1976	
Highest daily mean	19.772	29 Jan	53.530	18 Dec 1965	
Peak	35.055	28 Jan	70.790	10 Jul 1968	
10 %ile	4.825		4.126		117
50 %ile	0.985		0.780		126
95 %ile	0.225		0.200		112
Annual total (million cu m)	62.69		53.77		117
Annual runoff (mm)	421		361		117
Annual rainfall (mm)	856		801		107
[1941-70 rainfall average (mm)			791]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from effluent returns.

Station and catchment description

Trapezoidal critical depth flume. Full range station. Flume designed on basis of pre-urbanisation flow estimates - site swamped in storms of 1965 and 1968. Extra retaining walls have been installed. Flows affected by mill operation upstream. Minor groundwater abstractions and effluent returns. Impermeable catchment - predominantly Coal Measures on eastern side of catchment and Lias on western side. Substantial urbanisation in catchment.

054001 Severn at Bewdley 1986

Measuring authority: STWA
First year: 1921
Grid reference: 32 (SO) 782 762
Level stn. (m OD): 17.00
Catchment area (sq km): 4325.0
Max alt. (m OD): 827

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	86.810	147.550	20.680	117.129	44.132	32.664	13.173	27.933	40.027	13.084	71.459	110.552
2	112.532	113.717	20.500	99.080	40.553	32.537	12.968	24.457	34.062	13.092	107.427	95.538
3	139.559	120.500	18.110	82.260	37.014	32.272	13.481	26.637	30.417	13.139	79.616	86.098
4	118.282	111.279	20.370	70.760	36.981	29.246	14.249	23.467	34.923	12.067	63.339	84.835
5	95.250	92.530	111.377	66.770	36.091	27.828	14.195	18.657	33.152	11.928	55.167	121.912
6	97.760	81.940	146.055	63.150	37.283	26.047	15.058	19.687	25.877	12.392	50.469	126.743
7	89.330	71.310	77.370	57.970	36.200	23.083	15.522	22.391	23.804	12.762	54.128	112.197
8	79.990	61.950	54.680	69.120	33.449	22.370	15.172	28.576	21.502	12.958	47.434	110.504
9	78.250	58.980	46.550	75.590	32.967	23.675	15.213	30.243	20.685	13.075	55.492	196.732
10	200.828	53.060	47.180	63.470	33.299	34.624	14.783	25.965	19.748	14.045	69.549	199.654
11	278.548	48.410	44.850	52.830	44.899	40.224	14.346	23.991	19.104	14.484	105.788	154.618
12	314.500	43.600	39.010	46.610	45.638	51.858	13.279	20.278	18.363	14.317	80.173	160.785
13	238.700	42.350	35.550	48.010	53.543	34.405	14.828	19.460	17.778	14.831	69.388	157.994
14	190.164	39.560	32.860	50.420	48.762	25.379	14.778	18.716	16.466	14.925	110.070	193.101
15	173.168	35.480	31.380	67.920	44.772	23.133	13.856	19.936	15.665	14.436	144.406	160.992
16	142.000	34.020	30.420	93.470	51.311	23.060	13.547	16.867	15.342	14.484	123.495	216.010
17	116.380	34.360	29.670	158.100	40.364	22.514	12.702	16.266	14.634	13.622	118.703	206.660
18	99.210	32.740	30.620	164.500	38.373	25.514	11.208	16.015	14.417	11.588	160.089	194.481
19	152.137	30.770	31.890	118.660	44.922	21.124	10.680	14.559	14.223	14.068	229.941	231.475
20	215.500	29.480	36.630	107.081	46.925	19.717	10.719	13.823	12.703	21.589	252.149	214.733
21	218.419	27.870	34.720	139.637	50.461	19.576	12.029	14.202	12.250	39.347	280.203	176.125
22	235.216	24.350	34.100	130.825	53.220	18.020	12.998	16.302	12.567	50.052	265.812	148.142
23	240.864	24.712	34.940	125.956	50.158	18.253	11.738	16.653	12.615	62.014	229.983	115.200
24	240.626	24.650	82.760	110.842	40.218	21.683	12.815	22.927	12.104	59.794	240.759	95.792
25	190.753	23.900	114.200	102.100	38.159	21.282	13.470	31.583	12.625	46.506	268.012	87.602
26	147.700	23.600	94.950	86.910	50.942	18.126	12.651	92.367	13.682	99.508	279.049	105.311
27	123.300	21.620	99.380	73.800	51.287	16.615	13.074	197.868	13.307	91.839	276.252	91.161
28	118.700	20.190	140.753	62.160	42.723	13.771	14.981	126.819	13.361	69.321	242.370	89.024
29	117.800		136.348	55.100	34.990	13.686	15.218	82.171	13.437	92.966	176.402	86.999
30	156.085		138.719	49.240	30.917	13.358	19.855	60.234	12.718	72.554	138.251	151.110
31	183.371		124.574		30.325		24.414	48.080		66.839		258.746
Average	161.000	52.590	62.620	86.980	41.960	24.850	14.090	36.680	19.050	33.150	148.200	146.500
Lowest	78.250	20.190	18.110	46.610	30.325	13.358	10.680	13.823	12.104	11.588	47.434	84.835
Highest	314.500	147.550	146.055	164.500	53.543	51.858	24.414	197.868	40.027	99.508	280.203	258.746
Peak flow	322.194	171.951	179.117	177.482	59.987	57.969	27.320	208.977	44.676	126.295	284.795	291.195
Day of peak	12	1	6	18	13	12	31	27	1	26	21	31
Monthly total (million cu m)	431.30	127.20	167.70	225.50	112.40	64.42	37.74	98.25	49.38	88.79	384.10	392.30
Runoff (mm)	100	29	39	52	26	15	9	23	11	21	89	91
Rainfall (mm)	141	11	83	82	70	40	49	110	[illegible]	85	143	153

Statistics of monthly data for previous record (Apr 1921 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	113.800	102.900	73.800	52.050	39.410	29.950	23.160	28.360	37.070	54.130	90.260	101.400
	Low	22.090	21.200	23.200	15.890	10.220	9.811	9.592	7.460	7.676	10.500	21.740	17.840
	(year)	1963	1934	1943	1938	1938	1976	1976	1976	1949	1947	1942	1933
	High	250.600	232.300	261.900	112.400	131.600	117.400	91.220	92.360	126.700	140.700	238.300	297.400
	(year)	1939	1946	1947	1947	1969	1931	1968	1927	1946	1967	1940	1965
Runoff:	Avg	70	58	46	31	24	18	14	18	22	34	54	63
	Low	14	12	14	10	6	6	6	5	5	7	13	11
	High	155	130	162	67	81	70	56	57	76	87	143	184
Rainfall:	Avg	92	68	62	60	70	61	72	78	79	84	97	95
	Low	23	8	3	5	18	5	10	13	5	13	13	10
	High	226	170	175	128	186	136	193	160	209	174	244	294

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	69.100		61.990		111
Lowest yearly mean			36.460	1964	
Highest yearly mean			94.740	1960	
Lowest monthly mean	14.090	Jul	7.460	Aug 1976	
Highest monthly mean	161.000	Jan	297.400	Dec 1965	
Lowest daily mean	10.680	19 Jul	5.990	4 Sep 1976	
Highest daily mean	314.500	12 Jan	637.130	21 Mar 1947	
Peak	322.194	12 Jan			
10 %ile	161.300		147.500		109
50 %ile	41.440		37.860		109
95 %ile	12.810		11.370		113
Annual total (million cu m)	2179.00		1956.00		111
Annual runoff (mm)	504		452		111
Annual rainfall (mm)	974		918		106
[1941-70 rainfall average (mm)			952]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station with rock control. Stage monitoring site relocated in 1950 and 1970; lowest flows not reliable in earlier record. US gauge undergoing calibration. Sig exports for PWS and CEGB, minimum flow maintained by Clywedog releases. Naturalised flow series accommodates major usages. Diverse catchment; wet western 50% from impermeable Palaeozoic rocks and river gravels; drier northern 50% from Drift covered Carboniferous to Liassic sandstones and marls. Moorland, forestry, mixed farming.

054002 Avon at Evesham 1986

Measuring authority: STWA
First year: 1936
Grid reference: 42 (SP) 040 438
Level stn. (m OD) 19.50
Catchment area (sq km) 2210.0
Max alt. (m OD): 320

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	33.840	46.695	9.754	36.494	13.901	11.335	6.419	7.360	8.625	6.279	14.686	17.934
2	65.796	56.967	8.711	30.047	13.824	11.163	6.256	6.482	7.835	6.044	16.562	15.118
3	54.376	64.694	7.721	25.959	13.335	11.837	6.107	6.823	7.936	5.972	12.900	14.120
4	38.547	51.888	14.339	19.931	12.860	11.029	6.107	7.914	7.547	5.889	9.871	13.579
5	43.703	37.119	22.458	17.342	12.860	9.383	6.284	6.983	7.056	5.853	8.833	15.006
6	35.954	30.184	21.205	17.891	12.506	8.726	6.345	6.147	6.519	5.931	8.131	15.772
7	30.022	25.239	16.354	25.430	14.541	8.475	6.264	5.829	6.221	5.961	8.187	14.728
8	53.014	22.030	14.173	40.632	18.465	8.046	6.161	5.749	6.496	5.965	10.351	28.494
9	52.512	19.546	12.900	33.470	17.412	8.861	5.978	5.580	6.380	5.902	11.044	32.501
10	118.389	17.336	13.180	24.219	14.356	13.308	5.853	8.174	6.413	6.012	13.182	23.432
11	113.345	15.877	13.988	18.695	12.765	11.630	5.935	27.778	6.258	5.960	15.372	32.710
12	80.328	15.622	13.028	16.976	12.887	8.866	6.529	17.308	6.291	5.899	14.009	42.216
13	41.877	14.544	12.288	16.929	12.605	7.899	6.896	10.932	8.429	5.961	14.853	53.377
14	32.612	13.948	11.422	17.689	16.816	7.516	6.329	8.504	15.502	6.141	26.156	45.815
15	25.506	13.594	10.497	39.341	44.673	6.919	6.193	7.374	11.059	5.779	42.463	60.831
16	20.892	12.610	10.616	50.500	28.838	7.172	5.949	6.657	8.471	5.817	32.465	74.739
17	18.595	12.137	11.199	52.522	20.326	7.262	5.792	6.272	7.298	5.837	23.292	51.010
18	17.810	11.673	11.721	42.906	20.608	6.998	5.448	6.649	6.796	5.871	34.778	42.652
19	18.832	11.246	18.183	31.178	17.093	6.712	5.398	8.897	6.329	6.339	52.187	40.454
20	19.287	10.796	20.741	54.198	44.256	6.626	5.356	8.125	6.194	11.395	47.867	33.998
21	18.621	10.356	15.961	56.297	44.111	6.313	5.429	8.011	6.134	13.865	85.758	29.959
22	20.618	10.219	13.857	54.686	30.146	6.423	5.296	12.720	6.201	18.026	65.487	30.380
23	24.331	9.644	13.977	50.350	21.108	10.291	5.337	20.557	6.180	11.071	42.136	25.461
24	21.650	9.259	22.229	44.989	16.245	14.859	5.517	10.840	6.023	8.257	32.484	21.689
25	17.536	9.210	23.535	30.241	13.608	10.366	5.663	21.970	6.009	7.853	30.892	27.530
26	14.567	8.248	20.757	24.352	12.894	8.133	5.721	66.500	6.025	7.052	60.808	31.441
27	18.641	7.523	22.517	20.680	12.144	7.386	5.343	37.653	5.953	9.947	48.943	26.025
28	27.977	11.431	36.734	18.315	11.931	6.877	5.928	24.295	5.921	11.119	31.490	22.568
29	90.976		43.299	16.618	11.837	6.385	6.848	15.618	5.963	8.955	24.109	20.788
30	102.605		46.004	14.738	10.616	6.169	8.337	11.363	6.040	8.023	20.113	55.302
31	58.897		44.911		10.907		9.646	9.332		7.466		71.737
Average	42.960	20.700	18.650	31.450	18.400	8.765	6.150	13.370	7.137	7.627	28.650	33.270
Lowest	14.567	7.523	7.721	14.738	10.616	6.169	5.296	5.580	5.921	5.779	8.131	13.579
Highest	118.389	64.694	46.004	56.297	44.673	14.859	9.646	66.500	15.502	18.026	85.758	74.739
Peak flow	145.447	66.194	50.224	62.336	59.805	17.539	11.303	77.769	18.392	20.795	93.744	87.776
Day of peak	10	3	30	20	20	24	31	26	14	22	21	15
Monthly total (million cu m)	115.10	50.08	49.96	81.53	49.29	22.72	16.47	35.80	18.50	20.43	74.25	89.11
Runoff (mm)	52	23	23	37	22	10	7	16	8	9	34	40
Rainfall (mm)	79	12	58	62	71	35	39	123	22	61	81	81

Statistics of monthly data for previous record (Dec 1936 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	27.680	27.800	22.550	14.360	11.500	8.490	6.476	6.633	6.731	9.154	17.180	22.570
	Low	5.140	4.869	2.261	3.240	2.220	1.935	2.253	2.038	1.970	2.484	2.677	3.548
	(year)	1950	1944	1944	1938	1944	1944	1976	1943	1959	1959	1943	1943
	High	73.520	77.930	75.600	35.160	37.680	27.380	42.220	16.100	24.210	45.410	55.920	65.160
	(year)	1939	1977	1947	1966	1983	1977	1968	1969	*960	1960	1960	1965
Runoff:	Avg	34	31	27	17	14	10	8	8	8	11	20	27
	Low	8	6	3	4	3	2	3	2	2	3	3	4
	High	89	85	92	41	46	32	51	20	28	55	66	79
Rainfall (1937-1985)	Avg.	60	43	48	42	56	53	56	70	56	57	64	61
	Low	13	3	5	5	15	10	8	5	3	6	8	15
	High	127	122	140	94	130	115	122	130	127	150	163	121

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	19.760		15.030		131
Lowest yearly mean			6.895	1944	
Highest yearly mean			25.030	1960	
Lowest monthly mean	6.150	Jul	1.935	Jun 1944	
Highest monthly mean	42.960	Jan	77.930	Feb 1977	
Lowest daily mean	5.296	22 Jul	1.274	9 Oct 1959	
Highest daily mean	118.389	10 Jan	277.082	11 Jul 1968	
Peak	145.447	10 Jan	371.000	11 Jul 1968	
10 %ile	44.870		33.460		134
50 %ile	13.040		7.998		163
95 %ile	5.854		2.524		232
Annual total (million cu m)	623.20		474.30		131
Annual runoff (mm)	282		215		131
Annual rainfall (mm)	724		666		109
[1941-70 rainfall average (mm)			672]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from effluent returns

Station and catchment description

Velocity-area station. Recording site, control and gauging site are widely separated; recording at a site where all flows contained. Gauge site can measure out-of-bank flows. Extensive modification to flow regime from abstractions and returns. Large catchment of low relief, draining argillaceous rocks almost exclusively. Contains many large towns, but chief land use is agriculture.

055026 Wye at Ddol Farm 1986

Measuring authority: WELS
First year: 1969
Grid reference 22 (SN) 976 676
Level stn. (m OD): 192 80
Catchment area (sq km): 174 0
Max alt. (m OD): 752

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	8.168	4.787	0 699	8 301	2 812	2.658	0 433	4 889	3.957	0 337	12 125	5 048
2	11.769	4.730	0 655	6 905	2.605	2 363	0 373	3.714	4.717	0 319	7.990	4 401
3	8.351	4.180	0.949	6 150	2.523	2 803	0 355	2 608	7 003	0 289	7 921	6 721
4	9.921	3.750	53 194	5 501	3.039	2 556	1 131	2 198	3 832	0 335	5 880	12 451
5	9 104	3 338	21.924	4 673	3.167	2 141	0 935	2 577	3 018	0 440	13 006	14 214
6	6 883	2.917	9 425	4 194	2.541	1 924	0 697	2 260	2 612	0 359	7 908	8 734
7	5.723	2 711	6.340	4 101	2 401	1 791	0 754	6 342	2 209	0.314	7 757	8 882
8	4 792	2 488	4 917	4.710	3 096	1.643	0 790	4 437	1.958	0 332	9 485	29 492
9	14.610	2.384	4 412	3 804	3 973	1 846	0 671	3 047	1 767	0 374	12 200	17 090
10	39.982	1 951	3.797	3 120	5 519	6 963	2 323	2 457	1 604	0.955	11.117	11 612
11	15.848	2 098	3 251	2.865	4 982	5 321	2 186	2 305	1.459	0 778	9 723	15 049
12	10.335	1.733	2 871	2 901	5 829	3 282	1 510	1.972	1 330	0 534	7.514	16 738
13	12 203	1 677	2 615	3.303	5 034	2.633	1 186	2 238	1 243	0 455	16 681	18 435
14	10.205	1.693	2.529	3.684	7 359	2 226	1 166	2 040	1.159	0.414	17.605	12.121
15	14.234	1 695	2 463	5.176	6.308	1.892	0 949	1 653	1 087	0 366	11 469	25 704
16	9.828	1.458	2 333	5 959	4.933	1 903	0 716	1.419	0.957	0 322	11.915	17.377
17	13.421	1 319	2 055	7.395	6 700	1.755	0 616	1 244	0 884	0 300	16 535	22 119
18	50.104	1 323	2.417	5.469	5 323	1 530	0 539	1 199	0.808	0.344	74 749	26.161
19	38.124	1 290	2 405	9 907	4 401	1 334	0 471	1.113	0.725	1 862	32.178	17 834
20	23 500	1 108	2.537	16.809	5 427	1 243	0 548	0 926	0 668	10 476	17.517	14 287
21	23.355	1.353	2 077	15.392	6 809	1.139	0 467	0.925	0 613	18 934	13.860	11 084
22	34 833	1 149	4 224	15.504	4.789	1.103	0 369	2 517	0 557	13 524	23 734	8 198
23	23 922	1 038	6.252	10.585	4 096	1 099	0 373	2 150	0 521	10 982	51.522	6 662
24	13.424	1 024	11 130	10 064	3 769	1 081	0 383	1 544	0.496	9 061	33 223	10 698
25	9 124	0 969	9 218	7.379	4 581	0 971	1 740	25 460	0 465	35 659	40 373	22 800
26	7.257	0.803	14 021	5.679	4 797	0 788	1 350	17.481	0.438	14 271	26 176	10 909
27	7.660	0 690	16 800	4.665	3 786	0 660	0 991	9 073	0 411	17 664	14 209	8 511
28	6 448	0 775	14 838	4.564	3.196	0 574	2 070	6 083	0 407	18 302	9 587	17 418
29	5.800		15 481	3.914	2 808	0 512	4 883	4 796	0 395	11 423	7 103	57 326
30	6.272		13 033	3 275	2 809	0 480	5 973	3 979	0.356	11 652	5 577	74 607
31	5.370		11 146		3.388		7 773	3 207		10 827		23 074
Average	14.860	2 015	8 065	6.532	4.284	1 940	1 443	4.124	1 589	6 200	17.890	17 930
Lowest	4 792	0 690	0 655	2.865	2.401	0 480	0 355	0 925	0 356	0 289	5.577	4.401
Highest	50.104	4.787	53.194	16.809	7 359	6.963	7 773	25 460	7 003	35.659	74 749	74 607
Peak flow	80 709	5 052	76.781	38.764	10.104	9 742	11 881	56 838	12.136	63 456	177 590	172 324
Day of peak	10	1	4	20	21	10	31	25	2	25	18	29
Monthly total (million cu m)	39 79	4 88	21 60	16 93	11 47	5.03	3 86	11 05	4 12	16 61	46 37	48 02
Runoff (mm)	229	28	124	97	66	29	22	63	24	95	266	276
Rainfall (mm)	269	10	181	120	120	38	100	136	19	192	302	354

Statistics of monthly data for previous record (Oct 1969 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	11 510	9 898	7 997	5 226	3.176	2.690	2 141	3.132	4.727	7 530	11 420	11 750
	Low	4.819	5 248	2 753	1 014	0 485	0 497	0 316	0 177	0 948	0 683	4 598	4 974
	(year)	1985	1975	1984	1974	1980	1975	1984	1976	1972	1972	1985	1971
	High	18 780	16 880	19 610	12 460	8.773	8 867	5 543	9 934	12 340	18 840	19 810	17 890
	(year)	1983	1970	1981	1972	1979	1985	1974	1985	1974	1981	1970	1974
Runoff:	Avg.	177	139	123	78	49	40	33	48	70	116	170	181
	Low	74	73	42	15	7	7	5	3	14	11	68	77
	High	289	235	302	186	135	132	85	153	184	290	295	275
Rainfall:	Avg	190	147	137	93	86	92	74	109	140	141	194	188
	Low	77	49	60	11	25	21	14	13	44	39	97	95
	High	322	260	284	206	191	202	150	201	260	269	293	314

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	7 284		6 751		108
Lowest yearly mean			4.304	1976	
Highest yearly mean			8.231	1974	
Lowest monthly mean	1.443	Jul	0.177	Aug 1976	
Highest monthly mean	17 930	Dec	19 810	Nov 1970	
Lowest daily mean	0 289	3 Oct	0 083	15 Aug 1983	
Highest daily mean	74 749	18 Nov	76.690	21 Feb 1970	
Peak	177 590	18 Nov	252.200	5 Aug 1973	
10 %ile	17 140		16 450		104
50 %ile	3 797		3 774		101
95 %ile	0 393		0.430		92
Annual total (million cu m)	229 70		213 00		108
Annual runoff (mm)	1320		1224		108
Annual rainfall (mm)	1841		1591		116
[1941-70 rainfall average (mm)			1618]		

Factors affecting flow regime

- Abstraction for public water supplies.

Station and catchment description

Initially, gauged nearby at Rhayader (055005 1937-69); resited as a velocity-area station with a rock bar as control. Informal Flat V control installed 1972. Bankfull width approx. 30m. Cableway span 54m. All but exceptional floods contained. Lowest extent of natural gauging on the Wye. Wet, upland catchment draining impermeable, metamorphosed Silurian sediments. High relief, headwaters reach over 600m, and feature steep sided and high gradient streams. Moorland and forestry.

056001 Usk at Chain Bridge 1986

Measuring authority: WELS
First year: 1957

Grid reference: 32 (SO) 345 056
Level stn. (m OD): 22 60

Catchment area (sq km): 911 7
Max alt. (m OD): 886

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	105 044	35.056	9 320	29 243	19 924	17 746	7 043	9 344	13.349	4 988	40 627	40 043
2	118.099	33 993	8 935	30 097	18 668	16 408	6 683	11.393	12 987	4 926	36 655	35.985
3	74 090	31 880	8 748	27 635	18 078	15 204	6.361	8 410	13 835	4 833	32 760	32 243
4	62.168	29 002	58 940	25.827	22 397	14.441	6 267	7 028	10 170	4 664	62 695	63 053
5	59 435	26 737	59.412	23 407	25 454	13 416	6 370	6 317	9 611	4 574	63 265	62 784
6	50 898	24 912	29.800	22 399	21 356	12 668	6 215	6 139	9 027	4 638	21 727	48 076
7	47 680	23 084	22 911	22 750	19 374	12 140	6 037	11 457	8 358	4 536	20 695	51 327
8	51 602	21 850	19.281	27 058	24 461	11 603	5 806	9 328	8 358	4 360	33 863	160 240
9	57 193	20 120	20 121	24 761	22 577	17 300	5 581	7 096	7 864	4 322	98 600	91 516
10	200 533	19 138	19 211	21 529	40 123	51 160	5 598	9 918	7 445	4.334	121 348	65 928
11	83 532	17 784	17 164	19 512	38 474	32 888	6 253	15 218	7 132	4 310	72 345	131 255
12	61 515	17 404	15 795	19 402	52 927	21 599	6 136	9 906	6 854	4 285	49 728	107 658
13	57 265	16.596	14 331	19 797	35 226	17 676	5 668	8 772	7 992	4 235	86 129	171 248
14	59 626	15 623	13 736	31 243	37 972	15 365	5 414	9 332	10 908	4 236	136 518	80 430
15	50.718	14 957	14 256	48 736	46 004	13 907	5 165	8 029	8 102	4 064	77 806	155 063
16	44.425	14 429	14 312	37 061	31 151	12 947	4 886	7 043	7 264	3 980	82 028	83 370
17	40 669	13 810	14 410	34 404	49 215	12 237	4 681	6 465	6 716	3 980	82 174	88 678
18	44 841	13.170	13 572	29 140	47 166	11 558	4 557	6 754	5 923	4 107	232 089	87 554
19	72.980	12 609	15 230	26 689	32 883	10 824	4 468	7 261	5 620	4 656	221 923	66 096
20	54 011	12 321	18 973	60 714	40 407	10 263	4 362	6 331	5 465	17 950	128.082	58 394
21	99 643	11 797	16 492	57 070	63 641	9 920	4 295	5 958	5 310	39 304	112 818	52 154
22	135.623	11 389	17 001	91 144	41 537	9.838	4 176	7 193	5 137	38 515	86 789	42 988
23	98 014	11 115	29 745	64 249	32 615	9 663	4 060	10 383	4 927	25 557	101 216	37 507
24	65 006	10 315	57.501	50 224	29 301	9 634	3 988	8 307	5 065	28 232	75 430	34 772
25	50 489	10 323	34 999	39 181	31 387	9 541	3 948	72 221	5 034	50 604	144 988	49 610
26	44 501	9 358	29 320	33 525	30 694	8 517	3 940	89 881	4 929	33 287	122 736	38 489
27	47 277	8 711	33 125	29 201	25 758	7 943	3 905	37 719	4 802	35 901	72 672	34 697
28	46 554	9 075	39 706	26 815	21 741	7 607	4 500	26 409	4 726	50 475	57 363	36 201
29	48 026		49 850	25 186	19 514	7 349	6 425	20 755	4 979	36 722	47 870	41 730
30	42 061		43 548	22 204	17 967	7 223	7 061	17 652	5 025	61 780	41 994	199 191
31	37 886		36 461		20 236		13 312	14 985		38 536		83 202
Average	68 110	17.730	25 680	33 990	31 560	14.290	5 586	15 580	7 430	17 450	85 500	75 210
Lowest	37 886	8.711	8 748	19 402	17 967	7 223	3 905	5 958	4 726	3 980	20 695	32 243
Highest	200.533	35 056	59 412	91 144	63 641	51 160	13 312	89 881	13 835	61 780	232 089	199 191
Peak flow	335.114	36 334	109 762	121 929	112 752	62 583	19 203	197 828	16 292	100 902	480 271	322 447
Day of peak	10	*	4	22	21	10	31	25	3	30	19	30
Monthly total (million cu m)	182 40	42 90	68 79	88 10	84 52	37 03	14 96	41 73	19 26	46 73	221 60	201 40
Runoff (mm)	200	47	75	97	93	41	16	46	21	51	243	221
Rainfall (mm)	196	10	116	117	140	52	65	154	24	153	265	251

Statistics of monthly data for previous record (Mar 1957 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	50 860	41 940	34 240	23 180	17 410	11 070	8 025	10 620	16 820	28 910	39 090	50 440
	Low	10 850	12 690	10 010	8 122	6 124	4 274	3 390	2 699	2 941	4 303	16 030	20 380
	(year)	1964	1963	1962	1974	1984	1957	1976	1976	1959	1978	1975	1963
	High	88 650	95 710	100 700	49 330	46 590	26 740	27 490	38 540	45 680	86 350	99 840	112 700
	(year)	1974	1958	1981	1985	1983	1972	1968	1985	1974	1967	1960	1959
Runoff	Avg.	149	112	101	66	51	31	24	31	48	85	111	148
	Low	32	34	29	23	18	12	10	8	8	13	46	60
	High	260	254	296	140	137	76	81	113	130	254	284	331
Rainfall	Avg	158	112	113	84	92	77	76	98	129	133	149	168
	Low	28	11	15	8	31	17	21	25	8	19	74	46
	High	331	223	303	175	221	144	137	210	259	325	323	351

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	33 280		27 670		120
Lowest yearly mean			14 880	1973	
Highest yearly mean			44 050	1960	
Lowest monthly mean	5 586	Jul	2 699	Aug 1976	
Highest monthly mean	85 500	Nov	112 700	Dec 1959	
Lowest daily mean	3.905	27 Jul	1 607	27 Aug 1976	
Highest daily mean	232 089	18 Nov	585 400	27 Dec 1979	
Peak	480 271	19 Nov	945 000	27 Dec 1979	
10 %ile	75 360		63 520		119
50 %ile	20.640		16 650		124
95 %ile	4 376		4 336		101
Annual total (million cu m)	1050 00		873 20		120
Annual runoff (mm)	1151		958		120
Annual rainfall (mm)	1543		1389		111
(1941-70 rainfall average (mm)			1415)		

Factors affecting flow regime

- Reservoir(s) in catchment

Station and catchment description

Velocity-area station; permanent cableway. Low flows measured at complementary station downstream (056010 - Trostrey weir). There is a partial impact on flows resulting from three large existing public water supply reservoirs in upper catchment. Intake to canal upstream of gauge. Some naturalised flows available. Geology - mainly Old Red Sandstone. Hill farming in upper areas, with dairy or livestock farming below; forest 3%. Peaty soils in uplands, seasonally wet.

062001 Teifi at Glan Teifi 1986

Measuring authority: WELS
First year: 1959
Grid reference: 22 (SN) 244 416
Level stn. (m OD): 5.20
Catchment area (sq km): 893.6
Max alt. (m OD): 595

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	101.572	38.389	6.440	27.151	21.579	15.313	6.223	11.471	31.438	4.706	48.415	40.895
2	103.040	33.361	6.220	25.952	19.527	14.591	5.800	12.908	30.617	4.585	40.718	37.278
3	73.478	28.983	6.128	25.697	18.814	14.110	5.550	9.820	30.344	4.363	39.029	36.582
4	65.662	25.384	29.613	21.687	25.600	14.254	5.553	8.750	25.865	4.242	35.111	49.478
5	60.864	22.928	44.351	19.358	23.487	12.573	5.455	7.886	21.614	4.206	32.068	52.854
6	78.906	20.588	30.789	17.936	20.088	11.575	5.365	10.748	18.960	4.206	37.109	47.995
7	77.582	18.515	17.530	17.006	18.363	11.069	5.192	14.658	17.029	4.178	37.141	55.224
8	65.483	17.093	15.184	16.930	17.893	10.638	5.010	13.333	15.484	3.870	54.644	163.645
9	61.740	15.720	17.943	15.424	19.025	14.110	4.912	10.962	14.252	4.096	102.428	129.300
10	107.276	14.742	16.333	14.045	26.366	26.587	5.041	9.823	13.237	5.123	126.401	92.490
11	82.345	13.697	14.857	13.059	24.409	24.191	6.229	9.213	12.354	4.979	81.202	144.140
12	62.488	13.066	13.873	12.725	34.379	17.245	6.716	8.526	11.548	4.439	59.799	129.418
13	48.217	12.008	13.094	12.926	27.942	14.491	5.715	8.493	10.953	4.064	91.252	173.379
14	41.634	10.943	12.903	16.711	34.195	13.219	5.317	8.930	10.405	3.956	143.864	112.365
15	38.424	10.630	13.445	20.768	33.225	12.041	5.041	8.077	9.900	3.839	111.022	150.780
16	38.590	10.684	13.682	18.395	26.959	11.685	4.938	7.274	9.486	3.691	100.647	97.427
17	35.098	10.112	12.863	19.738	41.577	11.058	4.639	6.767	9.049	3.589	85.602	85.263
18	38.874	9.782	12.488	17.955	38.915	10.254	4.476	6.599	8.737	3.671	161.207	80.171
19	50.332	9.393	13.462	20.736	31.598	9.668	4.376	6.448	8.490	4.185	183.237	67.529
20	49.153	9.104	17.382	39.662	27.863	9.130	4.305	6.185	8.079	11.897	151.140	56.799
21	60.612	8.647	15.302	59.072	33.543	8.767	4.117	5.991	7.851	22.886	107.552	54.487
22	80.297	8.319	16.562	89.747	27.113	8.464	4.016	12.752	7.639	31.341	79.651	46.667
23	73.897	8.068	20.822	79.247	23.519	8.297	3.569	16.491	7.477	23.570	82.345	42.235
24	62.403	7.519	41.904	69.297	21.398	8.139	3.528	11.704	7.263	21.673	71.927	39.980
25	48.885	7.358	36.084	54.112	20.567	7.535	3.502	98.396	6.972	30.251	113.544	68.965
26	41.222	6.778	33.216	43.554	20.100	6.999	3.502	145.124	6.777	27.345	125.257	60.309
27	53.574	7.447	33.050	36.810	18.422	6.465	3.565	70.277	6.623	40.747	92.787	50.060
28	56.477	7.235	32.477	33.198	16.746	6.225	5.515	64.130	6.504	41.233	65.012	47.577
29	55.880		33.778	28.746	15.520	7.584	7.206	51.891	6.375	39.428	50.631	65.470
30	48.377		35.225	24.350	14.936	7.237	9.932	42.200	6.168	45.122	43.251	168.264
31	43.796		32.639		15.750		10.928	34.026		43.390		158.632
Average	61.420	14.520	21.280	30.400	24.500	11.780	5.330	23.870	12.920	14.800	85.130	84.050
Lowest	35.098	6.778	6.128	12.725	14.936	6.225	3.502	5.991	6.168	3.589	32.068	36.582
Highest	107.276	38.389	44.351	89.747	41.577	26.587	10.928	145.124	31.438	45.122	183.237	173.379
Peak flow	119.682	41.206	49.784	92.690	54.085	32.386	11.776	181.963	33.746	52.339	220.343	203.421
Day of peak	10	1	4	22	17	10	31	25	1	31	18	8
Monthly total (million cu m)	164.50	35.12	56.99	78.80	65.61	30.54	14.28	63.92	33.48	39.64	220.70	225.10
Runoff (mm)	184	39	64	88	73	34	16	72	37	44	247	252
Rainfall (mm)	190	2	120	112	120	63	78	172	13	129	260	288

Statistics of monthly data for previous record (Jul 1959 to Dec 1985—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	46.780	38.870	30.360	21.910	18.510	11.510	8.136	11.940	17.040	35.210	45.040	53.640
	Low	7.086	11.140	8.281	7.481	4.227	2.975	1.818	1.128	1.072	3.887	16.060	17.820
	(year)	1963	1965	1962	1974	1984	1984	1984	1976	1959	1972	1983	1963
	High	106.000	81.100	96.730	41.800	36.780	41.700	24.930	39.210	48.680	102.000	78.080	93.960
	(year)	1974	1974	1981	1985	1979	1972	1968	1985	1974	1981	1977	1965
Runoff	Avg.	140	106	91	64	55	33	24	36	49	106	131	161
	Low	21	30	25	22	13	9	5	3	3	12	47	53
	High	318	220	290	121	110	121	75	118	141	306	226	282
Rainfall	Avg.	145	95	101	84	80	80	78	98	122	147	154	160
	Low	28	12	25	10	29	17	25	16	10	40	76	28
	High	326	213	312	163	168	148	140	180	242	293	279	315

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	32.620		28.210		116
Lowest yearly mean			18.860	1964	
Highest yearly mean			38.230	1974	
Lowest monthly mean	5.330	Jul	1.072	Sep 1959	
Highest monthly mean	85.130	Nov	106.000	Jan 1974	
Lowest daily mean	3.502	25 Jul	0.731	29 Aug 1976	
Highest daily mean	183.237	19 Nov	275.100	27 Dec 1979	
Peak	220.343	18 Nov	303.300	27 Dec 1979	
10 %ile	80.370		63.090		127
50 %ile	18.400		18.980		97
95 %ile	4.244		3.037		140
Annual total (million cu m)	1029.00		890.30		116
Annual runoff (mm)	1151		996		116
Annual rainfall (mm)	1547		1344		115
[1941-70 rainfall average (mm)			1333]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.

Station and catchment description

Velocity-area station. Straight reach (width: 35m), natural control. Flood flows spill over right bank. Public water supply impounding reservoirs in upland area where there is mostly hill farming. 10 sq km Tregaron bog has partial effect on flows; sensibly natural regime. Geology - mainly Ordovician and Silurian deposits. Dairy farming predominates in southern area. Forest: 5%. Peaty soils on hills, seasonally wet. Apart from Tregaron bog, most of the lower areas have soils with permeable substrate.

065001 Glaslyn at Beddgelert 1986

Measuring authority: WELS
First year: 1961
Grid reference: 23 (SH) 592 478
Level stn. (m OD): 32.90
Catchment area (sq km): 68.6
Max alt (m OD) 1085

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	6 597	3 253	0.527	8 083	3.313	3 055	0 592	10 263	6 483	0 668	12 584	3 263
2	5 465	3 293	0.462	6 013	2 632	2 598	0.623	11 934	6 058	0 725	7 910	3 823
3	4 162	2.853	2.419	4 389	2 396	3 361	0 910	5 689	6.843	0 731	12.331	20 390
4	9 972	2 353	38 066	3 417	2 373	3 085	2.267	4 149	3 987	0 667	5 798	21.130
5	7 024	1 996	10.902	2 892	2 779	2 671	1 683	3 457	2.945	0 603	16 809	18.984
6	5 320	1 706	4.834	2.538	2 270	2.279	1.232	7 655	2.414	0 569	7 518	7.197
7	4 070	1.487	3.304	2 318	2.183	1.798	1 070	9 942	1.989	1.193	20 761	8 013
8	3 460	1.303	2.883	2 117	2 606	1.505	0 995	5 178	1.847	1.445	14 158	29.006
9	16 673	1.124	3.992	1.900	10 738	16 161	1 429	3.621	2.189	15.109	25 637	13.933
10	28.501	0 995	3.531	1 686	16 356	9 975	2.664	2 813	2.339	8.044	13.701	7.624
11	6.900	0.983	3 129	1 562	22 301	6 100	2.531	2 396	2.304	3.392	12.190	13 194
12	4.221	0 955	2.824	1 580	19 940	4.228	1 893	2 221	2 180	2 120	6 471	9 096
13	3 265	0.927	2.340	1 949	7 043	4 304	1 788	2 700	1.840	1.629	7 801	9.948
14	2.811	0.871	2 691	3.888	6 365	3 190	2.534	2 773	1 291	1.730	15 307	6 802
15	3.595	0 801	3.107	5.422	5 017	2.172	1 917	3 114	0 941	1 546	8 963	15 223
16	3.125	0 714	3.437	3.818	3 836	1.861	1.575	2 406	0 791	1 333	15 852	7 562
17	5.777	0 642	2 636	4 917	6 511	1.871	1.338	1 784	1 052	1 212	7 744	18 650
18	17 921	0.569	5 306	4.100	6 063	1 685	1 128	1 419	1 308	5.811	36 296	18 328
19	23.754	0 547	4.334	23.255	4 110	1.512	1 646	1.255	1 180	5.295	16 274	8 321
20	18 586	0.597	5.039	19 625	4 162	1.248	3 105	1.151	0 919	9.230	15 233	5 552
21	15.279	0 579	7.311	8 422	9 801	1.058	1.852	1.151	0.701	7.884	11.238	4 563
22	28 562	0.483	21 665	6 121	5 025	0 880	1 494	1 548	0 584	6.998	8 581	3 766
23	9 388	0 494	12.619	4 807	3.741	0.809	1.446	1.330	0.582	4 861	10 163	3 437
24	5 957	0 462	13 504	5 100	10 197	0 965	4 007	1 088	0 601	11.025	18 456	12 913
25	4.274	0 426	8.808	4 218	20 352	1.080	6.114	20 576	0.563	16 973	46 909	17 460
26	4 397	0.551	14 877	3 256	14 828	0 967	3.547	23.977	0 511	9.773	12 974	6 083
27	9.782	0.512	10.961	2.675	6 635	0 961	2 283	8 082	0 510	31.907	6.669	4 111
28	8 166	0 444	7 718	8 145	4 439	0 897	24 585	4.561	0 557	30 003	4 930	4 748
29	6 020		7 033	4 718	3 329	0 710	14 890	3 446	0 559	11 932	3 776	33 299
30	5 413		8.266	4 117	3 422	0 605	23 121	5 151	0.604	19 807	2 930	52 839
31	4 321		9.212		4 206		12 035	4 062		15 648		14 224
Average	9 121	1 139	7.346	5 235	7 064	2 786	4 139	5 190	1.889	7 415	13 530	13.020
Lowest	2 811	0 426	0 462	1 562	2 183	0 605	0 592	1 088	0 510	0 569	2 930	3.263
Highest	28 562	3 293	38.066	23 255	22 301	16 161	24 585	23 977	6.843	31.907	46.909	52 839
Peak flow	75 211	3.687	52.251	62.206	50 648	25 164	42 611	36 612	9.069	54 850	74.342	107 618
Day of peak	9	1	4	19	11	9	28	25	2	28	18	30
Monthly total (million cu m)	24 43	2.76	19 68	13.57	18 92	7 22	11 08	13 90	4 90	19.86	35 08	34 86
Runoff (mm)	356	40	287	198	276	105	162	203	71	290	511	508
Rainfall (mm)	359	20	377	194	324	118	285	280	35	379	525	607

Statistics of monthly data for previous record (Dec 1961 to Dec 1985—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	7.686	5 629	5 603	3 715	3 381	3.287	3 428	4 861	6 215	7 326	8 464	8 815
	Low	1.535	1.369	1 734	0.814	0 325	1.173	0 495	0 305	3 301	3 526	3 399	1 793
	(year)	1963	1965	1984	1974	1980	1984	1984	1976	1969	1978	1983	1963
	High	13 630	13 040	15 600	8 228	6 790	7.429	7 132	12 860	11 830	13.370	14 460	16 400
	(year)	1983	1977	1981	1975	1979	1971	1978	1985	1974	1980	1980	1965
Runoff:	Avg.	300	200	219	140	132	124	134	190	235	286	320	344
	Low	60	48	68	31	13	44	19	12	125	138	128	70
	High	532	460	609	311	265	281	278	502	447	522	546	640
Rainfall:	Avg	313	200	235	182	178	201	201	262	294	317	362	344
	Low	28	41	69	20	39	78	66	16	62	136	130	74
	High	563	475	638	482	334	358	380	563	508	726	564	700

Summary statistics

	For 1986		For record preceding 1986		1986 As % of prev. 1986
Mean flow (m^3s^{-1})	6.540		5.704		115
Lowest yearly mean			4 185	1968	
Highest yearly mean			6 942	1980	
Lowest monthly mean	1.139	Feb	0 305	Aug 1976	
Highest monthly mean	13.530	Nov	16 400	Dec 1965	
Lowest daily mean	0.426	25 Feb	0 039	9 Jul 1973	
Highest daily mean	52.839	30 Dec	85 850	27 Oct 1980	
Peak	107.618	30 Dec	130 200	16 Jul 1973	
10 %ile	16.360		12 910		127
50 %ile	3.790		3 175		119
95 %ile	0 578		0 529		109
Annual total (million cu m)	206 20		180 00		115
Annual runoff (mm)	3006		2624		115
Annual rainfall (mm)	3503		3089		113
(1941-70 rainfall average (mm)			3030)		

Factors affecting flow regime

- Regulation for HEP.

Station and catchment description

A 20m wide river section rated by current meter and, in the past, by dilution gauging. Rating tends to be insensitive at low flows due to subtle movements in the natural bed control downstream. High flow gauging restricted to peaks and troughs because of rapid water level changes. Station bypassed at high flows. Lakes (Dinas and Gwynant) and HEP discharge from the higher Llyn Llydaw marginally affect records. Catchment drains the southern flanks of Snowdonia with much bare rock exposure (impermeable Ordovician volcanics).

067015 Dee at Manley Hall 1986

Measuring authority: WELS
First year: 1937
Grid reference: 33 (SJ) 348 415
Level stn. (m OD): 25.40
Catchment area (sq km): 1019.3
Max alt. (m OD): 884

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	51.547	38.781	10 488	50 047	21 629	18 952	11 419	15 262	25 295	11 159	47 981	35 846
2	56 545	36 582	10 431	44 052	20 079	18 942	11 048	15 505	22 452	10 335	36 714	33 257
3	50 682	34 043	10 508	39 016	18.936	18 117	10 787	12 790	25 235	9 576	31 883	34 042
4	44 155	32 353	45 640	33 919	18 805	17 639	11 119	10 815	22 524	9 140	26 985	59 368
5	43 729	29 984	62 335	31 080	20 505	17 032	11 042	10 415	21 423	9.216	25 042	70 257
6	39 481	27 207	48 781	26 647	17 622	15 971	10 947	10 354	21 740	9.418	25 684	66 241
7	35.548	25 109	34 512	27 668	16 105	13 611	10 771	19 642	20 379	9 664	26 387	62 151
8	33 523	22 948	26 886	28 972	18 424	12 512	10 914	18 799	18 325	9 735	36.896	101 964
9	42 665	20 154	23 869	26 141	16 757	11 964	10 713	15 666	15 019	10 046	48 040	97 046
10	159 400	18 786	21 479	23 013	25 092	18 286	10 606	11 752	12 213	10 060	69 252	88 594
11	106 077	18 627	18.901	20 976	31 290	22 576	10 576	10 630	9 843	9 948	68 170	98 005
12	83 944	17 499	17 399	19 780	38 754	26 729	10 342	10.589	9 299	9 848	58 683	105 339
13	87.805	16 315	16.031	18 231	39 082	18 755	10 299	11 222	11 365	9 837	71 673	132 890
14	77.275	15.293	14 565	19 369	31 803	16 401	10 661	11 674	12 580	9 888	78 965	104 449
15	65.727	14 764	12 472	30 591	24 395	14 462	12 038	10.402	15 948	10 254	68 197	121 199
16	55.097	13 074	11 205	44 898	22 088	15 095	12 477	10 312	12.849	9 613	61 941	94 579
17	48 454	12 020	10 516	92 991	24 855	15 992	13 858	10 140	10 860	9 681	58 499	83 748
18	63 686	12 107	10 788	80 989	29 929	14 652	13 591	9 808	10 547	9 843	107 194	87 084
19	122 450	12 091	12 230	69 590	31 171	14 153	11 889	9 656	10 291	10 230	133 369	84 695
20	114 929	11 710	13 928	87 159	29 741	13 698	11 587	9 644	10 225	17 217	122 006	72 895
21	122 010	10 171	12 396	88 306	30 307	13 234	11 176	9 623	10 089	17 478	103 136	64 536
22	123 405	10 329	13 185	73 274	28 759	13 068	11 901	10 630	9 811	19 959	88 738	52 693
23	113 011	9 302	29 850	56 065	22 307	13 467	12 641	11 027	10 254	19 300	99 479	45 393
24	89 094	9 137	40 562	49 706	21 157	14 795	12 694	10 147	10 368	20 284	89 397	41 015
25	68 025	10 010	40 902	44.541	27 180	11 464	12 960	52 429	10 372	45 919	103 577	45 698
26	56.598	8 575	45 304	37 507	33 882	10 755	12 482	114 244	10 126	41 667	102 379	42 825
27	59 530	9 400	62 587	31 094	33 798	11 932	11 943	83 181	10 091	37 351	98 459	39 187
28	51 862	11.007	54 790	28 129	28 471	11 851	12 950	73 621	9 513	40 089	70 858	36 662
29	47.915		53 548	25 748	21 232	11 637	12 814	49 249	9 334	43 161	51 703	42 077
30	48 982		48 641	23 759	18 254	11 590	12 033	41 363	10 454	41 901	40 038	119 903
31	44.658		52 238		19 358		14 476	29 778		34.256		130 602
Average	71.220	18.120	28 610	42 440	25 220	15 310	11 770	23 560	13 960	18 260	68 380	74 010
Lowest	33 523	8.575	10 431	18 231	16.105	10 755	10 299	9 623	9 299	9 140	25 042	33 257
Highest	159 400	38 781	62 587	92 991	39 082	26 729	14 476	114 244	25 295	45 919	133 369	132 890
Peak flow	208 273	43 176	74 270	118 177	43 176	31 498	16 276	141 030	26 681	54 670	178 326	174 904
Day of peak	10	1	27	17	12	12	31	25	1	25	18	13
Monthly total (million cu m)	190 80	43 84	76 63	110 00	67 54	39 69	31 51	63 10	36 19	48 91	177 20	198 20
Runoff (mm)	187	43	75	108	66	39	31	62	36	48	174	194
Rainfall (mm)	217	14	135	120	129	53	78	163	13	129	227	277

Statistics of monthly data for previous record (Oct 1937 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	51 530	45 200	32 620	23 920	17 640	13 780	13 050	17 300	23 740	33 360	47 170	52 260
	Low	13 460	7 858	8 129	7 841	4 274	3 740	3.113	3 288	3 052	4 217	11 580	18 610
	(year)	1964	1963	1943	1938	1938	1961	1949	1955	1949	1947	1937	1963
	High	109 300	106 700	103 700	61 030	41 950	31 240	40 270	59 400	69 470	92 470	103 000	105 200
	(year)	1948	1946	1947	1970	1969	1972	1957	1957	1950	1967	1960	1965
Runoff	Avg	135	108	86	61	46	35	34	45	60	88	120	137
	Low	35	19	21	20	11	10	8	9	8	11	29	49
	High	287	253	273	155	110	79	106	156	177	243	262	277
Rainfall (1969-1985)	Avg	154	106	121	79	82	83	75	101	131	132	173	154
	Low	60	37	54	10	39	16	27	9	45	41	66	46
	High	287	236	233	182	151	150	144	184	306	221	249	314

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	34 360		30 900		111
Lowest yearly mean			20 460	1964	
Highest yearly mean			44 600	1954	
Lowest monthly mean	11 770	Jul	3 052	Sep 1949	
Highest monthly mean	74 010	Dec	109 300	Jan 1948	
Lowest daily mean	8 575	26 Feb	1 926	30 Jul 1949	
Highest daily mean	159 400	10 Jan	521 000	14 Dec 1964	
Peak	208 273	10 Jan	665 400	14 Dec 1964	
10 %ile	84 010		70 500		119
50 %ile	27 370		19 450		140
95 %ile	9 724		4 933		197
Annual total (million cu m)	1084 00		975 10		111
Annual runoff (mm)	1063		957		111
Annual rainfall (mm)	1555		1391		112
[1941-70 rainfall average (mm)			1403]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Asymmetrical compound Crump weir, checked by current meter. Drowns at flows in excess of 200 cumecs. Low flows maintained by releases from major river regulating reservoirs (Celyn and Brenig). Data prior to February 1970 is of poorer quality - based on the d/s Erbistock (67002, area: 1040.0 sq km) flow record. Geology is 75% shales, slates, mudstones and palaeozoic grits, 25% extrusive igneous and Carboniferous rocks. 80% grazed open moorland, 12% forestry, remainder arable, urban negligible.

068001 Weaver at Ashbrook 1986

Measuring authority: NWWA
First year: 1937
Grid reference: 33 (SJ) 670 633
Level stn. (m OD): 16 30
Catchment area (sq km): 622.0
Max alt. (m OD): 222

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.712	12 100	2 301	10 270	4 383	2.385	1 590	2 221	2 471	1.414	7 647	4.738
2	11.580	9.253	2 160	8.394	4 094	2 299	1 571	2.042	2 243	1.453	4 793	3 970
3	8.683	7.368	2 287	6.054	3 910	3.265	1 549	1 853	2 992	1 444	3 208	3.964
4	6.196	6 351	6 120	5 612	3 736	2.831	1 769	2 012	2.344	1 410	2 788	5.277
5	9.109	5.476	5 874	6.094	3 590	2 515	1 664	2.207	2 067	1.399	2 551	5 854
6	9.413	4.770	4 257	5.032	3 420	2 387	1.648	2.031	1 943	1 407	2 313	4 688
7	6.493	4 263	3.650	4 480	4 830	2.322	1 601	2 110	1.861	1 498	2 359	4.546
8	6.910	4 044	3 377	5.230	4 679	2 281	1.563	2.074	1.796	1.488	5 850	17 880
9	12.250	3 818	3.436	5.580	4 019	2.468	1 505	1 919	1 788	1.734	4 512	19.550
10	29 450	3 645	3 565	4 383	3 880	5 241	1 596	1.756	1 737	1 850	3 877	12 000
11	21.110	3 405	3.378	3 757	3 672	3.652	1 563	1.769	1 780	1 637	3 097	13 070
12	13 040	3.321	3 113	3.650	3 542	2 697	1.722	1 793	1 740	1 444	2 666	12.310
13	12 520	3.181	2.993	4 856	3 176	2.433	1 645	1 860	1 649	1.503	3 363	21.700
14	9 848	3 064	2 843	8.829	2.874	2 313	1 628	1.747	1 610	1.536	4 887	14 360
15	8 073	3 003	2.750	26.170	3 058	2.265	1 700	1 726	1 627	1.475	5 810	19.890
16	6 409	2.911	3 287	32 070	2 627	2 200	1 666	1.638	1 593	1.373	4 072	17 910
17	5 867	2.863	3.591	42 250	2 858	2 108	1 572	1 573	1 606	1.387	3 463	11 640
18	12 380	2.775	3 826	24 540	2.753	1.997	1 444	1 567	1 586	1 576	11 300	18 740
19	19.610	2.725	5 074	14 660	2 481	1 914	1 428	1.583	1 535	1.841	16 810	26 560
20	15 080	2 679	4 073	18 260	3 936	1 845	1 736	1 547	1 513	4 317	10 960	27 310
21	16.760	2.581	3 334	14.710	3 782	1 752	1 602	1 466	1.503	3.106	15 890	19 400
22	14.720	2 534	3.566	14.620	3 024	1.809	1 557	1 623	1 576	2.318	11.220	13 580
23	15.300	2 354	5 182	14.700	2 492	3.112	3 057	1.764	1 567	2 311	13 210	9.247
24	10 330	2.491	14 640	20 490	2.334	4 459	2 604	1 808	1.568	2 624	9 640	7.880
25	7.478	2.481	12.560	15 050	2 211	2.642	3.523	5.378	1.503	3.534	12.930	14.500
26	5.716	2.153	9 346	9 315	2 166	2.140	2 297	14 220	1 528	2 719	20.830	12 060
27	6.909	2.264	8 214	6 897	2 104	1.912	1 894	6.946	1 510	2.975	10 570	10 220
28	8.468	2 458	6 137	6 369	2 222	1 814	1.927	6 269	1 462	2 703	6 933	8 451
29	14.470		5 655	5 420	2.152	1 678	2 184	3.851	1 525	2 263	5 611	12 620
30	24 920		5 484	4.987	2.120	1 612	2 546	4 005	1.729	2.179	5 063	41 450
31	18.480		9 339		2 483		2 288	2.944		2 498		27.970
Average	12.040	3.940	5 013	11.760	3 181	2 478	1 859	2 816	1.765	2 013	7.274	14.300
Lowest	5.712	2 153	2.160	3.650	2 104	1 612	1 428	1 466	1 462	1 373	2 313	3.964
Highest	29 450	12 100	14 640	42.250	4 830	5 241	3.523	14 220	2.992	4.317	20 830	41 450
Peak flow	32.380	14 110	16 220	46.790	7 165	7 743	4 616	16 550	3 375	5 171	24 300	43.660
Day of peak	10	1	24	16	7	23	25	26	3	20	26	30
Monthly total (million cu m)	32.25	9.53	13.43	30 48	8 52	6.42	4 98	7.54	4 57	5.39	18 85	38 30
Runoff (mm)	52	15	22	49	14	10	8	12	7	9	30	62
Rainfall (mm)	84	2	62	86	55	48	54	92	8	70	77	113

Statistics of monthly data for previous record (Oct 1937 to Dec 1985—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	10 340	9.345	6 599	4 720	3 856	2 773	2 782	2 995	3 340	4 439	7 753	9.369
	Low	1 965	2 376	2 183	1 490	0 903	1 125	0.736	0.641	0 919	1.184	1 303	2.429
	(year)	1964	1965	1938	1938	1946	1962	1976	1976	1964	1947	1942	1947
	High	21.950	19.860	18 580	10 360	22.720	6.995	12 750	8 404	16 980	15.970	22 540	22.250
	(year)	1939	1980	1947	1983	1969	1954	1968	1971	1957	1954	1954	1965
Runoff:	Avg.	45	37	28	20	17	12	12	13	14	19	32	40
	Low	8	9	9	6	4	5	3	3	4	5	5	10
	High	95	80	80	43	98	29	55	36	71	69	94	96
Rainfall	Avg.	68	5[illegible]	50	48	60	58	68	7[illegible]	68	68	77	69
	Low	18	8	18	2	18	13	16	6	5	15	13	10
	High	145	145	127	98	194	142	168	175	169	137	170	140

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	5.717		5 676		101
Lowest yearly mean			2 752	1964	
Highest yearly mean			9 209	1954	
Lowest monthly mean	1.765	Sep	0 641	Aug 1976	
Highest monthly mean	14 300	Dec	22.720	May 1969	
Lowest daily mean	1.373	16 Oct	0 394	17 Aug 1976	
Highest daily mean	42.250	17 Apr	84.950	9 Feb 1946	
Peak	46.790	16 Apr	212 400	8 Feb 1946	
10 %ile	14.440		12 380		117
50 %ile	3.114		3 236		96
95 %ile	1.500		1.122		134
Annual total (million cu m)	180.30		179.10		101
Annual runoff (mm)	290		288		101
Annual rainfall (mm)	751		756		99
[1941-70 rainfall average (mm)			754]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Augmentation from effluent returns.

Station and catchment description

Natural river section. Accuracy of early rating curves not known and gaugings lost. However, calibration came under suspicion in 1972 and previous records, particularly low flows, deemed to be of little value. Low flow rating then changed several times before station moved 400m downstream and shallow vee bed control constructed in August 1978. High flow rating (above 40 cumecs) has yet to be defined. Flat catchment includes western half of Crewe. Post glacial deposits over (mostly) Keuper Marl.

071001 Ribble at Samlesbury 1986

Measuring authority: NWWA
First year: 1960
Grid reference 34 (SD) 589 304
Level stn. (m OD) 6.00
Catchment area (sq km): 1145.0
Max alt. (m OD): 680

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	145.500	29.830	6.959	59.840	13.670	9.766	4.326	15.580	33.180	5.774	133.600	28.090
2	78.940	26.200	5.780	34.020	10.420	9.491	4.188	17.590	40.950	5.275	46.130	24.940
3	45.890	23.080	3.935	24.480	10.300	11.170	4.082	14.290	82.800	5.020	46.380	166.400
4	24.350	19.690	147.100	18.600	16.680	9.843	5.061	11.670	25.740	5.159	32.190	186.000
5	19.590	16.440	145.600	16.970	12.190	8.127	6.652	16.390	16.560	7.012	65.370	106.200
6	17.280	14.230	39.270	14.810	12.220	6.688	4.824	19.680	13.570	5.997	39.560	56.250
7	15.150	12.810	22.710	13.100	81.540	6.128	4.454	46.600	11.410	14.800	29.680	37.320
8	13.270	11.910	17.150	15.240	54.140	6.079	4.154	23.670	9.660	13.860	36.400	110.900
9	14.670	11.300	18.350	13.510	26.860	7.361	3.983	13.840	8.677	8.515	47.790	72.040
10	202.500	10.250	19.960	12.240	25.800	99.880	4.060	10.150	8.008	15.340	72.720	47.190
11	66.500	8.597	15.640	9.588	34.000	84.070	7.701	8.782	7.259	10.950	53.420	96.020
12	89.690	9.076	12.850	9.021	36.050	53.380	8.705	8.231	6.933	7.543	34.560	59.810
13	159.100	8.902	10.740	10.190	20.870	32.720	7.398	8.418	6.736	6.751	39.090	129.100
14	69.390	8.003	9.721	14.690	16.790	14.890	7.291	9.081	6.513	8.910	52.530	53.470
15	46.390	7.427	10.130	141.900	23.170	8.939	7.419	9.529	6.319	11.720	43.080	177.200
16	27.550	6.765	14.160	66.360	15.200	7.534	7.017	9.259	6.102	8.464	37.720	103.600
17	52.830	6.556	16.410	98.670	20.250	6.906	6.898	9.476	5.931	7.069	40.330	177.800
18	134.700	6.527	11.960	41.640	22.860	6.425	6.661	8.907	5.887	8.193	133.200	178.300
19	214.900	6.315	15.810	26.700	14.130	6.096	6.663	7.841	5.715	40.170	117.700	119.000
20	147.500	5.601	15.920	105.800	42.460	5.806	7.339	7.025	5.830	66.150	67.280	94.890
21	191.500	5.148	13.510	54.150	60.400	5.521	7.220	6.809	5.772	181.900	65.450	50.650
22	159.400	5.682	86.460	51.860	27.980	5.243	7.738	8.086	6.313	100.300	64.180	34.680
23	129.100	5.206	105.300	28.990	17.210	5.262	8.677	7.109	6.154	84.150	150.800	27.270
24	78.230	5.091	63.880	29.920	14.200	17.950	9.101	6.679	5.721	48.920	149.900	28.540
25	64.640	5.241	67.750	24.650	84.590	18.110	13.100	57.010	5.520	208.500	193.200	153.200
26	58.480	5.406	54.330	18.730	43.700	14.540	9.218	178.900	5.652	67.700	123.300	48.620
27	58.260	8.639	80.580	14.760	21.130	11.000	8.297	41.470	5.667	152.300	57.860	48.080
28	58.910	9.020	41.760	14.030	15.650	7.853	8.719	26.630	5.481	138.400	37.770	67.730
29	62.820		79.210	15.420	12.470	5.167	23.880	20.500	5.791	66.000	28.390	158.800
30	70.020		42.230	11.990	10.530	4.000	18.730	15.920	5.826	96.040	23.300	268.200
31	40.960		57.090		10.680		20.870	12.060		69.430		130.700
Average	82.520	10.680	40.400	33.730	26.710	16.530	8.207	21.200	12.390	47.620	68.760	98.100
Lowest	13.270	5.091	3.935	9.021	10.300	4.000	3.983	6.679	5.481	5.020	23.300	24.940
Highest	214.900	29.830	147.100	141.900	84.590	99.880	23.880	178.900	82.800	208.500	193.200	268.200
Peak flow	339.700	36.240	311.900	302.000	155.300	145.700	31.510	336.600	149.000	338.700	302.900	477.500
Day of peak	10	1	22	15	25	10	29	26	3	25	25	3
Monthly total (million cu m)	221.00	25.83	108.20	87.43	71.55	42.85	21.98	56.78	32.11	127.60	178.20	262.70
Runoff (mm)	193	23	94	76	62	37	19	50	28	111	156	229
Rainfall (mm)	187	9	148	99	124	61	70	126	28	208	179	284

Statistics of monthly data for previous record (May 1960 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	50.480	37.090	33.560	26.200	18.650	14.020	15.620	24.070	31.030	41.170	53.070	55.460
	Low	10.610	9.565	11.790	5.601	4.048	5.031	2.638	2.958	5.782	5.716	20.770	15.190
	(year)	1963	1965	'975	1974	1980	1975	1984	1976	1972	1972	1983	1971
	High	80.040	80.890	'04.700	54.820	46.460	33.520	40.220	68.920	65.820	118.400	88.610	120.200
	(year)	1983	1966	1981	1970	1967	'966	'960	:967	1968	1967	1963	1965
Runoff:	Avg	118	79	79	59	44	32	37	56	70	96	120	130
	Low	25	20	28	13	9	11	6	7	13	13	47	36
	High	187	171	245	124	109	76	94	161	149	277	201	281
Rainfall (1961-1985)	Avg	133	84	103	81	84	90	88	117	140	135	145	146
	Low	18	17	43	3	16	27	21	20	48	50	53	43
	High	224	189	280	171	178	166	158	205	277	304	221	384

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	39.200		33.360		118
Lowest yearly mean			22.040	1971	
Highest yearly mean			45.020	1967	
Lowest monthly mean	8.207	Jul	2.638	Jul 1984	
Highest monthly mean	98.100	Dec	120.200	Dec 1965	
Lowest daily mean	3.935	3 Mar	1.876	22 Jul 1984	
Highest daily mean	268.200	30 Dec	675.000	27 Oct 1980	
Peak	477.500	3 Dec	891.300	12 Dec 1964	
10 %ile	109.200		81.470		134
50 %ile	16.530		16.410		101
95 %ile	5.225		4.406		119
Annual total (million cu m)	1236.00		1053.00		117
Annual runoff (mm)	1080		919		117
Annual rainfall (mm)	1523		1346		113
[1941-70 rainfall average (mm)			1329]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Augmentation from effluent returns.

Station and catchment description

Natural section with gravel shoal control affected by accretion of silt and weeds in summer. Just u/s of tidal limit. To overcome poor low flow calibration, large compound Flat V weir built (1970) 1 km u/s. Intermittent record from weir due to extreme vandalism - finally closing in 1982. Well rated at main site for high flows. Geology - Carboniferous Limestone and Millstone Grit; Boulder Clay over Coal Measures and Millstone Grit (Pennines). Lower Ribble adds little industry or population, being mostly agricultural.

073010 Leven at Newby Bridge 1986

Measuring authority: NWWA
First year: 1939
Grid reference: 34 (SD) 367 863
Level stn. (m OD): 37.30
Catchment area (sq km): 247.0
Max alt. (m OD): 873

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	15.330	12.720	1.479	21.140	15.550	13.360	1.906	16.220	5.909	1.463	47.530	25.880
2	15.870	10.540	1.042	18.440	15.000	11.260	1.624	17.630	6.133	1.462	40.250	22.320
3	14.340	8.956	1.039	16.050	14.160	9.804	1.256	18.420	8.212	1.475	38.820	28.200
4	13.090	8.080	7.164	13.810	13.720	8.258	1.334	16.190	8.175	1.376	34.770	44.500
5	11.850	7.319	17.640	12.050	13.420	7.234	1.243	14.140	7.419	1.132	33.720	56.370
6	10.470	6.640	17.990	10.400	13.190	6.063	1.106	15.030	6.762	1.079	31.720	50.730
7	9.316	5.944	15.640	9.406	14.590	4.916	0.959	24.440	5.951	2.019	30.390	42.920
8	8.144	5.157	13.210	8.181	15.280	4.044	1.003	25.370	5.421	2.323	29.810	43.520
9	7.650	4.654	13.640	7.603	15.230	9.156	1.264	22.350	4.473	4.535	33.310	43.460
10	22.530	4.231	13.260	5.556	18.110	17.430	1.221	18.860	3.887	8.762	41.930	37.860
11	29.190	3.894	12.130	4.372	21.050	20.180	1.091	15.510	3.670	8.251	38.840	41.280
12	28.240	3.720	10.610	4.058	24.220	18.210	1.027	12.940	3.104	6.808	33.050	40.890
13	34.900	3.573	9.145	4.247	24.650	18.180	0.920	12.800	2.714	5.492	29.320	41.810
14	39.510	3.145	8.025	5.271	22.700	18.030	0.844	12.600	2.475	4.285	28.290	37.580
15	35.590	2.759	7.529	5.825	20.070	16.050	0.843	12.580	2.243	3.366	26.270	39.760
16	30.260	2.981	7.708	6.895	17.530	13.600	0.764	12.840	1.900	2.671	26.620	39.270
17	24.030	2.832	7.623	6.581	15.680	11.410	0.774	12.330	1.844	2.088	27.080	39.180
18	25.410	1.975	7.571	5.855	17.470	10.010	0.740	11.060	1.552	2.417	28.940	42.420
19	35.520	1.903	7.200	6.009	17.460	8.953	0.727	9.583	1.272	4.091	32.140	40.870
20	39.530	1.801	8.593	9.841	16.030	7.600	0.729	8.310	1.093	6.718	30.600	37.250
21	43.870	1.764	10.310	11.620	18.680	6.289	0.725	7.479	1.153	11.440	27.000	32.510
22	48.720	1.815	27.480	10.950	19.170	5.185	0.720	6.667	1.176	16.470	25.390	27.450
23	50.010	1.740	49.850	10.180	17.390	4.492	0.747	5.716	1.278	19.330	33.250	20.860
24	42.600	1.650	46.610	9.786	16.420	3.962	0.757	4.976	1.291	20.400	43.930	18.930
25	35.090	1.745	40.510	9.188	23.630	3.953	0.932	6.122	1.152	35.730	61.200	26.470
26	29.240	1.701	36.260	8.348	30.490	3.762	0.975	8.516	1.084	35.830	63.880	25.920
27	24.980	1.654	36.090	7.399	29.780	3.476	0.957	8.907	0.994	44.970	56.780	23.990
28	21.600	1.600	34.200	7.593	24.470	3.006	3.169	8.772	1.619	52.440	47.670	23.920
29	16.530		32.700	7.427	20.850	2.646	7.866	8.078	1.763	48.430	39.590	26.360
30	14.940		27.720	12.160	17.500	2.080	10.830	7.219	1.623	54.570	31.390	35.470
31	13.460		24.460		15.440		16.200	6.084		51.340		47.560
Average	25.540	4.160	17.880	9.208	18.680	9.087	2.105	12.510	3.245	14.930	36.450	35.660
Lowest	7.650	1.600	1.039	4.058	13.190	2.080	0.720	4.976	0.994	1.079	25.390	18.930
Highest	50.010	12.720	49.850	21.140	30.490	20.180	16.200	25.370	8.212	54.570	63.880	56.370
Peak flow	52.090	14.710	51.540	22.850	31.990	20.990	16.950	26.560	10.720	56.780	66.160	57.450
Day of peak	22	1	23	1	26	11	31	7	11	30	25	5
Monthly total (million cu m)	68.41	10.06	47.90	23.87	50.02	23.55	5.64	33.50	8.41	39.98	94.48	95.52
Runoff (mm)	277	41	194	97	203	95	23	136	34	162	383	387
Rainfall (mm)	275	7	276	126	228	107	132	162	32	339	364	450

Statistics of monthly data for previous record (Jan 1939 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	19.560	16.580	13.010	11.140	7.575	6.442	7.406	10.550	14.670	17.330	20.280	21.090
	Low	1.935	0.974	3.699	1.796	0.641	0.545	0.775	0.652	0.560	1.438	6.873	8.208
	(year)	1963	1963	1962	1974	1980	1978	1941	1984	1959	1972	1983	1963
	High	38.020	31.030	29.970	21.640	16.940	18.730	16.990	31.070	33.930	50.170	36.350	40.110
	(year)	1975	1945	1981	1949	1964	1972	1953	1985	1946	1967	1954	1954
Runoff:	Avg	212	164	141	117	82	68	80	114	154	188	213	229
	Low	21	10	40	19	7	6	8	7	6	16	72	89
	High	412	304	325	227	184	197	184	337	356	544	381	435
Rainfall:	Avg	228	149	154	119	117	126	147	184	222	219	236	234
	Low	26	20	32	12	22	17	40	7	29	30	17	90
	High	439	295	341	243	241	269	287	428	427	557	428	431

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	15.900		13.790		115
Lowest yearly mean			9.234	1973	
Highest yearly mean			21.840	1954	
Lowest monthly mean	2.105	Jul	0.545	Jun 1978	
Highest monthly mean	36.450	Nov	50.70	Oct 1967	
Lowest daily mean	0.720	22 Jul	0.108	7 Oct 1972	
Highest daily mean	63.880	26 Nov	115.900	2 Dec 1954	
Peak	66.160	25 Nov	135.800	2 Dec 1954	
10 %ile	39.240		30.460		129
50 %ile	11.300		10.120		112
95 %ile	1.031		1.215		85
Annual total (million cu m)	501.40		435.20		115
Annual runoff (mm)	2030		1762		115
Annual rainfall (mm)	2498		2135		117
(1941-70 rainfall average (mm)			2189)		

Factors affecting flow regime

- Reservoir(s) in catchment
- Abstraction for public water supplies.
- Augmentation from effluent returns

Station and catchment description

Level record since 1939 from four different sites at Newby Bridge. All flow records from 1939 to 1974 combined into a single sequence. Since 5/5/71 compound Crump weir - increased sensitivity at low flows. Full range. Just d/s of Lake Windermere - highly regulated, compensation flow. Major abstractions for PWS, sewage effluent from Ambleside. Predominantly impervious, Borrowdale Volcanics in north and Silurian slates in south. Boulder Clay along river valleys. Mainly grassland, very wooded in lower reaches.

076007 Eden at Sheepmount 1986

Measuring authority: NWWA
First year: 1967
Grid reference: 35 (NY) 390 571
Level stn. (m OD): 7.00
Catchment area (sq km): 2286.5
Max alt. (m OD): 950

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	68.370	59.130	15.430	56.760	38.170	38.690	12.950	29.960	33.270	11.750	192.900	57.760
2	68.800	50.200	15.020	51.110	30.190	34.050	12.670	31.090	38.060	11.500	93.430	90.690
3	57.490	49.020	15.130	46.360	27.200	30.910	12.510	26.960	112.000	11.280	102.700	175.600
4	44.560	44.380	112.600	42.260	25.580	27.670	12.440	23.040	45.910	11.170	71.910	222.000
5	40.980	39.090	152.400	39.140	26.010	24.810	12.370	20.730	32.740	11.350	85.130	354.500
6	36.230	35.220	62.200	35.060	29.840	22.650	12.220	34.520	29.010	11.200	63.240	142.300
7	32.280	32.510	45.980	32.340	137.200	21.240	12.140	77.340	25.610	12.580	78.730	121.400
8	30.560	30.730	40.340	33.290	73.330	20.160	12.240	50.760	21.860	13.350	119.000	255.800
9	35.840	29.030	39.540	33.360	50.000	24.710	11.820	35.130	19.730	13.620	124.900	184.200
10	228.700	27.000	39.610	31.420	52.330	129.100	11.710	27.050	18.430	19.210	140.100	107.600
11	109.100	23.950	37.120	26.750	55.190	70.000	11.310	22.660	17.290	16.340	117.200	173.600
12	93.140	23.130	33.670	27.330	63.220	44.180	11.040	20.450	16.520	13.690	84.440	136.800
13	164.000	22.270	30.110	29.460	63.970	37.740	11.020	20.980	15.900	12.670	94.170	221.800
14	130.900	21.340	27.230	33.730	50.000	35.840	10.970	24.200	15.390	12.220	109.800	116.300
15	84.180	21.100	34.030	147.900	49.340	29.690	11.000	35.210	14.830	11.800	97.750	208.000
16	61.740	20.440	35.600	99.000	42.890	25.440	10.840	34.660	14.310	11.540	84.590	144.600
17	53.760	19.970	33.810	59.950	37.050	24.200	10.470	26.980	13.850	11.270	80.670	157.900
18	80.610	19.560	28.940	46.210	50.440	26.040	10.270	23.330	13.570	12.970	116.900	152.500
19	245.100	19.200	30.500	39.150	43.490	22.210	10.400	33.020	13.270	22.420	141.200	125.000
20	221.600	18.410	41.830	95.820	42.880	19.690	10.530	30.080	13.000	29.680	80.040	95.540
21	240.700	18.250	44.030	61.840	89.130	18.230	10.130	24.030	12.950	57.470	64.550	76.940
22	306.100	17.460	139.400	45.180	65.290	17.330	10.150	26.840	12.830	53.450	103.000	64.310
23	166.200	17.860	182.300	37.910	48.090	17.120	11.240	25.160	12.670	46.170	212.500	55.030
24	98.540	16.760	92.410	37.210	47.500	17.820	11.050	20.370	12.390	47.010	190.500	62.680
25	71.670	16.960	87.000	40.260	151.300	17.570	10.920	19.030	12.110	194.500	361.800	128.000
26	59.720	15.890	77.990	35.790	106.500	16.100	10.600	206.500	11.910	80.390	202.500	67.620
27	58.640	15.290	101.300	30.880	68.210	15.050	10.450	87.040	11.870	93.570	129.500	65.710
28	53.500	16.080	88.320	28.010	64.880	14.460	21.620	53.300	11.870	125.600	94.540	67.690
29	52.120		99.350	27.610	57.210	13.820	41.510	37.250	11.760	86.690	75.960	135.000
30	66.310		71.190	36.780	44.730	13.230	29.370	30.050	11.870	175.500	63.880	247.500
31	68.180		62.080		41.730		47.140	26.180		112.200		221.500
Average	101.000	26.440	61.820	46.260	57.190	28.990	14.360	38.190	21.560	43.680	119.300	143.100
Lowest	30.560	15.290	15.020	26.750	25.580	13.230	10.130	19.030	11.760	11.170	63.240	55.030
Highest	306.100	59.130	182.300	147.900	151.300	129.100	47.140	206.500	112.000	194.500	361.800	354.500
Peak flow	422.700	66.840	339.400	282.400	227.900	222.800	68.290	306.400	166.700	279.900	443.200	449.900
Day of peak	22	1	23	15	25	10	31	26	3	25	25	5
Monthly total (million cu m)	270.40	63.96	165.60	119.90	153.20	75.15	38.46	102.30	55.88	117.00	309.10	383.30
Runoff (mm)	118	28	72	52	67	33	17	45	24	51	135	168
Rainfall (mm)	150	13	109	76	133	58	71	129	25	160	173	235

Statistics of monthly data for previous record (Oct 1967 to Dec 1985—incomplete or missing months total 3.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	84.780	59.710	53.600	39.700	28.150	22.630	20.890	24.690	39.810	64.400	74.850	73.730
	Low	39.880	29.200	24.360	13.070	11.050	10.420	8.375	7.026	9.218	7.965	30.420	32.480
	(year)	1985	1985	1975	1974	1974	1973	1984	1976	1972	1972	1973	1971
	High	151.200	100.000	119.700	63.960	68.940	50.380	39.380	92.390	105.500	225.000	126.400	139.200
	(year)	1975	1974	1968	1970	1983	1972	1985	1985	1985	1967	1984	1974
Runoff	Avg.	99	64	63	45	33	26	24	29	45	75	85	86
	Low	47	31	29	15	13	12	10	8	10	9	34	38
	High	177	106	140	73	81	57	46	108	120	264	143	163
Rainfall	Avg	130	69	94	65	71	75	82	89	122	125	130	120
	Low	63	17	43	8	25	37	38	19	26	31	54	43
	High	232	129	179	111	123	126	142	211	231	307	208	371

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	58.790		48.880		120
Lowest yearly mean			28.180	1973	
Highest yearly mean			60.790	1982	
Lowest monthly mean	14.360	Jul	7.026	Aug 1976	
Highest monthly mean	143.100	Dec	225.000	Oct 1967	
Lowest daily mean	10.130	21 Jul	5.468	7 Sep 1976	
Highest daily mean	361.800	25 Nov	772.900	23 Mar 1968	
Peak	449.900	5 Dec	1357.000	24 Mar 1968	
10 %ile	137.300		103.100		133
50 %ile	36.460		30.590		119
95 %ile	11.270		9.523		118
Annual total (million cu m)	1854.00		1543.00		120
Annual runoff (mm)	811		675		120
Annual rainfall (mm)	1330		1172		113
[1941-70 rainfall average (mm)			1240]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies

Station and catchment description

Velocity-area station. Permanent cableway. Full range. Most floods contained in immediate channel. Pre-1970 (when floodbanks constructed) bypassed via Caldew floodplain. Highly influenced by Ullswater, Haweswater and Wet Sleddale especially at low flows. Rural except for Carlisle, Penrith and Appleby. Headwaters in Carboniferous Limestone of Pennines to E, impervious Lower Palaeozoics of Lake District massif to W; moorland. Extensive Boulder Clay covered Permo-Triassic sandstones in Vale of Eden. Arable and grazing.

079006 Nith at Drumlanrig 1986

Measuring authority: SRPB
First year: 1967
Grid reference: 25 (NX) 858 994
Level stn. (m OD): 52.20
Catchment area (sq km): 471.0
Max alt. (m OD): 725

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19.997	11.205	2.155	10.105	12.464	14.227	2.137	13.478	3.728	1.831	19.162	14.073
2	16.318	9.067	2.370	12.359	9.041	11.286	1.983	48.591	4.554	1.822	15.807	68.425
3	10.126	8.165	3.484	11.009	11.461	10.849	1.971	13.497	11.760	1.772	24.432	72.567
4	8.255	7.134	91.208	8.511	12.981	8.639	1.951	13.655	5.001	1.662	26.418	59.663
5	7.919	6.278	31.037	7.436	35.403	7.028	1.938	12.025	4.133	1.632	82.308	60.860
6	8.534	5.596	12.716	6.500	16.573	6.188	1.908	56.457	7.186	1.641	28.588	41.708
7	6.119	5.240	9.660	5.762	78.034	5.589	1.866	35.464	4.666	2.560	76.236	124.396
8	5.784	5.230	20.156	5.223	28.983	6.091	1.815	18.044	3.687	2.526	50.755	63.723
9	48.775	4.788	29.320	4.776	22.866	31.759	1.836	10.713	3.353	2.515	106.754	34.599
10	95.880	4.453	15.462	4.191	48.211	52.246	1.799	7.860	3.206	2.349	38.300	48.295
11	46.572	3.956	11.101	4.041	27.901	17.298	1.666	6.237	3.129	1.942	27.509	81.963
12	61.125	4.245	9.238	3.996	44.462	21.042	1.547	5.280	2.963	1.786	21.922	89.126
13	89.902	4.152	7.645	3.979	32.064	14.454	1.487	10.790	2.920	1.715	31.996	70.519
14	101.964	3.896	9.585	5.190	19.821	9.753	1.530	27.168	2.838	1.722	73.302	34.587
15	41.513	3.711	11.213	5.391	14.281	7.409	1.675	60.092	2.667	1.632	50.102	76.810
16	21.354	3.457	26.472	6.640	10.935	6.123	1.686	23.403	2.532	1.533	92.398	46.547
17	22.104	3.259	12.533	6.113	38.377	7.240	1.654	13.117	2.330	1.454	37.949	97.768
18	45.070	3.077	18.785	5.409	31.263	6.887	1.546	9.754	2.266	1.808	29.705	47.334
19	56.047	2.931	16.376	11.577	14.717	5.423	1.657	8.035	2.159	16.552	22.794	33.182
20	66.052	2.710	89.006	24.000	12.339	4.543	1.820	6.517	2.075	35.515	26.280	24.171
21	34.716	2.586	47.745	9.246	50.997	4.066	1.672	5.859	1.932	50.308	24.014	17.359
22	76.758	2.392	104.059	6.942	20.523	3.780	1.499	5.508	2.224	68.927	66.947	13.213
23	42.203	2.232	60.744	10.679	17.306	3.517	1.497	4.804	3.110	50.078	72.692	11.514
24	25.642	2.068	24.781	9.168	24.903	3.324	1.508	4.169	2.258	87.321	89.120	45.552
25	16.148	1.916	26.022	7.108	41.330	3.131	1.635	4.322	1.950	66.264	84.179	32.649
26	13.518	1.834	21.458	5.798	33.122	2.957	1.658	7.545	1.844	26.718	41.417	25.906
27	22.429	2.200	21.931	5.206	70.068	2.787	1.862	4.734	1.806	64.121	32.787	34.610
28	15.687	2.288	16.488	8.215	28.975	2.592	6.292	3.998	1.804	52.616	21.035	84.864
29	12.586		20.086	7.854	17.357	2.473	15.561	3.782	1.934	45.640	18.952	106.902
30	13.505		13.606	39.313	13.990	2.263	18.442	3.671	2.028	75.644	14.441	88.922
31	15.210		12.136		14.028		14.193	3.574		36.137		59.205
Average	34.320	4.288	25.760	8.725	27.570	9.499	3.267	14.590	3.268	22.890	44.940	55.190
Lowest	5.784	1.834	2.155	3.979	9.041	2.263	1.487	3.574	1.804	1.454	14.441	11.514
Highest	101.964	11.205	104.059	39.313	78.034	52.246	18.442	60.092	11.760	87.321	106.754	124.396
Peak flow	293.921	13.114	156.657	70.855	132.616	100.352	45.414	135.620	18.764	154.255	229.032	267.045
Day of peak	10	1	21	30	8	11	31	15	3	30	10	8
Monthly total (million cu m)	91.91	10.37	69.00	22.61	73.85	24.62	8.75	39.06	8.47	61.32	116.50	147.80
Runoff (mm)	195	22	146	48	157	52	19	83	18	130	247	314
Rainfall (mm)	223	10	184	88	230	76	92	148	30	217	279	345

Statistics of monthly data for previous record (Jun 1967 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	28.110	20.140	17.540	9.079	7.398	5.038	5.087	7.078	14.550	23.230	26.620	24.220
	Low	9.037	7.630	4.428	2.457	1.389	1.488	0.869	0.841	1.261	2.745	5.268	12.770
	(year)	1985	1985	1969	1974	1980	1984	1984	1984	1972	1972	1983	1971
	High	61.220	38.900	33.190	24.190	16.060	14.660	13.620	38.280	39.000	39.200	49.350	41.980
	(year)	1974	1984	1978	1972	1983	1972	1985	1985	1985	1967	1982	1974
Runoff	Avg.	160	105	100	50	42	28	29	40	80	132	147	138
	Low	51	39	25	14	8	8	5	5	7	16	29	73
	High	348	207	189	133	91	81	77	218	215	223	272	239
Rainfall:	Avg	180	109	124	69	94	85	92	98	159	179	176	156
	Low	67	27	34	11	19	52	41	23	20	66	35	69
	High	398	170	217	175	213	163	165	302	247	301	285	282

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	21.380		15.660		137
Lowest yearly mean			10.720	1971	
Highest yearly mean			21.700	1982	
Lowest monthly mean	3.267	Jul	0.841	Aug 1984	
Highest monthly mean	55.190	Dec	61.220	Jan 1974	
Lowest daily mean	1.454	17 Oct	0.606	26 Aug 1984	
Highest daily mean	124.396	7 Dec	231.700	19 Dec 1982	
Peak	293.921	10 Jan	538.355	18 Oct 1982	
10 %ile	62.610		40.430		155
50 %ile	10.840		7.857		138
95 %ile	1.678		1.305		129
Annual total (million cu m)	674.20		494.20		136
Annual runoff (mm)	1432		1049		136
Annual rainfall (mm)	1922		1521		126
(1941-70 rainfall average (mm)			1584)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.

Station and catchment description

Velocity-area station on long straight reach at particularly well confined site. Cableway. Gravel and rock bed. Natural channel control. Sensibly natural flow regime. Afton Reservoir has small influence.

084005 Clyde at Blairston 1986

Measuring authority: CRPB
First year: 1958
Grid reference: 26 (NS) 704 579
Level stn (m OD): 17.60
Catchment area (sq km): 1704.2
Max alt. (m OD): 732

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	43.749	53.465	9.632	29.724	39 393	37 938	9 617	25 617	12.224	9.215	54 753	53 172
2	35.883	40.367	8.991	26 387	26 203	32 876	9.762	37 851	17 551	9.390	43 914	201 972
3	29.751	37.377	14 885	25 240	25.791	29 380	9.799	32 806	37.747	9 040	59 734	224 927
4	24.601	33.554	194.906	22.914	25 170	25 095	9 879	24.315	21.235	8.524	51 236	161 942
5	24.031	28.787	142.470	20 841	24 217	21 116	10.297	27 099	21 675	8 831	149 969	202 660
6	19.843	25 806	61.794	19 617	29 450	19 268	9.791	114 588	32.827	8 544	72 051	106 259
7	19.224	23 468	43.753	18 835	162 321	18 323	9.593	117 519	20.160	8.974	161 987	143 470
8	20.345	21.955	36 281	17 841	90 377	18 004	9.193	53.961	15 000	10 038	178.927	171 271
9	64.598	20 852	40.808	16 671	64 078	29 729	9 101	33 979	13 068	11.587	164 095	114 742
10	182.360	19.192	37.613	15 440	118 956	130 588	8 835	26 849	12.144	10 364	126 294	77 183
11	149.648	15.745	32.716	14 708	73 552	72 332	8 809	22.511	11 343	9 306	75 585	130 046
12	115.715	14.604	26 474	14 205	69 120	55 320	8 743	20 011	10 908	8 770	61 181	100 368
13	176.768	14 679	23.195	14 134	89 024	52 554	8 659	21 713	10 607	8 471	65 757	132 662
14	221 047	15 567	22 640	15 669	56 415	32 689	8 852	31 553	10 509	8 525	107 331	77.165
15	123 054	15 277	23.256	22 616	47 724	25 651	9 202	70 827	9.775	8 338	117 900	116 772
16	71.967	14 206	27 083	55 728	37 894	21 801	8 999	69 424	10 339	8.154	155 482	107 237
17	64.365	14 041	30.456	46 728	32 975	27 443	8 281	41 604	9 728	8 123	116 927	207.160
18	123.588	13 634	25 519	39 300	44 770	29 161	8 142	32 860	9 287	10 225	120 064	151 624
19	139 081	13 411	28.469	38 409	32 937	22 074	8 179	29.495	9 092	35 179	78 616	102 632
20	155.787	12.781	118 307	78 839	28 452	18 006	8 265	29 634	9.217	73 155	71 373	77 177
21	113.655	12 386	83 317	40 263	51 380	16.099	8 600	26 426	9 552	152.621	59 014	60 584
22	156.128	10 485	228 721	31 318	48 955	14 800	8 098	25 437	10 633	177.477	109 310	50 052
23	118.498	10 939	182.187	39 629	37 516	13 683	7 734	21 883	10 016	107 220	128 564	44.496
24	76.901	11.935	104.589	37 975	35 623	14 224	7 706	19.746	9 162	67 712	220 071	107 011
25	56.315	11.824	84 422	27 587	61.579	13 776	7 747	18 696	8 448	123.797	240 140	131 512
26	49.898	9 822	68 484	22 856	79 853	12 821	8 136	19.618	9.412	62 526	123 105	76 384
27	58.642	10.367	67.580	20 464	107 084	11 937	9 028	19.180	8.792	143 245	92 982	84.641
28	49.620	10 866	49 627	22 236	72.541	11 365	30 509	15.640	9.321	118 827	66.920	188 897
29	42 436		47.276	28 347	49.900	10.744	49.185	14 102	10 161	104.178	56 999	232 022
30	49 037		43 072	75 744	40 232	10.318	33 568	13 202	9.761	140.587	49 667	305 932
31	70.174		35.568		39.543		37.186	12 461		83 861		194 131
Average	85.380	19.190	62 710	30 010	56 230	28.300	12 560	34.540	13 320	50.150	106 000	133 400
Lowest	19.224	9 822	8 991	14 134	24 217	10.318	7.706	12 461	8 448	8 123	43 914	44 496
Highest	221 047	53 465	228.721	78 839	162 321	130 588	49 185	117.519	37.747	177 477	240.140	305 932
Peak flow	235.118	68.774	293.802	99.228	214 931	180 402	78 877	161.577	43.748	183 983	340.527	375 880
Day of peak	15	1	5	30	8	11	29	7	4	23	25	31
Monthly total (million cu m)	228.70	46.43	168 00	77 78	150.60	73 36	33 65	92 50	34.53	134 30	274.70	357 40
Runoff (mm)	134	27	99	46	88	43	20	54	20	79	161	210
Rainfall (mm)	147	18	119	76	150	61	79	116	34	154	188	237

Statistics of monthly data for previous record (Oct 1958 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	63 530	50.320	44 260	29 500	23 040	16 970	15 750	24 140	37 690	51 220	64 900	63 670
	Low	11.920	8 855	14.810	10 430	8 831	8 127	6 700	6.185	7 627	8 246	16 400	26 090
	(year)	1963	1963	1969	1974	1980	1961	1984	1984	1972	1972	1983	1963
	High	134 300	101.100	88.940	58 700	51 980	41.190	50 580	86.140	132 400	114 600	131 300	115.100
	(year)	1975	1984	1979	1972	1967	1972	1985	1985	1985	1967	1982	1974
Runoff:	Avg.	100	72	70	45	36	26	25	38	57	80	99	100
	Low	19	13	23	16	14	12	11	10	12	13	25	41
	High	211	149	140	89	82	63	79	135	201	180	200	181
Rainfall	Avg	111	72	88	64	72	73	80	96	120	121	127	114
	Low	25	23	28	9	18	43	32	24	16	33	24	38
	High	237	127	163	125	127	157	166	206	230	231	221	209

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	53.020		40 370		131
Lowest yearly mean			27 090	1973	
Highest yearly mean			54 160	1982	
Lowest monthly mean	12.560	Jul	6 185	Aug 1984	
Highest monthly mean	133.400	Dec	134 300	Jan 1975	
Lowest daily mean	7.706	24 Jul	4 502	11 Oct 1959	
Highest daily mean	305.932	30 Dec	585 900	21 Sep 1985	
Peak	375.880	31 Dec	666 389	22 Sep 1985	
10 %ile	133 100		93.980		142
50 %ile	30.160		23 150		130
95 %ile	8.652		8 068		107
Annual total (million cu m)	1672 00		1274 00		131
Annual runoff (mm)	981		748		131
Annual rainfall (mm)	1377		1138		121
[1941-70 rainfall average (mm)			1151]		

Factors affecting flow regime

Station and catchment description

Recordor moved to present position in Nov. 1974 from opposite bank. Section is natural with steep grass and tree covered banks. Velocity profile slightly uneven due to upstream bend. Control - piers of redundant rail bridge, 300m d/s. Section rated by current meter to 3.44m, just below max. recorded stage. Some naturalised flows available. Very mixed geology with the older formations (Ordivician/Silurian) to the south. Hill pasture and moorland predominates but some mixed farming and urban development is found in the lower valley.

085003 Falloch at Glen Falloch 1986

Measuring authority: CRPB
First year: 1970
Grid reference: 27 (NN) 321 197
Level stn (m OD): 9.50
Catchment area (sq km): 80.3
Max alt. (m OD): 1130

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.293	0.941	0.196	1.562	4.883	2.191	0.165	10.553	0.855	5.511	1.797	7.827
2	1.342	0.822	0.278	1.369	2.558	1.421	0.157	19.404	2.494	1.844	3.909	40.734
3	1.423	0.884	2.884	1.174	3.429	1.265	0.271	3.263	1.188	1.279	3.782	19.504
4	0.821	0.792	51.829	1.137	3.389	0.947	0.968	2.249	1.618	1.075	33.683	25.978
5	0.559	0.727	9.126	0.995	8.362	0.686	1.472	4.493	2.420	4.641	12.250	10.694
6	0.441	0.643	5.311	0.843	5.546	0.563	0.750	17.941	1.252	9.361	13.871	17.617
7	0.550	0.634	6.301	0.652	14.869	0.485	0.564	4.280	1.053	5.835	24.786	22.822
8	0.518	0.574	17.499	0.592	4.013	4.821	0.370	1.634	0.724	8.190	15.771	8.668
9	38.781	0.529	13.351	0.833	14.018	6.898	0.505	1.105	0.553	4.630	48.507	4.552
10	17.341	0.497	5.337	0.620	40.429	5.441	0.476	0.805	0.468	2.895	14.602	30.996
11	13.415	0.458	4.795	0.786	9.089	1.468	0.335	0.622	0.511	1.730	7.635	10.470
12	34.120	0.438	4.805	0.927	25.575	5.166	0.271	0.505	0.469	1.125	7.896	35.939
13	30.040	0.472	7.310	0.701	19.206	1.825	0.250	34.987	0.393	1.010	17.698	7.138
14	20.576	0.401	22.492	0.613	5.710	1.165	0.557	6.530	0.362	3.426	15.739	5.979
15	3.156	0.402	34.540	0.521	2.614	0.810	0.578	16.042	0.343	1.466	29.375	4.899
16	1.522	0.400	15.711	0.494	1.643	0.672	3.535	5.213	0.318	2.610	15.076	7.553
17	8.010	0.499	4.948	0.485	23.282	2.440	4.982	1.683	0.311	3.476	9.055	28.203
18	9.063	0.449	5.775	0.495	21.725	1.106	1.107	1.123	0.290	9.376	5.279	6.390
19	5.847	0.372	5.452	3.001	3.593	0.739	3.082	2.999	0.481	10.647	4.832	3.500
20	34.603	0.356	15.666	3.920	8.738	0.546	1.944	1.359	0.677	16.525	2.755	2.380
21	7.182	0.333	33.528	1.373	13.003	0.423	1.267	0.986	5.129	10.158	5.349	1.858
22	8.019	0.371	56.887	1.177	6.281	0.314	0.892	0.720	6.511	5.793	31.259	1.431
23	3.610	0.291	5.514	2.213	9.889	0.294	0.623	0.617	1.895	34.538	17.778	1.583
24	1.581	0.351	3.687	1.434	21.148	0.500	1.265	0.522	1.014	10.359	38.163	39.062
25	1.165	0.273	3.827	1.298	22.052	0.973	1.477	0.446	0.709	7.116	14.003	6.149
26	2.808	0.248	4.370	1.810	17.973	0.508	11.784	0.381	0.937	7.754	8.288	5.668
27	2.331	0.297	7.532	2.579	16.940	0.353	12.376	0.396	4.356	11.358	8.820	19.616
28	1.344	0.242	3.595	5.110	3.734	0.289	4.637	0.381	19.548	13.032	6.418	87.550
29	1.192		6.254	10.970	1.952	0.240	2.510	0.340	4.662	36.094	7.673	5.916
30	1.654		3.376	24.476	2.690	0.196	10.584	0.310	1.569	17.469	14.121	12.341
31	1.220		1.985		2.050		5.835	0.735		3.759		4.892
Average	8.242	0.489	11.750	2.472	10.980	1.491	2.438	4.601	2.104	8.196	14.670	15.740
Lowest	0.441	0.242	0.196	0.485	1.643	0.196	0.157	0.310	0.290	1.010	1.797	1.431
Highest	38.781	0.941	56.887	24.476	40.429	6.898	12.376	34.987	19.548	36.094	48.507	87.550
Peak flow	172.885	1.105	141.229	59.258	80.482	20.321	49.055	213.123	45.723	120.267	187.158	182.216
Day of peak	10	1	23	30	11	9	27	14	29	30	10	29
Monthly total (million cu m)	22.08	1.18	31.46	6.41	29.41	3.87	6.53	12.32	5.45	21.95	38.03	42.16
Runoff (mm)	275	15	392	80	366	48	81	153	68	273	474	525
Rainfall (mm)	378	11	475	109	439	85	158	215	127	403	614	631

Statistics of monthly data for previous record (Oct 1970 to Dec 1985—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	8.649	5.261	5.643	2.939	2.551	2.436	2.528	3.340	6.755	7.236	8.852	8.072
	Low	1.926	1.840	0.853	0.408	0.133	0.328	0.634	0.339	0.751	1.362	3.326	1.416
	(year)	1985	1975	1975	1974	1980	1977	1984	1983	1972	1974	1983	1981
	High	19.830	8.387	11.360	6.325	6.422	5.609	7.152	10.510	11.210	16.050	13.830	15.650
	(year)	1974	1982	1979	1977	1976	1973	1985	1985	1981	1983	1978	1974
Runoff:	Avg.	289	160	188	95	85	79	84	111	218	241	286	269
	Low	64	55	28	13	4	11	21	11	24	45	107	47
	High	655	253	379	204	214	181	239	351	362	535	446	522
Rainfall:	Avg.	357	199	233	123	131	146	162	181	310	310	366	341
	Low	93	79	100	15	19	67	66	42	40	100	117	111
	High	715	310	388	261	288	249	329	507	468	645	557	637

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	7.003		5.357		131
Lowest yearly mean			4.440	1972	
Highest yearly mean			6.474	1982	
Lowest monthly mean	0.489	Feb	0.133	May 1980	
Highest monthly mean	15.740	Dec	19.630	Jan 1974	
Lowest daily mean	0.157	2 Jul	0.032	12 Jul 1977	
Highest daily mean	87.550	28 Dec	113.422	2 Mar 1979	
Peak	213.123	14 Aug	226.684	22 Oct 1971	
10 %ile	19.620		14.930		131
50 %ile	2.617		2.044		128
95 %ile	0.310		0.207		150
Annual total (million cu m)	220.80		169.10		131
Annual runoff (mm)	2750		2105		131
Annual rainfall (mm)	3645		2859		127
[1941-70 rainfall average (mm)			2732]		

Factors affecting flow regime

Station and catchment description

Velocity-area station with artificial low flow control (long broad-crested weir with rectangular low flow notch) - installed 1975. Damage to part of the high flow crest results in a small discharge bypassing the central notch. All but very high flows contained. No significant abstractions or discharges. Very responsive flow regime. A very wet mountainous catchment developed on ancient metamorphic formations - some Drift cover.

093001 Carron at New Kelso 1986

Measuring authority: HRPB
First year: 1979
Grid reference: 18 (NG) 942 429
Level stn. (m OD): 5.60
Catchment area (sq km): 137.8
Max alt. (m OD): 1053

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.154	3.025	0.696	4.442	16.711	8.915	0.814	6.908	6.999	13.893	8.258	35.258
2	6.365	2.697	0.692	3.994	6.481	6.429	0.803	13.268	4.661	7.959	5.727	62.367
3	4.265	2.475	1.817	3.753	4.471	7.391	0.862	10.321	3.281	5.382	8.967	54.840
4	2.929	2.265	67.192	3.365	4.093	7.204	2.910	7.053	5.240	3.994	36.787	25.209
5	2.458	2.061	33.022	2.929	3.583	5.004	5.072	6.853	5.820	4.291	51.903	22.890
6	1.917	1.822	16.364	2.624	3.207	3.587	3.365	4.748	3.568	15.079	13.871	16.347
7	1.669	1.672	12.947	2.337	6.966	2.860	4.409	3.939	2.835	22.486	29.276	42.961
8	1.631	1.586	12.601	2.201	12.810	3.151	3.278	3.298	2.660	10.527	16.618	13.203
9	17.776	1.508	18.780	2.196	13.935	9.411	2.594	2.662	2.657	10.974	41.165	7.706
10	29.659	1.427	14.988	1.957	34.527	6.855	2.520	2.221	2.742	14.506	49.698	7.928
11	17.250	1.368	9.011	3.427	28.724	5.791	2.076	1.929	2.625	8.608	17.708	16.269
12	37.497	1.269	8.962	4.087	13.687	4.479	1.691	1.806	2.733	4.827	8.240	14.336
13	52.595	1.121	5.526	3.344	18.666	4.048	1.511	3.844	2.458	3.492	5.393	14.509
14	50.511	1.185	10.239	2.933	10.569	3.242	1.761	8.792	3.400	5.097	7.761	6.755
15	17.304	1.096	12.828	2.427	5.770	2.731	2.998	8.393	6.117	6.665	16.485	9.983
16	8.584	1.085	12.354	2.083	5.436	2.447	5.044	10.457	4.790	12.213	29.560	10.080
17	17.520	0.984	8.765	1.884	4.212	2.429	20.533	5.895	4.465	11.318	14.571	45.993
18	20.829	0.968	8.057	1.817	26.764	2.167	6.994	4.193	3.185	28.018	12.507	18.533
19	9.704	0.942	5.382	2.705	16.192	1.898	5.403	3.567	3.335	21.411	11.894	10.014
20	56.733	0.952	16.385	7.888	10.603	1.696	5.245	3.213	7.739	14.178	10.096	13.064
21	18.062	0.907	33.928	5.160	12.631	1.475	4.879	2.610	19.766	14.235	7.027	13.902
22	13.288	0.890	103.091	3.479	22.456	1.308	8.400	2.122	32.247	15.462	41.884	7.324
23	14.959	0.857	19.478	3.547	20.385	1.184	8.035	1.851	12.630	15.195	43.691	9.313
24	7.260	0.871	10.940	3.532	24.156	1.120	9.157	1.660	6.018	14.666	50.001	87.668
25	4.586	0.807	12.835	3.540	23.514	1.092	12.116	1.537	4.100	23.987	59.981	27.352
26	10.297	0.742	11.893	8.389	19.422	1.073	9.070	1.362	3.794	19.467	25.830	11.466
27	12.870	0.775	23.466	6.098	19.744	1.017	19.531	1.416	8.434	41.795	25.217	23.427
28	8.685	0.762	16.185	7.641	13.540	0.937	7.308	2.222	19.633	19.219	23.801	82.047
29	4.489		11.690	6.618	10.306	0.895	4.228	2.965	16.758	32.443	16.208	18.169
30	4.465		8.057	33.313	12.810	0.827	3.330	2.685	7.884	59.961	49.842	10.911
31	3.616		5.217		11.301		6.006	9.748		19.438		7.009
Average	14.930	1.361	17.210	4.790	14.120	3.422	5.547	4.630	7.086	16.150	24.670	24.090
Lowest	1.631	0.742	0.692	1.817	3.207	0.827	0.803	1.362	2.458	3.492	5.393	6.755
Highest	56.733	3.025	103.091	33.313	34.527	9.411	20.533	13.268	32.247	59.961	59.981	87.668
Peak flow	88.798	3.252	181.637	42.432	62.314	16.392	30.158	25.103	44.353	91.946	129.599	153.780
Day of peak	21	1	23	30	11	10	18	16	23	31	5	25
Monthly total (million cu m)	40.00	3.29	46.08	12.42	37.81	8.87	14.86	12.40	18.37	43.27	63.93	64.53
Runoff (mm)	290	24	334	90	274	64	108	90	133	314	464	468
Rainfall (mm)	377	6	372	97	295	56	167	133	150	330	523	546

Statistics of monthly data for previous record (Jan 1979 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	13.940	8.872	11.000	7.333	3.945	4.635	5.855	7.911	15.280	14.090	17.280	18.910
	Low	6.148	5.368	4.104	2.863	0.698	0.921	2.426	2.703	10.700	6.332	8.851	5.646
	(year)	1985	1983	1980	1980	1980	1982	1984	1984	1984	1979	1985	1981
	High	28.470	13.610	18.250	13.440	8.894	8.623	10.530	15.070	19.100	24.070	31.120	30.710
	(year)	1983	1981	1983	1984	1979	1980	1985	1985	1980	1983	1981	1983
Runoff:	Avg.	271	157	214	138	77	87	114	154	287	274	325	368
	Low	120	94	80	54	14	17	47	53	201	123	166	110
	High	553	239	355	253	173	162	205	293	359	468	585	597
Rainfall:	Avg.	296	149	238	135	96	142	150	187	343	333	358	371
	Low	125	98	95	70	38	28	96	85	259	182	133	124
	High	553	225	397	217	189	275	248	321	425	532	629	517

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	11.600		10.760		108
Lowest yearly mean			9.152	1984	
Highest yearly mean			12.770	1983	
Lowest monthly mean	1.361	Feb	0.698	May 1980	
Highest monthly mean	24.670	Nov	31.120	Nov 1981	
Lowest daily mean	0.692	2 Mar	0.425	27 Jun 1982	
Highest daily mean	103.091	22 Mar	201.081	31 Dec 1983	
Peak	181.637	23 Mar	295.541	31 Dec 1983	
10 %ile	26.880		26.760		100
50 %ile	6.890		5.283		130
95 %ile	0.971		0.981		99
Annual total (million cu m)	365.80		339.60		108
Annual runoff (mm)	2655		2464		108
Annual rainfall (mm)	3052		2798		109
[1941-70 rainfall average (mm)			]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

40m wide river section with floodbank on right bank. Any bypassing in extreme floods will be over 30m wide floodplain on left bank. Unstable gravel control requires regular calibration of low flow range. Adequately gauged to bankfull. Computed flows are 100% natural. 70% of catchment drains through Loch Dughaill with little additional surface storage. Typical mix of rough grazing and moorland. One of the wetter Highland catchments currently gauged.

203010 Blackwater at Maydown Bridge 1986

Measuring authority: DOEN
First year: 1970

Grid reference: 23 (IH) 820 519
Level stn (m OD): 15 00

Catchment area (sq km): 951 4
Max alt (m OD): 362

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	27.180	17 929	2 550	22 589	15 702	20 507	3 093	6.924	9 100	1 549	62 836	14 273
2	39 689	15.094	2 340	18 735	10 699	15 493	3 169	20 663	7 615	1 397	44 508	14 016
3	29 393	13 429	2 439	14 850	13 472	12 090	2 408	11 368	7 170	1.347	28.963	22 641
4	30 393	12 225	6 661	12.141	22 435	10 048	2 498	10 625	6 320	1 351	21 096	33 135
5	39 100	11 468	16 566	10 565	21 552	8 492	2 460	18 431	5 478	1 369	18 659	52 459
6	31 941	10 416	11 656	9 261	15 961	6 947	2 401	58 229	4 929	1 389	17 418	35 132
7	29 367	9 716	8 741	8 866	11 598	6 287	2.252	52 625	4 493	1 386	28 052	45 646
8	34 041	9 228	7 085	8 240	9 866	5 981	1 685	34 020	4 014	1 381	51 379	47.588
9	35 657	8 878	7 374	7 545	8 950	6 871	1 527	16 117	3 466	1 381	41 979	42 184
10	39 378	8 460	7 563	6 734	11 173	6 600	1 648	10 516	3.300	1 373	38 845	37.945
11	41.191	7.695	7 345	6 157	11 902	5 784	2 366	8 320	3 069	1 353	24 808	65 391
12	45.257	7 280	13 328	6 056	18.191	5 011	2 661	6 590	2 736	1 347	18 256	53 848
13	46.611	6.854	10 830	6.386	16 148	4.663	3 074	19 154	2 670	1 347	18 215	52 687
14	54.806	6 392	8 326	13 747	21 504	4 337	2 859	32 255	2 600	1 291	18 736	38 973
15	56.467	5 945	8 599	88 016	18 283	3.981	2 866	28.046	2 395	1 242	33 293	63 843
16	47.750	5 533	21 675	100 476	12 432	3 152	3 521	18 385	2.135	1 275	73 602	59 742
17	47 468	5 337	14 629	93 784	12 271	3 298	2 981	12 799	2 062	1 342	61 915	66 394
18	51 358	4 717	10 546	63 264	15 444	3 306	2 555	9 710	1 995	1 501	51 815	68 957
19	79 902	4 357	9.405	59 170	11 541	3 205	2 161	7 682	1 816	5 639	52 426	69 446
20	78 105	4 170	22 441	57 264	9 247	2.697	2 055	6 653	1 755	15 026	36 631	62 766
21	64 167	3 685	27 238	44 965	10 615	2 446	1 914	6 187	1 736	19.420	28 095	49 148
22	57 693	3 544	33 361	32 639	12 590	2 442	1 632	10 608	1 754	23 609	47 490	34 597
23	61 936	3.474	58 762	23 069	11 696	2 414	1 530	9 539	1 709	28 710	61 038	26 626
24	52.467	3 313	56 611	16 812	13 049	2 430	1 514	6 967	1 668	21 461	52 822	24 270
25	41.758	3 210	52 202	13 447	31 984	2 729	1 508	24 014	1 649	50 897	64 923	27 095
26	38 394	3 308	47 694	11 942	43 968	2 645	1 494	72 809	1 639	36 707	56 297	21 411
27	42.723	2 709	47 005	11 561	35 740	2 659	1 439	52 765	1 632	32 618	40 471	19 642
28	36 877	2 841	37 642	10.981	28 701	3 900	1 979	31 865	1 615	32 435	27 323	20 761
29	27 912		29 933	10 195	20 657	3 194	4 605	18 988	1 587	29 643	20 096	29 166
30	23 198		23.880	16 134	20 621	2 942	5 295	13 515	1 652	22 780	16 529	51 998
31	21 800		20 883		29 344		7 649	10 598		32 746		48 784
Average	43 680	7 186	20 490	26 850	17 660	5 552	2 606	20 870	3 192	12 140	38 620	41 950
Lowest:	21 800	2.709	2 340	6 056	8 950	2 414	1 439	6 187	1 587	1 242	16 529	14 016
Highest	79.902	17 929	58 762	100 476	43 968	20 507	7 649	72 809	9 100	50 897	73 602	69 446
Peak flow	82 450	19.836	60 130	112 092	47 076	24 429	9 524	80 054	9 651	60 018	76 411	70 929
Day of peak	19	1	23	15	26	1	31	26	1	31	16	18
Monthly total (million cu m)	117 00	17 38	54 89	69 60	47 29	14 39	6 98	55 90	8 27	32.51	100 10	112 40
Runoff (mm)	123	18	58	73	50	15	7	59	9	34	105	118
Rainfall (mm)	133	4	107	122	117	43	61	138	-	131	114	143

Statistics of monthly data for previous record (Sep 1970 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	32 550	26 260	21 130	11 000	8 138	5 548	3 728	6 768	10 640	16 810	26 520	30 200
	Low	18 050	12 970	8 770	3 439	1 368	0 921	0 860	0 565	1 920	2 163	8 857	10 570
	(year)	1971	1979	1973	1974	1984	1975	1984	1975	1972	1972	1983	1971
	High	56 780	52.240	43 250	26 730	19 810	17 540	12 700	32 480	30 110	31 470	51 680	50 390
	(year)	1984	1977	1981	1972	1983	1981	1985	1985	1985	1980	1970	1978
Runoff:	Avg	92	67	59	30	23	15	10	19	29	47	72	85
	Low	51	33	25	9	4	3	2	2	5	6	24	30
	High	160	133	122	73	56	48	36	91	82	89	141	142
Rainfall:	Avg	110	77	82	50	62	59	64	73	93	89	101	96
	Low	64	28	33	14	19	19	17	15	9	43	38	30
	High	185	158	142	84	124	111	115	160	153	168	146	164

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre 1986
Mean flow (m^3s^{-1})	20 190		16 570		122
Lowest yearly mean			9 709	1975	
Highest yearly mean			19 720	1982	
Lowest monthly mean	2 606	Jul	0 565	Aug 1975	
Highest monthly mean	43 680	Jan	56 780	Jan 1984	
Lowest daily mean	1 242	15 Oct	0 026	5 Sep 1976	
Highest daily mean	100 476	16 Apr	100 913	5 Jan 1982	
Peak	112 092	15 Apr	107 900	26 Jul 1985	
10 %ile	52 330		43 300		121
50 %ile	11 990		9 584		125
95 %ile	1 498		0 879		170
Annual total (million cu m)	636 70		522 90		122
Annual runoff (mm)	669		550		122
Annual rainfall (mm)	1120		956		117
[1941-70 rainfall average (mm)			1005]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow

Station and catchment description

Velocity-area station with cableway and natural control. A substantial portion of the catchment area is in the Irish Republic where some groundwater may be abstracted but its hydrological significance is uncertain. Geology: Carboniferous Limestone and Millstone Grit with sandstones overlain by substantial amounts of till. A predominantly rural catchment with limited afforestation. Monaghan Town (pop. 5,000) - in the Irish Republic - is the only significant urban centre.

205005 Ravernet at Ravernet 1986

Measuring authority: DOEN
First year: 1972
Grid reference: 33 (IJ) 267 613
Level stn (m OD) 31 00
Catchment area (sq km) 69 5
Max alt (m OD) 163

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5 788	1 626	0 178	1 575	0 759	0 476	0 080	0 407	1 255	0 078	0 941	0 861
2	6 070	1 379	0.185	1 517	0 564	0 440	0 069	0 604	1 065	0 068	0 602	0 814
3	3 364	1 247	0 262	1 294	0 550	0 378	0 061	0 262	0 923	0 063	0 522	0 851
4	4 166	1 105	0 485	1 121	0 668	0 346	0 062	0 188	0 812	0 063	0 466	1 511
5	4 686	1 001	0 469	1 011	0 728	0 308	0 172	1 172	0 673	0 060	0 441	1 804
6	4.163	0 877	0 347	0 906	0 689	0 278	0 140	3 438	0 532	0 061	0 381	1 376
7	8 007	0 800	0 307	0 807	0 565	0 255	0 108	1 694	0 463	0 062	0 716	2 089
8	8.042	0 753	0.290	0 749	0 499	0 252	0 102	1 027	0 415	0 060	1 061	3 706
9	6.359	0.716	0 282	0 669	0 469	0 279	0 099	0 820	0 383	0 048	0 851	2 379
10	5 063	0 636	0 278	0 519	0 516	0 281	0 096	0 723	0 369	0 049	0 621	2 771
11	3 981	0 529	0 283	0 476	0 478	0 290	0 091	0 600	0 367	0 046	0 546	4 098
12	3 461	0 472	0 281	0 475	0 510	0 258	0 088	0 495	0 338	0 041	0 522	3 721
13	3.385	0.445	0 233	0.460	0 513	0.215	0 086	0.560	0 310	0 039	0 517	3 475
14	4 363	0 432	0 229	2 651	0 653	0 204	0 073	0 720	0 279	0 039	7 517	3 158
15	4.708	0.412	0 253	30.870	0 753	0.193	0 069	0 715	0 240	0 039	3 843	5 085
16	4.052	0.380	0 513	17.304	0 589	0.238	0.063	0 683	0 235	0 039	3 877	3 571
17	4 617	0 344	0 539	8 779	0 727	0 549	0 067	0 519	0 217	0 040	2 661	4 184
18	6 082	0 325	0 544	5 895	0 804	0 288	0 065	0 456	0 201	0 043	3 742	3 044
19	9 488	0.308	0 596	5.871	0.734	0 217	0 053	0 428	0.198	0 044	3 155	3 494
20	4 755	0 254	1 062	5 207	0 688	0 179	0 050	0 391	0 192	0 049	2 201	3 117
21	3 404	0 231	1 234	3 874	0 598	0 163	0 048	0 391	0 175	0 074	2 425	2 537
22	3 038	0 249	1 565	2 930	0 499	0 152	0 045	0 624	0 159	0 081	2 926	2 001
23	2 767	0 217	2 489	2 154	0 462	0 138	0 041	0 524	0 140	0 076	2 948	1 723
24	2 398	0 223	2 658	0 834	0 438	0 138	0 041	0 441	0 126	0 107	2 284	1 572
25	2 129	0 195	2 311	0 806	0 466	0 128	0 041	8 400	0 103	0 251	2 119	1 400
26	2 345	0 176	2 118	0 801	0 499	0 126	0 041	18 207	0 100	0 187	1 738	1 215
27	2 941	0 224	2 007	0 801	0 457	0 122	0 040	5 284	0 098	0 180	1 522	1 054
28	2 180	0 203	1 947	0 801	0 451	0 104	0 064	2 901	0 094	0 251	1 232	1 012
29	1 708		2.040	0 801	0 429	0 098	0 167	2 202	0 089	0 272	1 097	1 357
30	2 379		1.837	0 801	0 433	0 097	0 106	1 759	0 083	0 220	0 974	2 552
31	2 003		1 635		0 476		0 085	1 470		0 609		2 268
Average	4.255	0 563	0 950	3 425	0 570	0 240	0 078	1 874	0 354	0 108	1 815	2 381
Lowest	1 708	0 176	0 178	0 460	0 429	0 097	0 040	0 188	0 083	0 039	0 381	0 814
Highest	9 488	1 626	2.658	30 870	0 804	0 549	0 172	18 207	1 255	0 609	7 517	5 085
Peak flow	15 856	1 826	2 967	42 564	0 837	0 923	0 306	36 141	1 399	1 614	15 014	6 851
Day of peak	18	1	24	15	18	17	5	26	1	31	14	14
Monthly total (million cu m)	11.40	1 36	2 54	8 88	1 53	0 62	0 21	5 02	0 92	0 29	4 70	6 38
Runoff (mm)	164	20	37	128	22	9	3	72	13	4	68	92
Rainfall (mm)	140	9	92	117	96	45	54	158	5	71	90	115

Statistics of monthly data for previous record (Aug 1972 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	2 589	2 095	1 436	0 778	0 667	0 428	0 210	0 362	0 710	1 520	1 644	2 570
	Low	1 494	1 000	0 313	0 199	0 055	0 040	0 006	0 008	0 013	0 066	0 285	0 573
	(year)	1983	1975	1973	1982	1984	1975	1984	1976	1977	1972	1983	1975
	High	4 045	5.670	2 543	2 427	2 282	1 593	1 185	3 385	3 355	4 361	4 093	9 416
	(year)	1974	1984	1981	1985	1981	1981	1985	1985	1985	1976	1982	1978
Runoff	Avg.	100	74	55	29	26	16	8	14	26	59	61	99
	Low	58	35	12	7	2	2	0	0	0	3	11	22
	High	156	204	98	91	88	59	46	130	125	168	153	363
Rainfall	Avg	100	61	73	42	66	61	54	69	96	89	83	98
	Low	57	21	21	11	18	22	13	14	9	31	36	22
	High	154	108	114	97	156	127	91	144	160	207	149	268

Summary statistics

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	1 390		1 248		111
Lowest yearly mean			0 724	1975	
Highest yearly mean			2 196	1985	
Lowest monthly mean	0 078	Jul	0 006	Jul 1984	
Highest monthly mean	4 255	Jan	9 416	Dec 1978	
Lowest daily mean	0 039	13 Oct	0 000	4 Sep 1976	
Highest daily mean	30 870	15 Apr	42 383	28 Dec 1978	
Peak	42 564	15 Apr	52 073	28 Dec 1978	
10 %ile	3 614		2 990		121
50 %ile	0 525		0 714		74
95 %ile	0 049		0 022		220
Annual total (million cu m)	43 83		39.39		111
Annual runoff (mm)	631		567		111
Annual rainfall (mm)	992		892		111
(1941-70 rainfall average (mm)			935)		

Factors affecting flow regime

- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Flat V weir installed autumn 1977, width 8 64m. Height of wing walls 2 1m. Theoretical rating applies up to bankfull; exceedence very unlikely. Previous to weir installation rating based on current meterings. Natural flow regime, significant storage in several loughs in the headwaters - their influence on the flow regime is partly counterbalanced by the minimal soil cover in many areas. Geology, quartzite overlain with 'till and rock'. Predominantly a grassland catchment, some limited arable use.

039001 Thames at Kingston 1986

Measuring authority: TWA
First year: 1883
Grid reference: 51 (TQ) 177 698
Level stn (m OD): 4.70
Catchment area (sq km): 9948.0
Max alt (m OD): 330

Daily mean naturalised discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	169 000	212 000	71 100	135 000	87 600	70 000	32 700	30 800	42 800	31 500	54 300	96 100
2	263 000	204 000	73 500	105 000	84 900	70 700	33 200	32 400	37 100	31 300	75 500	98 100
3	359 000	208 000	72 600	102 000	82 800	69 900	38 200	46 600	38 300	34 400	68 200	97 300
4	339 000	199 000	94 500	106 000	80 200	69 200	33 200	58 700	38 100	29 100	63 600	88 600
5	259 000	177 000	126 000	99 300	75 000	58 000	59 000	35 900	37 700	29 400	50 200	87 500
6	242 000	161 000	144 000	88 000	79 800	61 100	47 700	40 400	34 000	29 600	50 000	106 000
7	220 000	135 000	101 000	92 100	74 900	54 300	44 000	35 300	34 400	33 000	46 400	98 600
8	247 000	133 000	90 800	111 000	75 500	55 600	43 000	34 800	30 200	29 700	50 600	108 000
9	272 000	129 000	84 500	113 000	78 200	55 500	42 700	32 600	33 300	29 500	55 400	103 000
10	245 000	110 000	88 900	111 000	73 700	57 000	41 900	33 100	32 300	29 200	54 800	105 000
11	263 000	113 000	86 100	87 400	71 800	64 000	40 700	39 000	32 000	29 400	79 500	98 000
12	235 000	107 000	79 600	87 600	72 600	62 600	40 500	41 900	31 500	27 800	93 800	117 000
13	231 000	107 000	78 200	86 400	66 600	58 800	39 600	39 300	38 600	27 200	84 500	176 000
14	185 000	101 000	73 000	95 800	61 700	52 000	41 000	41 500	73 800	34 100	111 000	178 000
15	157 000	101 000	72 100	136 000	95 400	51 000	41 300	33 900	58 900	46 800	167 000	184 000
16	142 000	97 900	64 300	170 000	96 500	45 100	40 400	30 900	53 900	40 900	145 000	241 000
17	121 000	97 000	69 500	183 000	74 400	45 600	41 200	33 000	38 400	33 600	121 000	208 000
18	125 000	90 700	71 900	167 000	76 900	45 100	33 800	35 300	43 600	29 700	138 000	221 000
19	126 000	91 300	84 900	149 000	81 400	46 500	30 400	37 200	39 300	35 400	218 000	193 000
20	124 000	89 200	85 500	170 000	105 000	46 400	33 500	36 300	33 400	53 300	248 000	151 000
21	126 000	84 000	87 200	196 000	143 000	43 100	35 000	32 300	36 000	60 600	233 000	141 000
22	156 000	78 800	84 800	189 000	136 000	42 700	33 600	39 200	36 300	82 300	231 000	120 000
23	200 000	81 800	79 600	170 000	107 000	44 900	33 200	42 100	35 600	64 300	198 000	118 000
24	173 000	81 300	110 000	161 000	80 800	46 800	34 100	46 000	33 800	56 800	193 000	102 000
25	132 000	68 900	135 000	135 000	84 300	54 700	33 800	53 800	34 100	55 600	168 000	136 000
26	114 000	75 800	108 000	126 000	68 300	43 300	32 700	105 000	31 800	48 500	161 000	167 000
27	116 000	73 700	79 000	109 000	68 000	41 300	31 600	88 200	32 600	50 000	147 000	147 000
28	145 000	69 700	115 000	104 000	69 400	39 400	32 700	69 600	31 900	55 800	137 000	129 000
29	228 000		150 000	83 500	68 400	35 200	34 300	45 900	28 100	51 900	110 000	114 000
30	285 000		177 000	96 200	67 500	34 500	30 900	55 400	30 700	56 000	106 000	125 000
31	235 000		143 000		68 500		31 600	40 700		47 600		179 000
Average	201 100	117.000	96 150	125.500	82 450	52 140	37 470	44 100	37 750	41 750	122 000	136 600
Lowest	114 000	68.900	64 300	83 500	61 700	34 500	30 400	30 800	28 100	27 200	46 400	87 500
Highest	359.000	212 000	177 000	196 000	143 000	70 700	59 000	105 000	73 800	82 300	248 000	241 000
Monthly total (million cu m)	538 60	283 10	257 50	325 20	220 80	135 20	100 40	118 10	97 85	111 80	316 10	365 70
Naturalised runoff (mm)	54	28	26	33	22	14	10	12	10	11	32	37
Rainfall (mm)	100	45	60	66	71	22		105	32		99	87

Statistics of monthly data for previous record (Jan 1883 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean naturalised flows	Avg.	137 500	134 700	116 100	85 510	65 110	48 760	35 040	32 550	34 350	49 440	83 160	112 800
	low	32 200	25 080	27 340	26 520	18 200	13 470	10 770	11 030	11 250	15 120	17 730	22 470
	(year)	1905	1905	1944	1976	1944	1944	1921	1976	1898	1934	1921	1921
	High	332 900	348 100	370 900	199 800	181 300	178 700	88 840	88 770	139 400	185 300	339 600	343 900
	(year)	1915	1904	1947	1951	1932	1903	1968	1931	1968	1903	1894	1929
naturalised runoff	avg	37	33	31	22	18	13	9	9	9	13	22	30
	Low	9	6	7	7	5	4	3	3	3	4	5	6
	High	90	88	100	52	49	47	24	24	36	50	88	93
Rainfall	Avg	64	49	52	48	55	52	58	64	58	72	72	73
	Low	18	3	3	3	8	3	8	3	3	5	8	13
	High	137	127	142	104	137	137	130	147	157	188	188	185

Summary statistics
(naturalised flows)

	For 1986		For record preceding 1986		1986 As % of pre-1986
Mean flow (m^3s^{-1})	91 020		77 650		117
Lowest yearly mean			30 940	1934	
Highest yearly mean			131 800	1951	
Lowest monthly mean	37 470	Jul	10 770	Jul 1921	
Highest monthly mean	201 100	Jan	370 900	Mar 1947	
Lowest daily mean	27 200	13 Oct	7 370	9 Jul 1934	
Highest daily mean	359 000	3 Jan	1065 000	18 Nov 1894	
10 %ile	178 500		172 600		103
50 %ile	74 500		53 220		140
95 %ile	31 330		18 210		172
Annual total (million cu m)	2870 00		2450 00		117
Annual runoff (mm)	289		246		117
Annual rainfall (mm)	777		717		108
(1941-70 rainfall average (mm)			723)		

Factors affecting flow regime

- Reservoir(s) in catchment
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Comment
The ultrasonic gauging station was not operational between 26/12/85 and 18/1/86. Over this period flows were derived using the Teddington Weir record.

Station and catchment description
Ultrasonic gauging station commissioned in 1974; multi-path operation from 1986. Full range. Pre-1974 flows derived from Teddington weir complex (70m wide); significant structural improvements have been made since 1883. US data led to revision of 1951-74 flows (in 1981). Substantial baseflow - sustained from the Chalk and the Oolites. Daily naturalised flows available for POR - allowance is made for major PWS abstractions only. Diverse topography, geology and land use which has undergone important historical changes.

Part (ii) - The monthly flow data

The introductory information (measuring authority etc.) is as described in Part (i).

Hydrometric statistics for the year

The monthly average, peak flow, runoff and rainfall figures are equivalent to the summary information following the daily mean gauged discharges in Part (i). Because of the rounding of monthly runoff values, the runoff for the year may differ slightly from the sum of the individual monthly totals.

Monthly and yearly statistics for previous record

Monthly mean flows (Average, Low and High) and the monthly rainfall and runoff figures are equivalent to those presented in Part (i). Again, due to the rounding of monthly runoff values, the average runoff for the year derived from the previous record may differ slightly from the sum of the individual monthly totals. The peak flow is the highest discharge, in cubic metres per second, for each month. For many stations the archived series of monthly instantaneous maximum flows, from which the preceding record peak is abstracted, is incomplete, particularly for the earlier years, and certain of the peak flows are known to be of limited accuracy. An examination of the quality of the peak flow figures is underway and significant revision may be expected as this review proceeds. The figures are published primarily to provide a guide to the range of river flows experienced throughout the year at the featured gauging stations.

Factors affecting flow regime

Code letters are used as described in Part (i)

Station type

The station type is coded by the list of abbreviations given below - two abbreviations may be applied to each station relating to the measurement of lower or higher flows.

B	Broad-crested weir
C	Crump (triangular profile) single crest weir
CB	Compound broad-crested weir. The compounding may include a mixture of types such as rectangular profiles, flumes and Flat-Vs and with or without divide walls
CC	Compound Crump weir
EM	Electromagnetic gauging station
EW	Essex weir (simple Crump weir modified with angled, sloping, triangular profile flanking crests) in trapezoidal channel
FL	Flume
FV	Flat-V triangular profile weir
MIS	Miscellaneous method
TP	Rectangular thin-plate weir
US	Ultrasonic gauging station
VA	Velocity-area gauging station
VN	Triangular (V notch) thin-plate weir

003003 Oykel at Easter Turnaig 1986

Measuring authority: HRPB
First year: 1977
Grid reference: 29 (NC) 403 001
Level stn. (m OD): 15.60
Catchment area (sq km): 330.7
Max alt. (m OD): 998

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	28.630	2.376	26.490	5.991	12.440	4.255	6.709	9.432	14.540	20.390	29.770	34.300	**16.277**
(m^3s^{-1})	Peak	181.92	5.43	266.61	23.65	66.19	49.08	55.75	71.39	66.44	211.26	196.48	309.95	**309.95**
Runoff (mm)		232	17	215	47	101	33	54	76	114	165	233	278	**1566**
Rainfal (mm)		255	21	232	73	167	46	133	126	146	223	276	339	**2037**

Monthly and yearly statistics for previous record (Nov 1977 to Dec 1985)

Mean	Avg	26.540	16.460	19.500	10.540	5.771	6.583	7.648	10.040	23.460	26.770	28.980	24.020	**17.196**
flows	Low	13.550	9.324	6.649	5.445	1.067	0.751	2.853	2.332	17.680	7.328	14.420	8.245	**14.287**
(m^3s^{-1})	High	43.980	25.370	40.740	17.710	14.380	14.140	15.690	22.590	31.870	41.100	49.380	38.710	**20.249**
Peak flow (m^3s^{-1})		510.66	466.46	470.84	208.27	129.64	169.90	191.07	196.76	423.38	847.50	407.70	394.15	**847.50**
Runoff (mm)		215	122	158	83	47	52	62	81	184	217	227	195	**1641**
Rainfal (mm)		242	100	180	94	72	106	102	132	240	255	276	220	**2019**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 95% of previous mean
rainfal 101%

004001 Conon at Moy Bridge 1986

Measuring authority: HRPB
First year: 1953
Grid reference: 28 (NH) 482 547
Level stn. (m OD): 10.00
Catchment area (sq km): 961.8
Max alt. (m OD): 1052

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	94.830	36.940	69.120	32.000	52.920	37.460	11.150	33.150	32.990	49.110	90.760	110.300	**54.227**
(m^3s^{-1})	Peak	249.23	131.65	248.72	77.35	83.90	83.63	53.89	59.88	80.90	229.76	185.12	265.01	**265.01**
Runoff (mm)		264	93	192	86	147	101	31	92	89	137	245	307	**1785**
Rainfal (mm)		294	10	242	67	186	40	106	111	92	217	296	355	**2018**

Monthly and yearly statistics for previous record (Oct 1947 to Dec 1985—incomplete or missing months total 5.7 years)

Mean	Avg	65.860	57.810	54.790	40.740	31.550	21.310	20.220	26.640	40.350	53.740	62.920	72.010	**45.617**
flows	Low	31.690	25.810	18.670	13.940	10.940	8.861	2.959	8.162	12.510	23.090	24.080	27.970	**29.991**
(m^3s^{-1})	High	138.300	121.000	127.900	75.730	53.050	47.560	36.690	45.140	94.870	94.030	121.700	165.100	**59.238**
Peak flow (m^3s^{-1})		694.00	467.20	362.90	203.90	232.20	165.20	247.41	254.90	223.72	324.80	411.85	1076.00	**1076.00**
Runoff (mm)		183	147	153	110	88	57	56	74	109	150	170	201	**1497**
Rainfall (mm)*		189	127	152	108	105	98	107	126	170	217	206	224	**1829**

*(1953-1985)

Factors affecting flow regime: H
Station type: VA

1986 runoff is 119% of previous mean
rainfall 110%

007002 Findhorn at Forres 1986

Measuring authority: HRPB
First year: 1958
Grid reference: 38 (NJ) 018 583
Level stn. (m OD): 9.60
Catchment area (sq km): 781.9
Max alt. (m OD): 941

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	27.140	6.300	30.060	17.280	25.370	14.210	5.562	19.660	9.469	14.180	20.950	33.510	**18.641**
(m^3s^{-1})	Peak	155.79	9.89	173.09	82.27	86.08	126.97	150.95	127.26	29.96	185.24	154.17	228.12	**228.12**
Runoff (mm)		93	19	103	57	87	47	19	67	31	49	69	115	**757**
Rainfall (mm)		183	26	109	59	93	65	70	124	46	102	99	181	**1157**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1985)

Mean	Avg	24.340	20.000	22.310	21.290	15.490	9.892	9.665	13.610	15.700	21.120	23.880	25.260	**18.545**
flows	Low	9.429	5.259	8.615	5.560	3.836	3.321	2.744	2.478	2.863	3.547	9.300	8.332	**11.994**
(m^3s^{-1})	High	51.190	44.700	54.320	54.170	41.990	41.900	24.650	58.840	37.870	49.540	39.710	61.550	**25.482**
Peak flow (m^3s^{-1})		361.11	537.70	410.00	173.47	294.32	430.20	469.14	2410.00	861.10	512.03	465.20	616.90	**2410.00**
Runoff (mm)		83	62	76	71	53	33	33	47	52	72	79	87	**748**
Rainfall (mm)		102	62	82	64	73	77	85	104	104	111	119	106	**1089**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 101% of previous mean
rainfall 106%

008007 Spey at Invertruim 1986

Measuring authority: NERPB
First year: 1952
Grid reference: 27 (NN) 687 962
Level stn. (m OD): 242.50
Catchment area (sq km): 400.4
Max alt. (m OD): 951

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	10.150	2.204	11.280	2.942	4.400	2.728	1.418	3.167	1.710	6.696	9.843	16.330	**6.072**
(m^3s^{-1})	Peak	77.82	3.77	128.70	9.97	20.23	9.79	7.73	18.77	2.89	76.10	52.60	114.80	**128.70**
Runoff (mm)		68	13	75	19	29	18	9	21	11	45	64	109	**482**
Rainfall (mm)		277	13	213	53	180	51	75	108	38	186	274	327	**1795**

Monthly and yearly statistics for previous record (Oct 1952 to Dec 1985)

Mean	Avg	8.801	6.509	6.332	4.223	3.664	2.993	2.876	3.392	4.837	6.908	7.735	9.658	**5.662**
flows	Low	3.314	1.953	2.722	2.075	1.413	1.123	1.042	0.852	1.454	1.638	3.235	3.518	**4.211**
(m^3s^{-1})	High	23.280	21.020	20.600	7.126	6.210	6.269	5.021	7.545	14.650	14.830	15.960	24.970	**8.037**
Peak flow (m^3s^{-1})		153.70	198.20	274.50	60.85	43.92	45.93	72.83	75.00	108.00	106.90	170.60	259.50	**274.50**
Runoff (mm)		59	40	42	27	25	19	19	23	31	46	50	65	**446**
Rainfall (mm)		154	101	114	74	88	77	86	102	137	166	164	176	**1439**

Factors affecting flow regime: H
Station type: VA

1986 runoff is 108% of previous mean
rainfall 125%

009002 Deveron at Muiresk 1986

Measuring authority: NERPB
First year: 1960
Grid reference: 38 (NJ) 705 498
Level stn (m OD): 25.30
Catchment area (sq km): 954.9
Max alt. (m OD): 775

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}):	Avg.	35.620	12.660	24.840	18.280	10.870	11.080	4.611	13.850	8.934	5.871	7.724	18.330	**14.389**
	Peak	130.40	19.27	124.70	65.93	20.66	162.60	16.29	128.50	18.51	14.12	21.25	72.32	**162.60**
Runoff (mm)		100	32	70	50	30	30	13	39	24	16	21	51	**477**
Rainfall (mm)		98	41	29	84	68	58	66	131	57	42	38	110	**822**

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1985)

Mean flows (m^3s^{-1})	Avg	25.830	20.610	20.130	17.420	13.900	8.728	8.023	11.200	11.070	17.540	22.680	24.590	**16.803**
	Low	5.726	5.376	6.735	7.456	5.373	3.935	2.738	2.578	2.907	2.706	6.322	5.184	**8.890**
	High	45.260	38.820	37.190	37.990	46.250	21.770	18.950	36.380	36.540	49.480	56.410	46.390	**23.048**
Peak flow (m^3s^{-1})		214.50	135.20	187.10	131.30	506.60	254.40	222.50	422.90	322.60	332.10	305.60	244.20	**506.60**
Runoff (mm)		72	53	56	47	39	24	23	31	30	49	62	69	**555**
Rainfall (mm)		85	54	70	62	69	63	75	89	84	92	101	88	**932**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 86% of previous mean rainfall 88%

010002 Ugie at Inverugie 1986

Measuring authority: NERPB
First year: 1971
Grid reference: 48 (NK) 101 485
Level stn (m OD): 8.50
Catchment area (sq km): 325.0
Max alt. (m OD): 234

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}):	Avg	11.630	4.997	5.357	3.876	2.844	2.635	1.508	2.770	1.724	1.978	2.750	8.541	**4.217**
	Peak	45.26	8.64	24.42	11.48	5.21	13.00	5.24	12.18	2.83	7.18	9.06	33.14	**45.26**
Runoff (mm)		96	37	44	31	23	21	12	23	14	16	22	70	**410**
Rainfall (mm)		73	37	22	60	55	45	67	95	44	45	39	116	**692**

Monthly and yearly statistics for previous record (Feb 1971 to Dec 1985)

Mean flows (m^3s^{-1})	Avg	8.357	6.498	5.250	3.976	3.159	2.161	1.833	2.013	2.446	4.358	6.980	8.014	**4.580**
	Low	2.285	1.999	1.593	1.246	1.542	0.913	0.904	0.764	0.791	0.869	1.942	1.473	**3.003**
	High	13.270	14.320	9.291	7.464	6.197	4.372	4.487	6.404	7.092	8.075	18.350	13.280	**6.445**
Peak flow (m^3s^{-1})		61.04	83.56	36.61	30.50	31.64	12.70	23.79	20.75	38.80	87.72	106.10	95.52	**106.10**
Runoff (mm)		69	49	43	32	26	17	15	17	20	36	56	66	**445**
Rainfall (mm)		85	44	67	49	51	54	57	60	87	82	99	84	**819**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 92% of previous mean rainfall 84%

011001 Don at Parkhill 1986

Measuring authority: NERPB
First year: 1969
Grid reference: 38 (NJ) 887 141
Level stn (m OD): 32.40
Catchment area (sq km): 1273.0
Max alt. (m OD): 872

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}):	Avg	40.390	19.070	32.310	25.590	19.620	13.380	6.747	12.050	7.721	6.450	8.297	17.750	**17.448**
	Peak	93.82	30.19	68.85	46.74	31.99	57.86	10.92	51.03	12.41	9.52	25.38	59.56	**93.82**
Runoff (mm)		85	36	68	52	41	27	14	25	16	14	17	37	**433**
Rainfall (mm)		106	46	30	86	72	54	52	112	30	35	44	120	**787**

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1985—incomplete or missing months total 0.1 years)

Mean flows (m^3s^{-1})	Avg	31.760	29.870	27.990	25.400	17.470	12.790	11.430	12.720	12.380	20.970	24.760	30.080	**21.432**
	Low	9.453	6.846	6.587	9.317	9.553	6.773	4.335	3.346	4.194	3.631	6.542	7.951	**10.623**
	High	49.160	52.550	49.590	47.220	35.460	29.050	29.270	42.320	38.380	60.580	86.420	57.440	**30.410**
Peak flow (m^3s^{-1})		185.90	165.10	159.80	132.30	110.70	101.60	119.30	251.20	121.20	347.20	215.90	198.30	**347.20**
Runoff (mm)		67	57	59	52	37	26	24	27	25	44	50	63	**531**
Rainfall (mm)		101	56	75	61	65	60	69	73	82	85	94	84	**905**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 81% of previous mean rainfall 87%

013007 North Esk at Logie Mill 1986

Measuring authority: TRPB
First year: 1976
Grid reference: 37 (NO) 699 640
Level stn (m OD): 10.60
Catchment area (sq km): 730.0
Max alt. (m OD): 939

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}):	Avg	27.220	11.100	32.370	22.850	36.420	13.460	4.519	9.791	3.622	4.098	15.120	30.410	**17.540**
	Peak	127.84	19.22	125.91	109.99	167.52	119.91	9.62	50.72	6.51	48.85	121.31	195.30	**195.30**
Runoff (mm)		100	37	119	81	134	48	17	34	13	15	54	112	**762**
Rainfall (mm)		135	50	81	102	152	54	46	103	12	56	105	183	**1079**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1985—incomplete or missing months total 0.1 years)

Mean flows (m^3s^{-1})	Avg	24.210	27.530	31.010	22.950	15.270	9.405	6.602	10.670	12.370	30.740	28.170	33.300	**21.000**
	Low	13.770	9.795	16.450	9.071	6.179	3.684	2.993	2.548	4.748	5.691	5.281	20.790	**15.314**
	High	48.590	45.670	42.750	34.750	32.840	24.300	18.060	35.810	30.540	80.410	91.170	59.880	**24.926**
Peak flow (m^3s^{-1})		240.80	88.31	169.10	111.40	180.80	271.90	133.00	199.20	196.00	97.64	462.10	398.10	**462.10**
Runoff (mm)		89	92	114	82	56	33	24	39	44	113	100	122	**908**
Rainfall (mm)		119	83	117	55	79	67	73	81	120	140	119	134	**1187**

Factors affecting flow regime: S P I
Station type: VA

1986 runoff is 84% of previous mean rainfall 91%

013008 South Esk at Brechin 1986

Measuring authority: TRPB
First year: 1983
Grid reference: 37 (NO) 600 596
Level stn (m OD): 18 00
Catchment area (sq km): 490 0
Max alt (m OD): 958

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	18 120	7 000	18.920	11.710	26 390	8 972	2.876	6 093	2 402	3 487	11 760	20 400	11.511
(m^3s^{-1}):	Peak	76.24	13 13	58 41	52 98	103 75	43.45	7 89	23 50	4 44	26 60	49.48	104 22	104.22
Runoff (mm)		99	35	103	62	144	47	16	33	13	19	62	112	745
Rainfall (mm)		144	55	86	92	167	57	46	100	12	71	120	193	1143

Monthly and yearly statistics for previous record (Jan 1983 to Dec 1985)

Mean	Avg.	16.300	14 830	17.170	16 200	12 810	8 780	4 648	9.548	9.562	10 440	20 100	20.030	13.353
flows	Low	10.160	9 230	9 358	11.510	6 529	3.577	1 712	1 403	3 597	8 922	3.911	17 730	11.397
(m^3s^{-1})	High	22.320	21 550	25.730	20 690	24 340	11 860	8 909	25.140	21.290	12 840	48 150	23 240	14.702
Peak flow (m^3s^{-1})		67.60	72 40	98 91	56 51	59 07	86.79	32 82	127.90	89 54	41 64	172 00	181 10	181:10
Runoff (mm)		89	74	94	86	70	46	25	52	51	57	106	110	861
Rainfall (mm)		148	62	112	62	83	83	63	89	126	98	152	140	1218

Factors affecting flow regime: I
Station type: VA

1986 runoff is 87% of previous mean
rainfall 94%

014001 Eden at Kemback 1986

Measuring authority: TRPB
First year: 1967
Grid reference: 37 (NO) 415 158
Level stn. (m OD): 6.20
Catchment area (sq km): 307 4
Max alt (m OD): 522

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	9.655	4 922	5 033	4 015	5 323	3 164	1 711	1 829	1 416	1 301	2.559	7.746	4.056
(m^3s^{-1}):	Peak	33 80	10 78	19 33	13.58	22.89	11.22	4 15	2 62	2 67	2 53	10.45	25 89	33.80
Runoff (mm)		84	39	44	34	46	27	15	16	12	11	22	67	417
Rainfall (mm)		97	32	49	68	108	59	63	55	28	44	70	140	813

Monthly and yearly statistics for previous record (Oct 1967 to Dec 1985)

Mean	Avg.	6.692	6 422	4.935	3 557	3 033	2.166	1 494	1 694	2.108	3 151	4.832	5 942	3.823
flows	Low	2.546	2 170	1 408	1 199	1 406	1 077	0 914	0 799	0 749	0 833	0 830	1.731	1.446
(m^3s^{-1})	High	10.890	19 460	8 096	7.243	8 335	6 651	3.390	6 038	11.260	6 880	14 440	12.390	5.593
Peak flow (m^3s^{-1})		59 05	71 31	54.89	28 27	47 48	41.93	26.20	17.19	53 64	35.97	39.37	47.82	71.31
Runoff (mm)		58	51	43	30	26	18	13	15	18	27	41	52	393
Rainfall (mm)		83	55	64	42	67	52	58	58	79	74	78	75	785

Factors affecting flow regime: S GEI
Station type: VA

1986 runoff is 106% of previous mean
rainfall 104%

015011 Lyon at Comrie Bridge 1986

Measuring authority: TRPB
First year: 1958
Grid reference: 27 (NN) 786 486
Level stn. (m OD): 92.10
Catchment area (sq km): 391.1
Max alt (m OD): 1215

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	15.940	3 660	21.380	7.030	24 520	7 147	3 750	8.038	2 843	10.390	25 630	32.020	13.529
(m^3s^{-1})	Peak	125 51	5 98	157.00	48 18	124 86	34.33	39 04	110 69	9 08	122 92	153 26	189 57	189 57
Runoff (mm)		109	23	146	47	168	47	26	55	19	71	170	219	1100
Rainfall (mm)		306	19	306	72	310	61	90	142	51	243	418	445	2483

Monthly and yearly statistics for previous record (Jan 1958 to Dec 1985)

Mean	Avg.	17.100	13 440	13 430	10 130	9 443	6 600	6 120	7.450	10.580	14 950	14 680	15.530	11 620
flows	Low	3.596	3 198	4 219	4 002	3.537	3.514	3 062	2 221	2 868	3 662	5 320	6.182	8.330
(m^3s^{-1})	High	43.920	28 580	37.440	17.100	16 560	18 870	20 800	28.940	28 120	29 930	30 550	32.780	19.870
Peak flow (m^3s^{-1})		271 20	149.10	254.70	62 02	104 40	56.93	84.85	128.70	131 40	160 90	270 40	198 00	271.20
Runoff (mm)		117	84	92	67	65	44	42	51	70	102	97	106	938
Rainfall (mm)*		259	127	180	82	103	93	99	113	193	210	247	233	1939

*(1971-1985)

Factors affecting flow regime: H
Station type: VA

1986 runoff is 117% of previous mean
rainfall 127%

016003 Ruchill Water at Cultybraggan 1986

Measuring authority: TRPB
First year: 1970
Grid reference: 27 (NN) 764 204
Level stn. (m OD): 62 30
Catchment area (sq km): 99.5
Max alt. (m OD): 985

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	8 461	1 049	9.796	2 474	10 120	2 495	1 204	3 413	0.621	5 133	14 370	12 160	5.941
(m^3s^{-1}):	Peak	213 53	2.36	115 66	37 27	56 88	34 73	69 85	50 43	4 58	105.26	164.71	174.50	213.53
Runoff (mm)		228	26	264	64	273	65	32	92	16	138	374	327	1899
Rainfall (mm)		296	21	278	95	330	86	109	132	49	246	433	406	2481

Monthly and yearly statistics for previous record (Oct 1970 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg.	7.599	5 951	6 052	2 940	2 588	1.850	1 679	2 288	5 033	6 131	7.673	7 697	4.786
flows	Low	2.263	2.389	1 802	0 758	0 304	0.402	0 239	0 164	0 345	0 789	2 306	1 630	3 281
(m^3s^{-1})	High	15.240	9 995	11 100	5 156	7 075	4.562	4 812	9 246	10 260	12 130	16.550	12 350	6 586
Peak flow (m^3s^{-1})		250 40	130 20	165 30	61 27	165.00	221 30	160 00	143 00	227 30	136 60	183 30	160 70	250.40
Runoff (mm)		205	146	163	77	70	48	45	62	131	165	200	207	1518
Rainfall (mm)		230	152	166	85	115	97	112	127	211	204	241	230	1970

Factors affecting flow regime: N
Station type: VA

1986 runoff is 125% of previous mean
rainfall 126%

016004 Earn at Forteviot Bridge 1986

Measuring authority: TRPB
First year: 1972
Grid reference: 37 (NO) 043 184
Level stn (m OD): 7 80
Catchment area (sq km): 782.2
Max alt (m OD): 985

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	56 350	16.990	47 370	19 740	47 200	13 820	7 591	19 260	6 546	18 700	67 940	79 160	**33.389**
(m^3s^{-1}):	Peak	240 71	37 86	166 11	55 17	120 17	51 01	57 64	7: 77	12 55	150 59	249 16	238 69	**249.15**
Runoff (mm)		193	53	162	65	162	46	26	66	22	64	225	271	**1354**
Rainfall (mm)		197	24	177	61	219	69	77	102	35	158	267	278	**1664**

Monthly and yearly statistics for previous record (Oct 1972 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	44 810	36.940	35 110	19 590	13 5'0	9 608	7 648	10 310	20 190	31 100	42 230	44 790	**26.277**
flows	Low	19 630	'6 070	12 310	8 389	4 906	4 095	2 658	2 456	5 302	5 984	15 120	15 060	**15.508**
(m^3s^{-1})	High	85 510	58.640	58 620	33 790	33 520	20 070	18 350	46 660	55 680	59.340	89 750	70 090	**31.138**
Peak flow (m^3s^{-1})		277 50	214 60	'94 '0	106 00	155 20	114 90	'42 30	169 70	271 80	241 20	328 60	219 90	**328 60**
Runoff (mm)		'53	115	120	65	46	32	26	35	67	106	140	153	**1080**
Rainfall (mm)		'62	100	133	54	81	70	8'	96	168	145	173	165	**1428**

Factors affecting flow regime: P H
Station type: VA

1986 runoff is 128% of previous mean rainfall 117%

017001 Carron at Headswood 1986

Measuring authority: FRPB
First year: 1969
Grid reference: 26 (NS) 832 820
Level stn (m OD): 17 10
Catchment area (sq km): 122 3
Max alt (m OD): 570

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 476	1 017	6 770	1 879	5 724	1 949	0 759	1 411	0 587	4 127	9 628	8 492	**4.152**
(m^3s^{-1})	Peak	74 81	2 44	92 83	33 68	50 23	31 82	4 06	25 84	8 3'	83 47	91 74	77 07	**92.83**
Runoff (mm)		164	20	148	40	125	41	17	3'	12	90	204	186	**1079**
Rainfall (mm)		221	27	209	111	237	86	79	119	59	215	297	221	**1881**

Monthly and yearly statistics for previous record (Aug 1969 to Dec 1985)

Mean	Avg	5 474	3.794	3 299	1 881	1 363	1 159	1 101	' 465	3 197	3 825	5 653	5 413	**3.132**
flows	Low	1.943	1 177	1 232	0 807	0 590	0 580	0 549	0 557	0 467	0 424	1 412	1 084	**2 108**
(m^3s^{-1})	High	10 890	7 576	7 463	3 165	3 63'	2 834	4 650	8 092	16 720	10 270	9 759	10 470	**4.575**
Peak flow (m^3s^{-1})		130.30	63 20	69 84	43 62	51 35	25 47	65 38	61 72	124 30	124 80	105 80	147 90	**147.90**
Runoff (mm)		120	76	72	40	30	25	24	32	68	84	120	119	**808**
Rainfall (mm)		166	101	125	68	85	85	87	'03	162	156	189	169	**1496**

Factors affecting flow regime: S E
Station type: VA

1986 runoff is 133% of previous mean rainfall 126%

017002 Leven at Leven 1986

Measuring authority: FRPB
First year: 1969
Grid reference: 37 (NO) 369 006
Level stn (m OD): 4.10
Catchment area (sq km): 424 0
Max alt (m OD): 522

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	:7 000	8 975	8 584	7 188	12 050	7 044	2 575	4 396	2 101	2 370	8 102	18 790	**8.223**
(m^3s^{-1}):	Peak	38 37	15 76	19 08	21 35	44 54	19 73	6 02	9 30	4 88	7 05	20 49	44 68	**44 68**
Runoff (mm)		107	51	54	44	76	43	16	28	13	15	50	116	**613**
Rainfall (mm)		124	31	75	82	132	69	71	68	36	78	114	170	**1050**

Monthly and yearly statistics for previous record (Aug 1969 to Dec 1985)

Mean	Avg	10 500	9 785	6 942	4 579	3 181	2 712	1 725	2 908	3 813	5 895	8 610	10 650	**5.924**
flows	Low	4 786	2 882	1 543	1 413	2 012	1 166	0 902	0 820	0 970	0 795	0 972	3 462	**2.269**
(m^3s^{-1})	High	20 700	22 660	11 240	9 712	6 612	6 527	5 300	11 840	21 040	'3 170	26 510	19 200	**9.294**
Peak flow (m^3s^{-1})		51 59	128 00	39 19	26 41	13 67	26 93	28 83	25 69	84 25	40 67	56 76	62 69	**128.00**
Runoff (mm)		66	56	44	28	20	17	1'	'8	23	'37	53	67	**441**
Rainfall (mm)		91	59	74	46	61	62	62	69	96	84	101	94	**899**

Factors affecting flow regime: SR El
Station type: VA

1986 runoff is 139% of previous mean rainfall 117%

018003 Teith at Bridge of Teith 1986

Measuring authority: FRPB
First year: 1957
Grid reference: 27 (NN) 725 011
Level stn (m OD): 14 70
Catchment area (sq km): 518.0
Max alt (m OD): 1165

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	46 390	7 233	45 970	11 340	55 000	11 600	5 550	15 740	4 953	23 640	70 650	72 370	**30.870**
(m^3s^{-1})	Peak	170 35	14 93	217 38	52 83	118 65	39 69	34 34	52 62	9 14	116 84	168 16	202 12	**217 38**
Runoff (mm)		240	34	238	57	284	58	29	81	25	122	354	374	**1895**
Rainfall (mm)		309	14	327	90	327	71	98	150	62	266	437	450	**2601**

Monthly and yearly statistics for previous record (Jan 1957 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg	33 690	27 360	25 280	15 650	'4.170	9 477	9 418	12 690	20 060	27 430	30 870	34 060	**21.667**
flows	Low	9 608	5 743	6 589	5 612	4 017	3 953	3 781	3 135	3 635	5 897	9 842	11 790	**15.094**
(m^3s^{-1})	High	72 430	54 340	60 190	30 040	33 160	21 520	26 390	54 210	45 020	66 410	59 330	63 980	**27.795**
Peak flow (m^3s^{-1})		303.90	207 40	'76 00	89.2'	158 00	161 70	118 30	174 40	184 10	242 60	245 10	241 10	**303.90**
Runoff (mm)		174	129	131	78	73	47	49	66	100	142	154	176	**1320**
Rainfall (mm)*		223	138	160	90	119	107	106	123	207	214	224	210	**1921**

*(1963-1985)

Factors affecting flow regime: S P
Station type: VA

1986 runoff is 144% of previous mean rainfall 135%

018005 Allan Water at Bridge of Allan 1986

Measuring authority: FRPB
First year: 1971
Grid reference: 26 (NS) 786 980
Level stn. (m OD): 11 20
Catchment area (sq km): 210 0
Max alt. (m OD): 633

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13.210	3.631	18 170	7 717	15 430	4.325	1.822	3 074	1 449	6 802	15 540	17 140	9.026
(m^3s^{-1}):	Peak	69.63	8 94	83 43	36.28	71 08	33.29	18 51	25 00	6 72	72 24	76 55	86 95	86.95
Runoff (mm)		168	42	232	95	197	53	23	39	18	87	192	219	1365
Rainfall (mm)		182	26	164	71	199	69	78	87	40	151	240	237	1544

Monthly and yearly statistics for previous record (Jul 1971 to Dec 1985)

Mean	Avg	10 530	8.363	7.901	4.212	3 286	2 480	1.900	2.799	5.203	7 049	9 321	10 080	6.086
flows	Low	4.751	4.793	3 152	1 654	1.189	0 945	0 726	0 648	0 907	0 971	3 642	3 709	4.269
(m^3s^{-1})	High	18.550	16 610	13 310	7 267	7.435	5 423	6 309	12 390	14 600	12.420	17 760	16.790	7 462
Peak flow (m^3s^{-1})		98.20	67.84	70 98	52 05	72 11	55 39	66 37	67 48	105 60	111 00	97.89	112 60	112.60
Runoff (mm)		134	98	101	52	42	31	24	36	64	90	115	129	915
Rainfall (mm)		141	87	110	58	77	70	76	86	138	128	145	143	1259

Factors affecting flow regime: I
Station type: VA

1986 runoff is 149% of previous mean
rainfall 123%

020001 Tyne at East Linton 1986

Measuring authority: FRPB
First year: 1961
Grid reference: 36 (NT) 591 768
Level stn (m OD): 16.50
Catchment area (sq km): 307.0
Max alt. (m OD): 528

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 325	3 405	4.842	7 824	3 145	1.608	0.987	1 837	1.768	1 041	1 562	4 161	3.292
(m^3s^{-1}):	Peak	38 53	10 58	47 67	50 88	22.61	5 53	3 46	13.73	26 89	2 67	4 62	26 32	50.88
Runoff (mm)		64	27	42	66	27	14	9	16	15	9	13	36	338
Rainfall (mm)		97	39	35	115	74	55	64	103	31	51	45	99	808

Monthly and yearly statistics for previous record (Jan 1961 to Dec 1985)

Mean	Avg.	4.556	3 853	4.010	2 666	2.501	1.506	1.290	1 640	1.872	2 227	3.787	3 754	2.801
flows	Low	1.032	0 783	0 531	0 644	0.926	0.586	0 500	0 468	0 461	0 450	0 523	0 582	0.709
(m^3s^{-1})	High	11 540	8 624	8.789	6.158	11.600	6 142	4 393	9 855	8 490	7 000	11 210	8 405	4 146
Peak flow (m^3s^{-1})		93 02	39 39	66.17	33.39	119.70	59.12	70 18	112.70	90.84	82 71	127.50	52 02	127.50
Runoff (mm)		40	31	35	23	22	13	11	14	16	19	32	33	288
Rainfall (mm)		63	40	59	44	60	53	60	75	71	67	75	60	727

Factors affecting flow regime: EI
Station type: VA

1986 runoff is 117% of previous mean
rainfall 111%

021006 Tweed at Boleside 1986

Measuring authority: TWRP
First year: 1961
Grid reference: 36 (NT) 498 334
Level stn. (m OD): 94.50
Catchment area (sq km): 1500 0
Max alt. (m OD): 839

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	64 460	19.550	57 140	33 650	60 040	26.460	10.270	28 570	14 700	28 580	81 380	100 400	43.767
(m^3s^{-1}):	Peak	267.47	46 69	285 38	92 29	137.62	117 72	55 78	109 08	57 98	160 07	289 04	309 21	309 21
Runoff (mm)		115	32	102	58	107	46	18	51	25	51	141	179	926
Rainfall (mm)		158	28	126	89	189	75	67	147	30	149	198	248	1504

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985)

Mean	Avg.	53 660	44.100	43 020	29 270	24 000	15.870	14.360	21 350	30 860	40 940	50 640	51 680	34.946
flows	Low	14 300	10.480	14.930	9 896	7 605	7.413	6 362	5 012	4 572	4.435	11 570	22 450	18 577
(m^3s^{-1})	High	110 700	81.860	101 000	57.330	64 330	32 820	40 970	81 400	95 510	96 720	119 800	86 540	44.323
Peak flow (m^3s^{-1})		678 60	483 90	470.10	248.90	182.80	126 00	342 60	444.30	496 30	1019 00	486 30	571 90	1019.00
Runoff (mm)		96	72	77	51	43	27	26	38	53	73	88	92	735
Rainfall (mm)		121	80	99	68	85	78	85	103	124	121	126	115	1205

Factors affecting flow regime: S P
Station type: VA

1986 runoff is 126% of previous mean
rainfall 125%

021012 Teviot at Hawick 1986

Measuring authority: TWRP
First year: 1963
Grid reference: 36 (NT) 522 159
Level stn (m OD): 90 10
Catchment area (sq km): 323 0
Max alt (m OD): 608

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	17.230	4.282	13.570	7 700	15.520	6 689	2.357	7.360	2 763	7 179	20 070	25 450	10.847
(m^3s^{-1}):	Peak	141.64	11.81	102 84	32.79	117.79	89.40	29 06	75 29	14 20	103 07	130 61	147.73	147.73
Runoff (mm)		143	32	113	62	129	54	20	61	22	60	161	211	1066
Rainfall (mm)		155	31	114	84	184	74	80	141	24	138	185	239	1449

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985)

Mean	Avg.	13.200	10 470	9.561	5.910	5 444	3 980	3 141	4 398	6 430	10 010	12 640	13 180	8.190
flows	Low	6 981	4.234	2.991	2.189	1 296	1 099	0 751	0.734	0 915	0 816	2.555	4 522	4.183
(m^3s^{-1})	High	28.560	18.510	20 250	13 030	17.340	10.500	11 020	19.120	18 960	25.690	29 930	23 280	10.959
Peak flow (m^3s^{-1})		185 90	228 60	142 00	86.03	98 31	81 84	148.30	178.60	185 60	273 40	188 60	210 70	273.40
Runoff (mm)		109	79	79	47	45	32	26	36	52	83	101	109	800
Rainfall (mm)		114	74	99	63	88	79	83	97	112	116	125	119	1169

Factors affecting flow regime: N
Station type: VA

1986 runoff is 133% of previous mean
rainfall 124%

021018 Lyne Water at Lyne Station 1986

Measuring authority: TWRP
First year: 1968
Grid reference 36 (NT) 209 401
Level stn (m OD) 168 00
Catchment area (sq km) 175.0
Max alt (m OD) 592

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6 290	2 454	3 769	3 980	3 433	2 110	1 075	1 884	1 654	2 245	5 515	7 575	**3 499**
(m^3s^{-1}):	Peak	18.42	5 53	20 18	14 41	16 94	13 14	1 98	5 61	11 56	8 79	20 48	24 54	**24.54**
Runoff (mm)		96	34	58	59	53	31	16	29	24	34	82	116	**632**
Rainfall (mm)		130	23	80	95	117	64	67	114	42	118	130	175	**1155**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1985)

Mean	Avg	4 711	4 157	3 585	2 538	1 735	1 362	1 156	1 301	2 009	2 818	4 355	4 272	**2.826**
flows	Low	1 682	2.158	1.357	1 127	0 882	0 787	0 713	0 605	0 591	0 597	0 977	1 618	**1 428**
(m^3s^{-1})	High	8 774	8 698	7 325	5 028	4 104	2.653	3 884	5 364	10 440	5 684	8 611	8 374	**3.704**
Peak flow (m^3s^{-1})		47 50	41 55	27 65	21 46	17 36	16 46	31 72	20 77	58 74	40 49	53 60	37 98	**58.74**
Runoff (mm)		72	58	55	38	27	20	18	20	30	43	65	65	**510**
Rainfall (mm)		88	57	80	50	62	62	67	71	99	93	103	86	**918**

Factors affecting flow regime: S P
Station type: VA
1986 runoff is 124% of previous mean rainfall 126%

021022 Whiteadder Water at Hutton Castle 1986

Measuring authority: TWRP
First year: 1969
Grid reference 36 (NT) 881 550
Level stn (m OD) 29 00
Catchment area (sq km): 503 0
Max alt (m OD) 533

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13.970	7 084	10 970	15 700	7 308	3 854	2 010	6 309	4 299	2 159	3 456	7 621	**7 062**
(m^3s^{-1}):	Peak	73 55	19 52	130 00	88 04	48 13	14 03	4 45	86 71	42 41	5 57	9 49	57 33	**130.00**
Runoff (mm)		74	34	58	81	39	20	11	34	22	12	18	41	**443**
Rainfall (mm)		103	48	33	122	87	49	52	151	25	47	49	88	**854**

Monthly and yearly statistics for previous record (Sep 1969 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg	11 110	10 780	9 774	6 775	5.474	3 453	2 213	2.602	3 081	4 890	8.106	8.845	**6.404**
flows	Low	2 143	1 557	1 108	1 325	2 113	1 403	1 315	1 162	0 990	1 001	1 100	1 347	**4.540**
(m^3s^{-1})	High	25 990	27.300	19 220	14 980	24 050	8 835	6 626	8 184	16 360	16 670	27 680	20.660	**8.847**
Peak flow (m^3s^{-1})		265.90	160 90	133.90	76 65	226 20	64 98	84 85	79 00	105 80	190 00	279 80	108 10	**279.80**
Runoff (mm)		59	52	52	35	29	18	12	14	16	26	42	47	**402**
Rainfall (mm)		81	52	77	47	66	58	57	63	72	70	77	72	**792**

Factors affecting flow regime: S P
Station type: CC
1986 runoff is 110% of previous mean rainfall 108%

022006 Blyth at Hartford Bridge 1986

Measuring authority: NWA
First year: 1966
Grid reference: 45 (NZ) 243 800
Level stn (m OD) 24 60
Catchment area (sq km) 269.4
Max alt (m OD) 259

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5 309	2.386	3 322	6 281	2 148	0 383	0 165	2 963	1 658	0 312	0 786	2 853	**2.380**
(m^3s^{-1}):	Peak	24 71	15 15	49 24	80 31	31 38	1 39	0 76	61 09	24 64	0 66	2 94	29 31	**80.31**
Runoff (mm)		53	21	33	60	21	4	2	29	16	3	8	28	**279**
Rainfall (mm)		88	43	40	100	68	29	31	168	26	41	38	74	**746**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1985—incomplete or missing months total 0.4 years)

Mean	Avg	4 635	3 791	3 787	1 991	1 467	0 664	0 371	0 534	0 724	1 624	2 499	3 717	**2.145**
flows	Low	0 587	0 398	0 245	0 359	0 212	0 177	0 096	0 067	0 107	0 111	0 162	0 274	**0 537**
(m^3s^{-1})	High	10.150	7 997	11 090	4 527	4 948	1 895	1 242	2 543	2 695	9 680	5 735	12 500	**3 410**
Peak flow (m^3s^{-1})		146 60	59 52	150.20	33 00	38 86	31 54	7 60	39 61	30 02	56.84	69 20	122 30	**150.20**
Runoff (mm)		46	34	38	19	15	6	4	5	7	16	24	37	**251**
Rainfall (mm)		66	44	65	42	58	53	55	65	67	60	67	65	**707**

Factors affecting flow regime: E
Station type: FV
1986 runoff is 111% of previous mean rainfall 106%

023001 Tyne at Bywell 1986

Measuring authority: NWA
First year: 1956
Grid reference 45 (NZ) 038 617
Level stn (m OD) 14 00
Catchment area (sq km): 2175 6
Max alt (m OD) 893

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	102 700	34 590	72 200	65 220	44 990	19 580	10 210	54 220	23 670	36 000	64 150	110 900	**53.202**
(m^3s^{-1})	Peak	761 10	83.33	849.91	905 60	422 60	176 10	53 36	1561 48	350 40	283 84	610 58	594 33	**1561 48**
Runoff (mm)		126	38	89	78	55	23	13	67	28	44	76	137	**775**
Rainfall (mm)		148	36	91	100	117	49	68	151	28	117	122	182	**1209**

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	72 300	57 210	55 310	37 560	25 470	18 190	18 410	29 010	35 840	46 460	63 260	68 000	**43.874**
flows	Low	19.220	14 360	20 150	8.461	7 246	4 910	5 199	3 403	4 155	4 727	18 090	23 080	**25 849**
(m^3s^{-1})	High	150 800	98 140	150 900	75 620	60 650	50 010	46 230	77 360	106 600	147 200	147 000	112 000	**63.834**
Peak flow (m^3s^{-1})		1525 00	922 10	1472 00	852 30	476 30	440 30	758 90	1282 00	1243 00	1586 00	1382 00	1317 00	**1586.00**
Runoff (mm)		89	64	68	45	31	22	23	36	43	57	75	84	**636**
Rainfall (mm)		102	69	84	62	69	70	80	96	94	92	105	103	**1026**

Factors affecting flow regime: S
Station type: VA
1986 runoff is 122% of previous mean rainfall 118%

023007 Derwent at Rowlands Gill 1986

Measuring authority: NWA
First year: 1962
Grid reference: 45 (NZ) 168 581
Level stn. (m OD): 29.30
Catchment area (sq km): 242.1
Max alt. (m OD): 560

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.838	2.497	3.397	7.760	2.663	1.193	0.939	2.387	1.526	1.014	1.438	2.964	2.635
(m^3s^{-1}):	Peak	19.76	8.90	29.08	70.25	26.89	3.09	1.35	55.15	13.81	2.44	3.87	18.45	70.25
Runoff (mm)		42	25	38	83	29	13	10	26	16	11	15	33	343
Rainfall (mm)		114	57	63	122	83	33	34	177	24	66	69	119	961

Monthly and yearly statistics for previous record (Nov 1962 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg.	3.634	3.784	4.717	3.141	2.392	1.652	1.336	1.581	1.696	2.037	3.109	3.184	2.684
flows	Low	1.148	0.911	0.749	1.149	0.973	0.844	0.796	0.656	0.626	0.791	0.903	0.882	1.119
(m^3s^{-1})	High	7.320	10.490	13.570	6.561	7.851	4.222	4.087	4.667	7.264	8.971	11.780	7.826	5.573
Peak flow (m^3s^{-1})		54.99	34.46	93.73	53.73	36.88	45.91	19.10	60.69	36.41	58.87	97.98	63.02	97.98
Runoff (mm)		40	38	52	34	26	18	15	17	18	23	33	35	350
Rainfall (mm)		81	59	76	58	65	62	59	80	75	66	89	77	847

Factors affecting flow regime: P
Station type: CC

1986 runoff is 98% of previous mean rainfall 113%

024001 Wear at Sunderland Bridge 1986

Measuring authority: NWA
First year: 1957
Grid reference: 45 (NZ) 264 376
Level stn. (m OD): 40.20
Catchment area (sq km): 657.8
Max alt. (m OD): 747

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	24.990	7.970	23.020	28.100	12.560	4.523	2.415	15.870	5.980	4.866	17.170	25.490	14.413
(m^3s^{-1}):	Peak	173.43	27.47	222.30	259.30	129.40	30.61	3.98	457.72	77.82	38.20	80.88	134.42	457.72
Runoff (mm)		102	29	94	111	51	18	10	65	24	20	68	104	694
Rainfall (mm)		127	53	76	124	101	32	36	171	25	83	92	150	1070

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	20.450	16.750	16.550	11.420	7.692	4.830	3.779	4.990	5.638	10.350	14.460	16.870	11.128
flows	Low	4.359	4.035	3.812	3.512	2.790	2.119	1.835	1.267	1.211	1.820	3.195	3.993	6.125
(m^3s^{-1})	High	53.820	37.750	53.210	25.940	21.220	10.840	9.635	14.060	15.810	38.610	32.550	38.850	18.410
Peak flow (m^3s^{-1})		362.40	282.20	336.50	269.80	158.60	163.20	141.10	307.10	360.30	397.10	576.70	417.60	576.70
Runoff (mm)		83	62	67	45	31	19	15	20	22	42	57	69	534
Rainfall (mm)		98	69	80	64	69	64	66	79	81	82	98	96	946

Factors affecting flow regime: S E
Station type: CB

1986 runoff is 130% of previous mean rainfall 113%

024004 Bedburn Beck at Bedburn 1986

Measuring authority: NWA
First year: 1959
Grid reference: 45 (NZ) 118 322
Level stn. (m OD): 109.00
Catchment area (sq km): 74.9
Max alt. (m OD): 531

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2.602	0.958	2.370	2.986	1.323	0.416	0.206	1.366	0.586	0.370	1.927	2.251	1.447
(m^3s^{-1}):	Peak	16.08	2.87	22.37	34.17	17.74	1.40	0.40	46.19	7.51	7.77	6.95	10.08	46.19
Runoff (mm)		93	31	85	103	47	14	7	49	20	13	67	81	611
Rainfall (mm)		116	49	70	115	88	27	29	166	24	82	77	128	971

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	2.078	1.780	1.831	1.281	0.922	0.554	0.412	0.543	0.589	1.144	1.520	1.779	1.201
flows	Low	0.515	0.471	0.436	0.440	0.270	0.196	0.152	0.120	0.157	0.146	0.244	0.444	0.667
(m^3s^{-1})	High	4.341	4.011	5.128	2.750	2.231	1.524	1.056	1.465	1.790	4.346	3.722	4.488	1.833
Peak flow (m^3s^{-1})		34.67	39.18	38.51	35.09	24.06	21.66	21.92	22.99	32.30	38.06	34.26	42.93	42.93
Runoff (mm)		74	58	65	44	33	19	15	19	20	41	53	64	506
Rainfall (mm)		90	63	74	57	65	59	62	77	74	77	91	86	875

Factors affecting flow regime: N
Station type: CC

1986 runoff is 121% of previous mean rainfall 111%

025006 Greta at Rutherford Bridge 1986

Measuring authority: NWA
First year: 1960
Grid reference: 45 (NZ) 034 122
Level stn. (m OD): 223.00
Catchment area (sq km): 86.1
Max alt. (m OD): 596

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.009	0.609	5.170	4.091	2.145	0.487	0.111	3.824	0.510	1.609	4.655	6.115	2.861
(m^3s^{-1}):	Peak	62.66	1.53	71.70	70.36	27.23	14.34	0.17	210.40	9.69	43.67	31.95	45.85	210.40
Runoff (mm)		156	17	161	123	67	15	3	119	15	50	140	190	1056
Rainfall (mm)		185	48	103	124	124	33	31	188	21	118	128	221	1324

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1985)

Mean	Avg	3.717	2.689	3.199	2.091	1.355	0.880	0.639	1.310	1.570	2.480	3.374	3.552	2.238
flows	Low	0.291	0.280	0.842	0.375	0.148	0.130	0.092	0.098	0.146	0.195	0.951	0.944	1.447
(m^3s^{-1})	High	7.155	6.881	8.926	4.682	3.951	2.502	2.013	4.107	4.067	6.665	6.878	6.406	2.926
Peak flow (m^3s^{-1})		118.00	88.63	79.00	62.01	56.35	51.74	52.83	110.40	109.00	93.85	68.81	73.77	118.00
Runoff (mm)		116	76	100	63	42	26	20	41	47	77	102	111	820
Rainfall (mm)		118	81	99	74	78	72	70	97	98	101	116	118	1122

Factors affecting flow regime:
Station type: CC

1986 runoff is 129% of previous mean rainfall 118%

025019 Leven at Easby 1986

Measuring authority: NWA
First year: 1971
Grid reference: 45 (NZ) 585 087
Level stn (m OD): 101.30
Catchment area (sq km): 14.8
Max alt. (m OD): 335

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.323	0 299	0 412	0 771	0 262	0.153	0 080	0 177	0 163	0 077	0 135	0 349	0.267
(m^3s^{-1}):	Peak	2.35	3.02	5.68	9 36	1 98	0.55	0.12	3.98	3.91	0 73	0 76	2 78	9 36
Runoff (mm)		58	49	75	135	47	27	15	32	29	14	24	63	567
Rainfall (mm)		99	67	54	161	83	46	36	158	33	60	57	136	990

Monthly and yearly statistics for previous record (May 1971 to Dec 1985)

Mean	Avg	0.323	0 301	0.294	0.224	0 186	0 132	0 108	0 116	0.122	0 173	0 204	0 273	0.204
flows	Low	0.115	0 100	0 076	0 085	0 072	0 075	0.044	0 039	0 059	0 063	0 092	0 132	0.143
(m^3s^{-1})	High	0.630	0.729	0.821	0 407	0 544	0 239	0 188	0 364	0 532	0 556	0 507	0 543	0.305
Peak flow (m^3s^{-1})		3.14	4.38	4 90	4.34	7 56	1 99	3 14	3.88	12.83	3.08	4 01	7 66	12.83
Runoff (mm)		58	50	53	39	34	23	20	21	21	31	36	49	436
Rainfall (mm)		82	47	74	53	62	60	61	70	78	75	77	77	816

Factors affecting flow regime: N
Station type: FV
1986 runoff is 130% of previous mean rainfall 121%

025020 Skerne at Preston le Skerne 1986

Measuring authority: NWA
First year: 1972
Grid reference: 45 (NZ) 292 238
Level stn (m OD): 67.50
Catchment area (sq km): 147.0
Max alt. (m OD): 222

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1 522	1 221	1.573	2.734	0 945	0 371	0.243	0 943	0.571	0 228	0 595	1 130	1.006
(m^3s^{-1}):	Peak	10.74	9 22	13 01	18.51	11 93	2 47	0 82	13 69	8 23	1 68	2 76	8 00	18.51
Runoff (mm)		28	20	29	48	17	7	4	17	10	4	10	21	215
Rainfall (mm)		67	41	45	103	69	38	26	141	25	45	42	69	711

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	1.608	1.266	1 395	0 885	0 733	0 468	0 350	0 367	0 329	0 818	0 827	1 456	0.875
flows	Low	0.486	0 481	0.293	0 247	0 199	0 112	0 121	0 086	0 082	0 099	0 204	0 553	0.558
(m^3s^{-1})	High	3 376	2.731	4 824	2 245	2 106	1 004	0 760	0 732	0 745	4.290	1 962	4 658	1.510
Peak flow (m^3s^{-1})		20 08	12 93	26 58	19 20	10 92	16 54	9 23	7.95	9 33	21.71	17.40	24 82	26.58
Runoff (mm)		29	21	25	16	13	8	6	7	6	15	15	27	188
Rainfall (mm)		61	36	58	41	54	54	45	60	64	55	58	61	647

Factors affecting flow regime: E
Station type: VA
1986 runoff is 115% of previous mean rainfall 110%

026003 Foston Beck at Foston Mill 1986

Measuring authority: YWA
First year: 1959
Grid reference: 54 (TA) 093 548
Level stn (m OD): 6.40
Catchment area (sq km): 57.2
Max alt. (m OD): 164

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.986	1 217	1 072	1 083	1 343	1 027	0 695	0 579	0 459	0 367	0 329	0 397	0.796
(m^3s^{-1})	Peak	1 26	1.60	1.27	1 65	1 95	1 27	0.85	0 79	0 65	0.54	0.43	1.03	1.95
Runoff (mm)		46	5	50	49	63	47	33	27	21	17	15	19	437
Rainfall (mm)		65	54	51	101	82	30	32	90	25	49	52	118	749

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1985—incomplete or missing months total 0 6 years)

Mean	Avg.	0 894	1.179	1 098	0 976	0 831	0 654	0 517	0 406	0 338	0 327	0 434	0 615	0 686
flows	Low	0 199	0 183	0 174	0.150	0 174	0 110	0 112	0 105	0.101	0 125	0 148	0 195	0 155
(m^3s^{-1})	High	2.224	2 332	2.242	2 070	1 708	1 231	0 882	0 675	0.567	0 612	1 845	2 379	1 282
Peak flow (m^3s^{-1})		2.89	3 31	2 69	2 70	1 92	2 01	1.47	0 99	0 80	1.22	2.49	2.86	3.31
Runoff (mm)		42	50	51	44	39	30	24	19	15	15	20	29	379
Rainfall (mm)		73	49	57	51	55	52	55	65	60	66	77	76	738

Factors affecting flow regime: N
Station type: TP
1986 runoff is 116% of previous mean rainfall 102%

026005 Gypsey Race at Boynton 1986

Measuring authority: YWA
First year: 1981
Grid reference: 54 (TA) 137 677
Level stn (m OD): 16.80
Catchment area (sq km): 240.0
Max alt. (m OD): 211

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.400	0 557	0 465	0 579	0 909	0 623	0.351	0.184	0.079	0 016	0 014	0 033	0.351
(m^3s^{-1})	Peak	0 52	0 61	0 55	0 83	1 08	0 83	0.45	0.26	0.23	0 04	0 03	0 10	1.08
Runoff (mm)		4	6	5	6	10	7	4	2	1	0	0	0	46
Rainfall (mm)		70	5	52	92	83	29	29	93	28	49	51	111	738

Monthly and yearly statistics for previous record (Feb 1981 to Dec 1985)

Mean	Avg.	0 271	0 480	0 467	0 615	0 558	0 338	0 197	0 092	0 047	0 023	0 020	0 053	0 282
flows	Low	0.071	0 120	0 116	0 118	0 225	0 132	0 104	0 026	0 014	0 004	0 009	0 020	0.143
(m^3s^{-1})	High	0.475	0 887	0.872	1 585	1 217	0 597	0 347	0 183	0 098	0 055	0 033	0 082	0.273
Peak flow (m^3s^{-1})		0 72	1 00	1 86	1.87	1 58	0 86	0 60	0 28	0 29	0 14	0 08	0 27	1.87
Runoff (mm)		3	5	5	7	6	4	2	1	1	0	0	1	34
Rainfall (mm)		85	35	91	54	58	38	58	65	88	59	92	58	781

Factors affecting flow regime: G I
Station type: FV
1986 runoff is 133% of previous mean rainfall 94%

027007 Ure at Westwick Lock 1986

Measuring authority: YWA
First year: 1958
Grid reference: 44 (SE) 356 671
Level stn (m OD): 14 20
Catchment area (sq km): 914 6
Max alt (m OD): 713

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	48 440	12 650	38 590	40 200	25 320	8 046	3 185	16 140	5 646	16 350	44 570	56 360	**26.291**
(m^3s^{-1})	Peak	238 10	30 64	246 50	222 50	149 20	87 95	5 81	271 90	42 72	112 50	171 90	177 10	**271.90**
Runoff (mm)		142	33	113	114	74	23	9	47	16	48	126	165	**911**
Rainfall (mm)		178	28	111	129	117	43	34	144	18	132	151	212	**1297**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1985—incomplete or missing months total 0.5 years)

Mean	Avg	33 130	28 670	26 670	19 690	13 020	8 780	7 775	11.810	14 100	21 630	28 850	32 200	**20.495**
flows	Low	4.009	3 886	10 250	5 674	3 831	3 024	2 202	1 287	1 450	5 856	7 078	11 330	**12.946**
(m^3s^{-1})	High	59 590	84 770	60 330	40 980	29 500	21 400	16 180	31 600	33 030	68 480	65 010	57 370	**27.066**
Peak flow (m^3s^{-1})		537 90	307 30	413 10	263 30	170 80	161 50	144 50	260 20	296 20	266 50	288 80	304 10	**537.90**
Runoff (mm)		97	77	78	56	38	25	23	35	40	63	82	94	**707**
Rainfall (mm)		119	80	95	77	75	72	75	90	100	103	122	123	**1131**

Factors affecting flow regime: S P
Station type: B VA

1986 runoff is 129% of previous mean
rainfall 115%

027025 Rother at Woodhouse Mill 1986

Measuring authority: YWA
First year: 1961
Grid reference: 43 (SK) 432 857
Level stn (m OD): 28 70
Catchment area (sq km): 352 2
Max alt (m OD): 367

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13 000	7 089	5 447	9 245	6 828	2 712	1 658	2 851	1 642	1 864	6 375	10 390	**5.758**
(m^3s^{-1})	Peak	60 30	33 67	27 31	43.59	55 73	13 15	3 96	29 55	3 76	8 93	49 54	33 74	**60 30**
Runoff (mm)		99	49	41	68	52	20	13	22	12	14	47	79	**515**
Rainfall (mm)		138	36	63	96	95	47	28	103	8	63	90	132	**899**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985—incomplete or missing months total 2.5 years)

Mean	Avg.	6 531	6 902	6 457	4 956	3 825	2 904	1 938	1 995	2 194	2 696	4 633	6 156	**4 252**
flows	Low	1 287	1 424	1 830	1 400	1 569	1 166	0 934	0 760	0 712	0 693	1 023	2 393	**2 540**
(m^3s^{-1})	High	12 020	22 440	14 330	13 160	10 110	10 840	4 907	3 323	7 786	6 596	8 200	18 140	**6 364**
Peak flow (m^3s^{-1})		58.26	78 80	53 21	78 14	61 40	105 40	45 63	33.55	45 59	40 80	50 55	91 46	**105 40**
Runoff (mm)		50	48	49	36	29	21	15	15	16	21	34	47	**381**
Rainfall (mm)		68	60	67	61	65	63	54	63	66	60	76	74	**777**

Factors affecting flow regime: S PGEI
Station type: VA

1986 runoff is 135% of previous mean
rainfall 116%

027030 Dearne at Adwick 1986

Measuring authority: YWA
First year: 1963
Grid reference: 44 (SE) 477 020
Level stn (m OD): 12 70
Catchment area (sq km): 310 8
Max alt. (m OD): 381

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 233	5.205	3 742	8 527	4 456	2 289	1 586	2 715	1 626	1 795	4 401	6 449	**4 169**
(m^3s^{-1})	Peak	28 62	21 45	12 77	43 90	23 48	8 01	3 44	27 40	3 38	13 96	18 36	28 68	**43.90**
Runoff (mm)		62	41	32	71	38	19	14	23	14	15	37	56	**422**
Rainfall (mm)		128	32	50	117	82	42	26	111	8	76	73	118	**863**

Monthly and yearly statistics for previous record (Nov 1963 to Dec 1985—incomplete or missing months total 0.7 years)

Mean	Avg	4 818	5 417	4 871	3 975	3 106	2 642	1 875	1 887	1 917	2 400	3 566	4 339	**3.390**
flows	Low	1 946	1 648	1 433	1 223	1 303	1 106	0 806	0 765	0 873	0 922	1 029	1 245	**2 104**
(m^3s^{-1})	High	9 214	14 340	10 750	8 866	7 380	7 299	3 699	3 054	5 658	5 171	7 632	10 980	**5.264**
Peak flow (m^3s^{-1})		51 76	56 32	41 85	58 42	43 97	55 58	31 94	18 07	28 97	26 56	51 52	56 65	**58.42**
Runoff (mm)		42	43	42	33	27	22	16	16	16	21	30	37	**344**
Rainfall (mm)		62	54	60	53	60	56	48	63	62	54	74	67	**713**

Factors affecting flow regime: GEI
Station type: C VA

1986 runoff is 123% of previous mean
rainfall 121%

027042 Dove at Kirkby Mills 1986

Measuring authority: YWA
First year: 1972
Grid reference: 44 (SE) 705 855
Level stn (m OD): 35 60
Catchment area (sq km): 59 2
Max alt (m OD): 429

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 793	1 310	2 022	2 915	1 625	0 749	0 345	0 784	0 665	0 341	1 012	2 119	**1.307**
(m^3s^{-1})	Peak	7.81	8 31	17 87	27 63	30 01	3 31	0 67	12 37	9 98	3 76	6 93	14 83	**30.01**
Runoff (mm)		81	54	91	128	74	33	16	35	29	15	44	96	**698**
Rainfall (mm)		119	51	66	162	100	39	40	144	34	77	71	151	**1054**

Monthly and yearly statistics for previous record (Feb 1972 to Dec 1985)

Mean	Avg	1 755	1 656	1 636	1 124	0 826	0 629	0 499	0 537	0 665	1 045	1 194	1 659	**1.100**
flows	Low	0 698	0 541	0 347	0 376	0 368	0 279	0 211	0 161	0 245	0 251	0 543	0 853	**0.640**
(m^3s^{-1})	High	2.861	3 180	4 701	1 968	1 702	1 099	0 922	1 397	2 743	2 683	2 032	3 237	**1.554**
Peak flow (m^3s^{-1})		37.45	36 68	40 93	21 66	15 44	7 43	19 33	32 36	56 38	24 71	23 85	53 38	**56.38**
Runoff (mm)		79	69	74	49	37	28	23	24	29	47	52	75	**587**
Rainfall (mm)		101	59	88	57	68	64	67	71	91	90	89	98	**943**

Factors affecting flow regime: N
Station type: FV

1986 runoff is 119% of previous mean
rainfall 112%

027043 Wharfe at Addingham 1986

Measuring authority: YWA
First year: 1974
Grid reference: 44 (SE) 092 494
Level stn (m OD): 79.70
Catchment area (sq km): 427.0
Max alt (m OD): 704

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	30.740	5.158	25.470	21.970	15.180	5.033	2.164	10.190	3.798	15.390	28.980	39.960	17.003
(m^3s^{-1}):	Peak	209.70	13.56	262.60	153.00	100.90	56.16	9.38	214.30	37.30	132.30	164.80	155.20	262.60
Runoff (mm)		193	29	160	133	95	31	14	64	23	97	176	251	1265
Rainfall (mm)		225	27	148	153	142	49	57	152	25	198	190	278	1644

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	25.680	17.020	20.870	9.258	7.334	5.206	4.366	8.654	13.750	18.380	23.000	24.310	14.823
flows	Low	11.760	7.627	6.391	2.453	1.673	1.740	1.245	1.143	7.978	6.422	8.263	5.972	10.487
(m^3s^{-1})	High	32.590	28.410	52.490	18.410	16.100	9.551	9.543	26.270	23.450	37.310	32.450	44.680	19.543
Peak flow (m^3s^{-1})		509.00	342.00	552.60	205.10	89.87	114.70	163.80	273.80	244.90	370.00	400.00	320.30	552.60
Runoff (mm)		161	98	131	56	46	32	27	54	83	115	140	152	1096
Rainfall (mm)		164	84	131	66	78	84	73	112	144	137	153	169	1395

Factors affecting flow regime: S P
Station type: C VA

1986 runoff is 115% of previous mean rainfall 118%

027059 Laver at Ripon 1986

Measuring authority: YWA
First year: 1977
Grid reference: 44 (SE) 301 710
Level stn (m OD): 29.60
Catchment area (sq km): 87.5
Max alt. (m OD): 406

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.299	0.981	1.645	3.063	1.122	0.410	0.182	0.537	0.224	0.262	1.546	2.255	1.211
(m^3s^{-1}):	Peak	16.92	3.76	14.37	36.95	6.91	1.86	0.27	11.10	1.23	9.05	10.53	16.59	36.95
Runoff (mm)		70	27	50	91	34	12	6	16	7	8	46	69	437
Rainfall (mm)		138	26	85	139	83	38	29	124	17	94	95	137	1005

Monthly and yearly statistics for previous record (Nov 1977 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	2.125	1.670	1.992	1.095	0.819	0.590	0.257	0.415	0.306	0.693	1.292	2.080	1.110
flows	Low	1.376	0.659	0.721	0.453	0.272	0.247	0.098	0.096	0.229	0.167	0.419	0.848	0.837
(m^3s^{-1})	High	3.265	3.090	3.850	1.843	1.881	1.264	0.480	0.952	0.462	1.506	2.400	3.786	1.139
Peak flow (m^3s^{-1})		24.06	16.85	22.65	15.17	13.32	16.75	6.29	11.48	10.21	13.64	15.01	39.14	39.14
Runoff (mm)		65	47	61	32	25	17	8	13	9	21	38	64	400
Rainfall (mm)*		109	59	108	55	67	67	44	84	80	86	103	129	991

*(1978-1985)

Factors affecting flow regime: S P
Station type: C

1986 runoff is 109% of previous mean rainfall 101%

027071 Swale at Crakehill 1986

Measuring authority: YWA
First year: 1980
Grid reference: 44 (SE) 425 734
Level stn (m OD): 12.00
Catchment area (sq km): 1363.0
Max alt (m OD): 713

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	41.320	17.690	32.270	46.690	25.390	9.344	4.187	16.650	7.217	9.088	30.500	41.050	23.450
(m^3s^{-1}):	Peak	162.10	57.45	168.80	183.30	94.62	51.27	5.04	199.80	36.97	51.30	106.50	104.30	199.80
Runoff (mm)		81	31	63	89	50	18	8	33	14	18	58	81	544
Rainfall (mm)		111	31	69	120	95	38	34	130	17	80	89	132	946

Monthly and yearly statistics for previous record (Jun 1980 to Dec 1985)

Mean	Avg	37.010	23.900	30.920	20.730	14.770	11.840	6.992	10.240	10.830	20.500	27.240	31.020	20.503
flows	Low	25.210	16.050	15.520	7.819	5.557	6.121	2.712	3.684	6.442	10.320	7.541	17.470	18.599
(m^3s^{-1})	High	56.800	44.450	60.040	34.770	32.370	17.180	12.230	24.220	16.090	35.430	44.280	40.580	21.427
Peak flow (m^3s^{-1})		230.70	187.90	188.30	140.70	90.61	107.60	103.50	124.80	114.50	184.50	161.40	183.70	230.70
Runoff (mm)		73	43	61	39	29	23	14	20	21	40	52	61	475
Rainfall (mm)*		106	36	71	72	74	44	42	77	84	72	90	96	864

*(1983-1985)

Factors affecting flow regime: N
Station type: C

1986 runoff is 114% of previous mean rainfall 109%

028012 Trent at Yoxall 1986

Measuring authority: STWA
First year: 1959
Grid reference: 43 (SK) 131 177
Level stn (m OD): 56.40
Catchment area (sq km): 1229.0
Max alt (m OD): 318

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	31.670	18.940	16.200	24.360	13.480	11.010	8.682	13.290	9.758	10.450	24.080	28.200	17.510
(m^3s^{-1}):	Peak	93.20	71.40	30.70	64.60	27.00	29.60	14.50	49.40	15.70	19.60	54.50	75.00	93.20
Runoff (mm)		69	37	35	51	29	23	19	29	21	23	51	61	449
Rainfall (mm)		104	6	70	76	60	50	55	109	8	77	95	110	820

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg.	17.960	17.710	14.010	11.890	10.450	8.720	8.660	9.446	10.290	10.870	13.110	17.390	12.520
flows	Low	6.268	5.886	6.640	4.950	5.258	4.827	3.611	2.482	4.874	5.621	5.898	6.424	7.404
(m^3s^{-1})	High	33.150	48.650	33.900	24.530	25.480	12.910	15.520	20.230	22.650	25.890	34.800	50.320	18.198
Peak flow (m^3s^{-1})		118.10	112.70	79.18	72.32	75.20	47.60	52.25	115.25	77.02	66.26	83.25	126.60	126.60
Runoff (mm)		39	35	31	25	23	18	19	21	22	24	28	38	322
Rainfall (mm)		70	53	57	55	66	61	57	70	72	63	75	75	774

Factors affecting flow regime: SRPGEI
Station type: VA

1986 runoff is 140% of previous mean rainfall 106%

028018 Dove at Marston on Dove 1986

Measuring authority: STWA
First year: 1961
Grid reference 43 (SK) 235 288
Level stn. (m OD): 47 20
Catchment area (sq km): 883 2
Max alt (m OD) 555

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	32.880	14.260	18 180	24.550	14 490	8.291	5 527	8 068	5.190	7.113	24 150	34 100	16 400
(m^3s^{-1}):	Peak	191.36	41.50	78.97	87 65	50 62	20 33	7.30	75.75	8 23	23 65	117.61	174 43	191.36
Runoff (mm)		100	39	55	72	44	24	17	24	15	22	71	103	587
Rainfall (mm)		144	12	88	99	81	47	61	110	9	100	123	176	1050

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg.	22 050	20.300	16 940	14 030	12 110	8 991	7 483	7 632	8.576	10.820	16 440	21 410	13.870
flows	Low	7 822	4.615	8.943	6 195	4 831	3 452	2.430	1 913	2 821	3.495	5.684	7 907	7.723
(m^3s^{-1})	High	31 880	55.910	36 570	24 440	22 480	14 700	15.530	14.630	29.350	22 830	31 070	56 460	19.411
Peak flow (m^3s^{-1})		187.56	194.62	129 73	121 00	121 42	69 70	77.10	101.86	113 87	132 10	130 80	202.80	202 80
Runoff (mm)		67	56	51	41	37	26	23	23	25	33	48	65	496
Rainfall (mm)		91	69	74	66	77	74	65	80	84	78	96	94	948

Factors affecting flow regime: SRPG
Station type: FV

1986 runoff is 118% of previous mean
rainfall 111%

028031 Manifold at Ilam 1986

Measuring authority: STWA
First year: 1968
Grid reference: 43 (SK) 140 507
Level stn. (m OD) 131 00
Catchment area (sq km) 148 5
Max alt (m OD) 513

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	8 088	2 826	6 119	6 200	3 788	1 553	1 009	2.190	1.164	2 091	7 398	9 996	4.388
(m^3s^{-1}):	Peak	65 98	7.14	66.72	36 98	34 92	4 94	1 38	41.14	1 99	14.75	68 69	61 03	68.69
Runoff (mm)		146	46	110	108	68	27	18	40	20	38	129	180	931
Rainfall (mm)		171	15	107	110	93	49	72	117	8	116	145	217	1220

Monthly and yearly statistics for previous record (May 1968 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg.	6.271	5 409	4 668	3.601	2 502	1 840	1.471	1.820	1 826	2.928	5 005	5 266	3.542
flows	Low	3.657	2.489	2.528	1.277	0 812	0 745	0 493	0 386	0 535	0 716	1.555	2.135	2.241
(m^3s^{-1})	High	8.522	12.710	9 455	5 985	5 713	3 443	3 481	4 560	4.147	6 697	8 198	8 741	4.806
Peak flow (m^3s^{-1})		80.13	74 53	49 89	47.36	52 40	39 58	37.29	137 00	45 69	75 78	91.61	66 25	137.00
Runoff (mm)		113	89	84	63	45	32	27	33	32	53	87	95	753
Rainfall (mm)*		124	88	92	72	77	77	69	77	91	90	123	109	1089

*(1969-1985)

Factors affecting flow regime: P E
Station type: C

1986 runoff is 124% of previous mean
rainfall 112%

028039 Rea at Calthorpe Park 1986

Measuring authority: STWA
First year: 1967
Grid reference: 42 (SP) 071 847
Level stn (m OD): 104.20
Catchment area (sq km): 74 0
Max alt (m OD) 286

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.547	0 567	0 779	1 036	0 769	0 590	0 498	1 238	0.371	0 598	1 257	1 256	0.875
(m^3s^{-1}).	Peak	26.42	2.35	5 12	9 18	14.52	8 98	5 10	29.44	4 70	11 01	15 34	8.95	29 44
Runoff (mm)		56	19	28	36	28	21	18	45	13	22	44	45	374
Rainfall (mm)		105	12	69	74	69	47	45	132	13	76	97	100	839

Monthly and yearly statistics for previous record (May 1967 to Dec 1985—incomplete or missing months total 1.1 years)

Mean	Avg	1.173	1 099	1 081	0.762	0 783	0 669	0 512	0.627	0 663	0 645	0.861	1 118	0.832
flows	Low	0 601	0 549	0 483	0 316	0 355	0 287	0 257	0 367	0 295	0 320	0 493	0 530	0.602
(m^3s^{-1})	High	1.634	2 810	2.101	1.489	1 780	1 324	0 890	1 366	1.423	1.408	1 753	1 934	1.058
Peak flow (m^3s^{-1})		24.64	27 44	28 64	25 15	30 37	37 44	46 86	41.25	40 85	23 28	24 97	54 02	54.02
Runoff (mm)		42	36	39	27	28	23	19	23	23	23	30	40	355
Rainfall (mm)*		76	63	68	54	71	64	53	71	75	56	73	79	803

*(1968-1985)

Factors affecting flow regime E
Station type: C

1986 runoff is 106% of previous mean
rainfall 104%

028080 Tame at Lea Marston Lakes 1986

Measuring authority: STWA
First year: 1957
Grid reference: 42 (SP) 207 937
Level stn (m OD). 66.20
Catchment area (sq km): 799.0
Max alt. (m OD): 267

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	23.900	13.730	13.360	17 420	13 840	10.940	9 430	16 450	9 024	10.900	19 160	21 000	14.929
(m^3s^{-1}):	Peak	115.82	32.44	30 61	58 27	70.27	50 70	37.57	142 20	27.64	51 24	57 26	56 76	142.20
Runoff (mm)		80	42	45	57	46	35	32	55	29	37	62	70	590
Rainfall (mm)		99	11	58	65	68	42	43	124	14	72	87	98	781

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg.	17 380	17 130	15.610	13 480	12 660	11 300	10 220	10 810	11 300	11 950	14.210	16 600	13 537
flows	Low	8 994	8.855	8.797	7 259	7 321	6 655	6.369	6 978	6 655	7 852	7 876	9 057	9.699
(m^3s^{-1})	High	24 130	35 140	26.590	22 000	24 690	16 540	17 210	16 970	19 440	25.600	27 880	32 880	17.355
Peak flow (m^3s^{-1})		67 90	66.01	86.27	90 46	80 09	75 20	94 78	94 43	72 02	72 02	127 60	219 20	219.20
Runoff (mm)		58	52	52	44	42	37	34	36	37	40	46	56	535
Rainfall (mm)		65	51	55	52	61	58	55	70	66	57	66	72	728

Factors affecting flow regime: EI
Station type: C

1986 runoff is 110% of previous mean
rainfall 107%

028082 Soar at Littlethorpe 1986

Measuring authority: STWA
First year: 1971
Grid reference 42 (SP) 542 973
Level stn (m OD) 61 40
Catchment area (sq km): 183.9
Max alt (m OD) 151

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 258	1 834	1 423	1 903	1 456	0 651	0 422	0 767	0 491	0 621	2 090	2 937	**1 488**
(m^3s^{-1}):	Peak	16.78	7.80	3 53	6 10	6 76	1 60	1 03	4 90	1 38	2 07	8 61	9 55	**16.78**
Runoff (mm)		47	24	21	27	21	9	6	11	7	9	29	43	**255**
Rainfall (mm)		70	18	51	51	74	29	38	107	20	61	75	85	**679**

Monthly and yearly statistics for previous record (Aug 1971 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	2 663	2 829	2 465	1 471	1 115	0 975	0 535	0 698	0 562	0 878	1 236	2 384	**1.479**
flows	Low	0 713	0 568	0 424	0 346	0 350	0.245	0 164	0 224	0 307	0 338	0.398	0 643	**0.644**
(m^3s^{-1})	High	4 661	6 868	5 031	3 105	2 654	2 346	1 447	2 242	1 608	2 921	2 714	5 101	**2.133**
Peak flow (m^3s^{-1})		17 74	24.47	20 78	21 18	21 08	15 78	13 71	20 41	15 94	19 81	16 59	22 46	**24.47**
Runoff (mm)		39	38	36	21	16	14	8	10	8	13	17	35	**254**
Rainfall (mm)*		53	48	52	39	56	64	39	59	58	48	51	63	**630**

*(1972-1985)

Factors affecting flow regime E
Station type EM

1986 runoff is 100% of previous mean rainfall 108%

029003 Lud at Louth 1986

Measuring authority AWA
First year 1968
Grid reference 53 (TF) 337 879
Level stn (m OD) 15 40
Catchment area (sq km) 55.2
Max alt (m OD) 159

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 885	0 868	0 673	0 782	0 764	0 612	0 473	0 365	0 272	0 203	0 312	0 515	**0.560**
(m^3s^{-1}):	Peak	2 17	1 84	1 32	1 28	2 32	1 68	0 79	1 14	0 69	0 80	1 80	2 80	**2 80**
Runoff (mm)		43	38	33	37	37	29	23	18	13	10	15	25	**319**
Rainfall (mm)		74	44	68	72	103	38	48	81	20	59	80	94	**781**

Monthly and yearly statistics for previous record (Aug 1968 to Dec 1985)

Mean	Avg	0 614	0 813	0 775	0 700	0 578	0 440	0 338	0 284	0 243	0 242	0 311	0 409	**0.477**
flows	Low	0 139	0 157	0 162	0 150	0 156	0 131	0 112	0 102	0 112	0 130	0 132	0 125	**0.178**
(m^3s^{-1})	High	1 279	1 428	1 338	1 289	1 177	0 687	0 507	0 414	0 625	0 719	1 158	0 911	**0.703**
Peak flow (m^3s^{-1})		3 70	3.81	3 58	5 06	3 51	3 27	3 40	3 10	3 30	2 96	6 77	3 10	**6.77**
Runoff (mm)		30	36	38	33	28	21	16	14	11	12	15	20	**273**
Rainfall (mm)		67	47	63	52	55	57	50	61	55	54	69	67	**697**

Factors affecting flow regime
Station type C

1986 runoff is 117% of previous mean rainfall 112%

030004 Partney Lymn at Partney Mill 1986

Measuring authority. AWA
First year 1962
Grid reference 53 (TF) 402 676
Level stn (m OD) 14 90
Catchment area (sq km) 61 6
Max alt. (m OD) 142

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0 962	0 782	0 659	0 848	0 886	0 379	0 257	0 288	0 276	0.266	0 690	0 966	**0.605**
(m^3s^{-1})	Peak	6 12	5.46	2 34	3 38	11 30	0 96	0 69	1 89	0 71	0 81	4 87	7 61	**11 30**
Runoff (mm)		42	31	29	36	39	16	11	13	12	12	29	42	**309**
Rainfall (mm)		68	38	71	69	126	36	54	80	19	54	76	99	**790**

Monthly and yearly statistics for previous record (Jun 1962 to Dec 1985—incomplete or missing months total 0 3 years)

Mean	Avg.	0 820	0 786	0 715	0 614	0 457	0 327	0 274	0 286	0 283	0 379	0 550	0 733	**0 518**
flows	Low	0 351	0 300	0 276	0 228	0 200	0 116	0 088	0 107	0 151	0 190	0 193	0 210	**0 292**
(m^3s^{-1})	High	1 475	1 838	1 538	1 518	0 807	0 691	0 862	0 593	0 917	1 144	1 112	1 804	**0.754**
Peak flow (m^3s^{-1})		10 01	12 59	7 71	13 34	8 56	8 13	13 38	7 06	6 64	8 07	10 17	8 48	**13.38**
Runoff (mm)		36	31	31	26	20	14	12	12	12	16	23	32	**265**
Rainfall (mm)		60	48	60	54	57	58	51	64	55	51	71	64	**693**

Factors affecting flow regime G I
Station type C

1986 runoff is 117% of previous mean rainfall 114%

031002 Glen at Kates Brdg and King St Brdg 1986

Measuring authority. AWA
First year 1960
Grid reference 53 (TF) 106 149
Level stn (m OD) 6 10
Catchment area (sq km) 341 9
Max alt (m OD) 129

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2 851	2 622	1 532	3 691	2 719	1 108	0 441	0 333	0 210	0 134	0 240	0 672	**1.380**
(m^3s^{-1}):	Peak													
Runoff (mm)		22	19	12	28	21	8	3	3	2	1	2	5	**126**
Rainfall (mm)		67	30	44	82	91	18	53	100	17	37	56	65	**660**

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1985)

Mean	Avg	1 965	2 471	2 397	1 820	1 457	0 796	0 444	0 381	0 331	0 477	0 867	1 480	**1 234**
flows	Low	0 093	0 048	0 033	0 018	0 008	0 004	0 000	0 001	0 008	0 024	0 020	0 078	**0 154**
(m^3s^{-1})	High	6 351	10 110	6 317	4 903	5 060	2 182	1 465	1 615	1 873	2 267	5 552	7 868	**2.333**
Peak flow (m^3s^{-1})														
Runoff (mm)		15	18	19	14	11	6	3	3	3	4	7	12	**114**
Rainfall (mm)		52	41	49	51	52	54	46	61	53	49	57	57	**622**

Factors affecting flow regime G
Station type FV

1986 runoff is 111% of previous mean rainfall 106%

031007 Welland at Barrowden 1986

Measuring authority: AWA
First year: 1968
Grid reference: 42 (SP) 948 999
Level stn. (m OD): 34.90
Catchment area (sq km): 411.6
Max alt. (m OD): 228

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6 672	4.505	2.976	5 774	2.338	0 728	0 467	1 369	0.669	0 617	4.295	5 510	**2.993**
(m^3s^{-1}):	Peak	39 99	23.14	7.19	22.94	11 62	1 94	1 05	11.87	2.20	1 41	21.16	20 75	**39.99**
Runoff (mm)		43	26	19	36	15	5	3	9	4	4	27	36	**228**
Rainfall (mm)		67	26	56	70	68	19	42	138	25	58	71	78	**718**

Monthly and yearly statistics for previous record (Feb 1968 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg.	4 665	5.163	4.430	2.726	1.780	1.164	0 825	0 816	0 684	1 213	1 885	3.597	**2 400**
flows	Low	0.516	0 425	0 352	0.257	0 232	0 159	0.092	0 154	0.271	0 226	0 318	0 410	**1.034**
(m^3s^{-1})	High	8 885	17.030	9.701	7.700	7 310	3 093	4 477	4 500	4 322	5 150	6.436	7.509	**3.667**
Peak flow (m^3s^{-1})		36.93	74.42	107 80	79 43	46.95	27 44	38 23	39 91	12.55	22.87	50.37	40 13	**107.80**
Runoff (mm)		30	31	29	17	12	7	5	5	4	8	12	23	**184**
Rainfall (mm)		57	44	53	45	57	59	49	63	52	47	58	60	**644**

Factors affecting flow regime: S E
Station type: C

1986 runoff is 124% of previous mean rainfall 111%

032003 Harpers Brook at Old Mill Bridge 1986

Measuring authority: AWA
First year: 1938
Grid reference: 42 (SP) 983 799
Level stn. (m OD): 30 30
Catchment area (sq km): 74 3
Max alt. (m OD) 146

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.193	0 818	0 613	1.259	0 620	0 180	0.128	0 223	0.131	0 116	0.664	0 790	**0.561**
(m^3s^{-1}):	Peak	14 78	6.59	1 87	7 16	8 38	0 31	0 41	4 31	0.78	0 50	11 04	4 86	**14.78**
Runoff (mm)		43	27	22	44	22	6	5	8	5	4	23	28	**237**
Rainfall (mm)		69	27	55	71	72	12	41	127	27	52	67	70	**690**

Monthly and yearly statistics for previous record (Dec 1938 to Dec 1985—incomplete or missing months total 0 5 years)

Mean	Avg	0 787	0 816	0.716	0 462	0 309	0.200	0 146	0 154	0 144	0 201	0 423	0 586	**0.410**
flows	Low	0 097	0 080	0 076	0 066	0 056	0 049	0 052	0 048	0 049	0 057	0.069	0 077	**0.159**
(m^3s^{-1})	High	2.766	2 485	2 363	1 334	1 246	0 606	0.685	0 791	1.147	0.979	1 688	1 762	**0.676**
Peak flow (m^3s^{-1})		16 06	18 58	17 01	22.00	18 65	10 54	12 49	20 50	6 80	7.73	11.74	17 90	**22.00**
Runoff (mm)		28	27	26	16	11	7	5	6	5	7	15	21	**174**
Rainfall (mm)		58	42	48	43	52	52	51	62	50	52	61	57	**628**

Factors affecting flow regime
Station type: CC

1986 runoff is 136% of previous mean rainfall 110%

032004 Ise Brook at Harrowden Old Mill 1986

Measuring authority: AWA
First year: 1943
Grid reference: 42 (SP) 898 715
Level stn. (m OD): 45.30
Catchment area (sq km): 194.0
Max alt. (m OD): 197

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3 464	2.300	1 745	3 155	1 656	0 655	0 405	0 823	0 522	0 473	2.198	2 520	**1.660**
(m^3s^{-1}):	Peak	12.78	9.61	4 64	9 27	7 74	1 53	1.49	5 06	2.62	2 80	9 11	7 57	**12.78**
Runoff (mm)		48	29	24	42	23	9	6	11	7	7	29	35	**269**
Rainfall (mm)		70	26	59	72	72	15	42	139	27	54	73	73	**722**

Monthly and yearly statistics for previous record (Dec 1943 to Dec 1985—incomplete or missing months total 0.8 years)

Mean	Avg	2.469	2 664	2.292	1 484	1 129	0 759	0 569	0 541	0 513	0 727	1 362	1 945	**1.365**
flows	Low	0 458	0 324	0.219	0 329	0 143	0 128	0 166	0 110	0 128	0 185	0 176	0 219	**0.422**
(m^3s^{-1})	High	6 441	6 949	7 984	3 834	3 606	2 421	3 018	2 655	2.315	4 384	5 331	5 827	**2.337**
Peak flow (m^3s^{-1})		17.10	17.51	28 39	20 77	17 73	24.04	19 54	25 10	7 79	13 08	16.00	16 99	**28.39**
Runoff (mm)		34	33	32	20	16	10	8	7	7	10	18	27	**222**
Rainfall (mm)		54	43	48	44	54	55	50	64	54	51	59	59	**635**

Factors affecting flow regime: S E
Station type: FV

1986 runoff is 121% of previous mean rainfall 114%

033003 Cam at Bottisham 1986

Measuring authority: AWA
First year: 1936
Grid reference: 52 (TL) 508 657
Level stn. (m OD): 2.40
Catchment area (sq km): 803 0
Max alt. (m OD) 168

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4 247	3.965		5 331	3 838	2.521	2 019	1 851	1 770	2 094	3 661	4 340	
(m^3s^{-1}).	Peak													
Runoff (mm)		14	12		17	13	8	7	6	6	7	12	14	
Rainfall (mm)		56	17	50	62	61	15	55	84	30	82	61	59	**632**

Monthly and yearly statistics for previous record (Oct 1936 to Dec 1985—incomplete or missing months total 1.1 years)

Mean	Avg	5 939	6.244	5 893	4 579	3.376	2 440	1.917	1 768	1 695	2.107	3 427	4 198	**3.619**
flows	Low	1 058	1.202	1 142	1 159	0.944	0 750	0 621	0.603	0 784	0 803	0 880	0 995	**1.082**
(m^3s^{-1})	High	19.210	16.410	19 610	18 430	8 775	5 400	6.419	5 471	6 698	6 503	12.120	12 070	**8.279**
Peak flow (m^3s^{-1})														
Runoff (mm)		20	19	20	15	11	8	6	6	5	7	11	14	**142**
Rainfall (mm)		51	36	42	39	48	49	52	56	51	52	59	51	**586**

Factors affecting flow regime: GEI
Station type: MIS

1986 runoff is % of previous mean rainfall 108%

033012 Kym at Meagre Farm 1986

Measuring authority: AWA
First year: 1960
Grid reference: 52 (TL) 155 631
Level stn. (m OD): 17.20
Catchment area (sq km): 137.5
Max alt. (m OD): 101

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.550	0.809	0.935	2.107	0.785	0.057	0.024	0.086	0.043	0.050	0.664	0.853	0.664
(m^3s^{-1}):	Peak	16.80	7.27	5.20	9.25	15.27	0.18	0.07	0.86	0.23	0.16	10.60	7.95	16.80
Runoff (mm)		30	14	18	40	15	1	0	2	1	1	13	17	152
Rainfall (mm)		60	21	53	71	76	12	45	105	24	53	63	56	639

Monthly and yearly statistics for previous record (May 1960 to Dec 1985—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.354	1.454	1.175	0.712	0.365	0.243	0.142	0.106	0.051	0.326	0.616	1.010	0.626
flows	Low	0.074	0.047	0.044	0.041	0.024	0.009	0.001	0.004	0.017	0.015	0.022	0.050	0.103
(m^3s^{-1})	High	3.296	5.577	3.474	2.055	1.469	1.489	2.438	1.096	0.158	2.200	3.718	3.328	1.048
Peak flow (m^3s^{-1})		25.26	22.70	30.24	30.75	20.61	24.10	16.68	23.42	1.34	25.91	34.71	33.98	34.71
Runoff (mm)		26	26	23	13	7	5	3	2	1	6	12	20	144
Rainfall (mm)		50	39	46	46	53	59	48	55	49	50	54	57	606

Factors affecting flow regime: EI
Station type: CB

1986 runoff is 106% of previous mean rainfall 105%

033013 Sapiston at Rectory Bridge 1986

Measuring authority: AWA
First year: 1949
Grid reference: 52 (TL) 896 791
Level stn. (m OD): 15.60
Catchment area (sq km): 205.9
Max alt. (m OD): 97

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.348	0.760	0.817	0.968	0.518	0.379	0.288	0.288	0.237	0.284	0.627	1.049	0.630
(m^3s^{-1}):	Peak	3.53	2.07	2.17	2.05	0.62	0.62		0.98	0.39	0.89	2.12	3.88	
Runoff (mm)		18	9	11	12	7	5	4	4	3	4	8	14	98
Rainfall (mm)		81	15	54	55	46	21	64	89	27	84	58	72	646

Monthly and yearly statistics for previous record (Jan 1949 to Dec 1985—incomplete or missing months total 2.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.175	1.249	1.036	0.788	0.613	0.464	0.315	0.269	0.285	0.341	0.609	0.856	0.664
flows	Low	0.226	0.221	0.150	0.079	0.193	0.133	0.015	0.045	0.051	0.066	0.087	0.139	0.219
(m^3s^{-1})	High	2.417	3.295	2.491	1.947	1.802	1.744	0.651	0.734	1.682	1.008	2.404	2.396	1.071
Peak flow (m^3s^{-1})		9.93	10.90	10.85	8.76	7.31	5.20	2.39	2.93	8.95	6.26	8.97	10.45	10.90
Runoff (mm)		15	15	13	10	8	6	4	4	4	4	8	11	102
Rainfall (mm)*		51	36	44	43	48	52	49	49	56	53	63	56	600

*(1960-1985)

Factors affecting flow regime: GEI
Station type: TP

1986 runoff is 95% of previous mean rainfall 108%

033014 Lark at Temple 1986

Measuring authority: AWA
First year: 1960
Grid reference: 52 (TL) 758 730
Level stn. (m OD): 8.90
Catchment area (sq km): 272.0
Max alt. (m OD): 125

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.730	1.283	1.277	1.787	1.134	0.874	0.777	0.779	0.695	0.700	1.145	1.620	1.150
(m^3s^{-1})	Peak	5.41	3.14	1.92	6.65	2.70	1.54	2.44	2.08	1.31	2.55	4.57	7.27	7.27
Runoff (mm)		17	11	13	17	11	8	8	8	7	7	11	16	133
Rainfall (mm)		61	15	54	60	46	20	66	88	27	85	63	71	656

Monthly and yearly statistics for previous record (Nov 1960 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.808	1.871	1.808	1.600	1.398	1.079	0.885	0.802	0.823	0.852	1.164	1.482	1.295
flows	Low	0.728	0.645	0.675	0.691	0.641	0.548	0.409	0.385	0.440	0.493	0.509	0.600	0.620
(m^3s^{-1})	High	3.062	3.562	3.614	2.999	3.476	1.878	1.422	1.267	2.893	1.847	2.677	2.662	2.014
Peak flow (m^3s^{-1})		11.08	12.05	12.12	10.31	11.83	5.46	3.31	5.24	22.06	8.25	10.12	11.27	22.06
Runoff (mm)		18	17	18	15	14	10	9	8	8	8	11	15	150
Rainfall (mm)		51	36	45	44	51	53	49	50	55	54	63	57	608

Factors affecting flow regime: GEI
Station type: CB

1986 runoff is 89% of previous mean rainfall 108%

033024 Cam at Dernford 1986

Measuring authority: AWA
First year: 1949
Grid reference: 52 (TL) 466 506
Level stn. (m OD): 14.70
Catchment area (sq km): 198.0
Max alt. (m OD): 146

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.082	0.939	0.893	1.265	1.041	0.736	0.580	0.619	0.522	0.612	1.020	1.324	0.886
(m^3s^{-1}):	Peak	3.29	2.67	1.92	3.37	1.59	1.01	1.96	1.99	0.74	1.81	3.73	4.83	4.83
Runoff (mm)		15	11	12	17	14	10	8	8	7	8	13	18	141
Rainfall (mm)		61	19	51	63	56	19	62	91	29	85	68	63	667

Monthly and yearly statistics for previous record (Mar 1949 to Dec 1985—incomplete or missing months total 1.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.427	1.499	1.359	1.187	0.989	0.779	0.622	0.581	0.559	0.708	0.933	1.179	0.983
flows	Low	0.449	0.400	0.562	0.465	0.408	0.318	0.184	0.248	0.155	0.313	0.361	0.356	0.418
(m^3s^{-1})	High	2.845	2.703	2.608	2.431	2.144	1.338	1.608	1.457	1.965	2.088	2.790	3.492	1.508
Peak flow (m^3s^{-1})		10.38	14.09	10.22	9.94	13.63	6.94	3.60	4.79	10.99	9.10	12.50	12.06	14.09
Runoff (mm)		19	18	18	16	13	10	8	8	7	10	12	16	157
Rainfall (mm)*		49	39	42	40	47	49	52	58	54	51	59	55	595

*(1950-1985)

Factors affecting flow regime: GEI
Station type: TP

1986 runoff is 90% of previous mean rainfall 112%

034001 Yare at Colney 1986

Measuring authority: AWA
First year: 1959
Grid reference: 63 (TG) 182 082
Level stn (m OD) 8 20
Catchment area (sq km) 231.8
Max alt (m OD) 69

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 199	1 558	1 439	2 336	1 164	0 629	0 43*	0 498	0 461	0 531	1 111	2 002	**1.280**
(m^3s^{-1})	Peak	5 29	3 90	3 18	3 72	2 14	1 16	1 29	1 58	0 89	0 93	2 83	5 29	**5.29**
Runoff (mm)		37	16	17	26	13	7	5	6	5	6	12	23	**174**
Rainfall (mm)		63	17	60	61	49	31	5*	82	26	68	62	84	**654**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1985)

Mean	Avg	2 609	2 633	2 043	1.739	1 135	0 746	0 588	0 562	0 683	0 895	1 481	2 211	**1.438**
flows	Low	0 779	0 947	0 842	0 623	0 462	0 285	0 189	0 200	0 272	0 381	0 440	0 714	**0.770**
(m^3s^{-1})	High	5.181	4.931	4.783	3 442	2 487	2 069	1 043	1 607	3 420	2.898	3 971	5 904	**2.230**
Peak flow (m^3s^{-1})		18 97	18 63	16 90	20 51	10 10	4 01	4 54	6 34	21 61	7 48	11.20	21 15	**21 61**
Runoff (mm)		30	28	24	19	13	8	7	6	8	10	17	26	**196**
Rainfall (mm)		59	42	46	48	48	52	54	56	56	58	70	65	**654**

Factors affecting flow regime: G I
Station type: MIS

1986 runoff is 89% of previous mean rainfall 100%

034002 Tas at Shotesham 1986

Measuring authority: AWA
First year: 1957
Grid reference 62 (TM) 226 994
Level stn (m OD) 9 60
Catchment area (sq km) 146 5
Max alt (m OD) 65

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 530	0 534	0 736	0 656	0 223	0 180	0 110	0 155	0 256	0 318	0 544	1.082	**0 527**
(m^3s^{-1})	Peak	3 58	1 99	2 04	1 55	0 55	0 75	0 60	1 06	1 00	0 82	1 29	4 44	**4 44**
Runoff (mm)		28	9	13	12	4	3	2	3	5	6	10	20	**114**
Rainfall (mm)		63	16	58	57	49	28	48	83	27	74	53	77	**633**

Monthly and yearly statistics for previous record (Nov 1957 to Dec 1985—incomplete or missing months total 0.6 years)

Mean	Avg	1 475	1 358	0 986	0 766	0 536	0 419	0 351	0 302	0 414	0 461	0 788	1 175	**0.750**
flows	Low	0 287	0 368	0 275	0 309	0 219	0 175	0 120	0 126	0 158	0 183	0 229	0 300	**0.280**
(m^3s^{-1})	High	3 107	3 709	2 435	1 666	1 539	1 515	0 962	0 764	3 425	1 422	2 946	3 239	**1.299**
Peak flow (m^3s^{-1})		14.16	13 58	11 53	5 69	6 65	6 80	6 51	3 57	62 30	7 84	11 31	13 31	**62 30**
Runoff (mm)		27	23	18	14	10	7	6	6	7	8	14	21	**181**
Rainfall (mm)		55	39	41	45	47	49	50	53	53	54	64	61	**611**

Factors affecting flow regime G I
Station type: FV

1986 runoff is 70% of previous mean rainfall 104%

035002 Deben at Naunton Hall 1986

Measuring authority: AWA
First year: 1964
Grid reference 62 (TM) 322 534
Level stn. (m OD) 5 50
Catchment area (sq km) 163 1
Max alt (m OD) 62

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2 476	0 697	0.901	1 185	0 331	0 209	0 145	0 182	0 170	0 397	1.260	2 100	**0.838**
(m^3s^{-1})	Peak	8 05	6 03	5 00	6 40	0 75	0 37	0 55	0 72	0 27	2 65	9 02	11 72	**11 72**
Runoff (mm)		41	10	15	19	5	3	2	3	3	7	20	34	**163**
Rainfall (mm)		67	18	52	56	55	31	72	91	31	91	59	75	**698**

Monthly and yearly statistics for previous record (Aug 1964 to Dec 1985—incomplete or missing months total 0.5 years)

Mean	Avg	1 741	1 485	1.074	0 786	0 422	0 248	0 166	0 168	0 322	0 385	0 862	1 322	**0.745**
flows	Low	0 259	0 247	0 228	0 176	0 107	0 052	0 044	0 054	0 076	0 139	0 173	0 192	**0.204**
(m^3s^{-1})	High	2 894	4 252	3 366	2 162	1 148	1 174	0 405	0 483	2 825	1 222	3 113	3 585	**1.060**
Peak flow (m^3s^{-1})		17 78	16 71	14 80	16 10	12 80	7 54	3 39	2 61	29 45	8 24	16 86	17 86	**29.45**
Runoff (mm)		29	22	18	12	7	4	3	3	5	6	14	22	**144**
Rainfall (mm)		54	38	44	42	46	47	46	44	57	49	64	57	**588**

Factors affecting flow regime R G I
Station type CC

1986 runoff is 113% of previous mean rainfall 119%

037001 Roding at Redbridge 1986

Measuring authority: TWA
First year: 1950
Grid reference 51 (TQ) 415 884
Level stn (m OD) 5 70
Catchment area (sq km) 303 3
Max alt (m OD) 117

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6 342	2 280	2 129	3 708	0 878	0 431	0 506	0 776	0 368	0 794	3 000	3 021	**2 019**
(m^3s^{-1})	Peak	24 70	10 65	6 78	9 62	2 95	1 25	4 01	10 30	2 00	7 22	12 70	8 30	**24.70**
Runoff (mm)		56	18	19	32	8	4	4	7	3	7	26	27	**210**
Rainfall (mm)		80	17	47	60	50	15	58	90	27	70	73	59	**646**

Monthly and yearly statistics for previous record (Feb 1950 to Dec 1985)

Mean	Avg	3 658	3 516	2 759	1 847	1 267	0 852	0 604	0 600	0 870	1 284	2 151	3 018	**1 861**
flows	Low	0 675	0 608	0 537	0 482	0 323	0 226	0 280	0 224	0 197	0 283	0 412	0 412	**0 801**
(m^3s^{-1})	High	7 282	10 670	6 858	6.768	4 045	2 953	1 975	1 315	4 012	6 834	10 340	9 454	**2.809**
Peak flow (m^3s^{-1})		34 74	30 80	38.08	27 72	32 70	21 70	24 50	19 8*	25 62	35 60	62 41	36 40	**62.41**
Runoff (mm)		32	28	24	16	11	7	5	5	7	11	18	27	**194**
Rainfall (mm)		51	42	46	42	50	52	51	56	59	55	63	58	**625**

Factors affecting flow regime: S EI
Station type: EW

1986 runoff is 108% of previous mean rainfall 103%

037005 Colne at Lexden — 1986

Measuring authority: AWA
First year: 1959
Grid reference: 52 (TL) 962 261
Level stn: (m OD) 8.20
Catchment area (sq km): 238.2
Max alt: (m OD) 114

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.945	1.098	1.007	1.346	0.657	0.396	0.349	0.347	0.319	0.499	1.215	1.694	**0.908**
(m^3s^{-1})	Peak	5.67	3.94	2.26	3.71	1.08	0.91	1.40	1.25	0.70	2.04	5.00	6.94	**6.94**
Runoff (mm)		22	11	11	15	7	4	4	4	3	6	13	19	**120**
Rainfall (mm)		61	16	47	50	46	22	63	79	28	75	58	65	**610**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1985)

Mean	Avg	1.973	1.812	1.672	1.199	0.818	0.466	0.346	0.321	0.377	0.639	1.141	1.549	**1.023**
flows	Low	0.460	0.346	0.380	0.358	0.229	0.146	0.100	0.088	0.179	0.188	0.288	0.352	**0.362**
(m^3s^{-1})	High	3.737	4.684	3.556	3.344	2.353	1.011	0.687	0.554	1.099	3.930	5.521	4.200	**1.732**
Peak flow (m^3s^{-1})		14.20	22.65	20.68	13.34	12.56	6.26	6.41	2.38	10.50	18.55	21.29	20.58	**22.65**
Runoff (mm)		22	19	19	13	9	5	4	4	4	7	12	17	**135**
Rainfall (mm)		47	34	44	42	46	46	44	48	53	51	60	55	**570**

Factors affecting flow regime: R EI
Station type: FL
1986 runoff is 88% of previous mean rainfall 107%

037010 Blackwater at Appleford Bridge — 1986

Measuring authority: AWA
First year: 1962
Grid reference: 52 (TL) 845 158
Level stn: (m OD) 14.60
Catchment area (sq km): 247.3
Max alt: (m OD): 127

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2.445	1.270	1.088	1.867	0.789	0.540	0.532	0.648	0.416	0.575	1.368	1.619	**1.096**
(m^3s^{-1})	Peak	9.62	5.15	2.21	5.49	1.50	0.95	1.25	1.71	0.80	2.00	5.30	6.18	**9.62**
Runoff (mm)		26	12	12	20	9	6	6	7	4	6	14	18	**140**
Rainfall (mm)		64	15	47	54	49	20	61	82	27	73	59	61	**612**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985)

Mean	Avg	2.004	1.974	1.947	1.451	1.048	0.730	0.515	0.460	0.517	0.680	1.142	1.682	**1.176**
flows	Low	0.532	0.460	0.479	0.479	0.341	0.356	0.182	0.161	0.215	0.288	0.325	0.379	**0.822**
(m^3s^{-1})	High	3.916	4.889	3.583	3.843	2.860	1.583	1.007	0.837	1.651	1.955	4.676	4.307	**1.642**
Peak flow (m^3s^{-1})		14.10	21.60	20.00	12.31	17.80	7.76	2.92	3.28	15.25	10.00	20.20	21.60	**21.60**
Runoff (mm)		22	19	21	15	11	8	6	5	5	7	12	18	**150**
Rainfall (mm)		46	34	47	43	49	52	43	48	52	47	60	52	**573**

Factors affecting flow regime: R GEI
Station type: FL
1986 runoff is 93% of previous mean rainfall 107%

038001 Lee at Feildes Weir — 1986

Measuring authority: TWA
First year: 1936 (naturalised flows from 1883)
Grid reference: 52 (TL) 390 092
Level stn: (m OD) 27.70
Catchment area (sq km): 1036.0
Max alt: (m OD): 229

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7.628	4.975	4.243	7.429	4.147	2.372	1.978	2.205	1.748	1.798	5.396	5.921	**4.153**
(m^3s^{-1})	Peak	26.80	15.40	11.20	29.90	10.60	5.34	8.39	13.90	7.20	8.24	45.00	30.00	**45.00**
Runoff (mm)		20	12	11	19	11	6	5	6	4	5	14	15	**126**
Rainfall (mm)		74	19	54	71	60	17	61	96	30	80	71	64	**697**

Monthly and yearly statistics for previous record (Oct 1936 to Dec 1985—incomplete or missing months total 1.9 years)

Mean	Avg	6.676	6.716	6.239	4.480	3.650	2.577	1.764	1.629	1.735	2.405	4.124	5.186	**3.918**
flows	Low	1.052	0.959	0.460	0.484	0.302	0.224	0.081	0.085	0.132	0.302	0.416	1.099	**0.866**
(m^3s^{-1})	High	17.200	17.800	29.430	12.000	12.260	7.618	4.994	3.841	7.063	10.420	13.880	13.210	**7.182**
Peak flow (m^3s^{-1})														
Runoff (mm)		17	16	16	11	9	6	5	4	4	6	10	13	**119**
Rainfall (mm)		57	42	47	43	51	50	54	57	55	59	66	58	**639**

Factors affecting flow regime: PGEI
Station type: MIS
1986 runoff is 106% of previous mean rainfall 109%

038007 Canons Brook at Elizabeth Way — 1986

Measuring authority: TWA
First year: 1965
Grid reference: 52 (TL) 431 104
Level stn: (m OD) 37.50
Catchment area (sq km): 21.4
Max alt: (m OD) 110

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.394	0.156	0.231	0.320	0.143	0.091	0.124	0.174	0.087	0.154	0.279	0.258	**0.201**
(m^3s^{-1})	Peak	4.47	0.75	1.83	3.77	2.42	1.88	4.26	7.07	1.63	5.06	2.43	2.49	**7.07**
Runoff (mm)		49	18	29	39	18	11	16	22	10	19	34	32	**297**
Rainfall (mm)		79	17	50	68	49	14	60	93	27	79	71	61	**668**

Monthly and yearly statistics for previous record (Oct 1965 to Dec 1985—incomplete or missing months total 0.4 years)

Mean	Avg	0.305	0.292	0.260	0.198	0.188	0.135	0.108	0.116	0.123	0.153	0.219	0.267	**0.197**
flows	Low	0.059	0.062	0.054	0.074	0.073	0.067	0.056	0.034	0.056	0.043	0.058	0.092	**0.095**
(m^3s^{-1})	High	0.470	0.883	0.468	0.520	0.415	0.253	0.210	0.193	0.294	0.468	0.794	0.507	**0.253**
Peak flow (m^3s^{-1})		8.25	11.50	6.56	10.31	12.20	10.10	10.97	10.61	9.00	10.60	9.85	9.36	**12.20**
Runoff (mm)		38	33	33	24	23	16	13	14	15	19	27	33	**290**
Rainfall (mm)		51	37	48	41	55	54	47	52	57	52	60	58	**612**

Factors affecting flow regime
Station type: FL
1986 runoff is 102% of previous mean rainfall 109%

038021 Turkey Brook at Albany Park 1986

Measuring authority: TWA
First year: 1971
Grid reference: 51 (TQ) 359 985
Level stn. (m OD): 16 60
Catchment area (sq km) 42.2
Max alt. (m OD) 127

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0 694	0 181	0 255	0 504	0 075	0 025	0 050	0 099	0 033	0.182	0.483	0 406	0.249
(m^3s^{-1}):	Peak	5.67	1.19	2.03	1.59	0 67	0.16	1.80	2.45	0 40	2 09	2 87	2 88	5.67
Runoff (mm)		44	10	16	31	5	2	3	6	2	12	30	26	186
Rainfall (mm)		95	16	55	75	58	14	53	105	29	86	77	71	734

Monthly and yearly statistics for previous record (Sep 1971 to Dec 1985)

Mean	Avg.	0 402	0 365	0 358	0.197	0 199	0 099	0 040	0 051	0 064	0 137	0 241	0 345	0.208
flows	Low	0 037	0 042	0 024	0 020	0 014	0 021	0 013	0 008	0 012	0 016	0 019	0 086	0.057
(m^3s^{-1})	High	0.760	0 988	0 811	0.626	0 626	0 240	0 087	0 171	0.228	0 524	1.158	0 704	0.339
Peak flow (m^3s^{-1})		10.50	11.00	5.14	7.72	20 69	15 30	2 38	2.76	7.55	8 14	12 75	10 50	20.69
Runoff (mm)		26	21	23	12	13	6	3	3	4	9	15	22	155
Rainfall (mm)		58	44	60	43	62	56	41	49	66	56	63	65	663

Factors affecting flow regime: G
Station type: FV

1986 runoff is 120% of previous mean
rainfall 111%

039002 Thames at Days Weir 1986

Measuring authority: TWA
First year: 1938
Grid reference: 41 (SU) 568 935
Level stn. (m OD): 46 00
Catchment area (sq km) 3444 7
Max alt. (m OD) 330

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	77.750	42.130	30.540	46.640	28 430	14.470	7.110	11 360	8 341	8 396	48 190	58 620	31.831
(m^3s^{-1}):	Peak													
Runoff (mm)		60	30	24	35	22	11	6	9	6	7	36	46	291
Rainfall (mm)		85	12	63	67	76	26	44	116	28	69	95	84	765

Monthly and yearly statistics for previous record (Oct 1938 to Dec 1985)

Mean	Avg	55.270	57 040	46 550	30 410	21 030	14.880	8.675	7.361	8 859	15 170	31 320	45 410	28.361
flows	Low	8.250	5.554	5.620	4 253	2.855	1.502	0 399	0 296	1 741	2 778	4 040	5 312	10 095
(m^3s^{-1})	High	133 600	120 800	163 200	85 070	61 140	41 560	48 820	18 690	38 630	74 570	128 100	128 700	51.292
Peak flow (m^3s^{-1})														
Runoff (mm)		43	40	36	23	16	11	7	6	7	12	24	35	260
Rainfall (mm)		66	47	54	46	60	55	53	68	62	63	71	73	718

Factors affecting flow regime: P EI
Station type: MIS

1986 runoff is 112% of previous mean
rainfall 107%

039005 Beverley Brook at Wimbledon Common 1986

Measuring authority: TWA
First year: 1935
Grid reference: 51 (TQ) 216 717
Level stn. (m OD): 11 00
Catchment area (sq km) 43 6
Max alt. (m OD): 190

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.090	0 573	0 574	0 726	0 484	0 429	0 456	0 545	0 399	0 535	0 770	0 641	0 602
(m^3s^{-1}):	Peak	10 10	2.87	3.04	3 42	4.08	3 71	6 72	9.75	3.24	4 95	5 11	4 10	10.10
Runoff (mm)		67	32	35	43	30	26	28	33	24	33	46	39	436
Rainfall (mm)		106	18	46	62	46	20	48	79	26	69	87	62	669

Monthly and yearly statistics for previous record (Mar 1935 to Dec 1985—incomplete or missing months total 23.5 years)

Mean	Avg.	0 699	0 598	0 565	0.536	0 483	0.476	0.425	0.441	0 506	0 494	0 583	0 649	0.538
flows	Low	0.280	0 244	0 290	0 257	0 214	0 157	0 211	0 189	0 224	0 160	0 274	0 247	0 291
(m^3s^{-1})	High	1.112	1 196	1 023	1.538	1 092	0.956	0 920	0 970	1 340	0 926	1 415	1 057	0 695
Peak flow (m^3s^{-1})		10 90	9.04	7.51	22 40	14.80	12 90	16 51	17 30	16 50	13 40	10 90	14 00	22 40
Runoff (mm)		43	33	35	32	30	28	26	27	30	30	35	40	389
Rainfall (mm)		57	38	46	41	53	55	48	56	60	59	64	65	642

Factors affecting flow regime: GE
Station type: FL

1986 runoff is 112% of previous mean
rainfall 104%

039014 Ver at Hansteads 1986

Measuring authority: TWA
First year: 1956
Grid reference: 52 (TL) 151 016
Level stn. (m OD): 61.30
Catchment area (sq km) 132.0
Max alt. (m OD) 243

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.328	0.322	0.307	0.398	0.388	0 261	0 205	0.208	0 171	0 176	0 276	0 328	0.281
(m^3s^{-1}):	Peak	0 82	0.53	0.79	1 03	1.29	0 58	0.73	0.80	0.44	0 52	0.61	0 70	1.29
Runoff (mm)		7	6	6	8	8	5	4	4	3	4	5	7	67
Rainfall (mm)		85	22	59	85	65	16	50	98	35	86	84	79	764

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1985)

Mean	Avg.	0.484	0.547	0.582	0.556	0.494	0 432	0.362	0 320	0.287	0 301	0 357	0 415	0.427
flows	Low	0.126	0.190	0.138	0.114	0.069	0 045	0 028	0.016	0 025	0 057	0 039	0 048	0.095
(m^3s^{-1})	High	0.981	1 336	1.312	1.254	1.028	0 857	0 651	0 564	0 660	0 668	0 791	0 977	0.752
Peak flow (m^3s^{-1})		1.77	1.91	1.88	1.90	2.07	1 65	1 44	1 13	2.34	1 35	2 31	2 64	2.64
Runoff (mm)		10	10	12	11	10	8	7	7	6	6	7	8	102
Rainfall (mm)		63	47	57	50	56	61	52	57	63	64	68	74	712

Factors affecting flow regime: G
Station type: CC

1986 runoff is 66% of previous mean
rainfall 107%

039016 Kennet at Theale 1986

Measuring authority: TWA
First year: 1961
Grid reference: 41 (SU) 649 708
Level stn (m OD): 43.40
Catchment area (sq km): 1033.4
Max alt. (m OD): 297

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	18 030	15.090	12.590	11 290	10 950	8 924	7 011	7 416	6 333	6 001	11 580	14 240	10.788
(m^3s^{-1}):	Peak	26 40	19 10	20 30	14 30	19 00	10 80	9 99	20 50	13 10	10 60	29 70	30 70	30 70
Runoff (mm)		47	35	33	28	28	22	18	19	16	16	29	37	329
Rainfall (mm)		106	11	66	60	85	23	42	11	43	76	117	105	845

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	12 950	14.470	14 840	12 750	10 470	8 693	6 510	5 768	5 410	6 091	7.861	10.270	9.648
flows	Low	4 144	4 401	4 190	3 429	2 739	2.041	1.620	1.377	2 787	3 897	3 943	5 159	4.056
(m^3s^{-1})	High	22.680	22.720	22.010	19 790	15.430	18 600	11 120	9 542	10 000	13 970	17 710	18.240	12.882
Peak flow (m^3s^{-1})		48.30	44 80	44 30	31 70	30 10	70 80	19 00	19 40	33.40	29 40	43.50	47 30	70.80
Runoff (mm)		34	34	38	32	27	22	17	15	14	16	20	27	295
Rainfall (mm)		74	50	70	50	65	62	47	67	70	65	76	83	779

Factors affecting flow regime: R G I
Station type: C

1986 runoff is 112% of previous mean rainfall 108%

039019 Lambourn at Shaw 1986

Measuring authority: TWA
First year: 1962
Grid reference: 41 (SU) 470 682
Level stn. (m OD): 75 60
Catchment area (sq km): 234.1
Max alt. (m OD): 261

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2.350	2.709	2 721	2.210	2 101	1 891	1 618	1.395	1.221	1 051	1.231	1.649	1.846
(m^3s^{-1}):	Peak	2 96	2 89	3 06	2 56	2 87	2.17	1.86	1 86	1.64	1 38	1 63	2.34	3.06
Runoff (mm)		27	28	31	24	24	21	19	16	14	12	14	19	248
Rainfall (mm)		93	12	63	61	83	24	38	111	40	73	108	95	801

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	1 721	2.172	2 471	2.445	2 161	1 869	1.540	1 316	1 188	1 165	1.239	1.414	1.722
flows	Low	0.828	0.796	0 743	0 695	0 639	0 573	0 538	0 485	0 681	0 683	0 757	0 855	0.739
(m^3s^{-1})	High	3 410	3 618	3.583	3.550	2 979	2 764	2.359	2 048	1 699	1 921	2.392	2.551	2.151
Peak flow (m^3s^{-1})		3 93	4 20	4.39	4.08	3 76	4 34	3 06	3 54	3 75	3 17	5 02	3.72	5.02
Runoff (mm)		20	23	28	27	25	21	18	15	13	13	14	16	232
Rainfall (mm)		68	48	66	48	63	60	49	62	66	60	74	78	740

Factors affecting flow regime: R G
Station type: C

1986 runoff is 107% of previous mean rainfall 108%

039023 Wye at Hedsor 1986

Measuring authority: TWA
First year: 1964
Grid reference: 41 (SU) 896 867
Level stn (m OD): 26.80
Catchment area (sq km): 137 3
Max alt. (m OD): 244

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 131	1.099	1.173	1.194	1 177	1 099	1 022	1 019	0 914	0 847	0.905	0 962	1 045
(m^3s^{-1}):	Peak	2 46	1 37	2.19	1 72	2.32	1 69	1.88	2.29	1.91	2 02	1 71	2 00	2.46
Runoff (mm)		22	19	23	23	23	21	20	20	17	17	17	19	240
Rainfall (mm)		108	18	60	68	75	17	39	105	34	92	96	98	810

Monthly and yearly statistics for previous record (Dec 1964 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0 945	1 041	1 146	1 187	1.167	1 128	1 022	0 973	0 878	0 831	0.825	0.870	1.001
flows	Low	0 419	0.483	0.488	0 470	0 432	0 380	0 370	0.314	0.381	0 395	0 375	0.340	0.442
(m^3s^{-1})	High	1 506	1 675	1 800	1 891	1 842	1 582	1 434	1 317	1 182	1 180	1 329	1.373	1.365
Peak flow (m^3s^{-1})		3 49	2.76	3 21	3.26	3 98	3 51	2 94	4 17	4 43	3 14	2 79	2 85	4 43
Runoff (mm)		18	18	22	22	23	21	20	19	17	16	16	17	230
Rainfall (mm)		70	50	62	52	67	65	55	65	70	63	71	80	770

Factors affecting flow regime: G I
Station type: C

1986 runoff is 104% of previous mean rainfall 105%

039026 Cherwell at Banbury 1986

Measuring authority: TWA
First year: 1966
Grid reference: 42 (SP) 458 411
Level stn (m OD): 88 90
Catchment area (sq km): 199 4
Max alt. (m OD): 222

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3 104	1 380	1 357	2 049	0 627	0 199	0 075	0 314	0 065	0 099	1 540	2 589	1.117
(m^3s^{-1}):	Peak	26 50	5 88	7 05	7 99	2 11	0 71	0.98	3 65	0 37	0 42	7.60	8.44	26.50
Runoff (mm)		42	17	18	27	8	3	1	4	1	1	20	35	176
Rainfall (mm)		72	16	59	59	63	28	47	121	22	56	83	84	710

Monthly and yearly statistics for previous record (Dec 1966 to Dec 1985)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2 394	2 342	2.102	0 972	0 853	0 516	0 237	0.350	0 231	0 440	0 807	1.872	1.089
flows	Low	0 074	0 049	0 031	0 012	0 010	0 008	0 004	0 009	0 016	0 013	0 018	0.056	0.259
(m^3s^{-1})	High	5 018	5.320	4.780	2.076	2 676	1 709	1 869	1 343	1 532	1 715	2 828	3.967	1.672
Peak flow (m^3s^{-1})		23.60	45.90	46.40	12 00	12.60	16 90	27.20	17.20	7.25	9 00	18 20	54.10	54.10
Runoff (mm)		32	29	28	13	11	7	3	5	3	6	10	25	172
Rainfall (mm)		63	47	58	41	64	61	54	69	58	52	58	68	693

Factors affecting flow regime: P
Station type: CC

1986 runoff is 102% of previous mean rainfall 102%

039029 Tillingbourne at Shalford 1986

Measuring authority: TWA
First year: 1968
Grid reference: 51 (TQ) 000 478
Level stn. (m OD): 31 70
Catchment area (sq km): 59 0
Max alt. (m OD): 294

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.774	0 585	0 607	0.644	0.573	0 494	0.455	0.465	0 434	0.469	0.620	0.588	0.559
(m^3s^{-1}):	Peak	1 60	0 84	0 96	0 98	0 91	0 63	0 74	1 02	0 59	0 96	1.37	0 93	1.60
Runoff (mm)		35	24	28	28	26	22	21	21	19	21	27	27	299
Rainfall (mm)		140	23	71	75	64	19	44	89	31	86	132	97	871

Monthly and yearly statistics for previous record (Jun 1968 to Dec 1985)

Mean	Avg.	0.665	0 638	0.641	0 606	0 575	0.523	0 471	0.469	0.492	0.512	0 567	0 624	0 565
flows	Low	0 457	0 423	0 398	0 398	0 376	0 353	0 340	0 326	0 357	0 362	0 354	0 392	0.389
(m^3s^{-1})	High	0.965	0.857	0.900	0 897	0 819	0.830	0.599	0 619	0.885	0 701	0 883	0 840	0.686
Peak flow (m^3s^{-1})		2.70	2 26	3 23	3 00	1 91	2 79	1 65	2 36	6 09	2 10	3 65	3 25	6.09
Runoff (mm)		30	26	29	27	26	23	21	21	22	23	25	28	302
Rainfall (mm)		83	49	71	51	66	60	49	62	80	73	83	85	812

Factors affecting flow regime: G I
Station type: C

1986 runoff is 99% of previous mean
rainfall 107%

039049 Silk Stream at Colindeep Lane 1986

Measuring authority: TWA
First year: 1973
Grid reference: 51 (TQ) 217 895
Level stn. (m OD): 39.90
Catchment area (sq km): 29 0
Max alt. (m OD): 146

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 592	0 188	0 285	0 422	0 275	0 061	0 143	0 216	0 087	0 239	0 420	0 391	0 276
(m^3s^{-1}):	Peak	7 54	1.18	2.45	3.35	12.40	1 71	7.40	10.40	2.06	7.70	3 15	3 05	12 40
Runoff (mm)		55	16	26	38	25	5	13	20	8	22	38	36	302
Rainfall (mm)		103	20	53	74	75	12	67	105	28	90	83	77	787

Monthly and yearly statistics for previous record (Dec 1973 to Dec 1985—incomplete or missing months total 4.4 years)

Mean	Avg	0 349	0.283	0.362	0 253	0 276	0.238	0.124	0 120	0 148	0 289	0 368	0 347	0.263
flows	Low	0 204	0 102	0 151	0 030	0 035	0 105	0 047	0 053	0 057	0 062	0 108	0 143	0.178
(m^3s^{-1})	High	0 564	0 472	0 676	0 574	0.602	0.643	0 213	0 199	0 363	0 507	1 086	0 659	0.314
Peak flow (m^3s^{-1})		9 00	6 20	8 89	10.26	39.80	32.80	16.50	30 50	27 90	40 50	24 30	36 31	40.50
Runoff (mm)		32	24	33	23	25	21	11	11	13	27	33	32	286
Rainfall (mm)		57	38	64	45	72	64	41	46	75	66	64	64	696

Factors affecting flow regime
Station type: FV

1986 runoff is 105% of previous mean
rainfall 113%

039069 Mole at Kinnersley Manor 1986

Measuring authority: TWA
First year: 1972
Grid reference: 51 (TQ) 262 462
Level stn. (m OD): 48 00
Catchment area (sq km): 142.0
Max alt. (m OD): 178

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6 268	1.477	2.618	2 761	1.094	0.616	0.543	0 953	0 598	0.984	4.691	3.792	2.200
(m^3s^{-1}):	Peak	41.00	4 31	13 20	14 10	3 43	3 07	4 78	14 30	6 15	6 19	42 60	24 40	42.60
Runoff (mm)		118	25	49	50	21	11	10	18	11	19	86	72	490
Rainfall (mm)		130	18	72	64	60	21	39	86	36	84	127	95	832

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1985—incomplete or missing months total 1.5 years)

Mean	Avg.	3 429	2.879	2.637	1.660	1.597	1 000	0 570	0.829	1 055	1 710	2 209	3 851	1.950
flows	Low	1 364	0 829	0 833	0 388	0 305	0 221	0 296	0 169	0 281	0 207	0 260	1 100	0.950
(m^3s^{-1})	High	5 576	5 883	4 668	3.666	3.552	1 874	1 709	2 864	5 419	6 062	5 668	5 474	2.313
Peak flow (m^3s^{-1})		41.30	46 50	22 30	47.00	32.90	23 30	14 90	29 80	40 70	45 90	56 10	68 50	68.50
Runoff (mm)		65	49	50	30	30	18	11	16	19	32	40	73	433
Rainfall (mm)		74	54	69	43	65	62	43	60	74	85	81	101	811

Factors affecting flow regime:
Station type: MIS

1986 runoff is 113% of previous mean
rainfall 103%

040004 Rother at Udiam 1986

Measuring authority: SWA
First year: 1962
Grid reference: 51 (TQ) 773 245
Level stn. (m OD): 1.90
Catchment area (sq km): 206 0
Max alt. (m OD): 197

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9.397	2.242	3.652	3 627	1.263	0 649	0 543	0.543	0 392	0 554	5 843	4 814	2.793
(m^3s^{-1}):	Peak	41.57	6.91	17.09	13.12	2.32	1.17	0 79	3.93	1 12	3 71	47 79	24 76	47.79
Runoff (mm)		122	26	47	46	16	8	7	7	5	7	74	63	429
Rainfall (mm)		160	25	89	68	49	16	26	67	41	110	146	107	904

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985—incomplete or missing months total 1.8 years)

Mean	Avg	3 598	3 419	3.142	2.226	1.430	1 026	0 599	0 699	0.888	1 550	3 082	3 658	2.103
flows	Low	0.945	0.792	0.657	0.343	0 338	0.268	0.231	0 182	0.245	0.179	0 184	0 427	0.756
(m^3s^{-1})	High	6.957	10 370	6 927	4 533	2 817	4 157	2.790	2 682	3 952	5.708	12 360	9 547	3.322
Peak flow (m^3s^{-1})		39.99	44.74	49.84	25 43	24.09	23.08	21.64	14 36	33.98	29 17	50 43	51 82	51 82
Runoff (mm)		47	40	41	28	19	13	8	9	11	20	39	48	322
Rainfall (mm)		82	61	72	55	60	64	51	64	80	84	101	93	867

Factors affecting flow regime: S GE
Station type VA

1986 runoff is 133% of previous mean
rainfall 104%

040009 Teise at Stone Bridge 1986

Measuring authority: SWA
First year: 1961
Grid reference: 51 (TQ) 718 399
Level stn (m OD) 24 50
Catchment area (sq km): 136 2
Max alt. (m OD): 201

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.344	1.109	1 482	1.783	0 811	0 727	0.718	0.718	0 605	0 722	2.246	1 724	1.332
(m^3s^{-1}):	Peak	19 75	3.51	10 65	6 94	1 27	1.42	1.13	0 92	1.14	2 06	17.78	12 88	19.75
Runoff (mm)		66	20	29	34	16	14	14	14	12	14	43	34	309
Rainfall (mm)		135	24	72	72	48	16	35	70	42	101	129	94	838

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985)

Mean	Avg.	2 447	2 094	1.893	1 405	1 107	0 787	0.526	0.528	0 682	0 964	1.748	2.072	1.351
flows	Low	0 553	0.522	0 413	0 323	0 238	0.130	0 231	0 100	0 170	0.128	0 276	0 471	0.559
(m^3s^{-1})	High	5.757	6.241	3 928	2 781	2 306	2 628	0 977	1 021	2 359	3 173	6.344	5 334	2.101
Peak flow (m^3s^{-1})		41.63	48 27	34.43	24 78	38 95	29.22	13.87	10 61	23.88	29.17	47.12	48 29	48.29
Runoff (mm)		48	37	37	27	22	15	10	10	13	19	33	41	313
Rainfall (mm)		75	53	67	51	60	58	48	60	75	76	90	87	800

Factors affecting flow regime: PGE
Station type: B VA

1986 runoff is 99% of previous mean rainfall 105%

040011 Great Stour at Horton 1986

Measuring authority: SWA
First year: 1964
Grid reference 61 (TR) 116 554
Level stn (m OD) 12 50
Catchment area (sq km): 345 0
Max alt (m OD) 205

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7.746	3.388	4 244	5 039	2 938	1 937	1 609	1.574	1 634	2 003	4.897	4 089	3.425
(m^3s^{-1}):	Peak	24 93	6 96	10 32	11 93	3 97	2 69	3 42	4 97	3.97	7.12	24 03	10 01	24.93
Runoff (mm)		60	24	33	38	23	15	12	12	12	16	37	32	313
Rainfall (mm)		110	27	66	77	44	24	46	68	47	93	108	80	790

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg.	5.151	4.832	4 435	3 495	2 860	2 086	1.789	1 749	1 913	2.558	3 600	4 695	3.257
flows	Low	2.293	2.386	1.812	1 654	1 324	1 079	0 965	0 877	1.119	1.085	1 328	1 687	1.808
(m^3s^{-1})	High	8.455	7.377	9 086	7 144	5.811	3 221	3 229	2.802	3 626	8 045	8 195	9 089	4.717
Peak flow (m^3s^{-1})		27 41	27.89	24.19	38 29	25 05	10 87	8.60	11 57	29 38	27.18	28.85	30 44	38 29
Runoff (mm)		40	34	34	26	22	16	14	14	14	20	27	36	298
Rainfall (mm)		71	50	59	47	54	52	56	57	74	73	84	78	755

Factors affecting flow regime: GE
Station type: B VA

1986 runoff is 105% of previous mean rainfall 105%

040012 Darent at Hawley 1986

Measuring authority: TWA
First year: 1963
Grid reference: 51 (TQ) 551 718
Level stn (m OD). 11 20
Catchment area (sq km) 191 4
Max alt (m OD): 251

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1 212	0.867	0 641	0 801	0 322	0 182	0 177	0 217	0 162	0 147	0 710	0 718	0.513
(m^3s^{-1})	Peak	2.75	2 90	1.27	1 48	0 61	0.50	0 43	0 72	0.41	0 46	2.47	1 55	2 90
Runoff (mm)		17	11	9	11	5	2	2	3	2	2	10	10	84
Rainfall (mm)		112	25	58	70	57	19	47	86	37	79	110	72	772

Monthly and yearly statistics for previous record (Dec 1963 to Dec 1985)

Mean	Avg.	0 979	0.996	0 943	0 828	0 664	0 497	0 330	0.306	0 333	0 387	0 550	0 820	0.634
flows	Low	0 194	0.219	0 124	0 174	0 076	0 041	0 000	0 000	0.000	0 000	0 000	0 011	0 101
(m^3s^{-1})	High	1.817	1 718	1 804	1 515	1 509	0 982	0 617	0 690	1.817	1 516	1 448	1 674	1.067
Peak flow (m^3s^{-1})		3.88	3 23	4.05	3 09	13 10	3 06	2 35	2.27	10 05	2 97	4 91	4 36	13.10
Runoff (mm)		14	13	13	11	9	7	5	4	5	5	7	11	105
Rainfall (mm)		66	47	60	52	60	57	53	57	73	62	74	76	737

Factors affecting flow regime:
Station type C

1986 runoff is 80% of previous mean rainfall 105%

041001 Nunningham Stream at Tilley Bridge 1986

Measuring authority: SWA
First year: 1950
Grid reference. 51 (TQ) 662 129
Level stn. (m OD): 3.80
Catchment area (sq km): 16.9
Max alt. (m OD) 137

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0 888	0.152	0 222	0 107	0 039	0 017	0 010	0 009	0 009	0 014	0 171	0 441	0 173
(m^3s^{-1}):	Peak	8.26	0.51	2.40	0 84	0 08	0 04	0 02	0.05	0 04	0 07	6 17	7 33	8.26
Runoff (mm)		141	22	35	16	6	3	2	1	1	2	26	70	326
Rainfall (mm)		159	19	91	60	44	16	21	60	41	107	147	111	876

Monthly and yearly statistics for previous record (Apr 1950 to Dec 1985—incomplete or missing months total 0 1 years)

Mean	Avg	0 411	0 341	0 244	0 148	0 082	0 055	0 033	0 040	0 055	0 125	0 302	0 375	0.184
flows	Low	0 076	0 094	0 054	0 034	0 023	0 012	0 011	0 008	0.009	0 013	0 019	0 033	0 053
(m^3s^{-1})	High	1.105	0 958	0 577	0 390	0 195	0 319	0 210	0 125	0.359	0 576	1 017	1 082	0 306
Peak flow (m^3s^{-1})		8.84	8 60	8.49	5 94	6 20	7 92	1 89	9 32	8 92	8 82	11 90	8 84	11 90
Runoff (mm)		65	49	39	23	13	8	5	6	8	20	46	59	343
Rainfall (mm)		81	60	59	49	55	57	56	72	77	87	99	97	849

Factors affecting flow regime N
Station type: MIS

1986 runoff is 95% of previous mean rainfall 103%

041005 Ouse at Gold Bridge 1986

Measuring authority: SWA
First year: 1960
Grid reference: 51 (TQ) 429 214
Level stn. (m OD): 11.40
Catchment area (sq km): 180.9
Max alt. (m OD): 203

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.741	2.877	3.185	3.525	1.736	0.955	0.744	0.595	0.467	0.745	4.072	4.284	**2.494**
(m^3s^{-1}):	Peak	26.01	5.85	8.89	10.58	2.19	2.16	1.10	3.86	1.90	2.70	30.73	20.29	**30.73**
Runoff (mm)		100	38	47	51	26	14	11	9	7	11	58	63	**435**
Rainfall (mm)		143	16	84	68	56	26	38	81	36	93	136	111	**888**

Monthly and yearly statistics for previous record (Mar 1960 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg.	4.175	3.526	3.071	2.314	1.749	1.067	0.638	0.752	1.077	1.678	3.282	3.639	**2.241**
flows	Low	1.142	1.240	0.793	0.611	0.450	0.283	0.282	0.157	0.230	0.275	0.384	0.846	**0.934**
(m^3s^{-1})	High	7.762	8.214	6.888	4.318	3.657	3.829	1.903	2.458	4.296	6.602	12.030	7.657	**3.261**
Peak flow (m^3s^{-1})		46.80	71.85	29.86	31.57	26.35	27.91	16.52	33.15	49.01	47.59	86.92	81.06	**86.92**
Runoff (mm)		62	48	45	33	26	15	9	11	15	25	47	54	**391**
Rainfall (mm)		85	56	68	58	63	63	51	67	84	86	102	93	**876**

Factors affecting flow regime: SRPGE
Station type: CBVA

1986 runoff is 111% of previous mean
rainfall 101%

041006 Uck at Isfield 1986

Measuring authority: SWA
First year: 1964
Grid reference: 51 (TQ) 459 190
Level stn. (m OD): 11.30
Catchment area (sq km): 87.8
Max alt. (m OD): 221

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.307	0.997	1.803	1.559	0.692	0.417	0.251	0.249	0.222	0.457	3.286	2.193	**1.453**
(m^3s^{-1})	Peak	48.22	2.84	23.77	15.47	0.88	1.22	0.41	1.99	0.94	2.25	58.81	39.88	**58.81**
Runoff (mm)		162	27	55	46	21	12	8	8	7	14	97	67	**524**
Rainfall (mm)		150	18	89	60	50	19	27	73	34	111	137	107	**875**

Monthly and yearly statistics for previous record (Dec 1964 to Dec 1985)

Mean	Avg	2.117	1.820	1.386	1.066	0.785	0.531	0.339	0.365	0.555	0.862	1.655	2.094	**1.128**
flows	Low	0.579	0.627	0.413	0.324	0.252	0.170	0.142	0.106	0.170	0.160	0.211	0.342	**0.480**
(m^3s^{-1})	High	4.154	4.195	3.317	2.183	1.854	1.657	1.489	1.506	2.868	2.527	6.536	4.033	**1.945**
Peak flow (m^3s^{-1})		52.09	75.63	39.12	23.74	28.97	29.59	46.63	33.74	36.40	37.31	64.43	55.58	**75.63**
Runoff (mm)		65	51	42	31	24	16	10	11	16	26	49	64	**405**
Rainfall (mm)		81	60	64	49	59	65	50	64	78	79	93	92	**834**

Factors affecting flow regime: E
Station type: C

1986 runoff is 129% of previous mean
rainfall 105%

041019 Arun at Alfoldean 1986

Measuring authority: SWA
First year: 1970
Grid reference: 51 (TQ) 117 331
Level stn. (m OD): 21.40
Catchment area (sq km): 139.0
Max alt. (m OD): 294

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6.712	1.205	2.301	2.374	0.738	0.399	0.239	0.412	0.255	0.697	5.352	3.423	**2.009**
(m^3s^{-1}):	Peak	68.63	3.60	11.95	12.86	1.32	1.25	1.03	4.67	1.77	3.88	65.57	36.31	**68.63**
Runoff (mm)		129	21	44	44	14	7	5	8	5	13	100	66	**457**
Rainfall (mm)		129	17	72	62	60	19	39	94	34	90	129	100	**845**

Monthly and yearly statistics for previous record (May 1970 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg	3.454	2.528	2.362	1.576	1.204	0.757	0.293	0.406	0.716	1.338	2.426	3.215	**1.687**
flows	Low	0.664	0.689	0.469	0.277	0.223	0.131	0.138	0.078	0.161	0.150	0.167	0.492	**0.589**
(m^3s^{-1})	High	6.927	6.708	4.413	3.829	3.313	3.055	1.116	1.618	5.443	6.614	10.030	6.152	**2.845**
Peak flow (m^3s^{-1})		63.05	67.53	54.45	76.97	47.48	46.54	7.27	23.86	56.14	68.58	69.14	77.65	**77.65**
Runoff (mm)		67	44	46	29	23	14	6	8	13	26	45	62	**383**
Rainfall (mm)		83	51	71	48	62	59	43	59	75	78	88	90	**807**

Factors affecting flow regime: E
Station type: CC

1986 runoff is 119% of previous mean
rainfall 105%

041027 Rother at Princes Marsh 1986

Measuring authority: SWA
First year: 1972
Grid reference: 41 (SU) 772 270
Level stn. (m OD): 56.40
Catchment area (sq km): 37.2
Max alt. (m OD): 252

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.276	0.483	0.485	0.619	0.411	0.240	0.191	0.245	0.177	0.247	0.971	0.909	**0.521**
(m^3s^{-1}):	Peak	12.39	0.87	2.90	2.65	2.24	0.36	0.59	2.91	0.40	0.82	13.35	7.76	**13.35**
Runoff (mm)		92	31	35	43	30	17	14	18	12	18	68	65	**442**
Rainfall (mm)		157	14	75	76	78	21	50	118	29	98	160	130	**1006**

Monthly and yearly statistics for previous record (Nov 1972 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	0.841	0.704	0.689	0.481	0.402	0.294	0.221	0.235	0.295	0.478	0.581	0.832	**0.504**
flows	Low	0.273	0.320	0.237	0.194	0.158	0.121	0.120	0.106	0.168	0.165	0.167	0.348	**0.288**
(m^3s^{-1})	High	1.485	1.409	1.220	0.684	0.641	0.471	0.300	0.493	0.949	1.011	1.855	1.299	**0.696**
Peak flow (m^3s^{-1})		15.63	13.72	10.71	6.83	7.20	4.68	2.17	4.55	12.97	68.03	16.60	22.19	**68.03**
Runoff (mm)		61	46	50	34	29	20	16	17	21	34	40	60	**427**
Rainfall (mm)		93	58	83	41	68	56	52	60	88	84	85	112	**880**

Factors affecting flow regime: GE
Station type: C

1986 runoff is 104% of previous mean
rainfall 114%

042003 Lymington at Brockenhurst Park 1986

Measuring authority: SWA
First year: 1960
Grid reference: 41 (SU) 318 019
Level stn (m OD) 6 10
Catchment area (sq km) 98 9
Max alt (m OD) 114

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}):	Avg.	2.387	0 570	1 167	1 462	1.085	0 253	0.171	0 331	0 210	0 575	2 229	2.159	1.050
Runoff (mm)		65	14	32	38	29	7	5	9	5	16	58	58	336
Rainfall (mm)		130	11	67	71	90	21	55	104	32	89	135	126	931

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1985—incomplete or missing months total 0 2 years)

Mean	Avg	1.817	1.687	1.447	0 991	0 828	0 471	0 237	0 277	0 464	1.021	1 367	1.608	1 015
flows	Low	0 330	0.439	0 327	0 168	0 128	0 042	0.013	0 014	0 084	0 128	0 198	0 541	0.407
(m^3s^{-1})	High	3.723	3 459	3.089	2.169	1.569	1 247	1 603	0 847	2 308	4.841	5 283	3 294	1.340
Peak flow (m^3s^{-1})														
Runoff (mm)		49	42	39	26	22	12	6	7	12	28	36	44	324
Rainfall (mm)		87	59	69	50	64	58	43	62	78	84	93	93	840

Factors affecting flow regime: N
Station type: VN
1986 runoff is 104% of previous mean rainfall 111%

042006 Meon at Mislingford 1986

Measuring authority: SWA
First year: 1958
Grid reference: 41 (SU) 589 141
Level stn. (m OD) 29 30
Catchment area (sq km): 72.8
Max alt (m OD): 233

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.226	1.842	1.328	1.227	1.132	0 821	0.552	0.436	0 330	0 276	0 663	1 461	1.024
(m^3s^{-1}):	Peak	3 00	2 30	1 93	1.60	1.32	1.43	1 23	1 00	0 40	0 37	1 61	2 31	3 00
Runoff (mm)		82	61	49	44	42	29	20	16	12	10	24	54	442
Rainfall (mm)		148	10	82	74	82	24	46	119	27	91	153	130	986

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1985)

Mean	Avg.	1.530	1.783	1 665	1.377	1.031	0 752	0 538	0 405	0 361	0 533	0 830	1 132	0.991
flows	Low	0.463	0.480	0 427	0 335	0.164	0 120	0 079	0 068	0 102	0 110	0 124	0 186	0.334
(m^3s^{-1})	High	3 470	3.300	2.820	1.988	1 738	1.220	0 827	0 657	0 882	2 309	4.126	3 917	1.815
Peak flow (m^3s^{-1})		3 51	4 02	3.26	2.83	2 06	1 50	1 18	1 07	0 96	1 50	2 83	3 77	4 02
Runoff (mm)		56	60	61	49	38	27	20	15	13	20	30	42	429
Rainfall (mm)		98	60	76	56	68	59	53	71	85	89	101	105	921

Factors affecting flow regime: G
Station type: FL
1986 runoff is 103% of previous mean rainfall 107%

042008 Cheriton Stream at Sewards Bridge 1986

Measuring authority: SWA
First year: 1970
Grid reference: 41 (SU) 574 323
Level stn (m OD) 55 80
Catchment area (sq km) 75 1
Max alt (m OD) 234

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1 077	1 004	0 813	0 768	0 728	0 585	0 457	0 401	0 375	0 351	0 562	0 836	0.663
(m^3s^{-1})	Peak	1 33	1.14	0 92	0 88	0.89	0 73	0 63	0 68	0 58	0 60	0 88	1 09	1.33
Runoff (mm)		38	32	29	27	26	20	16	14	13	13	19	30	278
Rainfall (mm)		146	12	77	75	8'	23	48	117	25	95	158	129	986

Monthly and yearly statistics for previous record (Jul 1970 to Dec 1985)

Mean	Avg	0 813	0 936	0 91:	0 833	0 677	0 571	0.474	0 411	0 383	0 428	0 517	0 699	0.636
flows	Low	0 521	0.495	0 409	0 320	0 271	0 218	0.183	0 165	0 207	0 279	0 278	0 320	0.408
(m^3s^{-1})	High	1 293	1.443	1 410	1 065	0 857	0.959	0.797	0 708	0 560	0 672	0 980	1 278	0.768
Peak flow (m^3s^{-1})		1.69	1 83	1 68	1 39	1 26	2 02	: 25	1 28	0 77	0 91	1 23	: 85	2.02
Runoff (mm)		29	30	32	29	24	20	17	15	13	15	18	25	267
Rainfall (mm)		97	62	80	45	65	61	54	63	81	79	98	106	891

Factors affecting flow regime: N
Station type: C
1986 runoff is 104% of previous mean rainfall 111%

042012 Anton at Fullerton 1986

Measuring authority: SWA
First year: 1975
Grid reference: 41 (SU) 379 393
Level stn (m OD): 40.50
Catchment area (sq km) 185.0
Max alt. (m OD): 253

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2 470	2.478	2.160	2 135	2.214	1.900	1.554	1.413	1.350	1 316	1 713	2 240	1.912
(m^3s^{-1}):	Peak													
Runoff (mm)		36	32	31	30	32	27	22	20	19	19	24	32	325
Rainfall (mm)		114	9	62	62	90	25	48	106	38	76	121	122	873

Monthly and yearly statistics for previous record (Jan 1975 to Dec 1985)

Mean	Avg.	2.234	2 497	2.559	2.483	2.135	1.857	1 520	1.373	1 296	1 388	1 506	1 832	1.887
flows	Low	1 301	1.215	1.047	0.948	0 830	0 691	0 626	0 548	0 688	1.015	1 003	1.417	1 010
(m^3s^{-1})	High	3 132	3 691	3.373	3.123	2.842	2 817	2 196	1.784	1.536	1 888	2.116	2 855	2 242
Peak flow (m^3s^{-1})														
Runoff (mm)		32	33	37	35	31	26	22	20	18	20	21	27	322
Rainfall (mm)		77	50	83	39	64	51	39	60	68	71	67	105	774

Factors affecting flow regime: N
Station type: C
1986 runoff is 101% of previous mean rainfall 113%

043006 Nadder at Wilton Park 1986

Measuring authority: WWA
First year: 1966
Grid reference 41 (SU) 098 308
Level stn (m OD): 51 10
Catchment area (sq km): 220 6
Max alt (m OD): 277

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6 772	4 617	3 105	3 334	2 905	2 148	1 662	1 468	1 133	1 378	4 010	6 629	**3 263**
(m^3s^{-1})	Peak	*3 52	6 94	4 85	6 24	5 93	2 44			2.27	3 93	12 17	14 88	
Runoff (mm)		82	51	38	39	35	25	20	18	13	17	47	80	**468**
Rainfall (mm)		139	8	60	78	93	22	63	*23	38	94	*45	133	**996**

Monthly and yearly statistics for previous record (Jan 1966 to Dec 1985)

Mean	Avg	4 694	5 187	4 499	3 201	2.472	1 982	1 516	1 360	1 379	1 820	2 545	3 855	**2 865**
flows	Low	1 011	1 263	1 358	1 048	0 993	0 839	0 684	0 595	0 823	0 829	0 905	1 219	**1.535**
(m^3s^{-1})	High	6.521	8.196	6 732	5 272	4 044	3 283	2 234	2 040	3 093	3 537	6 413	7 030	**3 821**
Peak flow (m^3s^{-1})		22 71	17 57	18 80	14 27	28 13	8 83	13 39	6 61	16 68	*0 99	22 90	47 88	**47 88**
Runoff (mm)		57	57	55	38	30	23	18	17	16	22	30	47	**410**
Rainfall (mm)		96	73	81	50	71	64	51	71	81	81	89	*06	**914**

Factors affecting flow regime: N
Station type: C

1986 runoff is 114% of previous mean
rainfall 109%

043007 Stour at Throop Mill 1986

Measuring authority: WWA
First year: 1973
Grid reference 40 (SZ) 113 958
Level stn (m OD): 4.40
Catchment area (sq km): 1073 0
Max alt (m OD): 277

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	38 730	17 470	12 060	15 730	13 520	7 338	5 556	5 652	4 776	6 788	26 540	36 660	**15 902**
(m^3s^{-1})	Peak	112 69	39 40	26 33	39 72	49 77	9 38	7 98	30 35	6 78	18 55	66 68	83 74	**112.69**
Runoff (mm)		97	39	30	38	34	*8	14	14	12	17	64	92	**468**
Rainfall (mm)		143	6	60	73	91	25	58	117	35	84	142	140	**974**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1985)

Mean	Avg	23 660	25 020	21 360	13 560	9 608	6 789	4 535	4 398	5 361	9 285	12 950	22 890	**13 236**
flows	Low	4.319	6 826	7 548	4 483	3 157	2 231	1 614	*358	2 413	2 716	2 823	6 386	**6 138**
(m^3s^{-1})	High	35 150	42 200	32 620	22 660	18 900	16 940	7 932	8 998	20 340	29 770	36 730	40 270	**17.377**
Peak flow (m^3s^{-1})		116 60	131 50	110 24	61 56	150 00	180 00	47 60	32 43	90 33	101 90	133 40	280 00	**280.00**
Runoff (mm)		59	57	53	33	24	*6	11	11	13	23	31	57	**389**
Rainfall (mm)		87	68	81	38	63	59	49	62	84	79	79	112	**861**

Factors affecting flow regime: I
Station type: CC

1986 runoff is 120% of previous mean
rainfall 113%

044002 Piddle at Baggs Mill 1986

Measuring authority: WWA
First year: 1963
Grid reference 30 (SY) 913 876
Level stn (m OD): 2 10
Catchment area (sq km): 183 1
Max alt (m OD): 275

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5 879	3 865	2 467	2 186	2 173	1 826	*298	1 186	1 087	1 174	2 791	5 653	**2.632**
(m^3s^{-1})	Peak	7 82	4 9*	3 44	3 17	3 55	2 27	1 73	3 32	1 50	1 68	6 89	8 62	**8.62**
Runoff (mm)		86	51	36	31	32	26	19	17	15	17	40	83	**453**
Rainfall (mm)		166	8	70	76	108	28	49	120	37	102	184	163	**1111**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985)

Mean	Avg	3 590	4 381	3 992	2 982	2 193	*679	*246	1 099	1 117	1 460	2 126	2 882	**2.385**
flows	Low	1 045	1 020	1 093	0 945	0 757	0 571	0 483	0 433	0 604	0 805	0 721	0 853	**1.328**
(m^3s^{-1})	High	5 959	6 616	6 202	4 782	3 376	2 907	1 755	1 526	2 300	3 106	5 047	5 504	**3.233**
Peak flow (m^3s^{-1})		*1.87	9 *8	9 37	6 48	8 11	9 23	4 79	4 50	8 *8	9 29	9 20	8 44	**11.87**
Runoff (mm)		53	58	58	42	32	24	18	16	*6	2*	30	42	**411**
Rainfall (mm)		*08	81	86	49	70	60	49	63	89	90	106	115	**966**

Factors affecting flow regime: I
Station type: FL

1986 runoff is 110% of previous mean
rainfall 115%

045003 Culm at Wood Mill 1986

Measuring authority: SWWA
First year: 1962
Grid reference 3* (ST) 021 058
Level stn (m OD): 44 00
Catchment area (sq km): 226 1
Max alt (m OD): 293

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9 743	2 705	3 482	4 927	3 239	1 959	1 5*9	2 081	1 479	2 304	7 572	8 618	**4.136**
(m^3s^{-1})	Peak	55 34	4 94	17 92	16 18	25 47	8 70	4 99	23 21	6 54	8 68	40 53	29 01	**55.34**
Runoff (mm)		115	29	41	56	38	22	*8	25	17	27	87	102	**579**
Rainfall (mm)		153	7	80	92	88	63	50	*07	37	89	132	149	**1047**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985)

Mean	Avg	6.631	6 450	5 135	3 276	2 876	2 045	1 *79	1 640	*947	2 904	4 335	6 100	**3 749**
flows	Low	1 930	2 251	2 392	*318	1 085	0 803	0 650	0 569	0 971	0 971	1 287	2 479	**2.277**
(m^3s^{-1})	High	12 870	11 820	9 184	6 649	6 337	4 449	5 200	2 787	*328	11 430	8 191	11 880	**4.840**
Peak flow (m^3s^{-1})		110 70	100.10	50 11	41 63	33 82	30 58	202 20	58 62	94 16	45 87	134 50	142 80	**202.20**
Runoff (mm)		79	70	61	38	34	23	21	19	22	34	50	72	**523**
Rainfall (mm)		111	83	87	56	*1	63	58	67	81	84	98	113	**972**

Factors affecting flow regime: PGEI
Station type: VA

1986 runoff is 111% of previous mean
rainfall 108%

045004 Axe at Whitford — 1986

Measuring authority: SWWA
First year: 1964
Grid reference: 30 (SY) 262 953
Level stn. (m OD): 7.30
Catchment area (sq km): 288.5
Max alt. (m OD): 316

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.560	3.598	4.489	5.628	6.370	2.409	1.769	4.940	2.163	3.016	11.030	11.750	5.977
(m^3s^{-1}):	Peak	97.76	6.99	22.33	17.01	44.04	7.96	4.84	127.97	6.49	11.31	52.34	73.45	127.97
Runoff (mm)		135	30	42	51	59	22	16	46	19	28	99	109	656
Rainfall (mm)		181	8	79	80	115	46	53	149	36	82	162	170	1161

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1985)

Mean	Avg.	9.264	8.434	6.601	4.075	3.663	2.559	2.001	2.082	2.581	4.183	5.642	8.482	4.951
flows	Low	1.891	2.448	2.551	1.567	1.176	0.817	0.626	0.554	1.242	1.243	1.714	3.166	2.669
(m^3s^{-1})	High	15.740	15.860	11.690	8.346	7.274	4.678	5.312	3.698	9.909	16.440	11.980	14.440	6.409
Peak flow (m^3s^{-1})		110.60	113.20	93.02	57.17	173.40	75.04	228.80	70.79	88.95	99.72	116.90	244.00	244.00
Runoff (mm)		86	71	61	37	34	23	19	19	23	39	51	79	542
Rainfall (mm)		123	87	82	53	74	65	60	70	85	91	96	121	1007

Factors affecting flow regime: PGEI
Station type: CC
1986 runoff is 121% of previous mean rainfall 115%

046002 Teign at Preston — 1986

Measuring authority: SWWA
First year: 1956
Grid reference: 20 (SX) 856 746
Level stn. (m OD): 3.80
Catchment area (sq km): 380.0
Max alt. (m OD): 604

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	24.120	6.493	5.194	9.122	8.981	4.809	2.642	5.993	4.314	5.218	24.980	24.040	10.492
(m^3s^{-1}):	Peak	101.10	14.13	27.81	23.50	48.87	21.50	5.42	96.61	13.31	36.69	169.99	95.25	169.99
Runoff (mm)		170	41	37	62	63	33	19	42	29	37	170	169	873
Rainfall (mm)		174	9	90	98	105	97	51	157	44	110	215	203	1353

Monthly and yearly statistics for previous record (May 1956 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg.	19.470	18.490	13.260	8.382	5.642	3.612	2.402	2.452	3.539	7.663	10.820	16.970	9.354
flows	Low	3.341	5.534	4.878	3.514	1.827	1.114	0.731	0.472	0.752	0.916	1.976	4.954	5.212
(m^3s^{-1})	High	36.080	38.750	29.940	21.960	17.270	9.522	7.334	5.549	14.080	41.570	28.960	37.820	15.681
Peak flow (m^3s^{-1})		172.70	198.20	146.60	122.50	86.08	81.35	98.87	72.64	312.80	190.00	153.60	248.40	312.80
Runoff (mm)		137	119	93	57	40	25	17	17	24	54	74	120	777
Rainfall (mm)		160	117	112	73	83	66	68	86	103	119	132	160	1279

Factors affecting flow regime: SRPGEI
Station type: VA
1986 runoff is 112% of previous mean rainfall 106%

046003 Dart at Austins Bridge — 1986

Measuring authority: SWWA
First year: 1958
Grid reference: 20 (SX) 751 659
Level stn. (m OD): 22.40
Catchment area (sq km): 247.6
Max alt. (m OD): 604

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	24.760	5.797	8.532	11.120	11.340	6.513	3.896	10.220	5.098	9.426	33.410	26.190	13.025
(m^3s^{-1})	Peak	120.75	12.55	79.15	48.63	85.60	90.24	31.71	222.16	12.20	86.38	261.09	181.39	261.09
Runoff (mm)		268	57	92	116	123	68	42	111	53	102	350	283	1665
Rainfall (mm)		268	11	164	127	158	133	90	207	51	212	350	317	2088

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1985)

Mean	Avg	19.940	17.290	14.100	9.881	7.361	4.945	3.742	4.639	5.932	10.720	14.560	19.540	11.031
flows	Low	5.435	4.270	5.731	3.566	2.220	1.456	0.996	0.713	0.905	1.229	5.048	8.650	7.304
(m^3s^{-1})	High	36.680	37.760	33.520	22.720	14.530	14.260	10.930	12.590	26.290	28.000	32.960	35.540	15.592
Peak flow (m^3s^{-1})		284.00	309.40	218.30	187.40	98.88	253.00	206.50	190.30	327.60	168.20	317.80	549.70	549.70
Runoff (mm)		216	170	152	103	80	52	40	50	62	116	152	211	1406
Rainfall (mm)		232	180	165	112	109	91	91	120	139	172	199	234	1824

Factors affecting flow regime: SRPGEI
Station type: VA
1986 runoff is 118% of previous mean rainfall 114%

047007 Yealm at Puslinch — 1986

Measuring authority: SWWA
First year: 1963
Grid reference: 20 (SX) 574 511
Level stn. (m OD): 5.50
Catchment area (sq km): 54.9
Max alt. (m OD): 492

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	4.107	1.015	1.615	1.818	1.292	1.113	0.712	1.549	0.769	1.319	4.881	3.999	2.016
(m^3s^{-1}):	Peak													
Runoff (mm)		200	45	79	86	63	53	35	76	36	64	230	195	1182
Rainfall (mm)		228	21	160	95	112	141	87	169	37	171	248	239	1708

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	3.002	2.883	2.136	1.320	1.012	0.794	0.565	0.646	0.822	1.396	2.138	2.918	1.831
flows	Low	0.563	1.318	0.659	0.572	0.327	0.171	0.095	0.057	0.183	0.121	0.373	1.171	1.052
(m^3s^{-1})	High	4.814	5.806	5.290	3.646	1.997	2.377	1.863	1.957	3.630	3.808	4.872	6.108	2.210
Peak flow (m^3s^{-1})														
Runoff (mm)		146	128	104	62	49	37	28	32	39	68	101	142	937
Rainfall (mm)		169	129	128	76	97	88	81	101	117	127	158	173	1444

Factors affecting flow regime: PGEI
Station type: FLVA
1986 runoff is 124% of previous mean rainfall 118%

047008 Thrushel at Tinhay 1986

Measuring authority: SWWA
First year: 1969
Grid reference: 20 (SX) 398 856
Level stn (m OD): 55 50
Catchment area (sq km): 112 7
Max alt (m OD): 375

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.366	0 951	1 750	3 303	2 464	1 219	0 702	2 915	0 959	2 152	7 032	7 275	**3 007**
(m^3s^{-1})	Peak	23 96	2 51	13 ·2	16 52	38 72	17 29	6 38	33 64	4 80	14 65	42 40	40 40	**42.40**
Runoff (mm)		128	20	42	76	59	28	17	69	22	51	162	173	**846**
Rainfall (mm)		133	4	92	101	106	98	73	160	33	117	178	209	**1304**

Monthly and yearly statistics for previous record (Nov 1969 to Dec 1985)

Mean	Avg	5 277	4 165	3 202	1 517	1 ·19	0 717	0 359	0 648	1.050	2 268	3 671	4 894	2 401
flows	Low	1 317	1 879	1 428	0 481	0 237	0 110	0 028	0 019	0 116	0 069	0 442	2 405	1.640
(m^3s^{-1})	High	9 701	8 826	7 477	4 038	4 209	2 491	1 095	2 809	6 671	6 878	7 195	8 122	**3 750**
Peak flow (m^3s^{-1})		53 32	61.78	61 46	27 72	19 16	57 13	9 89	27 33	75 ·2	55 86	57 07	124 40	**124.40**
Runoff (mm)		125	90	76	35	27	16	9	15	24	54	84	116	**672**
Rainfall (mm)*		152	100	103	56	69	72	64	86	99	106	133	143	**1183**

*(1970-1985)

Factors affecting flow regime: GE
Station type: CC

1986 runoff is 126% of previous mean
rainfall 110%

048004 Warleggan at Trengoffe 1986

Measuring authority: SWWA
First year: 1969
Grid reference: 20 (SX) 159 674
Level stn (m OD): 70 30
Catchment area (sq km): 25 3
Max alt (m OD): 308

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 648	0 839	0 605	0 757	0 829	0 700	0 543	0 950	0 730	0 555	1 672	1 798	**0 969**
(m^3s^{-1})	Peak	3 60	1 44	1 61	1 61	2 46	3 64	1 27	6 63	1 57	1 74	5 54	5 64	**6.63**
Runoff (mm)		175	80	64	78	88	72	57	101	75	59	171	190	**1209**
Rainfall (mm)		206	8	134	88	127	152	89	216	30	142	235	251	**1678**

Monthly and yearly statistics for previous record (Oct 1969 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	1 479	1 439	1 050	0 708	0 512	0 409	0 315	0 349	0 448	0 659	0 974	1 374	0 807
flows	Low	0 744	0 751	0 585	0.403	0 288	0 208	0 151	0 118	0 177	0 208	0 233	0 907	0.624
(m^3s^{-1})	High	2 584	2 906	1 588	1 234	0 978	0 904	0 688	0 760	1 677	1 557	1 775	1 949	1 228
Peak flow (m^3s^{-1})		14.31	14 85	5 27	4 59	3 19	5 96	4 35	8 60	14 85	7 86	15 38	11 25	**15.38**
Runoff (mm)		157	139	111	73	54	42	33	37	46	70	100	146	**1006**
Rainfall (mm)*		190	122	130	67	81	84	84	102	132	135	166	181	**1474**

*(1970-1985)

Factors affecting flow regime: G
Station type: CC

1986 runoff is 120% of previous mean
rainfall 114%

048005 Kenwyn at Truro 1986

Measuring authority: SWWA
First year: 1968
Grid reference: 10 (SW) 820 450
Level stn (m OD): 7 20
Catchment area (sq km): 19.1
Max alt (m OD): 152

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 019	0 435	0 246	0 326	0 228	0 178	0 128	0 179	0 171	0 147	0 867	0 987	**0.409**
(m^3s^{-1})	Peak	4 74	1 17	2 12	0 56	1 06	1 43	0 27	1 76	0 44	0 59	3 61	5 31	**5.31**
Runoff (mm)		143	55	34	44	32	24	18	25	23	21	118	138	**676**
Rainfall (mm)		187	17	100	66	77	119	51	117	31	96	179	189	**1229**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1985)

Mean	Avg	0 813	0 798	0 565	0 315	0 198	0 141	0 088	0 086	0 113	0 248	0 451	0 743	**0.378**
flows	Low	0 283	0 333	0 228	0 162	0 124	0 070	0 043	0 026	0 037	0 034	0 046	0 436	**0.264**
(m^3s^{-1})	High	1 322	1.536	0 917	0 613	0 478	0 358	0 162	0 125	0 564	0 633	1 093	1 091	**0.544**
Peak flow (m^3s^{-1})		5 88	7 19	5 74	2 93	1 41	3 71	2 79	2 29	4 10	5 94	9 74	13 35	**13.35**
Runoff (mm)		114	102	79	43	28	19	12	12	15	35	61	104	**625**
Rainfall (mm)		148	106	98	53	67	62	54	74	92	104	129	144	**1131**

Factors affecting flow regime: G
Station type: CC

1986 runoff is 108% of previous mean
rainfall 109%

048011 Fowey at Restormel 1986

Measuring authority: SWWA
First year: 1961
Grid reference: 20 (SX) 098 624
Level stn (m OD): 9 20
Catchment area (sq km): 169 1
Max alt (m OD): 420

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	10 430	3 680	2 880	4 066	4 275	3 400	2 130	6 044	3 361	2 647	12 810	13 000	**5 727**
(m^3s^{-1})	Peak	23 94	8.67	9 28	8 15	13 57	21 98	4 69	48 51	8 87	9 08	49 91	44 34	**49.91**
Runoff (mm)		165	53	46	62	68	52	34	96	52	42	196	206	**1071**
Rainfall (mm)		214	9	143	86	128	150	87	223	33	144	250	259	**1726**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985)

Mean	Avg	9.407	8 515	6 190	4 058	3 081	2 187	1 801	1 928	2 616	4 508	6 583	9 328	**5 003**
flows	Low	3 071	3 304	2 727	1 808	1 048	0 693	0 563	0 343	0 673	0 617	0 921	5 796	**3 493**
(m^3s^{-1})	High	17.330	21 780	12 130	7 641	6 447	5 479	4 859	4 701	10 490	11 720	15 450	20 890	**7.440**
Peak flow (m^3s^{-1})		104 80	111 90	45.62	24 52	22 62	39 44	31 10	40 94	70 02	35 07	223 70	126 60	**223 70**
Runoff (mm)		149	123	98	62	49	34	29	31	40	71	101	148	**934**
Rainfall (mm)		184	122	131	79	94	86	91	105	128	133	170	187	**1510**

Factors affecting flow regime: SRPGEI
Station type: CC

1986 runoff is 115% of previous mean
rainfall 114%

049001 Camel at Denby 1986

Measuring authority: SWWA
First year: 1964
Grid reference: 20 (SX) 017 682
Level stn (m OD): 4 60
Catchment area (sq km): 208 8
Max alt (m OD): 420

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13 750	5.215	3.650	5 530	5 454	4 884	3 631	7 858	4 739	3 914	17 800	16 140	7 714
(m^3s^{-1})	Peak	44 34	11 29	9 22	11 66	16 95	45 32	8 43	63 98	10 88	13 29	94 75	56 37	94.75
Runoff (mm)		176	60	47	69	70	61	47	101	59	50	221	207	**1167**
Rainfall (mm)		195	6	121	88	115	144	87	197	34	140	234	241	**1602**

Monthly and yearly statistics for previous record (Sep 1964 to Dec 1985)

Mean	Avg	11 280	9 797	7 087	4 358	3 276	2.333	2 145	2 295	2 897	5 169	7 357	11 100	**5.744**
flows	Low	4 833	4.249	2 835	2 081	0 960	0 888	0 582	0 421	0 798	0 882	1 371	6 552	**4 081**
(m^3s^{-1})	High	19.600	20 940	16.420	9 395	8 491	5 463	7 322	5 947	11 920	16 640	17 990	19 110	**8 165**
Peak flow (m^3s^{-1})		67.71	80 21	94 75	35 42	23 98	40 02	40 59	45 14	125 80	92 14	79 29	227.90	**227.90**
Runoff (mm)		145	115	91	54	42	29	28	29	36	66	91	142	**868**
Rainfall (mm)		172	110	118	71	85	85	91	99	122	130	152	168	**1403**

Factors affecting flow regime: PGE
Station type: VA

1986 runoff is 134% of previous mean
rainfall 114%

049002 Hayle at St Erth 1986

Measuring authority: SWWA
First year: 1957
Grid reference: 10 (SW) 549 342
Level stn (m OD): 7 00
Catchment area (sq km): 48 9
Max alt (m OD): 238

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2 529	1 520	0 950	1 306	0 906	0 626	0 442	0 410	0 371	0 365	1 478	2 584	**1.124**
(m^3s^{-1})	Peak	4 31	2 32	1 86	1 74	1 25	0 98	0 57	0 73	0 43	0 50	3 47	3 85	**4.31**
Runoff (mm)		139	75	52	69	50	33	24	22	20	20	78	142	**724**
Rainfall (mm)		166	17	117	70	71	85	59	100	24	97	169	180	**1155**

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1985—incomplete or missing months total 9 3 years)

Mean	Avg	1 916	2 072	1 620	1.037	0 668	0 502	0 400	0 344	0 360	0 468	0 874	1 527	0 977
flows	Low	0.746	0 863	0 810	0 573	0 445	0 335	0 237	0 167	0 193	0 179	0 181	0 503	**0.653**
(m^3s^{-1})	High	2 849	3 426	2 582	1.641	1 464	0 859	1 063	0 743	1 067	1 140	2 297	2 515	**1 258**
Peak flow (m^3s^{-1})		6 20	6 73	5 83	3 07	2.36	1 72	1 99	2 27	1 88	2 02	3 81	6 31	**6 73**
Runoff (mm)		105	103	89	55	37	27	22	19	19	26	46	84	**631**
Rainfall (mm)		138	111	102	52	66	67	58	76	97	100	122	138	**1127**

Factors affecting flow regime: G
Station type: CC

1986 runoff is 115% of previous mean
rainfall 102%

050002 Torridge at Torrington 1986

Measuring authority: SWWA
First year: 1962
Grid reference: 21 (SS) 500 185
Level stn (m OD): 13 90
Catchment area (sq km): 663 0
Max alt (m OD): 621

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	38 560	5 608	12.590	20 660	11 170	6 172	3 087	13 920	5 960	16 270	55 730	47 690	**19.785**
(m^3s^{-1})	Peak	194 13	16 31	98 80	117 49	182 44	61 38	19 59	157 32	42 67	143 72	370 40	197 45	**370.40**
Runoff (mm)		156	20	51	81	45	24	12	56	23	66	218	193	**945**
Rainfall (mm)		148	2	103	104	95	93	69	140	37	131	197	210	**1329**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985)

Mean	Avg	29 960	24 570	18 320	10 500	8 461	4 855	4 410	4 974	7 092	14 640	25 430	31 490	**15.360**
flows	Low	5 018	4.695	5 792	3 082	1 594	1 092	0 443	0 252	0 954	0 668	3 798	10 270	**8.968**
(m^3s^{-1})	High	57 510	47 590	51 280	28 120	31 290	14 960	21 540	19 690	45 910	49 230	52 970	64 530	**21.036**
Peak flow (m^3s^{-1})		391.10	294 40	535 60	164 40	205 70	181 30	310 60	228 50	415 00	225 00	313 20	730 00	**730.00**
Runoff (mm)		121	90	74	41	34	19	18	20	28	59	99	127	**731**
Rainfall (mm)		129	89	97	64	76	73	72	84	99	107	134	131	**1155**

Factors affecting flow regime: SRPGEI
Station type: VA

1986 runoff is 129% of previous mean
rainfall 115%

052006 Yeo at Pen Mill 1986

Measuring authority: WWA
First year: 1963
Grid reference: 31 (ST) 573 162
Level stn (m OD): 23 90
Catchment area (sq km): 213 1
Max alt (m OD): 265

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 108	1 791	1 765	3 248	2 912	0 978	0 626	1 408	0 681	0 994	7 054	6 745	**2 942**
(m^3s^{-1})	Peak	35 91	4.63	11 99	18 19	28.40	4 78	5 51	27 53	2 35	7 05	36 76	36 70	**36.76**
Runoff (mm)		89	20	22	40	37	12	8	18	8	12	86	85	**437**
Rainfall (mm)		140	5	63	76	102	38	59	123	38	74	145	150	**1013**

Monthly and yearly statistics for previous record (Nov 1963 to Dec 1985)

Mean	Avg	5.255	4 581	3 732	1 895	1 604	1 094	0 652	0 677	0 955	2 065	3 367	4 571	**2.530**
flows	Low	0 485	1 168	0 909	0 532	0 356	0 229	0 193	0 165	0 316	0 372	0 455	1 079	**1.093**
(m^3s^{-1})	High	8 612	10 060	7 060	4 223	4 510	2 498	1 909	1 607	5 174	9 808	12 780	9 099	**3 594**
Peak flow (m^3s^{-1})		99 93	119 30	57 33	21 80	130 00	39 38	35 74	21 95	27 64	54 94	77 52	138 90	**138.90**
Runoff (mm)		66	52	47	23	20	13	8	9	12	26	41	57	**375**
Rainfall (mm)		97	71	79	46	70	61	54	66	78	78	90	102	**892**

Factors affecting flow regime: S
Station type: C VA

1986 runoff is 117% of previous mean
rainfall 114%

052007 Parrett at Chiselborough 1986

Measuring authority: WWA
First year: 1966
Grid reference: 31 (ST) 461 144
Level stn. (m OD): 20.70
Catchment area (sq km): 74.8
Max alt. (m OD): 219

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.601	0.757	0.775	1.158	1.250	0.439	0.322	0.988	0.424	0.498	3.544	3.683	1.453
(m^3s^{-1}):	Peak	27.36	1.69	3.74	4.78	11.75	0.99	0.86	23.88	1.40	2.07	17.98	25.39	27.36
Runoff (mm)		129	25	28	40	45	15	12	35	15	18	123	132	615
Rainfall (mm)		141	5	65	73	99	46	52	132	39	69	148	160	1029

Monthly and yearly statistics for previous record (Aug 1966 to Dec 1985)

Mean	Avg	2.406	1.947	1.606	0.786	0.746	0.518	0.359	0.337	0.443	1.038	1.240	2.103	1.125
flows	Low	0.258	0.593	0.523	0.285	0.206	0.130	0.106	0.090	0.145	0.186	0.218	0.523	0.564
(m^3s^{-1})	High	4.914	3.865	3.055	1.581	2.048	1.053	0.921	0.591	2.225	4.819	3.789	3.917	1.534
Peak flow (m^3s^{-1})		36.38	27.14	27.46	12.34	57.21	12.81	16.14	7.92	15.29	27.22	29.12	44.94	57.21
Runoff (mm)		86	64	58	27	27	18	13	12	15	37	43	75	475
Rainfall (mm)		107	75	83	42	74	65	53	67	79	86	86	107	924

Factors affecting flow regime: N
Station type: C

1986 runoff is 130% of previous mean
rainfall 111%

052010 Brue at Lovington 1986

Measuring authority: WWA
First year: 1964
Grid reference: 31 (ST) 590 318
Level stn. (m OD): 19.80
Catchment area (sq km): 135.2
Max alt. (m OD): 244

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	4.904	1.544	1.419	2.455	2.017	0.714	0.403	0.807	0.515	1.294	4.210	4.519	2.067
(m^3s^{-1}):	Peak	44.02	3.89	7.72	14.55	25.71	1.21	0.95	21.11	3.50	6.28	26.17	27.66	44.02
Runoff (mm)		97	28	28	47	40	14	8	16	10	26	81	90	483
Rainfall (mm)		121	5	72	76	95	24	60	122	36	96	114	125	946

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1985)

Mean	Avg	3.562	3.327	2.641	1.481	1.254	0.848	0.868	0.836	0.823	1.340	2.217	3.582	1.894
flows	Low	0.743	0.910	0.844	0.526	0.313	0.217	0.150	0.130	0.247	0.190	0.407	1.034	1.153
(m^3s^{-1})	High	5.752	6.872	5.263	3.352	3.554	2.203	4.081	2.449	4.873	4.380	4.883	6.158	2.427
Peak flow (m^3s^{-1})		47.28	47.07	43.49	27.19	95.48	35.46	83.00	48.42	69.42	44.05	74.62	57.76	95.48
Runoff (mm)		71	60	52	28	25	16	17	17	16	27	43	71	442
Rainfall (mm)		88	68	75	49	70	69	69	73	80	70	88	96	895

Factors affecting flow regime: N
Station type: C VA

1986 runoff is 109% of previous mean
rainfall 106%

053004 Chew at Compton Dando 1986

Measuring authority: WWA
First year: 1958
Grid reference: 31 (ST) 648 647
Level stn. (m OD): 16.80
Catchment area (sq km): 129.5
Max alt. (m OD): 305

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.098	1.365	0.767	1.211	1.371	0.652	0.497	0.520	0.486	0.750	2.730	2.692	1.345
(m^3s^{-1}):	Peak	39.43	4.37	2.83	3.01	18.87	0.95	0.70	2.29	1.71	2.41	31.29	14.21	39.43
Runoff (mm)		64	26	16	24	28	13	10	11	10	16	55	56	328
Rainfall (mm)		151	6	81	84	112	32	63	110	41	118	159	160	1117

Monthly and yearly statistics for previous record (Mar 1958 to Dec 1985—incomplete or missing months total 1.0 years)

Mean	Avg	1.864	1.716	1.390	0.970	0.828	0.611	0.463	0.459	0.577	0.808	1.191	1.771	1.051
flows	Low	0.444	0.557	0.410	0.469	0.333	0.287	0.243	0.195	0.232	0.300	0.264	0.622	0.540
(m^3s^{-1})	High	3.935	4.166	4.210	2.185	2.493	1.211	0.811	1.245	2.135	3.251	3.898	5.017	1.766
Peak flow (m^3s^{-1})		32.54	48.99	50.00	14.19	67.50	13.00	6.23	6.09	59.26	49.56	38.83	63.78	67.50
Runoff (mm)		39	32	29	19	17	12	10	10	12	17	24	37	256
Rainfall (mm)		100	70	80	60	73	71	70	86	96	88	103	116	1013

Factors affecting flow regime: S PG I
Station type: FL

1986 runoff is 128% of previous mean
rainfall 110%

053007 Frome (Somerset) at Tellisford 1986

Measuring authority: WWA
First year: 1961
Grid reference: 31 (ST) 805 564
Level stn. (m OD): 35.10
Catchment area (sq km): 261.6
Max alt. (m OD): 305

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	11.660	3.646	3.601	5.386	4.465	1.694	0.917	1.547	1.307	2.957	10.080	9.546	4.734
(m^3s^{-1}):	Peak	72.14	9.51	16.54	19.10	21.96	2.91	1.80	19.12	7.73	13.50	37.80	40.35	72.14
Runoff (mm)		119	34	37	53	46	17	9	16	13	30	100	98	572
Rainfall (mm)		151	7	78	82	109	23	61	124	41	115	152	152	1095

Monthly and yearly statistics for previous record (Sep 1961 to Dec 1985)

Mean	Avg	6.749	6.350	5.596	3.587	2.771	1.904	1.445	1.514	1.761	2.658	4.446	6.551	3.768
flows	Low	1.684	2.072	1.938	1.510	0.843	0.518	0.329	0.291	0.649	0.612	0.962	2.795	2.334
(m^3s^{-1})	High	12.340	12.460	12.690	8.314	6.317	4.812	4.931	4.605	7.459	8.841	10.730	14.860	4.872
Peak flow (m^3s^{-1})		77.99	64.75	68.83	57.51	98.80	37.52	108.11	82.49	71.03	40.24	84.58	83.64	108.11
Runoff (mm)		69	59	57	36	28	19	15	15	17	27	44	67	454
Rainfall (mm)		95	69	86	59	77	67	63	80	90	78	95	105	964

Factors affecting flow regime: PG I
Station type: FL

1986 runoff is 126% of previous mean
rainfall 114%

053018 Avon at Bathford — 1986

Measuring authority: WWA
First year: 1969
Grid reference: 31 (ST) 786 671
Level stn. (m OD): 18.00
Catchment area (sq km): 1552.0
Max alt. (m OD): 305

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	47.760	21.020	15.700	21.880	18.650	7.394	4.079	5.558	4.931	7.372	39.810	39.140	19.441
(m^3s^{-1}):	Peak	191.85	82.20	53.44	43.86	61.37	11.89	7.03	31.55	19.59	20.20	117.71	111.27	191.85
Runoff (mm)		82	33	27	37	32	12	7	10	8	13	66	68	395
Rainfall (mm)		130	7	70	70	94	20	50	117	38	86	128	121	931

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1985)

Mean	Avg	32.310	32.100	26.680	16.410	12.710	10.300	6.046	6.145	6.842	10.820	18.170	29.500	17.273
flows	Low	9.225	11.370	10.080	7.718	5.047	3.898	2.411	1.715	3.748	3.117	4.407	12.120	10.364
(m^3s^{-1})	High	51.280	64.730	54.220	22.690	31.020	30.110	9.955	13.830	25.450	28.180	35.060	48.270	22.162
Peak flow (m^3s^{-1})		166.87	226.48	193.35	119.65	227.04	165.60	54.93	64.71	191.85	88.98	163.09	300.50	300.50
Runoff (mm)		56	50	46	27	22	17	10	11	11	19	30	51	351
Rainfall (mm)*		87	61	78	46	63	68	52	66	81	67	81	93	843

*(1970-1985)

Factors affecting flow regime: R G
Station type: VA

1986 runoff is 112% of previous mean rainfall 110%

054006 Stour at Kidderminster — 1986

Measuring authority: STWA
First year: 1953
Grid reference: 32 (SO) 829 768
Level stn. (m OD): 30.50
Catchment area (sq km): 324.0
Max alt. (m OD): 316

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.076	3.174	2.658	3.659	2.807	2.707	3.016	4.057	2.349	2.455	3.808	3.991	3.313
(m^3s^{-1}):	Peak	17.08	10.34	6.29	11.28	11.88	12.89	9.27	21.63	4.12	8.85	12.46	10.27	21.63
Runoff (mm)		42	24	22	29	23	22	25	34	19	20	30	33	323
Rainfall (mm)		97	8	53	68	63	52	43	122	10	58	79	83	736

Monthly and yearly statistics for previous record (Oct 1953 to Dec 1985)

Mean	Avg	3.629	3.447	3.347	2.765	2.620	2.335	2.124	2.293	2.366	2.454	2.996	3.415	2.813
flows	Low	1.703	1.527	1.762	1.344	1.424	1.127	1.049	0.895	1.367	1.335	1.576	1.537	1.865
(m^3s^{-1})	High	7.409	6.537	6.244	4.844	6.468	3.438	4.404	3.801	4.057	5.713	6.386	7.062	4.136
Peak flow (m^3s^{-1})		67.96	20.96	81.55	16.90	20.94	18.52	19.20	34.50	19.40	22.96	16.44	45.46	81.55
Runoff (mm)		30	26	28	22	22	19	18	19	19	20	24	28	274
Rainfall (mm)		62	48	54	48	62	56	58	69	67	57	65	68	714

Factors affecting flow regime: GEI
Station type: VA

1986 runoff is 118% of previous mean rainfall 103%

054008 Teme at Tenbury — 1986

Measuring authority: STWA
First year: 1956
Grid reference: 32 (SO) 597 686
Level stn. (m OD): 48.00
Catchment area (sq km): 1134.4
Max alt. (m OD): 546

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	43.250	18.970	15.470	28.050	13.490	6.016	2.995	4.735	3.072	3.047	27.740	35.110	16.829
(m^3s^{-1}):	Peak	160.01	54.03	42.63	74.87	23.63	15.72	3.85	32.07	5.80	8.41	97.51	76.69	160.01
Runoff (mm)		102	40	37	64	32	14	7	11	7	7	63	83	468
Rainfall (mm)		127	14	63	90	70	38	35	109	8	73	123	124	874

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1985)

Mean	Avg	27.880	25.230	21.780	14.180	11.030	6.357	4.180	4.197	6.396	11.510	16.650	25.080	14.499
flows	Low	6.281	8.009	7.433	4.692	2.571	1.558	1.008	0.745	1.085	1.347	3.085	5.565	7.278
(m^3s^{-1})	High	51.630	56.000	51.940	28.630	35.380	14.160	21.920	16.670	29.650	43.130	50.140	57.290	23.489
Peak flow (m^3s^{-1})		256.60	191.80	165.40	121.50	200.30	79.52	114.10	158.00	196.20	232.80	188.30	266.50	266.50
Runoff (mm)		66	54	51	32	26	15	10	10	15	27	38	59	403
Rainfall (mm)		85	64	70	58	66	59	57	73	84	72	83	92	863

Factors affecting flow regime: N
Station type: VA

1986 runoff is 116% of previous mean rainfall 101%

054012 Tern at Walcot — 1986

Measuring authority: STWA
First year: 1960
Grid reference: 33 (SJ) 592 123
Level stn. (m OD): 44.60
Catchment area (sq km): 852.0
Max alt. (m OD): 366

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.410	6.936	6.539	10.510	5.400	3.784	2.488	4.460	3.112	3.075	9.521	12.440	6.890
(m^3s^{-1}):	Peak	45.12	19.39	15.88	35.95	6.74	6.37	3.54	20.74	10.98	5.58	30.73	31.14	45.12
Runoff (mm)		45	20	21	32	17	12	8	14	9	10	29	39	255
Rainfall (mm)		90	4	60	73	49	41	46	99	4	57	92	97	712

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1985)

Mean	Avg	10.920	10.530	8.962	7.140	6.710	4.675	3.947	3.844	4.040	5.628	8.053	10.820	7.092
flows	Low	4.018	4.002	4.800	3.557	2.917	2.199	1.393	1.171	1.680	2.227	2.538	3.563	3.757
(m^3s^{-1})	High	20.320	22.280	17.810	12.320	22.390	9.069	14.060	6.655	9.490	16.920	21.830	24.950	10.286
Peak flow (m^3s^{-1})		45.31	45.98	40.53	40.73	40.35	27.00	48.71	38.53	32.17	37.38	44.54	55.82	55.82
Runoff (mm)		34	30	28	22	21	14	12	12	12	18	24	34	283
Rainfall (mm)		59	47	53	50	65	56	53	62	66	59	71	68	709

Factors affecting flow regime: G
Station type: FV

1986 runoff is 97% of previous mean rainfall 100%

054019 Avon at Stareton 1986

Measuring authority: STWA
First year: 1962
Grid reference 42 (SP) 333 715
Level stn (m OD): 54 70
Catchment area (sq km): 347 0
Max alt (m OD): 214

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5 927	3 400	3 381	4.644	2 368	0 918	0 538	1 467	0 786	0 938	5 455	5 680	**2.959**
(m^3s^{-1}):	Peak	31 42	14.90	9 69	14 22	7 23	2 32	1 66	7 06	2 73	2.88	19 94	17 93	**31.42**
Runoff (mm)		46	24	26	35	18	7	4	11	6	7	41	44	**269**
Rainfall (mm)		69	18	60	57	71	29	39	123	25	64	86	83	**724**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985)

Mean	Avg.	4 317	4 535	4 242	2.621	2 229	1 318	1 011	1 065	1 037	1 493	2 203	3 985	**2.497**
flows	Low	0 798	0 777	0 545	0 485	0 474	0 368	0 247	0 356	0 442	0 507	0 549	0 667	**1 094**
(m^3s^{-1})	High	8 143	12.890	8 577	5 558	6 149	3 202	5 379	3 332	2 858	5 274	5 311	10 400	**3.588**
Peak flow (m^3s^{-1})		38.23	59 60	55 89	42 67	39 05	27 34	71 36	26 08	16 59	32 89	34 11	56 28	**71.36**
Runoff (mm)		33	32	33	20	17	10	8	8	8	12	16	31	**227**
Rainfall (mm)		54	46	55	47	60	58	54	68	56	50	58	63	**669**

Factors affecting flow regime: S El
Station type: C

1986 runoff is 118% of previous mean rainfall 108%

054020 Perry at Yeaton 1986

Measuring authority: STWA
First year: 1963
Grid reference 33 (SJ) 434 192
Level stn. (m OD) 61 30
Catchment area (sq km) 180 8
Max alt. (m OD): 356

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 709	1 673	1 397	2 513	1 227	0 749	0 502	0 669	0 541	0 507	1 662	2 888	**1.503**
(m^3s^{-1})	Peak	14 23	3 62	3 67	7 34	4 64	1 10	0 76	2 64	0 97	0 83	5 81	7 52	**14.23**
Runoff (mm)		55	22	21	36	18	11	7	10	8	8	24	43	**262**
Rainfall (mm)		105	8	54	83	56	34	37	94	3	55	101	114	**744**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985)

Mean	Avg	2 846	2 776	2 406	1 669	1 476	0 984	0 749	0 729	0 743	1 136	1 807	2 670	**1.682**
flows	Low	0 901	0 859	1 257	0 742	0 583	0 379	0 271	0 208	0 350	0 412	0 427	0 848	**0 809**
(m^3s^{-1})	High	4.777	6 507	4 265	3 041	4 232	2 046	2 735	1 416	1 785	3 308	3 103	6 244	**2.335**
Peak flow (m^3s^{-1})		11 50	11 29	11 12	8 57	10 41	8 49	7 87	5 49	7 32	7 25	10 02	12 57	**12.57**
Runoff (mm)		42	37	36	24	22	14	11	11	11	17	26	40	**290**
Rainfall (mm)		67	55	62	46	66	58	57	62	70	64	80	79	**766**

Factors affecting flow regime: N G
Station type: C

1986 runoff is 90% of previous mean rainfall 97%

054022 Severn at Plynlimon flume 1986

Measuring authority: IH
First year: 1953
Grid reference 22 (SN) 853 872
Level stn (m OD) 331 00
Catchment area (sq km) 8 7
Max alt (m OD) 740

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 122	0.189	0 768	0.496	0 321	0 203	0 211	0 490	0 178	0 572	1 434	1 328	**0 609**
(m^3s^{-1}):	Peak	14 49	0 29	10 24	5 24	1 57	1 00	2 25	5 89	2 28	5 62	15 08	13 33	**15 08**
Runoff (mm)		346	53	236	148	99	61	65	151	53	176	427	409	**2223**
Rainfall (mm)		410	15	275	57	161	55	169	189	33	272	468	538	**2742**

Monthly and yearly statistics for previous record (Oct 1953 to Dec 1985—incomplete or missing months total 10 8 years)

Mean	Avg	0.745	0 580	0 572	0 326	0 244	0 221	0 282	0 394	0 521	0 606	0 772	0 751	**0.501**
flows	Low	0 363	0 136	0 171	0 046	0 048	0 045	0 054	0 037	0 073	0 059	0 268	0 174	**0 334**
(m^3s^{-1})	High	1 571	1 104	1 567	0 878	0 818	0 638	0 754	0 935	1 092	1 463	1 307	1 304	**0.646**
Peak flow (m^3s^{-1})		12 19	14 00	14 53	11 64	9 86	10 66	8 84	24 99	12 91	17 22	17 76	17 11	**24.99**
Runoff (mm)		229	162	176	97	75	66	87	121	155	187	230	231	**1817**
Rainfall (mm)		283	182	202	128	134	139	149	183	233	238	281	273	**2425**

Factors affecting flow regime: N
Station type: FL

1986 runoff is 122% of previous mean rainfall 113%

054038 Tanat at Llanyblodwel 1986

Measuring authority: STWA
First year: 1973
Grid reference 33 (SJ) 252 225
Level stn (m OD) 77 00
Catchment area (sq km) 229 0
Max alt (m OD) 827

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.610	3 143	6 172	8 039	4 694	2 109	0 638	4 894	1 683	2 185	16 360	15 560	**6.674**
(m^3s^{-1}):	Peak	90 52	8 99	27 07	23 59	13 31	14 30	2 59	54 50	5 54	17 72	73 38	54 06	**90.52**
Runoff (mm)		171	33	72	91	55	24	7	57	19	26	185	182	**923**
Rainfall (mm)		206	77	121	102	119	43	60	161	7	113	208	243	**1400**

Monthly and yearly statistics for previous record (Jun 1973 to Dec 1985—incomplete or missing months total 0.4 years)

Mean	Avg.	11 250	9 817	8 717	4 857	3 480	2 386	1 257	2 440	3 564	7 150	9 614	11 960	**6 362**
flows	Low	5 203	5 911	2 693	1 392	0 867	0 728	0 348	0 190	1 199	1 701	2 895	6 595	**4 185**
(m^3s^{-1})	High	15 860	19 900	17 800	9 686	10 250	4 660	1 930	7 609	9 885	15 020	16 920	21 410	**7.510**
Peak flow (m^3s^{-1})		91 77	64 77	85 77	39 85	31 27	56 87	15 68	118 20	69 56	59 64	64 64	87 99	**118 20**
Runoff (mm)		132	105	102	55	41	27	15	29	40	84	109	140	**877**
Rainfall (mm)		128	91	107	60	76	71	57	86	120	115	136	146	**1193**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 105% of previous mean rainfall 117%

055008 Wye at Cefn Brwyn 1986

Measuring authority: IH
First year: 1951
Grid reference: 22 (SN) 829 838
Level stn. (m OD): 341.00
Catchment area (sq km): 10.6
Max alt. (m OD): 752

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1 383	0.146	1 013	0 649	0.416	0 278	0.377	0 636	0 255	0 841	1 823	1.805	0.802
(m^3s^{-1}):	Peak	18 97	0.31	23 18	8 59	1 80	2 42	4 00	6 08	3.96	9 41	19.57	20 72	23.18
Runoff (mm)		351	33	257	160	106	68	96	162	63	214	448	458	2415
Rainfall (mm)		409	14	276	162	157	62	192	199	36	261	489	577	2834

Monthly and yearly statistics for previous record (Aug 1951 to Dec 1985—incomplete or missing months total 2.5 years)

Mean	Avg	0.947	0.754	0 645	0.521	0 400	0.353	0 436	0 571	0 682	0 794	1 023	1 107	0.686
flows	Low	0.492	0 158	0 206	0 064	0 054	0 074	0 053	0 036	0.050	0 092	0 376	0 198	0.447
(m^3s^{-1})	High	1.870	1 486	1.735	1 312	1 144	0.954	1.264	1.478	1 478	2 031	1 600	2 655	0.994
Peak flow (m^3s^{-1})		23 47	19.20	16.97	19 12	17 89	25 49	19 11	48 87	16 93	24 32	29.15	32.00	48.87
Runoff (mm)		240	174	164	128	101	87	111	145	168	202	251	281	2052
Rainfall (mm)		258	170	190	147	135	143	181	195	210	237	269	303	2418

Factors affecting flow regime: N
Station type: CC
1986 runoff is 118% of previous mean rainfall 117%

055013 Arrow at Titley Mill 1986

Measuring authority: WELS
First year: 1966
Grid reference 32 (SO) 328 585
Level stn. (m OD): 129.00
Catchment area (sq km): 126 4
Max alt. (m OD): 542

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6.972	1.912	2 109	3 868	2.218	1.025	0 395	1.246	0 691	0 697	6 625	6 157	2.826
(m^3s^{-1}):	Peak	101.12	4.92	6 43	7 86	4.77	3.11	0 61	24.79	1 55	4 34	27 66	17 38	101.12
Runoff (mm)		148	37	45	79	47	21	8	26	14	15	136	130	706
Rainfall (mm)		144	10	67	97	89	39	45	135	14	101	153	155	1049

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1985)

Mean	Avg.	4.748	4 235	3 629	2 099	1.852	1 177	0.758	0 631	0 908	2 025	3 022	4 304	2 443
flows	Low	1.886	1 936	1 629	0 962	0 526	0.332	0.210	0.154	0 277	0 294	0 662	1 694	1.309
(m^3s^{-1})	High	9.003	7 677	8.933	4.176	5 001	2.559	3 842	1 546	2 459	6 916	6.261	7 566	3.418
Peak flow (m^3s^{-1})		63.98	39.94	57 85	19 41	32 49	13 09	30 68	9 59	18 85	36 45	28 98	63 34	63.98
Runoff (mm)		101	82	77	43	39	24	16	13	19	43	62	91	610
Rainfall (mm)		109	82	88	55	77	66	51	76	97	90	99	111	1001

Factors affecting flow regime: P
Station type: VA
1986 runoff is 116% of previous mean rainfall 105%

055014 Lugg at Byton 1986

Measuring authority: WELS
First year: 1966
Grid reference 32 (SO) 364 647
Level stn (m OD) 124.10
Catchment area (sq km) 203.3
Max alt (m OD) 660

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	10.160	4.184	3 784	6 198	3 885	1 855	0.995	1.551	1.122	1 018	8 398	10 330	4.457
(m^3s^{-1}):	Peak	35 30	8.80	7 84	12 25	5.36	3.50	1.27	13.32	1 71	2 52	25 89	23.43	35.30
Runoff (mm)		134	50	50	79	51	24	13	20	14	13	107	136	692
Rainfall (mm)		151	9	74	101	87	40	42	136	11	94	156	154	1055

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1985)

Mean	Avg	7.393	7.014	5.991	3 902	3 284	2 118	1 433	1 161	1.351	2.803	4 393	6 443	3.928
flows	Low	2.991	2.630	2 947	2 016	1 186	0 772	0.557	0 414	0 678	0 657	1 219	2.978	2.321
(m^3s^{-1})	High	11.940	12.870	13.980	7 106	7 994	4 113	5 253	1 997	3 079	7.962	8 774	10 350	4.954
Peak flow (m^3s^{-1})		54.27	37 53	33 24	18 82	45.56	14 18	26.16	9.52	12 46	28.51	27.22	37 49	54.27
Runoff (mm)		97	84	79	50	43	27	19	15	17	37	56	85	610
Rainfall (mm)		118	85	91	61	82	66	54	75	97	88	100	113	1028

Factors affecting flow regime:
Station type: FVVA
1986 runoff is 113% of previous mean rainfall 103%

055018 Frome at Yarkhill 1986

Measuring authority: WELS
First year: 1968
Grid reference. 32 (SO) 615 428
Level stn. (m OD): 55 40
Catchment area (sq km): 144.0
Max alt. (m OD): 244

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.537	1 819	0 749	1.939	1 409	0.701	0.357	0.759	0 322	0 269	2.131	2.721	1.393
(m^3s^{-1}):	Peak	19.54	10 98	2 60	5 46	14 48	4 70	0 76	9 61	0 75	0 74	14 84	9 47	19.54
Runoff (mm)		68	31	14	35	26	13	7	14	6	5	38	51	305
Rainfall (mm)		101	7	48	70	70	45	44	128	17	56	98	88	772

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg	2.643	2.605	2 332	1.189	1.143	0.662	0.362	0.325	0 331	0 503	0 947	2.014	1.250
flows	Low	0.214	0.389	0.560	0 359	0 274	0 146	0 091	0 063	0 174	0 155	0 171	0 210	0.672
(m^3s^{-1})	High	4.668	5.456	5 176	2 298	3 972	1.349	0 630	0.538	0 970	2 405	2 266	3 594	1.628
Peak flow (m^3s^{-1})		23 84	24 99	24.28	14 74	25 89	16.99	5.96	6 04	15 68	10 34	18 51	25.14	25.89
Runoff (mm)		49	44	43	21	21	12	7	6	6	9	17	37	274
Rainfall (mm)		73	53	65	43	64	58	44	67	66	53	64	73	723

Factors affecting flow regime: E
Station type: VA
1986 runoff is 111% of previous mean rainfall 107%

055023 Wye at Redbrook 1986

Measuring authority: WELS
First year: 1936
Grid reference: 32 (SO) 528 110
Level stn. (m OD) 9 20
Catchment area (sq km): 4010.0
Max alt. (m OD) 752

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2'7 100	74 660	80 810	114.100	77 420	33 710	13 880	42 070	23 050	39.510	202 000	218 900	94.767
(m^3s^{-1}):	Peak	477 66	227 69	28: 43	260 23	140.81	78 94	26 50	347 80	48 43	170 31	539 38	492.27	539.38
Runoff (mm)		145	45	54	74	52	22	9	28	15	26	13:	146	747
Rainfall (mm)		159	9	84	93	91	42	49	127	17	101	172	176	1120

Monthly and yearly statistics for previous record (Oct 1936 to Dec 1985)

Mean	Avg	128 600	121 400	90 980	62.500	44.540	34 430	24 230	27 840	40 240	59.340	100 300	122.900	71.201
flows	Low	25 050	30 760	22.110	17 930	12 340	10 970	7 426	5.180	7.271	9 582	31 730	46 890	39 916
(m^3s^{-1})	High	241.900	234 000	325 400	133 100	125 000	131 600	95 830	83 680	174 000	174 700	252.400	246 000	113.382
Peak flow (m^3s^{-1})		688 80	700 40	905 40	365 30	387.90	467 20	368 30	258 50	531 70	472 90	600.30	812 70	905.40
Runoff (mm)		86	74	61	40	30	22	16	19	26	40	65	82	560
Rainfall (mm)		110	78	76	62	75	63	67	84	89	93	112	114	1023

Factors affecting flow regime: S P E
Station type: VA

1986 runoff is 133% of previous mean
rainfall 109%

056013 Yscir at Pontaryscir 1986

Measuring authority: WELS
First year: 1972
Grid reference: 32 (SO) 003 304
Level stn (m OD): 161.20
Catchment area (sq km): 62.8
Max alt (m OD): 474

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	4 619	0 998	2.395	2 298	1 850	0 693	0 336	1 160	0 509	1 528	5 291	4 813	2.207
(m^3s^{-1}):	Peak	23 83	2.23	16.15	11 39	6 93	3 33	0 84	30 69	1 79	8 81	34 02	31 09	34.02
Runoff (mm)		197	38	102	95	79	29	14	49	21	65	218	205	1114
Rainfall (mm)		210	10	138	110	143	42	69	144	22	164	265	270	1587

Monthly and yearly statistics for previous record (May 1972 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	3.352	2.736	2 513	1 335	1 023	0 711	0 446	0 702	1 203	2 087	3.011	3.606	1.891
flows	Low	1 146	1.767	0 852	0 431	0 269	0 214	0 150	0 104	0 283	0 214	1.475	2 196	1.286
(m^3s^{-1})	High	5.795	4 959	6 303	3 211	3 041	1 788	1 117	2.964	3 947	4 182	4 924	6 324	2.465
Peak flow (m^3s^{-1})		36.98	31.78	40 55	13 54	14 81	74 33	11 06	28 81	21 44	85 01	30 35	59.93	85.01
Runoff (mm)		143	106	107	55	44	29	19	30	50	89	124	154	950
Rainfall (mm)*		162	107	134	66	85	73	71	101	148	138	159	184	1428

*(1973-1985)

Factors affecting flow regime: N
Station type: C

1986 runoff is 117% of previous mean
rainfall 111%

057008 Rhymney at Llanedeyrn 1986

Measuring authority: WELS
First year: 1973
Grid reference: 31 (ST) 225 821
Level stn (m OD): 11.80
Catchment area (sq km): 178.7
Max alt. (m OD): 617

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13.870	3 204	4 379	5 861	6 440	3 764	1 539	5 215	2 093	4 923	16.560	14 750	6.883
(m^3s^{-1}):	Peak	108 25	6 26	37.56	22.18	31 31	54 30	7.17	81.66	6.06	43 46	113 46	89.94	113.46
Runoff (mm)		208	43	66	85	97	55	23	78	30	74	240	221	1220
Rainfall (mm)		218	5	123	116	150	70	78	177	26	190	254	272	1679

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1985)

Mean	Avg	9.063	7 893	7 119	3.932	2.923	1 957	1 419	2 450	3 809	6.013	7.625	9 375	5.289
flows	Low	3 313	3.199	2 889	1 754	1 276	0 873	0 602	0 571	0.913	0.748	2 355	3 218	2.903
(m^3s^{-1})	High	17 200	15.620	20 960	9 695	8 340	4 604	2 371	10 450	11 500	13 700	15 430	15 730	7.153
Peak flow (m^3s^{-1})		100 10	72.22	105 80	41 55	26 05	32 92	27.39	87.41	101 60	118 50	106 50	147.30	147.30
Runoff (mm)		136	108	107	57	44	28	21	37	55	90	111	141	934
Rainfall (mm)		159	111	126	61	83	67	63	101	154	136	148	169	1378

Factors affecting flow regime: PGE
Station type: FVVA

1986 runoff is 131% of previous mean
rainfall 122%

058006 Mellte at Pontneddfechan 1986

Measuring authority: WELS
First year: 1971
Grid reference: 22 (SN) 915 082
Level stn. (m OD): 90 00
Catchment area (sq km): 65.8
Max alt. (m OD): 734

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5 951	0.913	3.717	3.174	4.283	1 592	0 716	2 441	0 789	4 178	9.471	7 526	3.729
(m^3s^{-1}):	Peak	70 15	2 02	23.04	30 08	20 85	15 69	13.18	40 82	2.65	34.19	106 85	64 49	106.85
Runoff (mm)		242	34	151	125	174	63	29	99	31	170	373	306	1798
Rainfall (mm)		296	12	200	168	264	77	118	197	36	303	428	414	2513

Monthly and yearly statistics for previous record (Oct 1971 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	4.883	3.742	3 655	2 014	1.563	1.133	0.941	1 682	2 558	3.336	4 637	5.218	2.945
flows	Low	1.932	2 073	.1 378	0 497	0 383	0.322	0 242	0 207	0 562	0 548	2 063	2.641	1.985
(m^3s^{-1})	High	8 274	7 231	10 670	5 095	3 233	3 559	2 608	6 802	6.876	6 305	7.875	8.739	3 814
Peak flow (m^3s^{-1})		82.30	66 12	72 93	39 02	21 45	32 54	39 14	58 52	81 01	96 78	79 82	127.60	127.60
Runoff (mm)		199	139	149	79	64	45	38	68	101	136	183	212	1412
Rainfall (mm)		247	155	187	97	116	107	93	152	189	198	236	254	2031

Factors affecting flow regime: S P
Station type: FVVA

1986 runoff is 127% of previous mean
rainfall 124%

059001 Tawe at Ynystanglws — 1986

Measuring authority: WELS
First year: 1957
Grid reference: 21 (SS) 685 998
Level stn. (m OD): 9 30
Catchment area (sq km): 227 7
Max alt. (m OD) 802

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	28.620	5 892	17.140	14 830	17 670	7.755	5 727	15 120	5.099	17.270	38 260	34 330	17.309
(m^3s^{-1}):	Peak	219.92	12.86	89.07	122.91	100 00	52 94	109 99	204 52	20 68	114 41	236 15	220 60	236 15
Runoff (mm)		337	63	202	169	208	88	67	178	58	203	435	404	2411
Rainfall (mm)		261	3	198	151	220	73	132	208	34	278	404	396	2358

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1985—incomplete or missing months total 0.7 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	18.740	13.730	11 330	8 520	7 260	5 095	4 932	7 487	10.250	13 820	16 710	18 500	11.360
flows	Low	1 479	2 445	3.175	2.145	1 603	1.354	1 032	1 280	0 574	2 587	8 358	3.931	7.613
(m^3s^{-1})	High	36.580	29 040	41.630	17.020	17 980	15 960	9 480	27 090	26.290	43.430	33 320	43 650	15.158
Peak flow (m^3s^{-1})		275 10	322 80	270.20	188 60	147 50	214.10	131.90	261 80	286 00	314 30	290 60	461 30	461.30
Runoff (mm)		220	147	133	97	85	58	58	88	117	163	190	218	1574
Rainfall (mm)		205	135	139	110	115	109	110	143	175	193	205	221	1860

Factors affecting flow regime: GEI
Station type: VA
Comment: Runoff data suspect; stage-discharge relation under review

1986 runoff is 153% of previous mean rainfall 127%

060002 Cothi at Felin Mynachdy — 1986

Measuring authority: WELS
First year: 1961
Grid reference 22 (SN) 508 225
Level stn. (m OD) 16 10
Catchment area (sq km): 297 8
Max alt. (m OD) 484

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	24.030	4 401	9.920	11.910	12 850	5.240	1 793	12.500	4.160	9 177	36 270	29.750	13.500
(m^3s^{-1}).	Peak	96.58	13 98	47 45	54 43	59 92	28 18	11.71	162 85	15.35	54 86	153 85	116 81	162.85
Runoff (mm)		216	36	89	104	116	46	16	112	36	83	316	268	1437
Rainfall (mm)		246	1	159	131	172	68	100	194	19	195	331	332	1948

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1985—incomplete or missing months total 1.9 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	17.700	14 160	12.550	8 546	6.715	4 271	3 452	6 205	8 311	15 380	17 710	20.370	11.277
flows	Low	2.990	3.708	2.821	1 444	0 835	0 824	0.418	0 362	1.500	1.610	8 903	6 723	7.174
(m^3s^{-1})	High	37.580	31 100	40 710	20 380	14 820	13.070	11.810	23 350	23 920	37 940	33 360	41 140	14.950
Peak flow (m^3s^{-1})		141.60	181 20	220 90	85.88	87 22	90 33	144 40	171 00	129 70	188 60	175 80	274.70	274.70
Runoff (mm)		159	116	113	74	60	37	31	56	72	138	154	183	1195
Rainfall (mm)		171	116	129	93	102	96	96	123	154	178	175	187	1620

Factors affecting flow regime: P E
Station type: VA

1986 runoff is 120% of previous mean rainfall 120%

061003 Gwaun at Cilrhedyn Bridge — 1986

Measuring authority: WELS
First year: 1969
Grid reference: 22 (SN) 005 349
Level stn. (m OD): 70.30
Catchment area (sq km) 31 3
Max alt. (m OD). 468

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2 279	0 691	1 493	1.259	0 829	0 529	0 367	1 095	0.553	0 665	2 493	2 596	1.237
(m^3s^{-1}).	Peak	11 36	1 53	3 62	4.81	2 53	3.79	2.58	16 41	1 39	3 99	15 21	13.17	16 41
Runoff (mm)		195	53	128	104	71	44	31	94	46	57	206	222	1252
Rainfall (mm)		194	4	139	127	132	91	89	189	14	161	270	334	1744

Monthly and yearly statistics for previous record (Apr 1969 to Dec 1985—incomplete or missing months total 0 1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1 887	1 658	' 367	0 837	0 575	0 493	0 309	0 562	0 612	1.357	1 738	2 061	1.119
flows	Low	0 859	0 751	0 576	0 352	0 231	0 178	0 108	0 073	0 288	0 271	0 605	1 487	0.802
(m^3s^{-1})	High	3 898	4 108	3 668	2.247	1 248	1.600	0 712	1 972	1 630	3 462	3 080	2 851	1.392
Peak flow (m^3s^{-1})		22.52	21 10	16 70	13.51	7.23	18 35	7 02	23 48	15.64	16.13	20 03	20 59	23 48
Runoff (mm)		161	129	117	69	49	41	26	48	51	116	144	176	1129
Rainfall (mm)*		172	116	129	81	80	83	77	113	144	170	175	183	1523

*(1970-1985)

Factors affecting flow regime:
Station type VA

1986 runoff is 111% of previous mean rainfall 115%

063001 Ystwyth at Pont Llolwyn — 1986

Measuring authority: WELS
First year: 1963
Grid reference. 22 (SN) 591 774
Level stn. (m OD): 12 00
Catchment area (sq km): 169.6
Max alt. (m OD): 611

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	12.210	2 571	6 470	5 125	2 742	1 583	1 952	3 789	2 814	4 168	14 190	17 100	6 226
(m^3s^{-1})	Peak	53 84	6 01	63 99	27 25	6 05	8 61	13.97	25 21	18.50	29.50	107 65	133 01	133.01
Runoff (mm)		193	37	102	78	43	24	31	60	43	66	217	270	1164
Rainfall (mm)		220	5	145	107	92	48	134	139	22	159	262	314	1647

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	9 297	7.214	5 999	4.247	3 419	2.611	2 475	3.340	4 480	7 124	9 281	10.950	5.868
flows	Low	2 268	2.283	2 816	0.960	0 577	0.625	0 422	0 180	0 882	0 558	3 959	2.219	3.783
(m^3s^{-1})	High	15 330	15.200	18 470	10 080	10 100	7.571	5 461	8 556	10 670	19 800	18 320	22.600	7.774
Peak flow (m^3s^{-1})		105.60	88 63	126.70	90 32	105 10	129.70	68 24	174 30	71.02	129.90	128.10	210.40	210.40
Runoff (mm)		147	104	95	65	54	40	39	53	68	113	142	173	1092
Rainfall (mm)		151	103	114	83	93	93	93	110	135	146	167	179	1467

Factors affecting flow regime.
Station type. VA

1986 runoff is 107% of previous mean rainfall 112%

064001 Dyfi at Dyfi Bridge 1986

Measuring authority: WELS
First year: 1962
Grid reference: 23 (SH) 745 019
Level stn: (m OD) 5 90
Catchment area (sq km): 471.3
Max alt: (m OD) 905

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	47 130	6 905	29 910	19 950	6 160	7 55	6 690	21 040	5 966	20 740	70 470	63 770	**26.357**
(m^3s^{-1}):	Peak	280 77	22 20	208 23	100 16	48 86	34 08	51 05	140 33	29 12	135 35	357 54	384 93	**384 93**
Runoff (mm)		268	35	170	110	92	42	38	120	33	118	388	362	**1775**
Rainfall (mm)		293	1	231	117	148	53	154	169	21	219	345	420	**2181**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1985—incomplete or missing months total 9.8 years)

Mean	Avg	33 540	23 110	25 710	17 180	12 160	11 150	8 377	12 960	19 000	30 640	33 600	42 480	**22.514**
flows	Low	6 245	5 174	5 789	2 626	1.295	1 618	0 822	1 819	6 595	10 770	14 530	7 501	**18 343**
(m^3s^{-1})	High	68 810	46 060	75 790	42 490	23 600	21 770	16 680	40 440	34 110	76 960	62 790	88 280	**25.700**
Peak flow (m^3s^{-1})		350.20	340 00	360 70	271 30	337 20	402 10	162 00	210 00	254 90	344 00	375 50	580 50	**580.50**
Runoff (mm)		191	119	146	94	69	61	48	74	105	174	185	241	**1507**
Rainfall (mm)		199	126	154	111	113	114	105	146	182	199	206	242	**1897**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 118% of previous mean
rainfall 115%

064002 Dysynni at Pont-y-garth 1986

Measuring authority: WELS
First year: 1966
Grid reference: 23 (SH) 632 066
Level stn: (m OD) 2 30
Catchment area (sq km): 75 1
Max alt: (m OD) 892

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 755	1 548	5 70	4 559	3 745	2 253	2 955	4 674	2 096	4 000	12 680	12 580	**5.335**
(m^3s^{-1}):	Peak	35 08	3 62	40 84	36 85	13 89	8 39	15 57	27 04	11 88	29 64	46 20	81 29	**81.29**
Runoff (mm)		277	50	184	157	134	78	105	167	72	143	438	449	**2253**
Rainfall (mm)		277	7	256	142	159	79	217	191	38	234	369	484	**2453**

Monthly and yearly statistics for previous record (Jan 1966 to Dec 1985—incomplete or missing months total 1 8 years)

Mean	Avg	5 755	4 853	4 479	3 381	2 509	2 315	2 493	3 061	4 139	5 648	6 597	6 810	**4.335**
flows	Low	3 371	2 622	0 986	0 457	0 298	0 427	0 278	0 289	1 926	0 556	3 011	2 770	**3.612**
(m^3s^{-1})	High	11 040	8 809	14 780	7 209	7 602	5 921	5 407	8 899	7 285	12 350	10 750	10 750	**5.416**
Peak flow (m^3s^{-1})		61.40	41 34	98 71	33 40	76 32	48 42	53 35	51 62	70 14	107 70	121 30	84 70	**121.30**
Runoff (mm)		205	158	160	117	89	80	89	109	143	201	228	243	**1822**
Rainfall (mm)		222	149	174	125	131	145	139	165	211	246	251	243	**2201**

Factors affecting flow regime: N
Station type: VA

1986 runoff is 124% of previous mean
rainfall 111%

065005 Erch at Pencaenewydd 1986

Measuring authority: WELS
First year: 1973
Grid reference: 23 (SH) 400 404
Level stn: (m OD) 56 10
Catchment area (sq km): 18 1
Max alt: (m OD) 564

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.294	0 365	0 695	0 771	0 461	0 390	0 349	0 558	0 300	0 415	1 472	1 764	**0.736**
(m^3s^{-1}):	Peak	10 41	0 71	6 14	6 56	3 44	4 15	5 52	6 89	1 22	4 01	9 22	15 49	**15.49**
Runoff (mm)		191	49	103	110	68	56	52	83	43	61	211	261	**1288**
Rainfall (mm)		205	3	185	124	129	77	148	158	17	141	233	313	**1733**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1985)

Mean	Avg	0 956	0 857	0 719	0 431	0 334	0 202	0 161	0 274	0 417	0 794	1 020	1 084	**0.603**
flows	Low	0 629	0 414	0 311	0 177	0 120	0 089	0 081	0 061	0 167	0 236	0 264	0 600	**0.430**
(m^3s^{-1})	High	1 396	1 869	1 804	0 892	0 728	0 539	0 427	1 113	0 919	1 736	1 816	1 616	**0.734**
Peak flow (m^3s^{-1})		10 25	15 45	19.78	11 00	4 68	6 99	5 40	9 22	7 42	11 84	16 91	10 45	**19.78**
Runoff (mm)		142	116	106	62	49	29	24	41	60	117	146	160	**1052**
Rainfall (mm)		141	97	116	66	79	68	72	111	145	155	161	157	**1368**

Factors affecting flow regime: N
Station type: C

1986 runoff is 122% of previous mean
rainfall 127%

066006 Elwy at Pont-y-gwyddel 1986

Measuring authority: WELS
First year: 1973
Grid reference: 23 (SH) 952 718
Level stn: (m OD) 87 90
Catchment area (sq km): 194 0
Max alt: (m OD) 518

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9 22	2 649	3 520	6 939	2 730	1 043	0 526	3 013	1 446	1 361	10 370	11 270	**4 499**
(m^3s^{-1})	Peak	42.22	8 69	15 25	42 30	12 10	2 58	1 16	38 13	6 02	15 93	41 76	44 64	**44 64**
Runoff (mm)		126	33	49	93	38	14	7	42	19	19	139	156	**733**
Rainfall (mm)		155	14	106	96	100	45	67	142	14	113	171	218	**1241**

Monthly and yearly statistics for previous record (Dec 1973 to Dec 1985)

Mean	Avg	7 982	6 259	5.336	2 641	1 887	1 31	0 694	1 093	2 643	5 507	7 542	7 880	**4 224**
flows	Low	3 115	3 208	1.539	0 823	0 479	0 359	0 278	0 242	0 629	1 733	2 263	4 879	**2.908**
(m^3s^{-1})	High	11 430	12 050	11 950	5 761	5 918	3 300	1 402	4 351	7 450	11 530	11 850	14 450	**5.094**
Peak flow (m^3s^{-1})		82 42	50 82	76 59	50 76	21 66	18 00	27 05	35 15	58 57	143 00	101 60	75 42	**143 00**
Runoff (mm)		110	79	74	35	26	18	10	15	35	76	101	109	**687**
Rainfall (mm)		131	87	101	57	76	74	64	87	136	127	153	139	**1232**

Factors affecting flow regime: SRP
Station type: VA

1986 runoff is 107% of previous mean
rainfall 101%

067008 Alyn at Pont-y-capel 1986

Measuring authority: WELS
First year: 1965
Grid reference: 33 (SJ) 336 541
Level stn. (m OD): 37.30
Catchment area (sq km): 227.1
Max alt. (m OD): 562

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.029	1.959	1.448	6.474	1.689	0.981	0.643	2.456	1.103	0.674	2.978	5.040	2.623
(m^3s^{-1}):	Peak	21.62	5.00	5.05	25.28	3.28	4.51	1.10	20.81	4.69	1.87	10.29	13.24	25.28
Runoff (mm)		71	21	17	74	20	11	8	29	13	8	34	59	365
Rainfall (mm)		123	5	64	138	64	53	50	172	9	69	99	134	980

Monthly and yearly statistics for previous record (Jun 1965 to Dec 1985)

Mean	Avg.	4.360	4.095	3.310	2.400	1.885	1.183	0.890	0.844	1.002	1.956	3.127	4.384	2.446
flows	Low	1.753	2.088	1.465	1.023	0.712	0.438	0.331	0.287	0.474	0.452	0.614	1.246	1.266
(m^3s^{-1})	High	7.219	9.085	8.027	5.573	5.657	2.873	2.098	2.244	3.906	6.896	6.168	9.480	3.027
Peak flow (m^3s^{-1})		27.53	28.52	26.11	21.09	26.86	18.34	23.23	18.07	59.11	21.90	28.21	35.92	59.11
Runoff (mm)		51	44	39	27	22	13	10	10	11	23	36	52	340
Rainfall (mm)		86	68	75	57	74	64	59	68	86	82	109	97	925

Factors affecting flow regime: EI
Station type: CC
1986 runoff is 107% of previous mean rainfall 106%

068003 Dane at Rudheath 1986

Measuring authority: NWWA
First year: 1949
Grid reference: 33 (SJ) 668 718
Level stn. (m OD): 13.20
Catchment area (sq km): 407.1
Max alt. (m OD): 547

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9.714	3.551	5.672	10.290	3.981	2.447	1.337	2.586	1.363	2.177	7.489	14.140	5.394
(m^3s^{-1}):	Peak	49.49	10.22	23.76	68.32	9.51	15.66	3.84	42.34	4.87	11.83	73.36	193.60	193.60
Runoff (mm)		64	21	37	66	26	16	9	17	9	14	48	93	419
Rainfall (mm)		102	5	80	95	69	51	58	90	9	89	92	145	885

Monthly and yearly statistics for previous record (Nov 1949 to Dec 1985—incomplete or missing months total 5.5 years)

Mean	Avg.	7.288	5.878	4.656	3.987	3.000	2.476	2.633	3.413	3.664	4.384	6.544	7.580	4.621
flows	Low	2.183	1.545	1.277	0.988	0.720	0.746	0.734	0.654	0.633	0.877	1.396	1.803	2.333
(m^3s^{-1})	High	15.330	12.760	17.210	9.111	7.335	6.864	8.012	14.360	11.920	14.350	16.290	22.920	8.662
Peak flow (m^3s^{-1})		134.50	80.81	134.00	63.17	63.60	41.96	82.83	67.96	84.20	66.26	103.90	92.78	134.50
Runoff (mm)		48	35	31	25	20	16	17	22	23	29	42	50	358
Rainfall (mm)		76	54	59	60	65	67	78	88	84	75	90	84	880

Factors affecting flow regime: S PGEI
Station type: VA
1986 runoff is 117% of previous mean rainfall 101%

069002 Irwell at Adelphi Weir 1986

Measuring authority: NWWA
First year: 1949
Grid reference: 33 (SJ) 824 987
Level stn. (m OD): 24.10
Catchment area (sq km): 559.4
Max alt. (m OD): 473

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	34.770	10.100	18.830	19.780	12.940	9.340	7.187	13.470	8.010	17.430	30.150	46.330	19.028
(m^3s^{-1}):	Peak	163.90	22.43	62.80	97.57	33.19	39.64	19.68	39.64	67.05	162.90	249.80	268.80	268.80
Runoff (mm)		167	44	90	92	62	43	34	64	37	83	140	222	1078
Rainfall (mm)		169	11	130	94	93	58	66	134	29	180	152	260	1376

Monthly and yearly statistics for previous record (Oct 1949 to Dec 1985—incomplete or missing months total 2.0 years)

Mean	Avg	24.950	22.120	17.140	14.110	11.970	10.180	11.180	15.900	16.900	20.490	25.150	29.560	18.293
flows	Low	3.705	4.787	7.803	5.408	4.348	2.750	4.031	3.676	2.991	4.990	7.534	7.469	10.469
(m^3s^{-1})	High	40.260	67.230	48.030	27.070	21.530	18.900	26.150	56.000	43.480	52.510	51.100	84.660	30.469
Peak flow (m^3s^{-1})		430.40	400.30	295.60	184.20	141.60	238.00	385.60	395.70	390.80	485.10	334.90	419.50	485.10
Runoff (mm)		119	96	82	65	57	47	54	76	78	98	117	142	1032
Rainfall (mm)		118	84	90	76	82	86	98	124	122	123	134	138	1275

Factors affecting flow regime: S PGEI
Station type: B
1986 runoff is 104% of previous mean rainfall 108%

069006 Bollin at Dunham Massey 1986

Measuring authority: NWWA
First year: 1955
Grid reference: 33 (SJ) 727 875
Level stn. (m OD): 12.80
Catchment area (sq km): 256.0
Max alt. (m OD): 483

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7.460	3.020	4.485	6.928	4.461	2.440	2.114	3.117	2.084	3.196	7.659	11.200	4.847
(m^3s^{-1}):	Peak	20.31	6.73	14.78	24.98	18.28	11.81	4.06	25.67	4.28	13.89	38.83	46.33	46.33
Runoff (mm)		78	29	47	70	47	25	22	33	21	33	78	117	599
Rainfall (mm)		95	6	80	87	78	45	52	89	11	96	99	163	901

Monthly and yearly statistics for previous record (Oct 1955 to Dec 1985—incomplete or missing months total 1.1 years)

Mean	Avg.	6.257	5.452	4.298	3.508	2.903	2.298	2.220	2.789	3.128	3.912	5.300	6.244	4.020
flows	Low	1.639	1.686	1.694	1.742	1.286	0.707	0.875	0.464	0.651	1.300	1.804	2.296	2.728
(m^3s^{-1})	High	10.280	12.880	11.470	8.732	5.781	5.953	5.626	11.410	8.963	11.340	9.425	14.510	6.307
Peak flow (m^3s^{-1})		43.95	39.29	36.91	60.43	63.02	34.19	41.50	41.47	35.05	41.18	44.35	46.19	63.02
Runoff (mm)		65	52	45	36	30	23	23	29	32	41	54	65	496
Rainfall (mm)		80	56	61	55	66	69	76	89	87	80	85	87	891

Factors affecting flow regime: S PGEI
Station type: VA
1986 runoff is 121% of previous mean rainfall 101%

069015 Etherow at Compstall 1986

Measuring authority NWWA
First year 1977
Grid reference 33 (SJ) 962 908
Level stn (m OD) 73.50
Catchment area (sq km) 156 0
Max alt (m OD) 628

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	8.077	2 230	5 065	5 791	2 334	1 282	0 926	1 575	1 259	2 082	6 598	9 287	**3.875**
(m^3s^{-1}):	Peak	42 63	7 97	20 09	30 81	9 21	6 92	1 98	22 07	9 07	26 92	40 15	53 96	**53.96**
Runoff (mm)		139	35	87	96	40	21	16	27	21	36	110	159	**786**
Rainfall (mm)		234	40	131	131	107	63	74	136	29	183	166	275	**1589**

Monthly and yearly statistics for previous record (Jan 1977 to Dec 1985—incomplete or missing months total 0.3 years)

Mean	Avg	5 747	4 714	5 012	3 090	2 159	1 503	1 161	1 606	1.883	3 407	5 028	5 083	**3 361**
flows	Low	3.445	2 141	1 365	1 070	0 539	0 835	0 718	0 691	1 178	1 264	2 276	2 767	**2.440**
(m^3s^{-1})	High	8.964	8 539	10 080	6 325	4 870	2 997	1 993	3 572	2 692	9 424	7 471	8 741	**4.169**
Peak flow (m^3s^{-1})		42 12	44 46	46 03	32 66	18 79	24 95	15 22	24 43	37 45	42 12	35 83	62 95	**62 95**
Runoff (mm)		99	74	86	51	37	25	20	28	31	58	84	87	**680**
Rainfall (mm)		151	94	146	82	76	105	65	123	131	132	156	153	**1414**

Factors affecting flow regime: S PGEI
Station type: C

1986 runoff is 116% of previous mean rainfall 111%

070004 Yarrow at Croston Mill 1986

Measuring authority NWWA
First year 1976
Grid reference 34 (SD) 498 180
Level stn (m OD) 6 90
Catchment area (sq km) 74 4
Max alt (m OD) 456

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 980	0 846	1 646	2 456	1 217	0 968	0 626	1 363	0 840	1 942	3 469	6 531	**2 157**
(m^3s^{-1}):	Peak	18 43	1 78	11 11	15 96	5 05	12 42	2 36	25 12	10 94	22 07	33 83	76 57	**76.57**
Runoff (mm)		143	28	59	86	44	34	23	49	29	70	121	235	**920**
Rainfall (mm)		121	4	103	95	81	63	65	124	26	138	121	203	**1144**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1985)

Mean	Avg	3.258	2 352	2 636	1 239	1 149	0 873	0 661	0 915	1 249	2 578	2 812	3 283	**1.918**
flows	Low	1 491	1 108	1 104	0 586	0 508	0 405	0 494	0 379	0 628	0 854	1 349	1 756	**1 251**
(m^3s^{-1})	High	4.917	4 917	7 574	2 504	2 577	1 240	0 971	1 372	2 062	6 360	4 699	5 012	**2.830**
Peak flow (m^3s^{-1})		33 44	20 17	93 13	31 18	27 79	30 15	11 69	15 84	28 57	89 38	34 23	107 60	**107.60**
Runoff (mm)		117	78	95	43	41	30	24	33	44	93	98	118	**814**
Rainfall (mm)		106	61	98	50	69	78	50	89	110	119	112	114	**1056**

Factors affecting flow regime: S PGEI
Station type: MIS

1986 runoff is 113% of previous mean rainfall 108%

071004 Calder at Whalley Weir 1986

Measuring authority NWWA
First year: 1963
Grid reference 34 (SD) 729 360
Level stn (m OD) 39 90
Catchment area (sq km) 316 0
Max alt (m OD) 558

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	18 720	4 592	10 100	11 270	5 507	3 771	2 596	7 108	3 897	10 620	16 250	23 430	**9.822**
(m^3s^{-1})	Peak	93 15	12 10	69 00	94 45	22 67	24 86	10 06	171 60	47 59	97 71	123 20	124 50	**171.60**
Runoff (mm)		159	35	86	92	47	31	22	60	32	90	133	199	**986**
Rainfall (mm)		175	11	129	112	99	60	66	138	27	184	155	255	**1411**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985—incomplete or missing months total 2.6 years)

Mean	Avg	13.070	9 641	8 903	6 410	5 365	4 256	3 649	5 799	7 713	11 000	13 150	13 540	**8 540**
flows	Low	5.766	3 320	3 989	2 272	2 053	1 888	1 773	1 564	2 065	2 397	5 625	4 886	**6 225**
(m^3s^{-1})	High	20 590	17 170	25 320	13 010	9 916	7 372	9 059	16 280	18 620	23 910	21 990	25 610	**11 485**
Peak flow (m^3s^{-1})		183 20	146 10	185.20	108 40	91 66	135 50	230 60	141 90	206 00	229 50	148 60	194 30	**230.60**
Runoff (mm)		111	74	75	53	45	35	31	49	63	93	108	115	**853**
Rainfall (mm)		123	77	100	70	80	85	78	107	127	127	134	127	**1235**

Factors affecting flow regime: EI
Station type: FV

1986 runoff is 116% of previous mean rainfall 114%

071010 Pendle Water at Barden Lane 1986

Measuring authority NWWA
First year 1971
Grid reference 34 (SD) 837 351
Level stn (m OD) 92 30
Catchment area (sq km) 108 0
Max alt (m OD) 557

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7.502	1 649	4 204	4 736	1 940	1 162	0 763	2 993	1 246	3 779	5 715	8 531	**3.685**
(m^3s^{-1}):	Peak	52 54	5 78	52 21	67 21	11 55	8 80	3 54	96 31	23 56	46 46	49 18	63 13	**96 31**
Runoff (mm)		186	37	104	114	48	28	19	74	30	94	137	212	**1082**
Rainfall (mm)		185	15	128	122	101	58	63	143	25	178	157	249	**1424**

Monthly and yearly statistics for previous record (Nov 1971 to Dec 1985—incomplete or missing months total 2.5 years)

Mean	Avg	4.717	2 986	2 973	2 094	1 461	1 443	1 224	1 439	2 269	2 879	3 790	4 075	**2.612**
flows	Low	2 234	1 657	1 198	0 730	0 652	0 606	0 676	0 738	0 838	0 712	1 750	1 353	**1 809**
(m^3s^{-1})	High	6 900	4 817	8 577	3 881	3 008	2 813	2 490	3 364	3 872	6 610	6 124	6 296	**3 643**
Peak flow (m^3s^{-1})		64 81	79 00	83 69	62 38	14 00	62 26	16 00	37 95	67 37	81 61	78 54	101 40	**101.40**
Runoff (mm)		117	68	74	50	36	35	30	36	54	71	91	101	**763**
Rainfall (mm)*		136	71	127	73	68	98	50	109	131	126	141	138	**1268**

*(1977-1985)

Factors affecting flow regime: S EI
Station type: FV

1986 runoff is 142% of previous mean rainfall 112%

072002 Wyre at St Michaels 1986

Measuring authority: NWWA
First year: 1963
Grid reference: 34 (SD) 463 411
Level stn. (m OD): 4.40
Catchment area (sq km): 275.0
Max alt. (m OD): 560

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	14.140	1.960	8.214	6.917	5.048	3.054	1.657	3.622	2.208	9.816	15.110	26.530	8.190
(m^3s^{-1}):	Peak	89.58	5.57	59.20	64.09	32.53	59.92	12.07	51.85	38.66	108.80	106.00	167.10	167.10
Runoff (mm)		138	17	80	65	49	29	16	35	21	96	142	258	947
Rainfall (mm)		140	3	139	88	116	70	79	109	24	188	162	271	1389

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985—incomplete or missing months total 0.2 years)

Mean	Avg	9.792	7.055	6.900	4.687	3.338	2.832	2.792	4.557	6.847	9.167	10.410	10.680	6.589
flows	Low	3.983	1.746	2.270	0.774	0.732	0.444	0.431	0.248	0.902	0.617	4.859	2.581	3.186
(m^3s^{-1})	High	17.820	16.030	25.920	12.090	10.450	7.096	5.690	16.240	13.290	25.500	18.510	19.400	10.329
Peak flow (m^3s^{-1})		156.50	145.60	168.90	123.00	128.20	146.60	96.89	162.10	176.50	180.40	163.10	190.50	190.50
Runoff (mm)		95	63	67	44	33	27	27	44	65	89	98	104	756
Rainfall (mm)		121	72	96	70	79	91	87	112	139	135	140	126	1288

Factors affecting flow regime: S PG
Station type: FV
1986 runoff is 125% of previous mean rainfall 110%

073005 Kent at Sedgwick 1986

Measuring authority: NWWA
First year: 1968
Grid reference: 34 (SD) 509 874
Level stn. (m OD): 18.90
Catchment area (sq km): 209.0
Max alt. (m OD): 817

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.690	3.093	12.290	6.127	11.580	4.883	2.002	5.305	2.326	10.830	20.140	23.200	9.705
(m^3s^{-1}):	Peak	89.03	6.87	92.00	41.75	53.44	30.54	26.24	30.11	9.64	81.32	76.21	81.77	92.00
Runoff (mm)		188	36	157	76	148	61	26	68	29	139	250	297	1475
Rainfall (mm)		214	8	217	104	187	73	88	128	26	254	268	357	1924

Monthly and yearly statistics for previous record (Nov 1968 to Dec 1985)

Mean	Avg.	12.610	9.586	8.995	6.377	4.007	3.716	3.569	5.595	8.329	10.380	13.850	12.940	8.322
flows	Low	5.998	4.529	3.348	2.038	1.222	0.872	0.658	0.740	1.753	1.396	5.484	5.466	5.995
(m^3s^{-1})	High	20.820	16.800	22.750	12.620	9.612	13.010	10.550	18.790	15.630	17.940	21.410	22.360	10.316
Peak flow (m^3s^{-1})		197.70	114.00	166.10	111.10	39.62	72.86	94.65	88.68	120.70	123.50	175.00	231.40	231.40
Runoff (mm)		162	112	115	79	51	46	46	72	103	133	172	166	1257
Rainfall (mm)		194	106	145	88	87	102	107	130	184	176	214	187	1720

Factors affecting flow regime: N
Station type: CBVA
1986 runoff is 117% of previous mean rainfall 112%

074002 Irt at Galesyke 1986

Measuring authority: NWWA
First year: 1967
Grid reference: 35 (NY) 136 038
Level stn. (m OD): 54.20
Catchment area (sq km): 44.2
Max alt. (m OD): 978

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.195	0.736	3.201	2.369	3.901	2.444	1.270	2.815	1.361	4.842	6.997	6.845	3.415
(m^3s^{-1}):	Peak	10.34	2.09	9.82	4.97	6.84	5.95	7.67	7.07	4.54	18.46	16.82	20.02	20.02
Runoff (mm)		254	40	194	139	236	143	77	171	80	293	410	415	2453
Rainfall (mm)		301	5	303	157	254	137	200	174	62	382	363	516	2854

Monthly and yearly statistics for previous record (Dec 1967 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg	4.447	3.018	2.927	2.680	1.402	1.774	2.224	2.556	3.792	4.566	4.882	4.205	3.207
flows	Low	1.321	0.943	0.737	0.430	0.257	0.638	0.467	0.286	0.400	0.554	1.885	1.802	2.440
(m^3s^{-1})	High	8.242	5.117	6.575	5.947	2.572	5.216	4.667	6.757	7.630	8.174	7.094	7.645	3.950
Peak flow (m^3s^{-1})		31.73	18.67	16.74	34.04	6.19	10.27	27.26	18.46	17.89	27.29	21.85	20.33	34.04
Runoff (mm)		269	167	177	157	85	104	135	155	222	277	286	255	2290
Rainfall (mm)		322	184	232	150	125	167	184	216	294	310	338	299	2821

Factors affecting flow regime: S P I
Station type: VA
1986 runoff is 107% of previous mean rainfall 101%

074005 Ehen at Braystones 1986

Measuring authority: NWWA
First year: 1974
Grid reference: 35 (NY) 009 061
Level stn. (m OD): 10.10
Catchment area (sq km): 125.5
Max alt. (m OD): 899

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	7.938	1.856	5.845	3.857	6.877	4.176	1.609	3.494	1.836	8.467	12.300	13.230	5.957
(m^3s^{-1}):	Peak	45.24	6.16	41.12	22.33	24.58	38.25	11.16	24.53	9.21	80.20	36.66	46.57	80.20
Runoff (mm)		169	36	125	80	147	86	34	75	38	181	254	282	1507
Rainfall (mm)		197	4	211	105	177	111	129	129	36	297	269	343	2008

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1985)

Mean	Avg.	7.873	5.960	5.328	3.081	1.804	1.685	1.875	3.774	5.762	7.971	8.323	7.955	5.114
flows	Low	2.220	2.011	2.225	0.993	0.771	0.779	0.789	0.661	1.694	3.640	3.121	3.136	3.963
(m^3s^{-1})	High	16.030	15.890	10.220	7.046	4.605	4.371	5.444	12.260	12.840	14.080	12.470	13.380	6.328
Peak flow (m^3s^{-1})		97.85	79.36	69.47	81.07	46.97	30.96	53.72	73.04	76.40	115.90	64.49	91.47	115.90
Runoff (mm)		168	116	114	64	38	35	40	81	119	170	172	170	1286
Rainfall (mm)		209	115	166	81	78	94	118	146	214	222	215	203	1861

Factors affecting flow regime: S P
Station type: VA
1986 runoff is 117% of previous mean rainfall 108%

075004 Cocker at Southwaite Bridge 1986

Measuring authority: NWWA
First year: 1967
Grid reference: 35 (NY) 131 281
Level stn. (m OD): 59.50
Catchment area (sq km): 116.6
Max alt. (m OD): 838

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	8.390	1.313	5.865	3.076	7.109	3.599	0.915	3.662	2.009	7.879	14.710	14.830	**6.113**
(m^3s^{-1})	Peak	34.87	3.92	32.56	6.59	23.66	22.54	4.69	11.34	7.76	28.89	41.55	41.21	**41.55**
Runoff (mm)		193	27	135	68	163	80	21	84	45	181	327	341	**1665**
Rainfall (mm)		246	4	231	110	214	108	130	152	41	315	350	454	**2355**

Monthly and yearly statistics for previous record (Dec 1967 to Dec 1985)

Mean	Avg	7.583	5.188	4.716	3.713	2.052	2.039	2.237	3.336	5.491	7.106	8.680	7.642	**4.980**
flows	Low	1.823	1.685	1.270	0.677	0.528	0.633	0.672	0.738	0.718	0.668	2.957	3.031	**3.134**
(m^3s^{-1})	High	17.190	9.483	10.010	9.001	4.773	9.122	4.966	11.880	11.920	13.960	12.910	12.750	**5.821**
Peak flow (m^3s^{-1})		81.21	48.58	46.91	45.62	23.38	43.37	28.20	44.89	36.33	93.20	61.61	52.49	**93.20**
Runoff (mm)		174	109	108	83	47	45	51	77	122	163	193	176	**1348**
Rainfall (mm)		217	113	151	99	99	114	126	154	213	227	228	205	**1946**

Factors affecting flow regime: S P
Station type: VA

1986 runoff is 124% of previous mean
rainfall 121%

078003 Annan at Brydekirk 1986

Measuring authority: SRPB
First year: 1967
Grid reference: 35 (NY) 191 704
Level stn. (m OD): 10.00
Catchment area (sq km): 925.0
Max alt. (m OD): 821

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	52.020	12.830	40.050	20.610	53.160	22.590	7.813	27.930	6.657	27.290	76.200	87.020	**36.181**
(m^3s^{-1})	Peak	216.68	41.25	222.11	86.28	172.51	158.48	79.76	148.22	21.66	178.09	264.73	237.41	**264.73**
Runoff (mm)		151	34	116	58	154	63	23	81	19	79	214	252	**1242**
Rainfall (mm)		166	10	143	81	212	78	95	145	23	163	230	282	**1628**

Monthly and yearly statistics for previous record (Oct 1967 to Dec 1985)

Mean	Avg	44.160	34.110	29.570	19.170	14.290	10.930	9.800	15.110	25.650	37.280	42.060	42.420	**27.022**
flows	Low	17.080	12.930	8.402	6.124	3.519	2.937	1.944	2.007	3.362	3.592	11.490	19.530	**16.402**
(m^3s^{-1})	High	83.440	55.440	53.770	40.600	30.590	32.150	34.050	74.950	75.830	86.820	77.930	68.170	**35.426**
Peak flow (m^3s^{-1})		405.37	291.30	235.95	182.50	168.50	171.26	217.59	254.51	471.90	499.10	325.04	355.40	**499.10**
Runoff (mm)		128	90	86	54	41	31	28	44	72	108	118	123	**922**
Rainfall (mm)		141	91	112	65	85	83	89	99	141	145	139	134	**1324**

Factors affecting flow regime
Station type: VA

1986 runoff is 135% of previous mean
rainfall 123%

078004 Kinnel Water at Redhall 1986

Measuring authority: SRPB
First year: 1963
Grid reference: 35 (NY) 077 868
Level stn. (m OD): 53.70
Catchment area (sq km): 76.1
Max alt. (m OD): 697

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.435	0.747	4.078	1.567	5.496	1.625	0.578	2.562	0.312	3.541	7.407	8.490	**3.486**
(m^3s^{-1})	Peak	67.67	3.16	48.16	21.37	37.00	29.78	23.07	31.77	1.11	48.31	79.21	67.93	**79.21**
Runoff (mm)		191	24	144	53	193	55	20	90	11	125	252	299	**1458**
Rainfall (mm)		184	9	155	90	215	76	92	156	24	174	245	286	**1706**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985—incomplete or missing months total 1.0 years)

Mean	Avg	4.019	2.953	2.590	1.586	1.486	1.073	0.932	1.464	2.803	3.610	3.974	3.928	**2.534**
flows	Low	1.296	0.590	0.552	0.251	0.122	0.112	0.048	0.049	0.099	0.207	0.740	1.081	**1.507**
(m^3s^{-1})	High	8.456	5.362	5.124	4.161	3.715	3.282	3.435	7.513	6.689	7.288	7.535	7.009	**3.482**
Peak flow (m^3s^{-1})		79.34	77.68	59.19	42.46	51.79	36.09	60.14	58.54	91.37	110.90	86.69	103.65	**110.90**
Runoff (mm)		141	95	91	54	52	37	33	52	95	127	135	138	**1051**
Rainfall (mm)		146	96	119	75	98	91	90	108	156	154	152	150	**1435**

Factors affecting flow regime
Station type: VA

1986 runoff is 139% of previous mean
rainfall 119%

080001 Urr at Dalbeattie 1986

Measuring authority: SRPB
First year: 1963
Grid reference: 25 (NX) 822 610
Level stn. (m OD): 4.00
Catchment area (sq km): 199.0
Max alt. (m OD): 432

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	11.780	1.863	6.677	4.091	10.880	3.579	0.816	3.362	0.836	5.587	15.970	18.590	**7.003**
(m^3s^{-1})	Peak	103.55	6.40	45.21	27.82	38.80	35.74	13.83	20.46	2.48	45.92	65.24	61.08	**103.55**
Runoff (mm)		159	23	90	53	146	47	11	45	11	75	208	250	**1118**
Rainfall (mm)		167	5	149	91	195	68	84	116	16	170	213	270	**1544**

Monthly and yearly statistics for previous record (Nov 1963 to Dec 1985)

Mean	Avg	9.449	7.687	5.991	3.459	2.934	2.057	1.335	2.459	5.384	8.203	9.533	9.705	**5.674**
flows	Low	3.534	1.419	2.094	0.753	0.308	0.246	0.140	0.149	0.319	0.522	1.711	3.369	**3.109**
(m^3s^{-1})	High	19.080	13.750	11.780	7.485	8.229	6.833	5.081	13.310	17.160	19.400	19.420	15.720	**8.358**
Peak flow (m^3s^{-1})		133.72	91.45	95.03	61.69	65.95	59.18	68.42	73.50	114.06	162.16	129.74	164.30	**164.30**
Runoff (mm)		127	94	81	45	39	27	18	33	70	110	124	131	**900**
Rainfall (mm)		132	90	106	65	81	80	75	94	140	143	145	136	**1287**

Factors affecting flow regime
Station type: VA

1986 runoff is 124% of previous mean
rainfall 120%

081003 Luce at Airyhemming 1986

Measuring authority: SRPB
First year: 1967
Grid reference 25 (NX) 180 599
Level stn (m OD) 19 00
Catchment area (sq km) 171 0
Max alt (m OD) 438

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	11.270	0 789	8.286	4 003	7.597	2.261	1.505	4.710	0 459	4 526	12 200	17 090	6 225
(m^3s^{-1}):	Peak	68 66	2.73	49.88	66 96	57 32	16 78	29 96	70 88	2 94	50 58	128.33	193 82	193.82
Runoff (mm)		176	11	130	61	119	34	24	74	7	71	185	268	1159
Rainfall (mm)		184	3	178	102	176	66	105	136	22	140	215	308	1635

Monthly and yearly statistics for previous record (Jan 1967 to Dec 1985)

Mean	Avg.	10.400	7 037	5.767	3 316	2 450	1 816	1 999	2 861	6 536	8 874	10 040	8.785	5.818
flows	Low	4 540	3 943	1 359	0 454	0 260	0 225	0 191	0.277	0 365	1 689	3.857	2 445	3.691
(m^3s^{-1})	High	15.600	12 110	11 300	8.289	7 232	4 587	6 436	14 230	17 590	16 750	15 940	13.440	7.625
Peak flow (m^3s^{-1})		177 10	146 10	197 30	197 60	63 64	64 10	131 50	171 80	192.40	231 80	168 40	204 04	231.80
Runoff (mm)		163	101	90	50	38	28	31	45	99	139	152	138	1074
Rainfall (mm)		169	98	110	71	76	82	89	102	158	160	166	142	1423

Factors affecting flow regime: S P
Station type: VA

1986 runoff is 108% of previous mean rainfall 115%

082001 Girvan at Robstone 1986

Measuring authority: CRPB
First year: 1963
Grid reference: 25 (NX) 217 997
Level stn. (m OD): 9.10
Catchment area (sq km) 245 5
Max alt. (m OD): 659

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	14.400	1.736	8 736	3 395	8 583	3.163	1 050	3 031	0.915	8 179	18 860	24 350	8 033
(m^3s^{-1}):	Peak	88.18	6.09	57 96	45 90	61 87	18 23	16 18	24 73	6 45	59 19	90 82	85 83	90.82
Runoff (mm)		157	17	95	36	94	33	11	33	10	89	199	266	1041
Rainfall (mm)		182	6	161	81	175	66	89	107	38	180	241	314	1640

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg.	10 340	7 391	6.125	3 742	2 773	1 907	2 204	3 230	6.532	9 501	11.230	10 180	6 260
flows	Low	3.846	2.805	1.595	0 923	0 521	0 370	0 487	0 301	0 546	1 191	2.755	2 893	4.222
(m^3s^{-1})	High	19 370	13 240	11 520	11 330	8 256	5.682	6.751	12.930	21 830	17 380	20 230	19 450	7.859
Peak flow (m^3s^{-1})		100.96	84 94	63 02	65 23	55 75	52.91	97 92	92 54	157 60	147 17	88 07	182.98	182.98
Runoff (mm)		113	74	67	40	30	20	24	35	69	104	119	111	805
Rainfall (mm)		138	80	106	65	78	79	92	99	150	158	168	138	1349

Factors affecting flow regime S
Station type: VA

1986 runoff is 129% of previous mean rainfall 122%

083003 Ayr at Catrine 1986

Measuring authority: CRPB
First year: 1970
Grid reference: 26 (NS) 525 259
Level stn. (m OD): 89.90
Catchment area (sq km) 166.3
Max alt (m OD) 548

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	9 599	1 534	6 709	2 730	5 714	2 868	1 709	2 983	1 603	9 019	11 450	14 490	5 867
(m^3s^{-1})	Peak	49.48	6 62	57 00	30 62	51 40	44.34	29 21	25.59	21 85	68 46	78 43	109 15	109.15
Runoff (mm)		155	22	108	43	92	45	28	48	25	145	178	233	1122
Rainfall (mm)		163	11	128	74	168	69	93	93	45	196	228	281	1549

Monthly and yearly statistics for previous record (Sep 1970 to Dec 1985)

Mean	Avg	8.753	5 426	5.267	2.702	1.893	1.889	1.999	2.734	5.508	6 560	8.462	7.123	4.858
flows	Low	3.182	2 961	1.480	0.733	0 593	0 658	0 417	0 410	0 597	0 631	2.147	3 312	3.613
(m^3s^{-1})	High	14.120	11 280	10 780	7 056	4 703	4 179	7 720	9.970	14 680	10 900	13 630	13.230	5.928
Peak flow (m^3s^{-1})		178.53	96 54	92 30	67 02	75.55	60 69	70 77	72 00	157 42	162 59	105.57	119 15	178.53
Runoff (mm)		141	80	85	42	30	29	32	44	86	106	132	115	922
Rainfall (mm)		143	80	103	63	66	83	85	89	137	144	158	127	1278

Factors affecting flow regime H
Station type: VA

1986 runoff is 122% of previous mean rainfall 121%

084012 White Cart Water at Hawkhead 1986

Measuring authority: CRPB
First year: 1963
Grid reference: 26 (NS) 499 629
Level stn (m OD) 4.10
Catchment area (sq km): 227 2
Max alt (m OD): 375

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.070	2 480	11 160	3.356	10 330	3 675	2 289	4 119	1 752	10 370	20 470	20 850	8.743
(m^3s^{-1}):	Peak	96 45	8.20	90 03	51.59	80 43	27.55	41.93	28 38	21 44	90 00	104.10	105.36	105.36
Runoff (mm)		166	26	132	38	122	42	27	49	20	122	234	246	1223
Rainfall (mm)		158	16	152	72	173	55	95	98	52	180	242	256	1549

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1985)

Mean	Avg.	10.660	7 565	6 784	3.936	3 298	2.525	2 400	3 791	7 553	10 970	11.640	10 480	6.800
flows	Low	5.142	2 646	1.676	1.112	0 973	0 998	0 824	0 885	1 141	1 212	3.259	3 211	4.419
(m^3s^{-1})	High	21.190	14 260	15.630	8 523	7 651	6 542	8 806	14 220	24 360	46 570	20.730	19 610	10.946
Peak flow (m^3s^{-1})		187 40	139 25	117 02	82 46	115 13	65 13	93 51	111.27	132.91	134 42	134 05	187 10	187.40
Runoff (mm)		126	81	80	45	39	29	28	45	86	129	133	124	944
Rainfall (mm)		121	76	99	61	78	74	76	95	141	139	148	127	1235

Factors affecting flow regime. S
Station type: VA

1986 runoff is 129% of previous mean rainfall 125%

084016 Luggie Water at Condorrat 1986

Measuring authority: CRPB
First year: 1969
Grid reference: 26 (NS) 739 725
Level stn (m OD): 68 00
Catchment area (sq km): 33 9
Max alt (m OD): 107

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.811	0.455	1 158	0 706	0 911	0 477	0 221	0 656	0 295	1 081	1 996	2 642	1.034
(m^3s^{-1}):	Peak	10 63	1.19	8 66	6 73	12 59	6 05	1 38	15 32	5 04	8 89	19.79	39 55	39 55
Runoff (mm)		143	33	91	54	72	36	17	52	23	85	153	209	988
Rainfall (mm)		144	22	116	73	142	57	71	100	50	143	166	208	1292

Monthly and yearly statistics for previous record (Jan 1969 to Dec 1985)

Mean	Avg.	1 464	0 996	0 906	0 532	0 413	0 299	0 313	0.435	0 860	1 058	1.403	1 315	0.832
flows	Low	0 646	0 395	0 370	0.274	0 166	0 146	0 148	0 123	0 125	0 129	0 356	0.652	0.539
(m^3s^{-1})	High	3.312	1 944	1.591	1 030	1 199	0 673	1 816	1.499	3 624	2 148	2.255	2 230	1.107
Peak flow (m^3s^{-1})		38.90	22 89	35 65	8 86	13 28	5 55	34 19	20 88	42.27	42.44	30 68	37 41	42.44
Runoff (mm)		116	72	72	41	33	23	25	34	66	84	107	104	775
Rainfall (mm)		110	66	84	47	64	66	72	80	119	110	128	106	1052

Factors affecting flow regime:
Station type: VA

1986 runoff is 125% of previous mean
rainfall 123%

085001 Leven at Linnbrane 1986

Measuring authority: CRPB
First year: 1963
Grid reference: 26 (NS) 394 803
Level stn (m OD) 4.30
Catchment area (sq km): 784.3
Max alt. (m OD): 1130

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	78 240	24 430	59 890	29 790	73 060	33 950	10 210	36.740	10.220	31 630	112.700	122 400	51.938
(m^3s^{-1}):	Peak	100 76	68.24	97 67	75 25	91 20	78 32	15.39	56 85	14 59	96 68	140 91	143 49	143.49
Runoff (mm)		267	75	205	98	250	112	35	125	34	108	372	418	2100
Rainfall (mm)		296	13	316	101	306	72	116	166	76	278	421	432	2593

Monthly and yearly statistics for previous record (Jul 1963 to Dec 1985)

Mean	Avg	60 620	53 280	43 670	31 680	24 670	20 560	19 210	22 410	35 620	55 310	59.800	62.150	40.695
flows	Low	27 860	18.610	16 630	10 540	10.620	9 716	6 706	3 974	8.194	10 830	24 540	36 270	30.712
(m^3s^{-1})	High	119 100	102.100	98 410	51.390	51.100	51 860	44.640	85 140	90 470	90.150	96 320	94 750	49.874
Peak flow (m^3s^{-1})		150.48	140 83	122 21	83 14	71 90	66 58	85 61	113 02	118 82	138 54	129 95	131 00	150.48
Runoff (mm)		207	166	149	105	84	68	66	77	118	189	198	212	1637
Rainfall (mm)		231	141	166	100	118	118	121	140	221	226	234	217	2033

Factors affecting flow regime S
Station type: VA

1986 runoff is 128% of previous mean
rainfall 128%

094001 Ewe at Poolewe 1986

Measuring authority: HRPB
First year: 1970
Grid reference: 18 (NG) 859 803
Level stn. (m OD): 4.60
Catchment area (sq km): 441.1
Max alt. (m OD): 1014

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	48.340	10.660	39 950	16 940	36 280	19 250	9.992	16 000	15 330	29.910	78 300	75.150	33.008
(m^3s^{-1}):	Peak	89 24	29 96	83 02	42 37	62.22	47 52	23 55	27.92	24 25	82.05	116 63	129 95	129.95
Runoff (mm)		294	58	243	100	220	113	61	97	90	182	460	456	2373
Rainfall (mm)		366	8	324	89	276	60	148	127	144	275	481	474	2772

Monthly and yearly statistics for previous record (Nov 1970 to Dec 1985)

Mean	Avg	40 470	29 250	26 310	23 070	14 700	13 380	14.310	15 770	32 050	36 060	47 030	47 080	28.277
flows	Low	13 820	12.980	8 842	4.537	3 862	4.675	7 884	6 240	8 046	13 160	22 680	16.500	19.389
(m^3s^{-1})	High	81.130	46 880	54 440	38 270	27 730	27.180	26 180	33 070	57 270	66 220	77.600	81.840	35.549
Peak flow (m^3s^{-1})		177 08	104.96	117.00	73.59	65.63	64 43	45.08	85 46	109 22	119 00	136 10	179.82	179.82
Runoff (mm)		246	162	160	136	89	79	87	96	188	219	276	286	2023
Rainfall (mm)		261	162	191	134	107	128	138	151	255	294	334	304	2459

Factors affecting flow regime N
Station type: VA

1986 runoff is 117% of previous mean
rainfall 113%

095001 Inver at Little Assynt 1986

Measuring authority: HRPB
First year: 1977
Grid reference: 29 (NC) 147 250
Level stn (m OD): 60.30
Catchment area (sq km): 137.5
Max alt. (m OD): 988

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	10 760	2 397	7.929	4 561	5.582	5 636	4 684	6 687	8.547	10 820	17.310	15 870	8.399
(m^3s^{-1}):	Peak	20 96	6 03	18 61	10 96	20 92	16.79	12.13	15 22	14.23	22 89	35 03	28.72	35.03
Runoff (mm)		210	42	154	86	109	106	91	130	161	211	326	309	1936
Rainfall (mm)		229	19	223	71	183	49	132	118	180	227	330	334	2095

Monthly and yearly statistics for previous record (Aug 1977 to Dec 1985)

Mean	Avg.	10.890	7 647	9 016	5 578	3 884	3 180	5.156	5 423	11.030	14 010	14.070	11 370	8.444
flows	Low	4 082	5 045	4 179	3 453	1.660	1 915	2 432	3.394	5 263	6.227	8.605	4 631	7.152
(m^3s^{-1})	High	19.950	11 330	19 400	7.552	7 131	4 805	10 340	8 579	16 390	21 180	23 960	17.580	10.784
Peak flow (m^3s^{-1})		55.24	31 02	62 82	14.93	20 24	19.72	15 19	17.80	56.50	57.51	50 06	46.65	62.82
Runoff (mm)		212	136	176	105	76	60	100	106	208	273	265	222	1938
Rainfall (mm)*		243	114	200	101	68	117	135	159	270	282	315	255	2259

*(1978-1985)

Factors affecting flow regime N
Station type: VA

1986 runoff is 100% of previous mean
rainfall 93%

096001 Halladale at Halladale 1986

Measuring authority: HRPB
First year: 1976
Grid reference: 29 (NC) 891 561
Level stn. (m OD): 23.20
Catchment area (sq km): 204.6
Max alt. (m OD): 580

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	11.480	1.650	7.347	2.486	1.449	4.166	0.828	5.167	5.433	4.531	6.373	9.806	5.060
(m^3s^{-1})	Peak	50.19	5.92	92.84	6.76	20.16	140.81	13.41	38.54	26.44	38.54	35.28	64.42	140.81
Runoff (mm)		150	20	96	31	19	53	11	68	69	59	81	128	785
Rainfall (mm)		158	28	80	67	74	72	73	111	98	95	98	163	1117

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1985)

Mean	Avg.	9.106	6.433	5.557	3.052	2.377	1.602	1.546	2.180	4.941	7.385	9.592	8.439	5.179
flows	Low	5.333	1.624	2.907	0.624	0.279	0.271	0.215	0.186	2.181	1.441	2.510	3.004	3.420
(m^3s^{-1})	High	11.900	10.940	9.753	6.442	5.434	3.528	4.943	9.192	7.886	16.560	14.730	12.390	6.418
Peak flow (m^3s^{-1})		98.96	68.52	106.96	69.28	108.00	49.26	129.10	76.64	189.13	125.96	163.22	161.96	189.13
Runoff (mm)		119	77	73	39	31	20	20	29	63	97	122	110	799
Rainfall (mm)		145	66	109	67	61	65	62	75	129	136	158	131	1204

Factors affecting flow regime: N
Station type: VA

1986 runoff is 98% of previous mean
rainfall 93%

101002 Medina at Upper Shide 1986

Measuring authority: SWA
First year: 1965
Grid reference: 40 (SZ) 503 874
Level stn. (m OD): 10.40
Catchment area (sq km): 29.8
Max alt. (m OD): 167

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.688	0.213	0.274	0.310	0.194	0.121	0.096	0.104	0.101	0.193	0.610	0.533	0.286
(m^3s^{-1})	Peak	6.47	0.34	1.67	1.89	0.61	0.60	0.31	0.80	0.40	0.88	6.41	4.82	6.47
Runoff (mm)		62	17	25	27	17	10	9	9	9	17	53	48	304
Rainfall (mm)		143	24	74	68	67	33	45	98	41	112	136	113	954

Monthly and yearly statistics for previous record (Oct 1965 to Dec 1985—incomplete or missing months total 6.8 years)

Mean	Avg	0.421	0.413	0.330	0.253	0.210	0.145	0.129	0.121	0.165	0.222	0.320	0.393	0.260
flows	Low	0.150	0.160	0.121	0.104	0.094	0.069	0.073	0.044	0.080	0.110	0.088	0.116	0.122
(m^3s^{-1})	High	0.623	0.760	0.903	0.522	0.356	0.212	0.199	0.180	0.365	0.413	0.769	0.663	0.335
Peak flow (m^3s^{-1})		5.86	6.00	7.28	5.44	7.00	1.79	3.72	1.74	3.74	4.73	8.64	6.30	8.64
Runoff (mm)		38	34	30	22	19	13	12	11	14	20	28	35	275
Rainfall (mm)*		86	73	97	41	70	54	51	60	65	96	78	116	887

*(1968-1985)

Factors affecting flow regime: N I
Station type: FL

1986 runoff is 110% of previous mean
rainfall 108%

201005 Camowen at Camowen Terrace 1986

Measuring authority: DOEN
First year: 1972
Grid reference: *23* (IH) 460 730
Level stn. (m OD): 66.00
Catchment area (sq km): 274.6
Max alt. (m OD): 539

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13.080		7.271	8.687	7.946	2.733	1.944	7.799	1.686	5.402	13.480	14.650	
(m^3s^{-1})	Peak	46.98		31.82	69.92	27.07	7.44	7.08	81.99	3.55	44.84	70.20	84.26	
Runoff (mm)		128		71	82	78	26	19	76	16	53	127	143	
Rainfall (mm)		164	4	137	118	145	44	72	139	14	142	152	183	1314

Monthly and yearly statistics for previous record (May 1972 to Dec 1985)

Mean	Avg.	11.600	8.619	7.344	4.036	3.470	2.545	2.152	3.083	5.027	6.607	8.506	10.730	6.136
flows	Low	7.011	4.240	2.242	1.701	0.993	0.911	0.879	0.846	0.873	1.154	3.422	5.062	4.102
(m^3s^{-1})	High	16.170	17.200	12.340	6.712	7.394	4.955	5.114	11.310	12.730	11.260	15.270	17.330	7.648
Peak flow (m^3s^{-1})		91.15	91.35	82.76	36.50	47.73	35.02	73.00	75.05	101.01	83.36	90.76	128.42	128.42
Runoff (mm)		113	77	72	38	34	24	21	30	47	64	80	105	705
Rainfall (mm)		127	81	101	54	75	70	71	86	113	104	112	123	1117

Factors affecting flow regime: P E
Station type: VA

1986 runoff is % of previous mean
rainfall 118%

201007 Burn Dennet at Burndennet Bridge 1986

Measuring authority: DOEN
First year: 1975
Grid reference: *24* (IC) 372 047
Level stn. (m OD): 2.00
Catchment area (sq km): 145.3
Max alt. (m OD): 539

Hydrometric statistics for 1986

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	8.298	2.567	4.781	5.003	5.024	2.391	2.066	3.479	1.436	3.370	7.351	7.726	4.416
(m^3s^{-1})	Peak	30.17	4.43	17.84	25.39	18.68	4.98	17.09	30.40	2.15	18.55	31.86	50.79	50.79
Runoff (mm)		153	43	88	89	93	43	38	64	26	62	131	133	963
Rainfall (mm)		189	3	152	98	147	39	106	118	13	130	165	186	1346

Monthly and yearly statistics for previous record (Jan 1975 to Dec 1985—incomplete or missing months total 0.1 years)

Mean	Avg	6.070	4.655	4.272	2.559	2.232	1.751	1.789	2.100	3.433	4.375	4.770	5.563	3.628
flows	Low	3.410	2.244	2.441	1.674	0.914	0.843	0.832	0.579	0.664	2.596	2.205	3.208	2.634
(m^3s^{-1})	High	8.198	7.480	6.992	3.486	4.668	3.649	3.990	7.213	8.151	7.874	7.212	8.156	5.012
Peak flow (m^3s^{-1})		50.49	31.99	30.87	13.24	25.51	18.84	50.79	49.50	50.54	43.67	64.52	59.53	64.52
Runoff (mm)		112	78	79	46	41	31	33	39	61	81	85	103	788
Rainfall (mm)		129	69	102	54	69	72	82	79	120	121	111	112	1120

Factors affecting flow regime: E
Station type: VA

1986 runoff is 122% of previous mean
rainfall 120%

THE SURFACE WATER DATA RETRIEVAL SERVICE

The surface water archive comprises some 23,000 station-years of daily river flows and incorporates data from over 1200 gauging stations throughout the United Kingdom. In addition to gauged flow data, naturalised data have been derived from the records of a small number of gauging stations. Catchment areal rainfall and the highest instantaneous flow, when available, are also archived on a monthly basis.

In order that the contents of the archive may be readily accessible, a suite of programs has been developed to provide a selection of retrieval options. Descriptions of these options are listed below, and examples of the computer output are given on pages 139 to 146. The data retrieval programs have been designed to allow flexibility in the presentation of the options, particularly those producing graphical output. Before finalising a data request it is recommended that the Concise Register of Gauging Stations on pages 147 to 152, and the Summary of Archived Data on pages 153 to 161, be consulted to check the availability of suitable data sets.

To enable the suitability of individual flow records for particular applications to be assessed more effectively all retrievals are accompanied by the relevant gauging station and catchment details (where available).

In response to user requirements the data retrieval facilities are being continually extended. A wide range of specialist analyses and presentations is now available. Individuals having data requirements not catered for in the standard retrieval suite are invited to discuss their particular needs – address opposite.

Retrievals are normally available on line-printer listings or magnetic tape, or as hydrograph plots.

Cost of Service

To cover the computing and handling costs, a moderate charge will be made depending on the output options selected. Estimates of these charges may be obtained on request; the right to amend or waive charges is reserved.

Requests for retrieval options

Requests for retrieval options should include: the name and address to which output should be directed, the gauging stations for which data are required together with the period of record of interest and the title of the required options. Where possible, a daytime telephone number should be given.

Requests should be addressed to:

Surface Water Archive Office
Institute of Hydrology
Maclean Building
Crowmarsh Gifford
WALLINGFORD
OXFORDSHIRE OX10 8BB

Telephone: Wallingford (0491) 38800

Hydrological Data at the Institute of Hydrology

The Surface Water Archive is one of several major sources of hydrological data held at Wallingford. Others include an archive of flood peaks from over 600 catchments and a flood event archive comprising rainfall and river flows at short time intervals for over 3000 individual events. Data may be retrieved from these sources in a variety of formats. Enquiries concerning the availability and use of such data should be directed to the above address.

LIST OF SURFACE WATER RETRIEVAL OPTIONS

OPTION NUMBER	TITLE	NOTES
1	Table of daily mean gauged discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.
	Table of daily mean naturalised discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.
	Yearbook data tabulation (daily)	River flow and catchment rainfall data for a specified year with basic gauging station and catchment details and flow statistics derived from the historical record. Naturalised flows (where available) – and the corresponding runoff – may also be tabulated.
	Table of monthly mean gauged discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.

	Table of monthly mean naturalised discharges	Includes summary statistics. Flows in cubic metres per second.
	Yearbook data tabulation (monthly)	Monthly river flow and catchment rainfall data for a specified year together with comparative statistics derived from the historical record. Naturalised flows (when available) - and the corresponding runoff - may also be tabulated.
	Table of monthly extreme flows	The lowest and highest daily mean flows, together with the highest instantaneous flow and date of occurrence (when available). Flows in cubic metres per second. Includes summary statistics.
	Table of catchment monthly rainfall	Rainfall totals in millimetres and as a percentage of the 1941-70 catchment average. Includes summary statistics.
	Table of catchment monthly areal rainfall and runoff	Runoff is normally derived from the monthly mean gauged flow. An additional listing is provided for catchments with naturalised flow records. A monthly summary is provided and all rainfall and runoff totals are in millimetres.
10	Hydrographs of daily mean flows	Choices of scale, units, truncation level and overlay grid pattern are available. The period of record maximum and minimum flows, or the mean flow, may be included. The plots may be based on single or n-day means, or on n-day running mean flows.
	Hydrographs of monthly mean flows	Choices of scale, unit and overlay grid pattern are available. The period of record maximum, minimum and mean flows may be included.
	Flow duration statistics	Tabulation of the 1-99 percentile flows with optional plot of the flow duration curve. The percentiles may be derived from daily flows or n-day averages and the analysis may be restricted to nominated periods within the year e.g. April-September only. Choices of scales, grid marking and units are available and the percentiles may be expressed as a percentage of the average flow or of a nominated flow.
	Table of gauging station reference information	Tabulation of selected gauging station details and catchment characteristics for nominated gauging stations.
	Table of hydrometric statistics	Provides a comparison between summary statistics for a selected year, or a group of years, and the corresponding statistics for a nominated period of record.
	Gauging station and catchment description	A brief summary of the gauging station, its history and major influences on the flow regime, together with catchment details
	River flow pattern plots	Three plots on one sheet: a) daily mean flow hydrograph for a selected year. b) monthly mean flow hydrograph for the selected year together with the maximum and minimum monthly flows plus the 30-day running mean for the preceding period of record. c) flow duration curves for the selected year and for the period of record.

OPTION 1 TABLE OF DAILY MEAN GAUGED DISCHARGES

039001 TAW AT UMBERLEIGH DAILY MEAN GAUGED DISCHARGES IN CUBIC METRES PER SECOND

1961

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19.190	10.920*	37.280	13.900	8.922	16.710	3.008	3.249	1.272	39.130	46.220	33.430
2	19.140	11.980	40.710	12.020	13.230	29.010	3.125	2.242	1.305	63.770	35.500	27.270
3	23.450	43.450	28.730	10.850	15.085	15.470	3.745	1.919	1.235	105.200	29.010	23.180
4	17.580	26.340	23.290	9.823	16.300	15.690	3.159	1.857	1.157	76.200	24.830	20.440
5	15.950	22.470	21.020	8.915	17.550	13.840	3.043	2.091	1.109	58.640	20.230	17.890
6	15.520	19.190	21.440	8.200	19.040	12.160	3.231	8.561	1.078	44.150	17.240	16.800
7	13.830	17.750	33.840	7.679	17.730	11.390	2.862	4.332	1.079	33.600	15.170	31.070
8	12.870	16.930	37.810	7.318	15.770	10.670	2.441	3.192	1.104	30.360	13.280	69.430
9	16.190	20.830	223.400	7.043	13.770	9.451	2.283	2.787	1.098	33.360	11.630	41.100
10	14.200	18.420	173.500	6.694	29.540	10.980	2.174	2.405	1.228	31.090	10.580	40.460
11	11.690	15.290	136.900	7.144	17.620	17.560	2.037	2.200	1.830	30.730	10.360	69.490
12	14.250	15.010	107.300	5.962	14.770	10.980	2.084	2.037	2.238	29.440	9.672	41.850
13	15.650	13.250	95.870	5.422	12.900	9.760	2.115	1.910	2.268	23.380	8.384	104.300
14	80.200	11.940	84.940	5.040	12.020	9.056	2.013	1.846	2.418	21.270	7.645	136.100
15	59.900	11.250	67.040	4.826	18.840	8.388	1.993	1.810	4.032	34.230	7.235	74.960
16	59.230	10.450	36.300	4.583	15.690	7.624	1.997	1.686	2.511	23.060	7.329	48.700
17	59.010	9.654	28.140	4.267	33.340	7.013	1.939	1.564	4.231	26.540	6.770	35.680
18	61.550	8.956	23.000	4.017	28.620	6.398	1.814	1.518	21.100	25.060	31.920	26.640
19*	51.260	8.265	19.490	3.848	21.690	5.998	1.918	1.597	42.080	32.680	45.490	22.260
20	51.260	7.799	16.950	3.671	24.980	5.551	1.882	2.931	34.500	76.020	55.820	83.240
21	57.170	13.540	54.130	3.520	16.270	4.922	2.531	2.170	23.510	57.400	41.600	40.630
22	44.360	14.310	57.040	3.454	16.660	4.532	8.875	1.847	17.760	42.990	32.140	29.310
23	36.600	31.930	44.340	3.320	16.970	4.320	5.221	1.727	14.530	32.740	27.840	23.180
24	32.140	18.960	39.990	3.738	23.800	4.180	3.528	1.605	20.270	79.240	22.910	18.860
25	25.910	14.590	36.440	4.100	31.200	3.912	2.786	1.512	16.820	100.000	19.190	16.310
26	21.520	13.620	49.640	10.110	25.570	3.759	2.607	1.422	15.610	63.880	19.650	18.300
27	18.590	24.220	32.860	24.990	24.870	3.541	2.319	1.355	15.740	49.610	35.840	42.330
28	16.460	22.710	26.960	15.750	20.850	3.346	2.151	1.310	12.460	40.030	38.720	65.270
29	14.910		22.310	14.700	18.340	3.165	2.000	1.279	12.950	58.140	30.450	74.130
30	13.190		18.380	10.390	16.400	3.035	1.892	1.246	18.350	60.950	44.110	88.900
31	11.850		15.890		15.370		2.713	1.224		52.860		53.640
NISSING DAYS	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	29.827	16.857	52.144	7.776	19.552	9.114	2.749	2.208	9.896	47.732	24.213	46.368
MIN	11.690	7.799	15.890	3.320	8.922	3.035	1.814	1.224	1.078	21.270	7.235	16.310
MAX	80.200	43.450	223.400	24.990	33.340	29.010	8.875	8.561	42.080	105.200	55.820	136.100
MONTHLY TOTALS (CUMEC.DAYS)	924.64	471.99	1616.45	233.29	606.10	273.42	85.23	68.44	296.87	1479.08	726.39	1436.79

SUMMARY: MAX 223.400 ON 5 MAR
MIN 1.078 ON 6 SEP
MEAN 22.519

OPTION 2 TABLE OF DAILY MEAN NATURALISED DISCHARGES

039001 THAMES AT KINGSTON DAILY MEAN NATURALISED DISCHARGES IN CUBIC METRES PER SECOND

1961

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	73.100	67.000	83.100	228.000	104.000	99.200	52.600	72.200	31.700	113.000	83.400	82.600
2	71.700	66.200	159.000	227.000	86.400	192.000	52.700	54.800	31.000	104.000	84.000	72.600
3	67.800	66.100	232.000	192.000	87.300	259.000	50.700	52.200	31.700	80.300	78.660	66.600
4	65.700	79.100	196.000	135.000	96.700	142.000	46.700	42.500	30.900	77.800	63.600	89.100
5	65.300	81.100	159.000	132.000	93.400	106.000	48.900	40.600	29.000	72.100	68.100	68.800
6	66.500	63.000	127.000	117.000	84.000	102.000	45.600	120.000	29.200	93.300	61.100	69.400
7	69.100	60.200	128.000	115.000	81.800	91.100	45.500	125.000	29.600	111.000	61.800	72.400
8	74.300	62.700	189.000	109.000	78.200	93.400	46.600	79.100	30.300	75.400	61.000	116.000
9	74.000	63.200	216.000	96.300	77.600	89.100	45.100	67.600	29.700	79.100	60.600	127.000
10	75.700	65.700	242.000	105.000	92.800	82.100	45.500	64.400	28.300	79.100	57.100	104.000
11	82.300	67.800	267.000	101.000	97.100	90.300	59.800	60.600	31.300	78.900	57.800	98.900
12	80.300	67.300	277.000	97.900	89.900	87.100	44.900	56.500	39.100	76.600	57.500	87.300
13	76.700	63.500	273.000	96.000	76.200	78.300	42.800	49.100	37.700	63.900	57.200	90.100
14	76.800	61.000	289.000	120.000	71.400	73.800	41.200	41.500	38.500	67.200	55.400	230.000
15	99.400	56.700	274.000	114.000	77.700	70.300	43.200	40.800	48.600	67.800	53.100	314.000
16	107.000	59.900	253.000	84.900	92.300	69.300	40.800	38.600	41.300	66.700	56.600	279.000
17	111.000	55.500	218.000	85.100	91.200	67.600	41.600	37.200	36.300	69.600	73.700	226.000
18	121.000	55.300	180.000	80.900	93.100	65.400	42.000	37.700	39.900	65.700	96.860	145.000
19	112.000	54.500	139.000	74.200	92.200	66.300	41.600	37.600	49.600	61.300	97.600	116.000
20	109.000	56.300	127.000	76.500	100.000	64.400	41.400	37.400	104.000	136.000	121.000	110.000
21	108.000	53.100	117.000	75.100	122.000	64.200	40.300	36.200	67.300	179.000	146.000	136.000
22	113.000	53.600	173.000	75.300	102.000	59.800	55.700	36.400	61.600	147.000	131.000	182.000
23	111.000	58.100	208.000	73.100	90.400	61.000	55.400	36.100	40.100	102.000	97.900	132.000
24	95.600	60.100	206.000	72.400	81.000	61.700	55.300	35.100	42.700	92.600	90.450	101.000
25	86.100	59.200	204.000	79.500	77.100	61.000	48.000	34.900	51.900	94.100	72.000	102.000
26	78.800	61.000	203.000	128.000	266.000	57.100	47.400	32.800	131.000	107.000	75.800	99.300
27	77.500	61.000	161.000	183.000	267.000	57.700	39.300	34.300	162.000	90.900	74.860	94.800
28	72.500	64.800	131.000	194.000	212.000	57.400	37.800	32.700	98.300	85.500	100.000	111.000
29	71.800		135.000	174.000	171.000	54.200	39.400	32.400	73.800	80.300	85.500	218.000
30	71.700		145.000	140.000	122.000	50.700	37.500	32.200	161.000	81.400	87.700	295.000
31	67.500		204.000		108.000		44.500	30.300		82.100		264.000
NISSING DAYS	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	85.003	62.336	189.455	119.373	113.203	84.113	45.090	48.245	53.247	91.045	76.030	136.116
MIN	65.200	53.100	83.100	72.400	71.400	50.700	37.500	30.300	28.300	63.800	53.100	66.800
MAX	121.000	81.100	289.000	228.000	267.000	259.000	55.700	125.000	162.000	179.000	146.000	314.000
MONTHLY TOTALS (CUMEC.DAYS)	2635.10	1745.40	5873.10	3581.20	3509.30	2523.40	1397.80	1495.60	1597.40	2822.40	2370.90	4281.60

SUMMARY: MAX 314.000 ON 31 DEC
MIN 28.300 ON 30 SEP
MEAN 92.694

OPTION 3 YEARBOOK DATA TABULATION (DAILY)

050001 Tew at Uebertelgh 1986

Measuring authority: SWWA Grid reference: 21 (SS) 608 237 Catchment area (sq km): 525.2

First year: 1958 Level stn. to OD: 14.1 Max alt. to OD: 604

DAILY MEAN GAUGED DISCHARGES (cubic metres per second)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	45.922	16.995	5.461	31.022	11.699	6.454	4.707	3.765	15.832	5.536	62.287	24.618
2	45.671	15.510	5.561	28.435	10.668	5.675	3.970	3.945	13.766	5.249	51.469	22.266
3	53.091	14.186	5.499	21.680	9.470	5.371	3.617	3.035	13.657	5.018	28.826	18.010
4	37.836	12.695	9.709	18.030	12.558	5.018	4.546	9.236	13.314	4.861	23.680	16.196
5	33.756	11.366	21.279	15.590	10.187	4.621	8.677	5.198	9.181	7.784	22.010	21.573
6	28.560	10.417	10.379	13.836	5.294	4.282	5.403	5.577	8.612	2.738	19.850	19.573
7	62.257	9.347	8.387	14.586	8.795	4.127	4.203	7.496	7.693	2.657	19.707	24.982
8	47.615	8.383	7.566	19.408	9.632	3.935	4.538	5.501	7.056	2.575	25.696	68.151
9	53.912	7.508	10.315	14.122	8.156	12.460	3.770	4.976	6.326	2.552	29.678	67.744
10	70.557	7.249	9.515	11.702	8.123	36.595	3.614	12.531	5.789	2.663	57.135	37.830
11	59.463	6.796	7.739	10.316	7.324	37.555	3.788	45.093	5.434	2.570	31.705	69.360
12	51.120	6.554	7.063	10.111	7.486	20.524	3.544	16.651	5.058	2.405	25.036	69.830
13	66.068	6.389	6.513	11.176	7.155	16.077	3.184	11.316	17.067	2.403	48.861	68.783
14	60.020	6.735	6.018	21.978	44.508	13.286	2.978	9.587	21.159	2.423	127.383	50.857
15	56.157	5.361	5.759	31.528	37.765	11.171	2.812	7.743	11.432	2.325	57.152	35.636
16	52.736	5.179	5.363	25.399	25.283	9.558	2.668	6.513	9.663	2.147	47.602	75.175
17	51.718	4.861	5.915	22.678	27.619	8.339	2.272	5.821	7.866	2.037	48.672	66.340
18	56.256	4.614	6.608	19.092	21.356	7.399	2.158	21.257	6.809	2.156	109.704	60.550
19	58.588	4.225	7.124	25.908	17.116	6.633	2.062	13.415	6.159	3.303	176.727	63.493
20	52.951	4.399	7.407	43.695	16.267	5.986	2.131	9.176	5.758	19.324	104.960	60.592
21	52.741	3.944	6.675	50.704	15.469	7.548	2.236	8.659	5.431	29.031	80.859	48.165
22	74.691	3.726	7.747	44.683	12.802	8.406	2.109	20.983	5.136	55.352	66.497	36.562
23	89.088	3.903	14.096	47.316	11.204	6.503	1.941	20.255	4.871	45.550	64.009	29.295
24	83.162	3.641	37.112	41.624	10.076	7.160	1.861	20.968	4.563	34.370	53.318	25.077
25	66.132	4.151	23.093	34.778	9.169	5.670	1.992	70.878	4.244	45.962	71.424	67.277
26	54.861	4.976	22.505	27.679	5.483	4.666	2.253	57.460	4.032	34.077	75.556	45.610
27	52.785	4.649	22.360	22.322	7.809	4.137	2.141	44.535	3.899	56.152	56.160	37.013
28	50.342	4.296	45.032	18.819	7.205	3.957	2.766	38.560	3.790	77.885	45.063	34.950
29	26.791		42.048	15.709	6.561	6.985	3.030	29.169	3.687	60.458	35.022	32.125
30	21.077		49.238	13.274	5.510	4.096	3.301	22.587	3.408	47.519	26.239	70.375
31	18.521		39.862		8.266		4.837	18.122		37.569		77.129
Average	62.750	7.155	15.190	26.090	13.250	9.540	3.313	18.010	7.911	19.150	54.520	47.040
Lowest	18.521	3.641	5.461	10.111	6.330	3.935	1.861	3.035	3.408	2.037	19.707	16.196
Highest	89.088	16.995	49.238	50.704	44.508	37.555	8.677	70.878	21.159	77.885	176.727	82.616
Peak flow	103.524	18.233	60.897	65.314	99.639	79.066	10.853	174.530	41.069	97.651	251.996	125.954
Day of peak	10	1	24	21	15	10	5	11	14	28	19	15
Monthly total (million cu m)	1:4.50	17.51	40.67	62.43	35.56	24.73	8.87	48.23	20.51	51.30	140.50	126.00
Runoff (mm)	139	21	49	76	45	30	11	58	25	62	170	152
Rainfall (mm)	148	3	106	97	93	97	65	151	59	138	185	196

STATISTICS OF MONTHLY DATA FOR PREVIOUS RECORD (Oct 1958 to Dec 1985)

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean flows:	Avg.	55.970	28.910	20.510	13.710	9.698	5.213	4.028	5.676	7.776	18.720	28.260	37.233
	Low	6.557	3.244	7.449	3.959	2.075	1.529	0.793	0.425	0.861	1.043	3.653	13.210
	(year)	1965	1959	1984	1974	1976	1984	1984	1976	1959	1978	1978	1965
	High	62.100	54.760	32.140	32.600	37.000	14.630	23.390	19.130	47.670	77.360	58.500	73.670
	(year)	1984	1970	1981	1966	1983	1972	1968	1985	1974	1960	1963	1965
Runoff:	Avg.	117	55	67	63	51	16	15	19	24	61	89	171
	Low	22	10	24	12	7	4	3	1	3	3	11	43
	High	201	160	169	105	120	52	76	67	150	251	184	239
Rainfall:	Avg.	152	86	90	69	72	66	71	87	95	112	128	140
	Low	28	5	18	8	25	10	23	24	14	14	56	61
	High	242	171	183	145	146	164	152	160	247	278	259	271

SUMMARY STATISTICS

	FOR 1986		FOR RECORD PRECEDING 1986		1986 AS % OF PRE-1986
Mean flow (m3/s)	21.910		17.990		122
Lowest yearly mean			11.310	1964	
Highest yearly mean			27.590	1960	
Lowest monthly mean	3.513	Jul	0.623	Aug 1976	
Highest monthly mean	54.320	Nov	77.360	Oct 1960	
Lowest daily mean	1.861	24 Jul	0.200	25 Aug 1976	
Highest daily mean	176.727	19 Nov	363.830	4 Dec 1960	
Peak	251.996	19 Nov	644.900	4 Dec 1960	
10 %ile	55.770		48.690		115
50 %ile	11.450		9.291		123
95 %ile	2.472		1.176		211
Annual total (million cu m)	691.00		567.70		122
Annual runoff (mm)	836		687		122
Annual rainfall (mm)	1316		1148		115
(1961-70 rainfall average (mm)			1185)		

FACTORS AFFECTING FLOW REGIME

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Augmentation from effluent returns.

STATION AND CATCHMENT DESCRIPTION

Velocity-area station; main channel 34m wide; cableway span 54.9m. Rock step d/s forms the control. Bypassing begins at about 3.7m on the rb, but a good rating accomodates this. Significant modification to flows owing to PWS abstraction. Some naturalised flow data available.
Large rural catchment - drains both Dartmoor (granite) to the south and Devonian shales and sandstones of Exmoor to the north. Central area is underlain mainly by Culm shales and sandstones (Carboniferous). Agriculture is conditioned by the grade 3 and 4 soils.

OPTION 4 TABLE OF MONTHLY MEAN GAUGED DISCHARGES

055001 TAW AT UMBERLEIGH MONTHLY MEAN GAUGED DISCHARGES IN CUBIC METRES PER SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1979	30.918	32.905	44.410	15.654	12.801	7.679	1.956	11.910	5.314	9.371	36.082	51.477
1980	28.179	43.819	27.454	14.487	2.415	9.840	8.788	5.630	11.427	40.530	28.949	33.352
1981	29.826	16.857	52.143	7.777	19.551	9.113	2.748	2.209	9.897	47.732	24.212	46.367
1982	40.860	18.538	42.170	6.041	2.462	2.723	8.563	2.585	4.278	24.258	52.833	55.450
1983	48.920	19.180	14.436	17.895	36.998	4.472	1.650	0.836	3.245	14.976	11.134	48.906
1984	62.101	38.469	7.449	5.457	2.255	1.329	0.793	0.802	3.589	20.636	49.390	37.380
MEAN	40.134	27.961	31.344	11.218	12.747	5.693	4.083	3.995	6.292	26.251	33.767	45.152
MIN	28.179	16.857	7.449	5.457	2.255	1.329	0.793	0.802	3.245	9.371	11.134	33.352
MAX	62.101	43.819	52.143	17.895	36.998	9.840	8.788	11.910	11.427	47.732	52.833	55.450

THE SUMMARY RELATES EXCLUSIVELY TO THE YEARS SHOWN.

OPTION 5 TABLE OF MONTHLY MEAN NATURALISED DISCHARGES

039001 THAMES AT KINGSTON MONTHLY MEAN NATURALISED DISCHARGES IN CUBIC METRES PER SECOND

YEAR	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1979	125.200	168.700	203.200	185.700	135.900	108.600	45.960	42.090	30.640	36.450	46.670	145.600
1980	145.100	162.200	137.600	106.700	49.660	45.830	40.200	37.400	38.010	75.420	75.540	90.620
1981	88.970	60.530	199.300	123.900	118.400	84.170	40.860	44.610	51.930	95.810	78.220	142.200
1982	198.100	123.700	187.000	90.960	55.630	46.920	38.690	31.290	31.940	89.340	129.600	177.100
1983	126.500	110.930	84.870	128.400	137.400	82.660	43.670	34.580	55.280	38.280	39.100	78.590
1984	144.600	129.200	105.000	67.860	61.000	44.490	26.700	26.100	31.600	40.130	104.900	126.100
MEAN	138.078	125.877	152.828	117.253	92.998	68.778	39.313	36.012	36.562	62.572	79.005	126.702
MIN	88.970	60.530	84.870	67.860	49.660	44.490	26.700	26.100	30.640	38.450	39.100	78.590
MAX	198.100	168.700	203.200	185.700	137.400	108.600	45.960	44.610	51.900	95.810	129.600	177.100

THE SUMMARY RELATES EXCLUSIVELY TO THE YEARS SHOWN.

OPTION 6 YEARBOOK DATA TABULATION (MONTHLY)

055001 Umberleigh 1982

Measuring authority: SWWA Grid reference: SS60B237 Catchment area (sq km): 826.2

First year: 1958 Level stn. (m OD): 14.14 Max alt. (m OD): 604

HYDROMETRIC STATISTICS FOR 1982

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Flows (m3/s):	Avg.	40.860	18.540	42.170	6.041	2.462	2.723	8.563	2.585	4.278	24.260	52.830	55.450	21.750
	Peak	127.60	55.38	143.90	23.89	5.54	12.48	162.20	7.73	25.40	72.35	215.20	241.10	241.10
Runoff (mm)		132	54	137	19	8	9	28	8	13	79	166	180	833
Rainfall (mm)		106	78	143	24	37	116	67	87	81	129	192	179	1239

MONTHLY AND YEARLY STATISTICS FOR PREVIOUS RECORD (Oct 1958 to Dec 1981)

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean flows (m3/s):	Avg.	34.490	29.840	20.820	13.730	9.404	5.488	4.782	5.648	8.228	18.950	27.980	36.080	17.891
	Low	6.657	3.244	7.918	3.889	2.073	1.434	0.796	0.423	0.861	1.043	3.653	13.210	11.312
	High	50.890	54.760	52.140	32.800	22.140	16.630	23.390	14.440	47.670	77.360	58.500	75.470	27.587
Peak flow (m3/s)		580.60	278.40	339.90	149.40	91.74	160.10	208.00	183.50	512.50	422.10	249.70	644.90	644.90
Runoff (mm)		112	88	67	43	30	17	16	18	26	61	88	117	683
Rainfall (mm)		127	91	89	70	72	66	74	87	93	112	127	137	1145

Factors affecting flow regime: S P L

Station type: VA

1982 runoff is 122% of previous mean rainfall (108%)

OPTION 7 TABLE OF MONTHLY EXTREME FLOWS

050001 TAW AT UMBERLEIGH

TABLE OF MONTHLY INSTANTANEOUS PEAK DISCHARGES AND HIGHEST AND LOWEST DAILY MEAN GAUGED DISCHARGES IN CUBIC METRES PER SECOND

YEAR		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1978	HI	192.600	216.700	97.510	53.100	70.040	3.504	9.965	26.430	1.737	1.388	21.980	94.700
	HD	116.900	184.000	87.000	46.030	37.000	3.037	5.039	11.110	1.699	1.314	12.040	71.940
	LD	15.560	8.162	13.490	5.923	2.752	1.382	1.036	1.709	1.035	0.889	0.881	3.926
1979	HI	95.310	150.800	108.700	30.700	55.430	20.550	5.994	69.190	18.710	61.830	85.940	354.100
	HD	66.420	121.900	92.120	26.330	31.830	14.630	4.143	37.570	10.640	35.450	67.010	208.400
	LD	12.430	10.040	11.390	8.787	6.746	3.249	1.201	1.541	2.799	3.894	12.730	13.710
1980	HI	113.400	170.200	127.300	136.600	5.565	84.430	32.830	20.430	68.730	160.400	173.000	106.300
	HD	85.420	123.600	87.090	94.790	4.795	52.430	19.620	12.250	41.480	119.300	114.600	82.790
	LD	10.630	13.980	10.330	3.365	1.585	1.303	4.902	3.158	4.311	7.634	8.078	10.270
1981	HI	149.700	80.990	339.900	32.560	50.860	54.120	14.080	11.550	95.070	123.900	90.340	256.000
	HD	80.200	43.450	223.400	24.990	33.340	29.010	8.875	8.561	42.080	105.200	55.820	136.100
	LD	11.690	7.799	15.890	3.320	8.922	3.035	1.814	1.224	1.078	21.270	7.235	16.110
1982	HI	127.600	55.380	143.900	23.890	5.536	12.480	162.200	7.727	25.400	72.350	215.200	241.100
	HD	111.600	38.260	101.000	17.120	4.265	9.491	77.330	5.925	14.970	56.460	124.300	170.000
	LD	16.590	11.330	9.077	3.074	1.477	1.165	2.000	1.693	1.546	9.246	11.200	12.150
MAX	HI	192.600	216.700	339.900	136.600	70.040	84.430	162.200	69.190	95.070	160.400	215.200	354.100
MAX	HD	116.900	184.000	223.400	94.790	37.000	52.430	77.330	37.570	42.080	119.300	124.300	208.400
MIN	LD	10.630	8.162	9.077	3.074	1.477	1.165	1.201	1.224	1.035	0.889	0.881	3.926

THE SUMMARY RELATES EXCLUSIVELY TO THE YEARS SHOWN.

HI = HIGHEST INSTANTANEOUS DISCHARGE
HD = HIGHEST DAILY MEAN GAUGED DISCHARGE
LD = LOWEST DAILY MEAN GAUGED DISCHARGE

OPTION 8 TABLE OF CATCHMENT MONTHLY RAINFALL

050001 TAW AT UMBERLEIGH

AREAL AVERAGE RAINFALL EXPRESSED IN MM & AS A PERCENTAGE OF LONG TERM MEAN

YEAR		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1978	RAINFALL (MM)	160	146	114	51	49	61	95	42	39	14	68	174
	% 1941-70 MEAN	126	159	144	71	60	100	116	41	38	12	51	128
1979	RAINFALL (MM)	110	72	164	68	102	52	45	126	49	100	122	192
	% 1941-70 MEAN	87	78	208	94	126	85	55	124	47	88	91	141
1980	RAINFALL (MM)	99	130	131	24	43	164	65	69	101	175	107	115
	% 1941-70 MEAN	78	141	166	33	53	269	79	68	97	155	80	85
1981	RAINFALL (MM)	90	76	183	47	126	42	78	35	153	200	85	173
	% 1941-70 MEAN	71	83	232	65	156	69	95	34	147	177	63	127
1982	RAINFALL (MM)	106	78	143	24	37	116	67	87	81	129	192	179
	% 1941-70 MEAN	83	85	181	33	46	190	82	85	78	114	143	132
RAINFALL (MM)													
MEAN		113	100	147	43	71	87	70	72	85	124	115	167
MIN		90	72	114	24	37	42	45	35	39	14	68	115
MAX		160	146	183	68	126	164	95	126	153	200	192	192

THE SUMMARY RELATES EXCLUSIVELY TO THE YEARS SHOWN.

OPTION 9 TABLE OF CATCHMENT MONTHLY AREAL RAINFALL AND RUNOFF

050001 TAW AT UMBERLEIGH

MONTHLY RAINFALL AND RUNOFF (DERIVED FROM GAUGED FLOWS) EXPRESSED IN MM OVER THE CATCHMENT

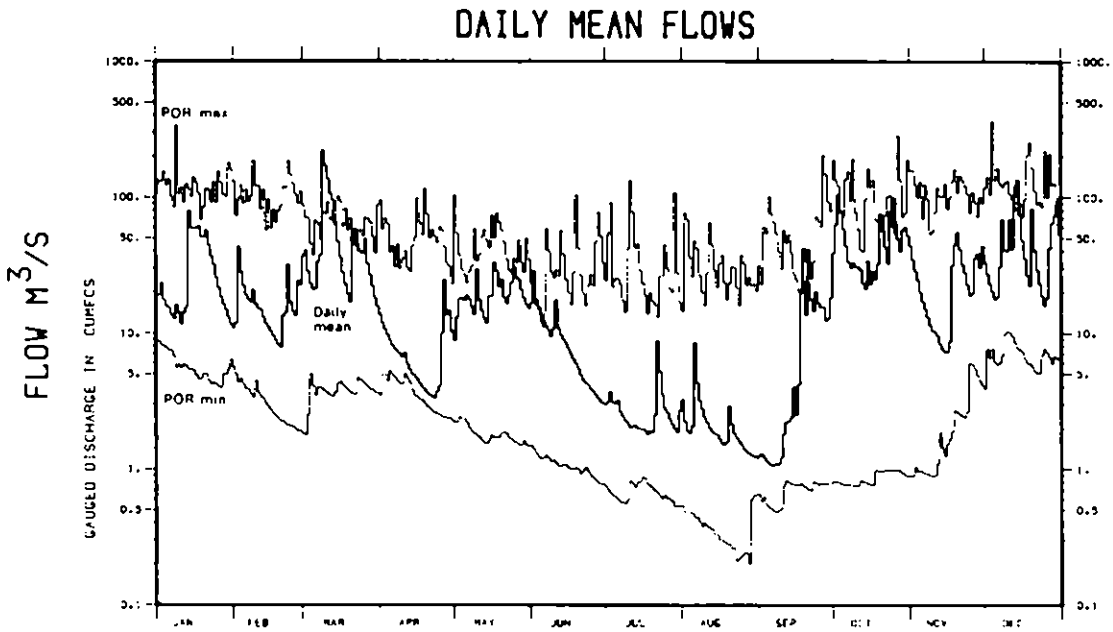
YEAR		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1978	RAINFALL	160	146	114	51	49	61	95	42	39	14	68	174
	RUNOFF	133	143	105	40	33	7	10	13	4	3	11	97
1979	RAINFALL	110	72	164	68	102	52	45	126	49	100	122	192
	RUNOFF	100	96	144	49	62	25	6	39	17	30	113	167
1980	RAINFALL	99	130	131	24	43	164	65	69	101	175	107	115
	RUNOFF	91	133	89	45	8	31	28	18	36	131	91	108
1981	RAINFALL	90	76	183	47	126	42	78	35	153	200	85	173
	RUNOFF	97	49	169	24	63	29	9	7	31	155	76	150
1982	RAINFALL	106	78	143	24	37	116	67	87	81	129	192	179
	RUNOFF	132	54	137	19	8	9	28	8	13	79	166	180
RAINFALL													
MEAN		113	100	147	43	71	87	70	72	85	124	115	167
MIN		90	72	114	24	37	42	45	35	39	14	68	115
MAX		160	146	183	68	126	164	95	126	153	200	192	192
RUNOFF													
MEAN		111	95	129	35	31	20	16	17	20	60	91	140
MIN		91	49	89	19	8	7	6	7	4	3	11	97
MAX		133	143	169	49	63	31	28	39	36	155	166	180
% RUNOFF													
MEAN		98	95	88	81	44	23	23	24	24	65	79	84
MIN		83	64	68	51	19	8	11	9	10	21	16	56
MAX		>100	>100	96	>100	67	69	43	31	36	78	93	>100

THE SUMMARY RELATES EXCLUSIVELY TO THE YEARS SHOWN.

OPTION 10 HYDROGRAPH OF DAILY MEAN FLOWS

050001 TAW AT UMBERLEIGH 1981

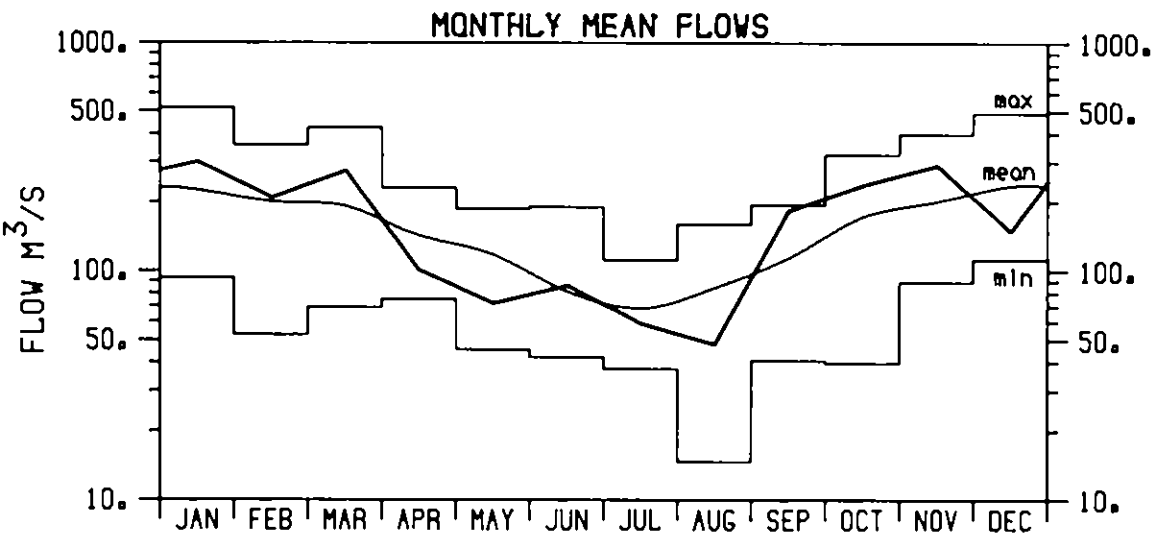
Previous record 1958-1980 Catchment area 826.2 km



OPTION 11 HYDROGRAPH OF MONTHLY MEAN FLOWS

15006 TAY AT BALLATHIE 1981

Previous record 1953-1980 Catchment area 4587.1km^2



OPTION 12 FLOW DURATION STATISTICS

FLOW DURATION TABLE

050001 TAW AT UMBERLEIGH GAUGED FLOWS USED

1 DAY MEAN FLOW EXCEEDED STATED AMOUNT IN CUMECS FOR GIVEN PERCENTAGE OF TIME

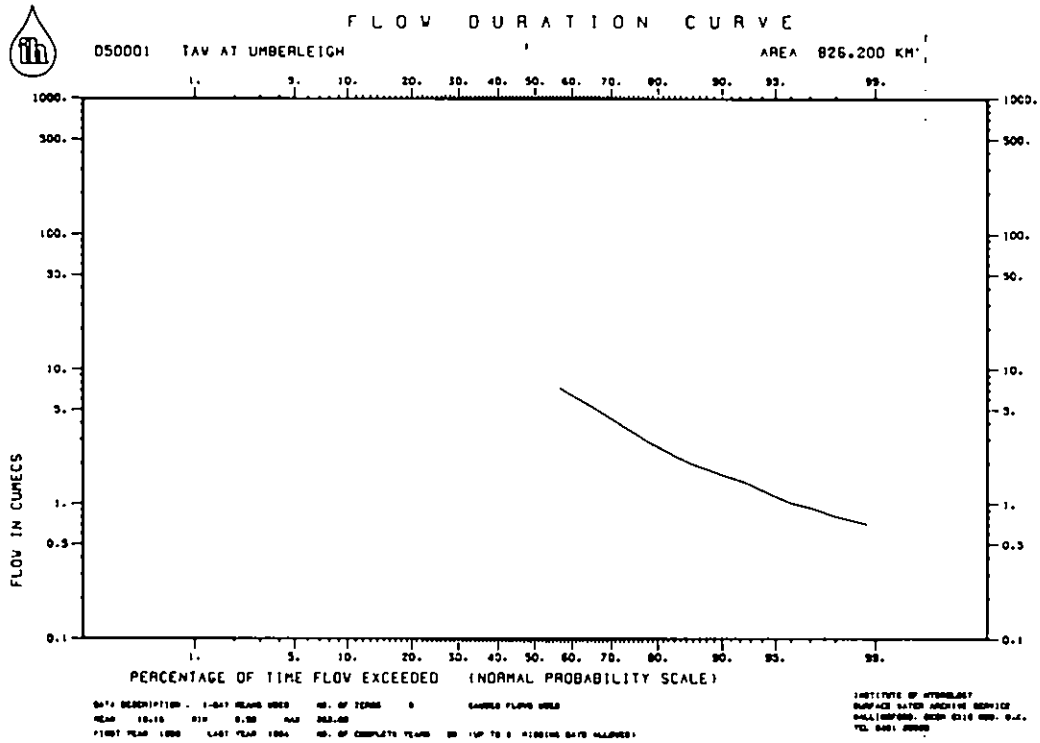
	0	.	2	3	4	5	6	.	.8	9
0		112.407	88.953	78.112	70.827	64.442	59.554	56.125	53.098	50.148
10	47.474	44.176	41.967	39.884	37.968	36.202	34.286	32.813	31.533	30.169
20	28.878	27.620	26.450	25.366	24.302	23.328	22.350	21.262	20.533	19.756
30	19.052	18.294	17.592	16.975	16.450	15.836	15.263	14.737	14.189	13.691
40	13.254	12.847	12.340	11.914	11.529	11.129	10.807	10.436	10.068	9.725
50	9.366	9.020	8.678	8.390	8.073	7.801	7.535	7.219	6.945	6.673
60	6.428	6.187	5.971	5.755	5.522	5.313	5.090	4.900	4.691	4.492
70	4.292	4.101	3.916	3.738	3.564	3.398	3.239	3.055	2.915	2.783
80	2.659	2.534	2.418	2.287	2.170	2.071	1.976	1.890	1.822	1.734
90	1.647	1.567	1.493	1.391	1.268	1.141	1.019	0.941	0.808	0.685

MAX FLOW= 363.800 MIN FLOW= 0.200 MEAN FLOW= 18.160 CATCHMENT AREA 826.2 SQ.KM

NUMBER OF ZEROS= 0 NUMBER OF VALUES USED= 9497

FIRST YEAR USED= 1959 LAST YEAR USED= 1984
NUMBER OF YEARS USED= 26

ONLY YEARS CONTAINING NOT MORE THAN 5 MISSING DAYS USED



OPTION 13 TABLE OF GAUGING STATION REFERENCE INFORMATION

NUMBER	RIVER	STATION	GRID REF	OPERATOR	RECORD 1ST YEAR	RECORD LAST YEAR	STN TYPE	BASIN AREA SQ KM	LEVEL STN MOD	MAX ALT MOD	ABSTRACTIONS & RETURNS	FM
048001	FOWEY	TREWILVESTEPS	SX227698	SWWA	1969		CC	36.6	187.86	420	SNPG	
048003	FAL	TREGONY	SW921447	SWWA	1977		FLVA	87.0	6.95	226	GBI	
048004	MARLEGGAN	TRENGOFFE	SX159674	SWWA	1969		CC	25.3	70.76	308	G	
048005	KENWYN	TRURO	SW820452	SWWA	1958		CC	19..	7..6	152	G	
048006	COBLA	HELSTON	SW654273	SWWA	1968		VA	40.1	4.69	251	PG	
048007	KENNALL	PONSANOOTH	SW767377	SWWA	1966		C	26.9	13.56	251	SNPG	I
048009	ST NEOT	CRAIGSHILL WOOD	SX184662	SWWA	1971		CC	22.7	70.53	339	GL	
048010	SEATON	TREBROWNSBRIDGE	SX299596	SWWA	197.		CC	38.1	25.60	369	G	I
048011	FOWEY	RESTORMEL TWO	SX098624	SWWA	1972		CC	169.1	9.24	420	SNPGLI	

OPTION 14 TABLE OF HYDROMETRIC STATISTICS

STATION NUMBER	TERM	AGE 1961 1970 YR	AREAL RAIN FALL MM	ANNUAL GAUGED RUNOFF MM	MEAN GAUGED FLOW CU M/S	NO. YRS REC	FDM MEAN FLOW	HIGHEST DAILY MEAN CU M/S	DATE	LOWEST DAILY MEAN CU M/S	DATE	10 %ILE CU M/S	50 %ILE CU M/S	95 %ILE CU M/S
021005	POR	1320	1250	676	7.99	15		185.50	30/01/74	1.19	07/10/72	16.20	5.39	1.97
	1977		1436	829	9.80		123	92.58	31/10	1.39	22/06	21.26	7.03	1.65
	1978		1317	757	8.95		112	75.74	15/11	1.75	19/06	20.23	6.03	2.25
	1979		1387	913	10.80		135	82.15	26/11	2.23	23/07	24.29	6.77	2.60
	1980		1288	793	9.38		117	69.29	24/11	2.01	01/06	19.96	7.00	2.19
021006	POR	1227	1180	694	32.99	15		593.40	30/01/74	3.65	07/10/72	68.79	22.22	6.23
	1977		1277	845	40.20		122	555.30	31/10	4.13	18/05	84.42	29.40	9.44
	1978		1244	731	34.77		105	320.30	15/11	5.62	20/06	78.17	22.26	7.01
	1979		1230	861	41.90		127	262.70	26/11	7.22	23/07	93.82	27.64	8.51
	1980		1167	746	35.48		108	171.80	20/11	8.37	19/05	78.83	24.91	7.46
21007	POR	1413	132.	878	13.89	15		209.80	30/01/74	0.57	07/09/76	31.59	8.50	1.71
	1977		1524	1108	17.54		126	288.30	31/10	0.67	18/06	41.40	10.64	1.11
	1978		13y4	886	14.02		101	210.80	15/11	0.93	19/07	32.60	8.24	1.24
	1979		1420	1105	17.48		125	120.90	25/11	1.42	24/07	41.36	10.83	1.83
	1980		1366	944	14.93		107	96.17	20/11	1.18	19/05	35.27	9.16	1.55
021008	POR	1006	949	504	17.74	10		308.65	06/03/67	1.71	22/08/76	38.44	11.05	2.89
	1977		1019	654	21.25		120	167.70	31/10	1.99	17/05	54.36	14.85	2.38
	1978		1068	541	19.03		107	177.90	15/11	2.04	20/07	43.34	11.09	2.53
	1979		1005	693	24.40		138	273.10	25/03	2.22	05/08	55.64	15.31	3.67
	1980		982	588	20.62		116	122.00	20/11	1.35	03/06	43.35	14.3.	4.14

NOTE: This example illustrates only a limited amount of the statistical information that may be output.

OPTION 15 GAUGING STATION DESCRIPTION

48003 Fal at Tregony

Originally a velocity-area station in a formalised trapezoidal channel; augmented by a low flow, side contracted flume 2.8m wide in August 1967. Site not ideal for high flows. Data available from June 1978. Earlier data unreliable due to silting of inlet pipes. Moderate modification to flows owing to industrial abstractions and returns.
Moderate to low relief catchment draining Devonian slates, shales and grits. Upper reaches plateau-like alluvial flats. Traverses the kaolinised St Austell Granite. Low grade agriculture and grazing.

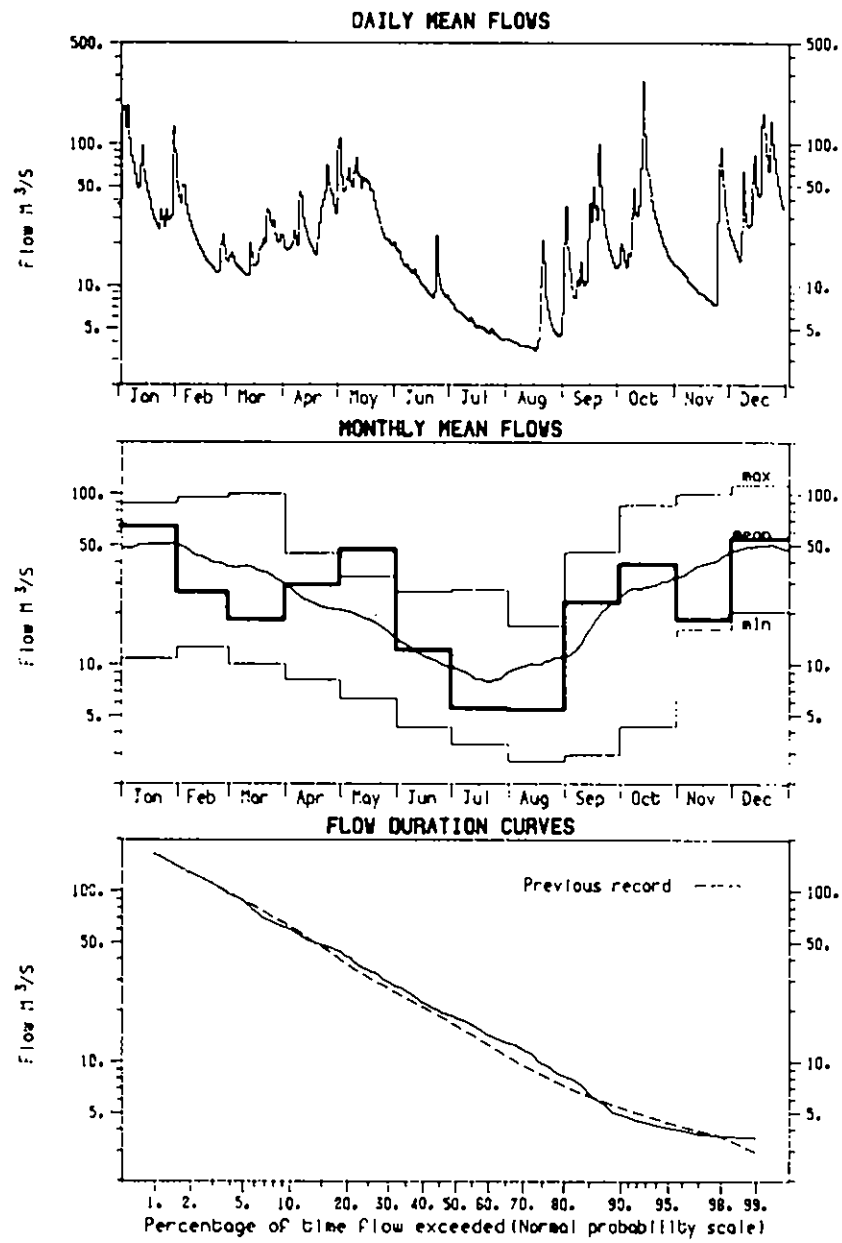
48004 Marleggan at Trengoffe

Three-bay compound Crump profile weir, crest lengths 1.52m and 8.53m (total). Wing walls at 1.67m. Flood banks contain flows up to wing wall height. Overtopped at the highest flows. The only gauged natural catchment on Bodmin Moor.
The upper 70% drains the kaolinised granite of Bodmin Moor. The relief is moderate to steep. The lower 30% traverses metamorphosed Devonian slates. Baseflow high for an upland catchment owing to storage in the granite.

48005 Kenwyn at Truro

Three-bay compound Crump profile weir, crest lengths 1.22m and 3.05 (total). Pier and wing wall height 1.98m. Contains all flows; potential for non-modularity at the highest flows. Variable shoaling affects low flow precision. Substantially natural catchment. High baseflow, low percentage runoff catchment for the relief. Catchment of moderate relief, with wooded, incised valleys. Geology is Devonian grits and shales.

OPTION 16 RIVER FLOW PATTERN PLOTS



Station number	River name	Grid reference	Measuring authority	Area (sq km)
002001	Helmsdale	29 (NC) 997 181	HRPB	551 4
003001 *	Shin	29 (NC) 581 062	NSHE	494 6
003002	Carron	28 (NH) 490 921	HRPB	241 1
003003	Oykel	29 (NC) 403 001	HRPB	330 7
003004	Cassley	29 (NC) 472 022	HRPB	187 5
003005	Shin	28 (NH) 574 974	HRPB	575 0
004001	Conon	28 (NH) 482 547	HRPB	961 8
004003	Alness	28 (NH) 654 695	HRPB	201 0
004004	Blackwater	28 (NH) 455 563	HRPB	336 7
004005	Meig	28 (NH) 286 528	HRPB	120 5
005001 *	Beauly	28 (NH) 426 405	NSHE	849 5
005002	Farrar	28 (NH) 390 405	HRPB	311 3
006001 *	Ness	28 (NH) 639 410	NSHE	1792 3
006003 *	Morston	28 (NH) 416 169	RFR	391 0
006006 *	Allt Breabaidh	28 (NH) 377 168	NSHE	27 5
006007	Ness	28 (NH) 645 427	HRPB	1839 1
006008	Enrick	28 (NH) 450 300	HRPB	105 9
007001	Findhorn	28 (NH) 826 337	HRPB	415 6
007002	Findhorn	38 (NJ) 018 583	HRPB	781 9
007003	Lossie	38 (NJ) 194 626	NERPB	216 0
007004	Nairn	28 (NH) 882 551	HRPB	313 0
007005	Divie	38 (NJ) 005 480	HRPB	165 0
007006	Lossie	38 (NJ) 135 489	NERPB	172
008001 *	Spey	38 (NJ) 278 439	NERPB	2654 7
008002	Spey	28 (NH) 881 082	NERPB	1011 7
008003 *	Spey	27 (NN) 759 996	NERPB	533 8
008004	Avon	38 (NJ) 186 352	NERPB	542 8
008005	Spey	28 (NH) 946 191	NERPB	1267 8
008006	Spey	38 (NJ) 318 518	NERPB	2861 2
008007	Spey	27 (NN) 687 962	NERPB	400 4
008008	Tromie	27 (NN) 789 995	NERPB	130 3
008009	Dulnain	28 (NH) 977 247	NERPB	272 2
008010	Spey	38 (NJ) 033 268	NERPB	1748 8
008011 *	Livet	38 (NJ) 201 291	NERPB	104 0
009001	Deveron	38 (NJ) 532 464	NERPB	441 6
009002	Deveron	38 (NJ) 705 498	NERPB	954 9
009003	Isla	38 (NJ) 494 506	NERPB	176 1
009004	Bogie	38 (NJ) 519 373	NERPB	179 0
010002	Ugie	48 (NK) 101 485	NERPB	325 0
010003	Ythan	38 (NJ) 947 303	NERPB	523 0
011001 *	Don	38 (NJ) 887 141	NERPB	1273 0
011002	Don	38 (NJ) 756 201	NERPB	787 0
011003	Don	38 (NJ) 566 170	NERPB	499 0
012001 *	Dee	37 (NO) 635 956	NERPB	1370 0
012002	Dee	37 (NO) 798 983	NERPB	1844 0
012003	Dee	37 (NO) 344 965	NERPB	690 0
012004	Gennock Burn	37 (NO) 324 956	NERPB	30 3
012005	Muick	37 (NO) 364 947	NERPB	110 0
012006	Gairn	37 (NO) 353 971	NERPB	150 0
012007	Dee	37 (NO) 098 895	NERPB	289 0
012008	Feugh	37 (NO) 687 928	NERPB	229 0
013001 *	Bervie	37 (NO) 826 733	NERPB	123 0
013002	Luther Water	37 (NO) 660 668	TRPB	138 0
013003 *	South Esk	37 (NO) 583 593	TRPB	487 0
013004	Prosen Water	37 (NO) 396 586	TRPB	104 0
013005	Lunan Water	37 (NO) 655 494	TRPB	124 0
013007	North Esk	37 (NO) 699 840	TRPB	730 0
013008	South Esk	37 (NO) 600 596	TRPB	490 0
013009	West Water	37 (NO) 592 680	TRPB	127 2
014001	Eden	37 (NO) 415 158	TRPB	307 4
014002	Dighty Water	37 (NO) 477 324	TRPB	126 9
014005	Motray Water	37 (NO) 441 224	TRPB	52 0
015001 *	Isla	37 (NO) 187 647	TRWS	70 7
015002 *	Newton Burn	37 (NO) 230 605	TRWS	15 4
015003	Tay	37 (NO) 082 395	TRPB	3711 0
015004 *	Inzion	37 (NO) 280 559	TRWS	24 7
015005 *	Malgan	37 (NO) 275 558	TRWS	40 9
015006	Tay	37 (NO) 147 367	TRPB	4587 1
015007	Tay	27 (NN) 924 534	TRPB	1149 4
015008	Dean Water	37 (NO) 340 479	TRPB	177 1
015010	Isla	37 (NO) 295 466	TRPB	366 5
015011	Lyon	27 (NN) 786 486	TRPB	391 1
015012	Tummel	27 (NN) 940 577	TRPB	1649 0
015013	Almond	37 (NO) 067 258	TRPB	174 8
015015	Almond	27 (NN) 888 316	TRPB	84 0
015016	Tay	27 (NN) 787 467	TRPB	6009
015017 *	Braan	27 (NN) 979 406	TRPB	197 0
015018 *	Lyon	27 (NN) 534 448	NSHE	161 4
015021	Lunan Burn	37 (NO) 182 400	TRPB	94 0
015023	Braan	37 (NO) 014 422	TRPB	2100
015024	Dochart	27 (NN) 567 320	TRPB	239 0
015025	Erich	37 (NO) 174 472	TRPB	432 0
016001	Earn	27 (NN) 933 167	TRPB	590 5
016002 *	Earn	27 (NN) 754 216	TRPB	176 9
016003	Ruchill Water	27 (NN) 764 204	TRPB	99 5
016004	Earn	37 (NO) 043 184	TRPB	782 2
017001	Carron	26 (NS) 832 820	FRPB	122 3
017002	Leven	37 (NO) 369 006	FRPB	424 0
017003	Bonny Water	26 (NS) 874 804	FRPB	50 5
017004	Ore	36 (NT) 330 997	FRPB	162 0
017005	Avon	26 (NS) 952 797	FRPB	195 3
017012	Red Burn	26 (NS) 788 780	FRPB	22 0
017014 *	Leven	36 (NT) 172 993	FRPB	158 0
017015	North Queich	37 (NO) 114 042	FRPB	23 1
017016	Lochty Burn	36 (NT) 221 987	FRPB	14 0
017017	Greens Burn	37 (NO) 150 053	FRPB	7 9
018001	Allan Water	27 (NN) 792 053	FRPB	161 0
018002	Devon	26 (NS) 858 960	FRPB	181 0
018003	Teith	27 (NN) 725 011	FRPB	518 0
018005	Allan Water	26 (NS) 786 980	FRPB	210 0
018007	Devon	37 (NO) 011 018	FRPB	69 5
018008	Leny	27 (NN) 585 096	FRPB	190 0
018010	Forth	26 (NS) 714 953	FRPB	397 0
018011	Forth	26 (NS) 775 955	FRPB	1036 0
018012	Ardoch Burn	27 (NN) 729 008	FRPB	48 0
018013	Black Devon	26 (NS) 914 924	FRPB	67 0
018014	Bannockburn	26 (NS) 812 908	FRPB	23 7
018015	Eas Gobhain	27 (NN) 602 070	FRPB	202 0
018016	Kelty Water	26 (NS) 468 968	FRPB	2 8
018017	Monachyle Burn	27 (NN) 475 230	IH	7 7
018018	Kirkton Burn	27 (NN) 532 219	IH	6 9
018019	Comer Burn	27 (NN) 386 043	FRPB	0 9
019001	Almond	36 (NT) 165 752	FRPB	369 0
019002	Almond	36 (NT) 004 657	FRPB	43 8
019003 *	Breich Water	36 (NT) 014 639	FRPB	51 8
019004	North Esk	36 (NT) 252 616	FRPB	81 6
019005	Almond	36 (NT) 086 686	FRPB	229 0
019006	Water of Leith	36 (NT) 228 732	FRPB	107 0
019007	Esk	36 (NT) 339 723	FRPB	330 0
019008	South Esk	36 (NT) 325 623	FRPB	112 0
019009	Bog Burn	36 (NT) 026 591	FRPB	8 5
019010	Braid Burn	36 (NT) 273 707	FRPB	16 2
019011	North Esk	36 (NT) 333 678	FRPB	137 0
019012	Water of Leith	36 (NT) 212 688	FRPB	72 0
019014	Brox Burn	36 (NT) 114 732	FRPB	34 1
019017	Gogar Burn	36 (NT) 161 733	FRPB	38 8
020001	Tyne	36 (NT) 591 768	FRPB	307 0
020002	West Peffer Burn	36 (NT) 489 811	FRPB	26 2
020003	Tyne	36 (NT) 456 689	FRPB	161 0
020004	East Peffer Burn	36 (NT) 610 824	FRPB	31 1
020005	Birns Water	36 (NT) 457 688	FRPB	93 0
020006	Biel Water	36 (NT) 645 768	FRPB	51 8
020007	Gifford Water	36 (NT) 511 717	FRPB	64 0
020008	Brox Burn	36 (NT) 697 776	FRPB	19 7
021001 *	Fruid Water	36 (NT) 088 205	LRWD	23 7
021002 *	Whiteadder Water	36 (NT) 663 633	LRWD	45 6
021003	Tweed	36 (NT) 257 400	TWRP	694 0
021004 *	Watch Water	36 (NT) 664 566	BRWD	10 7
021005	Tweed	36 (NT) 206 397	TWRP	373 0
021006	Tweed	36 (NT) 498 334	TWRP	1500 0
021007	Ettrick Water	36 (NT) 486 315	TWRP	499 0
021008	Teviot	36 (NT) 702 280	TWRP	1110 0
021009	Tweed	36 (NT) 898 477	TWRP	4390 0
021010 *	Tweed	36 (NT) 588 320	TWRP	2080 0
021011	Yarrow Water	36 (NT) 439 277	TWRP	231 0
021012	Teviot	36 (NT) 522 159	TWRP	323 0
021013	Gala Water	36 (NT) 479 374	TWRP	207 0
021014	Tweed	36 (NT) 109 285	TWRP	139 0
021015	Leader Water	36 (NT) 565 388	TWRP	239 0
021016	Eye Water	36 (NT) 942 635	TWRP	119 0
021017	Ettrick Water	36 (NT) 234 132	TWRP	37 5
021018	Lyne Water	36 (NT) 209 401	TWRP	175 0
021019	Manor Water	36 (NT) 217 369	TWRP	61 6
021020	Yarrow Water	36 (NT) 309 247	TWRP	155 0
021021	Tweed	36 (NT) 752 354	TWRP	3330 0
021022	Whiteadder Water	36 (NT) 881 550	TWRP	503 0
021023	Leet Water	36 (NT) 839 396	TWRP	113 0
021024	Jed Water	36 (NT) 655 214	TWRP	139 0
021025	Ale Water	36 (NT) 634 244	TWRP	174 0
021026	Tuna Water	36 (NT) 278 138	TWRP	31 0
021027	Blackadder Water	36 (NT) 826 530	TWRP	159 0
021030	Maggot Water	36 (NT) 231 232	TWRP	56 2
021031 *	Till	36 (NT) 927 396	NWA	648 0
021032 *	Glen	36 (NT) 919 310	NWA	198 9
021034	Yarrow Water	36 (NT) 288 244	TWRP	116 0
022001	Coquet	46 (NU) 234 044	NWA	569 8
022002 *	Coquet	36 (NT) 870 083	NWA	59 5
022003 *	Usway Burn	36 (NT) 886 077	NWA	21 4
022004 *	Aln	46 (NU) 211 129	NWA	205 0
022006	Blyth	45 (NZ) 243 800	NWA	269 4
022007	Wansbeck	45 (NZ) 175 858	NWA	287 3
022008 *	Alwin	36 (NT) 925 063	NWA	27 7
022009	Coquet	46 (NU) 067 016	NWA	346 0
023001	Tyne	45 (NZ) 038 617	NWA	2175 6
023002	Derwent	45 (NZ) 041 508	NWA	118 0
023003	North Tyne	35 (NY) 906 732	NWA	1007 5
023004	South Tyne	35 (NY) 856 647	NWA	751 1
023005	North Tyne	35 (NY) 776 861	NWA	284 9
023006	South Tyne	35 (NY) 672 811	NWA	321 9
023007	Derwent	45 (NZ) 168 581	NWA	242 1
023008	Rede	35 (NY) 868 832	NWA	343 8
023009 *	South Tyne	35 (NY) 716 465	NWA	118 5
023010 *	Tarset Burn	35 (NY) 789 879	NWA	96 0
023011	Kielder Burn	35 (NY) 644 946	NWA	58 8
023012 *	East Allen	35 (NY) 802 583	NWA	88 0
023013 *	West Allen	35 (NY) 791 583	NWA	75 1
023014 *	North Tyne	35 (NY) 631 931	NWA	27 0
023015 *	North Tyne	35 (NY) 974 721	NGWC	1043 8
024001	Wear	45 (NZ) 264 376	NWA	657 8
024002 *	Gaunless	45 (NZ) 215 306	NWA	93 0
024003	Wear	35 (NY) 984 391	NWA	171 9
024004	Bedburn Beck	45 (NZ) 118 322	NWA	74 9
024005	Browney	45 (NZ) 259 387	NWA	178 5
024006 *	Rookhope Burn	35 (NY) 952 390	NWA	36 5
024007 *	Browney	45 (NZ) 165 462	NWA	44 6
024008	Wear	45 (NZ) 174 309	NWA	455 0
024009	Wear	45 (NZ) 283 512	NWA	1008 3
025001	Tees	45 (NZ) 259 137	NWA	818 4
025002 *	Tees	35 (NY) 932 260	NWA	217 3
025003 *	Trout Beck	35 (NY) 759 336	NWA	11 4
025004	Skerne	45 (NZ) 284 129	NWA	250 1
025005	Leven	45 (NZ) 445 122	NWA	196 3
025006	Greta	45 (NZ) 034 122	NWA	86 1
025007 *	Clow Beck	45 (NZ) 282 101	NWA	78 2
025008 *	Tees	45 (NZ) 047 166	NWA	509 2
025009	Tees	45 (NZ) 364 105	NWA	1264 0
025010 *	Baydale Beck	45 (NZ) 260 156	NWA	31 1
025011 *	Langdon Beck	35 (NY) 852 309	NWA	13 0
025012	Harwood Beck	35 (NY) 849 309	NWA	25 1
025013 *	Billingham Beck	45 (NZ) 408 237	NWA	61 4
025014 *	Meridon Stell	45 (NZ) 323 274	NWA	2 5
025015 *	Woodham Burn	45 (NZ) 285 263	NWA	29 1
025018	Tees	35 (NY) 950 250	NWA	242 1
025019	Leven	45 (NZ) 585 087	NWA	14 8
025020	Skerne	45 (NZ) 292 238	NWA	147 0

Station number	River name	Grid reference	Measuring authority	Area (sq km)
025021	Skerne	45 (NZ) 318 285	NWA	70 1
025022 *	Balder	35 (NY) 931 '82	NWA	20 4
025023 *	Tees	35 (NY) 813 288	NWA	58 2
025024 *	Chapel Beck	45 (NZ) 599 163	NWA	13 4
026001 *	West Beck	54 (TA) 064 560	YWA	192 0
026002	Hull	54 (TA) 080 498	YWA	378 '
026003	Foston Beck	54 (TA) 093 548	YWA	57 2
026004 *	Gypsey Race	54 (TA) 165 675	YWA	253 8
026005	Gypsey Race	54 (TA) 137 677	YWA	240 0
026006	Elmswell Beck	54 (TA) 009 575	YWA	136 0
026007 *	Catchwater	54 (TA) 171 403	YWA	15 5
027001 *	Nidd	44 (SE) 428 530	YWA	484 3
027002	Wharfe	44 (SE) 422 473	YWA	758 9
027003	Aire	44 (SE) 534 255	YWA	1932 1
027004 *	Calder	44 (SE) 365 220	YWA	899 0
027005	Nidd	44 (SE) 141 683	YWA	113 7
027006	Don	43 (SK) 390 910	YWA	373 0
027007	Ure	44 (SE) 356 871	YWA	914 8
027008 *	Swale	44 (SE) 415 748	YWA	1345 6
027009	Ouse	44 (SE) 568 554	YWA	3315 0
027010 *	Hodge Beck	44 (SE) 627 944	YWA	18 9
027012 *	Hebden Water	34 (SD) 973 309	YWA	36 0
027013 *	Ewden Beck	43 (SK) 289 957	YWA	26 4
027014 *	Rye	44 (SE) 743 771	YWA	679 0
027015 *	Derwent	44 (SE) 714 557	YWA	1634 3
027016 *	Little Don	43 (SK) 253 992	YWA	38 8
027017 *	Loxley	43 (SK) 286 906	YWA	43 5
027018 *	Ryburn	44 (SE) 025 187	YWA	10 7
027019 *	Booth Dean Clough	44 (SE) 033 168	YWA	15 9
027020 *	Scout Dike Stream	44 (SE) 236 047	YWA	15 2
027021	Don	44 (SE) 569 040	YWA	1256 2
027022 *	Don	43 (SK) 427 928	YWA	826 0
027023	Dearne	44 (SE) 350 073	YWA	118 9
027024 *	Swale	45 (NZ) 146 006	YWA	381 0
027025	Rother	43 (SK) 432 857	YWA	352 2
027026	Rother	43 (SK) 394 744	YWA	165 0
027027 *	Wharfe	44 (SE) 112 481	YWA	443 0
027028	Aire	44 (SE) 281 340	YWA	691 5
027029	Calder	44 (SE) 124 219	YWA	341 9
027030	Dearne	44 (SE) 477 020	YWA	310 8
027031	Colne	44 (SE) 174 199	YWA	245 0
027032	Hebden Beck	44 (SE) 025 643	YWA	22 2
027033	Sea Cut	54 (TA) 028 908	YWA	33 2
027034	Ure	44 (SE) 190 860	YWA	510 2
027035	Aire	44 (SE) 013 457	YWA	282 3
027036 *	Derwent	44 (SE) 789 715	YWA	1421 0
027038	Costa Beck	44 (SE) 774 836	YWA	7 8
027039 *	Holme	44 (SE) 112 069	YWA	9 1
027040	Doe Lee	43 (SK) 443 746	YWA	67 9
027041	Derwent	44 (SE) 731 587	YWA	1586 0
027042	Dove	44 (SE) 705 855	YWA	59 2
027043	Wharfe	44 (SE) 092 494	YWA	427 0
027044	Blackfoss Beck	44 (SE) 725 475	YWA	47 0
027047	Snaizeholme Beck	34 (SD) 833 883	YWA	10 2
027048	Derwent	44 (SE) 990 853	YWA	127 0
027049	Rye	44 (SE) 696 791	YWA	238 7
027050	Esk	45 (NZ) 865 081	YWA	308 0
02705'	Crimple	44 (SE) 284 519	YWA	8 '
027052	Whitting	43 (SK) 376 747	YWA	50 2
027053	Nidd	44 (SE) 230 603	YWA	217 6
027054	Hodge Beck	44 (SE) 652 902	YWA	37.1
027055	Rye	44 (SE) 560 883	YWA	131 7
027056	Pickering Beck	44 (SE) 791 8'9	YWA	68.6
027057	Seven	44 (SE) 736 821	YWA	121 6
027058	Riccal	44 (SE) 661 8'0	YWA	57.6
027059	Laver	44 (SE) 301 7'0	YWA	87 5
027060	Kyle	44 (SE) 509 602	YWA	167 6
027061	Colne	44 (SE) 136 161	YWA	72 3
027062	Nidd	44 (SE) 482 56:	YWA	516 0
027063	Oxbb	44 (SE) 057 639	YWA	25 5
027064	Went	44 (SE) 551 163	YWA	83 7
027065	Holme	44 (SE) 142 157	YWA	97 4
027066	Blackburn Brook	43 (SK) 393 914	YWA	42 8
027067	Sheaf	43 (SK) 357 863	YWA	49 1
027068	Ryburn	44 (SE) 035 188	YWA	33 0
027069	Wiske	44 (SE) 375 844	YWA	215.5
027070	Eller Beck	14 (SB) 984 502	YWA	35 3
027071 *	Swale	44 (SE) 425 734	YWA	1363 0
027072	Worth	44 (SE) 064 408	YWA	71 7
027073	Brompton Beck	44 (SE) 936 794	YWA	12 9
027074	Soon Beck	44 (SE) 225 210	YWA	46 3
027075	Bedale Beck	44 (SE) 308 902	YWA	160 3
027076	Baiby Beck	44 (SE) 760 444	YWA	'03.1
027077	Bradford Beck	44 (SE) 151 375	YWA	58 0
027080	Aire	44 (SE) 381 285	YWA	865 0
028001	Derwent	43 (SK) 198 851	STWA	126 0
028002 *	Blithe	43 (SK) 109 192	STWA	163 0
028003 *	Tame	42 (SP) 189 915	STWA	408 0
028004 *	Tame	42 (SP) 206 935	STWA	795 0
028005 *	Tame	43 (SK) 173 105	STWA	1475 0
028006 *	Trent	33 (SJ) 994 231	STWA	325 0
028007	Trent	43 (SK) 448 299	STWA	4400 0
028008	Dove	43 (SK) 112 397	STWA	399 0
028009	Trent	43 (SK) 620 399	STWA	7486 0
028010	Derwent	43 (SK) 356 363	STWA	1054 0
028011	Derwent	43 (SK) 296 588	STWA	690 0
028012	Trent	43 (SK) 131 177	STWA	1229 0
028013	Soar	43 (SK) 498 240	STWA	1289 8
028014 *	Sow	33 (SJ) 975 215	STWA	591 0
028015	Idle	43 (SK) 690 895	STWA	529 0
028016 *	Ryton	43 (SK) 641 897	STWA	231 0
028017 *	Devon	43 (SK) 787 486	STWA	284 0
028018	Dove	43 (SK) 235 288	STWA	883 2
028019	Trent	43 (SK) 239 204	STWA	3072 0
028020 *	Churnet	43 (SK) 103 389	STWA	236 0
028021 *	Derwent	43 (SK) 443 327	STWA	1175 0
028022	Trent	43 (SK) 801 601	STWA	8231 0
028023 *	Wye	43 (SK) 182 696	STWA	154 0
028024	Wreake	43 (SK) 615 124	STWA	413.8
028025 *	Sence	42 (SP) 321 998	STWA	169 4
028028	Anker	43 (SK) 263 034	STWA	368 0
028027 *	Erewash	43 (SK) 482 364	STWA	182 2
028029 *	Kingston Brook	43 (SK) 503 277	STWA	57 0
028030 *	Black Brook	43 (SK) 466 171	STWA	8 4
028031	Manifold	43 (SK) 140 507	STWA	148 5
028032 *	Meden	43 (SK) 558 880	STWA	62 8
028033 *	Dove	43 (SK) 063 668	STWA	8 0
028036 *	Poulter	43 (SK) 700 752	STWA	128 2
028037 *	Derwent	43 (SK) 205 825	STWA	203 0
028038 *	Manifold	43 (SK) 106 595	STWA	46 0
028039	Rea	42 (SP) 07: 847	STWA	74 0
028040	Trent	33 (SJ) 892 467	STWA	53 2
028041 *	Hamps	43 (SK) 082 502	STWA	35 1
028043	Derwent	43 (SK), 261 683	STWA	335 0
028044 *	Poulter	43 (SK) 563 714	STWA	65 0
028045 *	Meden	43 (SK) 681 732	STWA	106 2
028046	Dove	43 (SK) 146 509	STWA	83 0
028047 *	Oldcoates Dyke	43 (SK) 615 876	STWA	85 2
028048	Amber	43 (SK) 376 520	STWA	139 0
028049 *	Ryton	43 (SK) 575 794	STWA	77 0
028050 *	Torne	44 (SE) 646 012	STWA	135 5
028052	Sow	33 (SJ) 883 270	STWA	163 0
028053 *	Penk	33 (SJ) 923 144	STWA	272 0
028054 *	Sence	42 (SP) 566 985	STWA	133 0
028055 *	Ecclesbourne	43 (SK) 320 447	STWA	50 4
028056	Rothley Brook	43 (SK) 580 121	STWA	94 0
028058 *	Henmore Brook	43 (SK) 176 463	STWA	42 0
028059 *	Maun	43 (SK) 548 623	STWA	28 8
028060 *	Dover Beck	43 (SK) 653 479	STWA	69 0
028061	Churnet	33 (SJ) 983 520	STWA	139 0
028062	Trent	43 (SK) 815 715	STWA	8433 0
028065	Trent	43 (SK) 827 780	STWA	8547 0
028066	Cole	42 (SP) 183 874	STWA	130 0
028067	Derwent	43 (SK) 438 316	STWA	1177.5
028070 *	Burbage Brook	43 (SK) 259 804	STWA	9 1
028072 *	Greet	43 (SK) 711 541	STWA	46 2
028073 *	Ashop	43 (SK) 171 896	STWA	47 0
028075 *	Derwent	43 (SK) 169 951	STWA	17 0
028079	Meece	33 (SJ) 874 291	STWA	86 3
028080	Tame	42 (SP) 207 937	STWA	799 0
028082	Soar	42 (SP) 542 973	STWA	183 9
028083	Trent	33 (SJ) 885 355	STWA	195 2
028085	Derwent	43 (SK) 355 368	STWA	1054 0
028086	Sence	42 (SP) 588 977	STWA	113 0
028091	Ryton	43 (SK) 631 871	STWA	231 0
028093	Soar	43 (SK) 565 182	STWA	1108 4
028094	Blythe	42 (SP) 213 888	STWA	183 8
028095	Tame	43 (SK) 182 052	STWA	1421 7
029001	Warthe Beck	54 (TA) 253 016	AWA	108 3
029002	Great Eau	53 (TF) 416 793	AWA	77 4
029003	Lud	53 (TF) 337 879	AWA	55 2
029004	Ancholme	53 (TF) 032 911	AWA	54 7
029005	Rase	53 (TF) 032 912	AWA	66 6
029009	Ancholme	53 (TF) 033 877	AWA	27 2
030001	Witham	43 (SK) 847 480	AWA	297 9
030002	Barkings Eau	53 (TF) 066 766	AWA	210 1
030003	Bain	53 (TF) 241 611	AWA	197 1
030004	Partney Lymn	53 (TF) 402 676	AWA	61 6
030005	Witham	43 (SK) 927 335	AWA	126 1
030006	Slea	53 (TF) 088 485	AWA	48 4
030011	Bain	53 (TF) 246 795	AWA	62 5
030012	Stainfield Beck	53 (TF) 127 739	AWA	37 4
030013	Heighington Beck	53 (TF) 042 696	AWA	21 2
030014	Ponton Lode	53 (TF) 128 313	AWA	11 9
030015	Cringle Brook	43 (SK) 925 297	AWA	50 5
030017	Witham	43 (SK) 929 246	AWA	51 3
031001	Eye Brook	42 (SP) 853 941	CDWC	60 1
031005	Welland	42 (SP) 970 997	AWA	417 0
031006	Gwash	53 (TF) 038 097	AWA	150 0
031007	Welland	42 (SP) 948 999	AWA	41' 6
031008	East Glen	53 (TF) 068 160	AWA	136 2
031009	West Glen	53 (TF) 074 113	AWA	173 0
031010	Chater	43 (SK) 961 030	AWA	68 9
031011	West Glen	43 (SK) 987 261	AWA	31 6
031012	Tham	53 (TF) 016 179	AWA	24 9
031013	East Glen	53 (TF) 038 273	AWA	71 5
031014	Grimsthorpe Brook	53 (TF) 046 203	AWA	21 0
031015	Chater	43 (SK) 848 037	AWA	18 5
031016	North Brook	43 (SK) 957 089	AWA	36 5
031017	Stonton Brook	42 (SP) 759 918	AWA	42 7
031018	Langton Brook	42 (SP) 755 908	AWA	55 1
031019	Medbourne Brook	42 (SP) 798 939	AWA	27 9
031020	Marcott Brook	43 (SK) 939 018	AWA	19 6
031021 *	Welland	42 (SP) 819 915	AWA	250 7
031022	Jordan	42 (SP) 740 867	AWA	20 8
031023	West Glen	43 (SK) 965 258	AWA	4 4
031024	Holywell Brook	53 (TF) 026 148	AWA	22 3
031025	Gwash South Arm	43 (SK) 875 051	AWA	24 5
031026	Egleton Brook	43 (SK) 878 073	AWA	2 5
031027	Bourne Eau	53 (TF) 107 199	AWA	10 6
031028	Gwash	43 (SK) 951 082	AWA	76 5
032001	Nene	52 (TL) 166 972	AWA	1634 3
032002	Willow Brook	52 (TL) 067 933	AWA	89 6
032003	Harpers Brook	42 (SP) 983 799	AWA	74 3
032004	Isa Brook	42 (SP) 898 715	AWA	194 0
032006	Nene/Kislingbury	42 (SP) 771 592	AWA	223 0
032007	Nene Brampton	42 (SP) 747 617	AWA	232 8
032008	Nene/Kislingbury	42 (SP) 677 607	AWA	107 0
032012 *	Wootton Brook	42 (SP) 736 571	AWA	53 3
032015	Willow Bk Central	42 (SP) 898 892	AWA	7.1
032016	Willow Brook Sth	42 (SP) 901 886	AWA	7 6
032018 *	Isa	42 (SP) 861 831	AWA	62 4
032019	Slade Brook	42 (SP) 873 763	AWA	58 3
032020	Wittering Brook	52 (TL) 089 995	AWA	46 9
032023	Grendon Brook	42 (SP) 883 633	AWA	47.5
032024	Southwick Brook	52 (TL) 025 921	AWA	20 5
032025	Nene/Whilton	42 (SP) 620 658	AWA	63 4
032026	Nene/Brampton	42 (SP) 736 707	AWA	58 0
032027	Billing Brook	52 (TL) 117 949	AWA	24 3
032029 *	Flore	42 (SP) 660 610	AWA	7 0
032030 *	Coton Mill Stream	42 (SP) 669 714	AWA	8 5
032031	Wootton Brook	42 (SP) 726 577	AWA	73 9
033001 *	Bedford Ouse	52 (TL) 369 727	AWA	3030 0
033002	Bedford Ouse	52 (TL) 055 495	AWA	1460 0
033003	Cam	52 (TL) 508 657	AWA	803 0
033004	Lark	52 (TL) 648 760	AWA	466 2
033005	Bedford Ouse	42 (SP) 736 353	AWA	388 5
033006	Wissey	52 (TL) 771 965	AWA	274 5
033007	Nar	53 (TF) 723 119	AWA	153 3
033008 *	Little Ouse	52 (TL) 860 832	AWA	699 0

Station number	River name	Grid reference	Measuring authority	Area (sq km)
033009	Bedford Ouse	42 (SP) 951 565	AWA	1320 0
033011	Little Ouse	52 (TL) 892 801	AWA	128 7
033012	Kym	52 (TL) 155 631	AWA	137 5
033013	Sapiston	52 (TL) 896 791	AWA	205 9
033014	Lark	52 (TL) 758 730	AWA	272 0
033015	Ouzel	42 (SP) 882 408	AWA	277 1
033016 *	Cam	52 (TL) 450 593	AWA	761 5
033018	Tove	42 (SP) 714 488	AWA	138 1
033019	Thet	52 (TL) 880 830	AWA	316 0
033020	Alconbury Brook	52 (TL) 208 717	AWA	201 5
033021	Rhee	52 (TL) 415 523	AWA	303 0
033022	Ivel	52 (TL) 153 509	AWA	541 3
033023	Lea Brook	52 (TL) 662 733	AWA	101 8
033024	Cam	52 (TL) 466 506	AWA	198 0
033025 *	Babingly	53 (TF) 696 256	AWA	39 6
033026	Bedford Ouse	52 (TL) 216 669	AWA	2570 0
033027	Rhee	52 (TL) 333 485	AWA	119 1
033028	Flit	52 (TL) 143 393	AWA	119 6
033029	Stringside	53 (TF) 716 006	AWA	98 8
033030 *	Clipstone Brook	42 (SP) 933 255	AWA	40 2
033031 *	Broughton Brook	42 (SP) 889 408	AWA	66 6
033032	Heacham	53 (TF) 685 375	AWA	59 0
033033	Hiz	52 (TL) 190 379	AWA	108 0
033034	Little Ouse	52 (TL) 851 844	AWA	699 3
033035	Ely Ouse	53 (TF) 588 010	AWA	3430 0
033037	Bedford Ouse	42 (SP) 877 443	AWA	800 0
033039	Bedford Ouse	52 (TL) 160 535	AWA	1660 0
033040	Rhee	52 (TL) 267 401	AWA	
033044	Thet	52 (TL) 957 855	AWA	277 8
033045	Witte	62 (TM) 027 878	AWA	28 3
033046	Thet	52 (TL) 996 923	AWA	145 3
033048	Laring Brook	52 (TL) 928 907	AWA	21 4
033049 *	Stanford Water	52 (TL) 834 953	AWA	43 5
033050	Snail	52 (TL) 631 703	AWA	60 6
033051	Cam	52 (TL) 505 426	AWA	141 0
033052	Swaffham Lode	52 (TL) 553 628	AWA	36 4
033053	Granta	52 (TL) 471 515	AWA	114 0
033054	Babingley	53 (TF) 680 252	AWA	47 7
033055	Granta	52 (TL) 510 504	AWA	98 7
033056	Ouy Water	52 (TL) 531 627	AWA	76 4
033057	Ouzel	42 (SP) 917 241	AWA	119 0
033058	Ouzel	42 (SP) 883 322	AWA	215 0
033059	Cutoff Channel	52 (TL) 729 757	AWA	
033060	Kings Dike	52 (TL) 208 973	AWA	
033062	Guilden Brook	52 (TL) 403 457	AWA	
033063	Little Ouse	52 (TL) 955 807	AWA	101 0
033064	Whaddon Brook	52 (TL) 359 466	AWA	16 0
033065	Hiz	52 (TL) 185 290	AWA	6 8
033066	Granta	52 (TL) 570 464	AWA	59 8
033067	New River	52 (TL) 608 696	AWA	19 6
033068	Chimey Water	52 (TL) 296 411	AWA	5 0
034001	Yare	63 (TG) 182 082	AWA	231 8
034002	Tas	62 (TM) 226 994	AWA	146 5
034003	Bure	63 (TG) 192 296	AWA	164 7
034004	Wensum	63 (TG) 177 128	AWA	536 1
034005	Turf	63 (TG) 170 113	AWA	73 2
034006	Waveney	62 (TM) 229 811	AWA	370 0
034007	Dove	62 (TM) 174 772	AWA	133 9
034008	Ant	63 (TG) 331 270	AWA	49 3
034010	Waveney	62 (TM) 168 782	AWA	149 4
034011	Wensum	53 (TF) 919 294	AWA	127 1
034012	Burn	53 (TF) 842 428	AWA	80 0
034013	Waveney	62 (TM) 364 917	AWA	670 0
034014	Wensum	63 (TG) 020 184	AWA	363 0
034018	Stiffkey	53 (TF) 944 414	AWA	77 1
034019	Bure	63 (TG) 267 194	AWA	313 0
035001	Gipping	62 (TM) 154 441	AWA	310 8
035002	Deben	62 (TM) 322 534	AWA	163 1
035003	Alde	62 (TM) 360 601	AWA	63 9
035004	Ore	62 (TM) 359 583	AWA	54 9
035008	Gipping	62 (TM) 058 578	AWA	128 9
035010	Gipping	62 (TM) 127 465	AWA	298 0
035013	Blyth	62 (TM) 406 769	AWA	92 9
036001 *	Stour	62 (TM) 042 340	EWC	844 3
036002	Glem	52 (TL) 846 472	AWA	87 3
036003	Box	52 (TL) 985 378	AWA	53 9
036004	Chad Brook	52 (TL) 868 459	AWA	47 4
036005	Brett	62 (TM) 025 429	AWA	156 0
036006	Stour	62 (TM) 020 344	AWA	578 0
036007	Belchamp Brook	52 (TL) 848 421	AWA	58 6
036008	Stour	52 (TL) 827 463	AWA	224 5
036009	Brett	52 (TL) 914 525	AWA	25 7
036010	Bumpstead Brook	52 (TL) 689 418	AWA	28 3
036011	Stour Brook	52 (TL) 696 441	AWA	34 5
036012	Stour	52 (TL) 708 450	AWA	78 2
036013	Brett	62 (TM) 032 354	AWA	195 0
036015	Stour	52 (TL) 897 358	AWA	480 7
036016 *	Ramsey	62 (TM) 206 288	AWA	13 9
036017 *	Ely Ouse outfall	52 (TL) 681 559	AWA	
037001	Roding	51 (TQ) 415 884	TWA	303 3
037002	Chelmer	52 (TL) 794 090	AWA	533 9
037003	Ter	52 (TL) 786 107	AWA	77 8
037005	Colne	52 (TL) 962 261	AWA	238 2
037006	Can	52 (TL) 690 072	AWA	228 4
037007	Wid	52 (TL) 686 060	AWA	136 3
037008	Chelmer	52 (TL) 713 071	AWA	190 3
037009	Brain	52 (TL) 818 147	AWA	60 7
037010	Blackwater	52 (TL) 845 158	AWA	247 3
037011	Chelmer	52 (TL) 629 233	AWA	72 6
037012	Colne	52 (TL) 771 364	AWA	65 1
037013	Sandon Brook	52 (TL) 755 055	AWA	60 6
037014	Roding	52 (TL) 561 040	TWA	95 1
037015	Cripsey Brook	52 (TL) 548 035	TWA	62 2
037016	Pant	52 (TL) 668 313	AWA	62 5
037017	Blackwater	52 (TL) 793 243	AWA	139 2
037018	Ingrebourne	51 (TQ) 553 862	TWA	47 9
037019	Beam	51 (TQ) 515 853	TWA	49 7
037020	Chelmer	52 (TL) 670 193	AWA	132 1
037021	Roman	52 (TL) 985 205	AWA	52 6
037022	Holland Brook	62 (TM) 179 212	AWA	54 9
037023 *	Roding	51 (TQ) 442 955	TWA	269 0
037024	Colne	52 (TL) 855 298	AWA	154 2
037025 *	Bourne Brook	52 (TL) 822 276	AWA	32 1
037028 *	Tenpenny Brook	62 (TM) 079 207	AWA	29 0
037027 *	Stispenny Brook	62 (TM) 054 214	AWA	5 1
037028 *	Bentley Brook	62 (TM) 109 193	AWA	12 1
037029 *	St Osyth Brook	62 (TM) 134 159	AWA	8 0
037030 *	Holland Brook	62 (TM) 171 217	AWA	48 6
037031	Crouch	51 (TQ) 748 934	AWA	71 8
037033	Eastwood Brook	51 (TQ) 859 888	AWA	10 4
037034	Mardyke	51 (TQ) 596 806	AWA	90 7
037036	Ely Ouse Outfall	52 (TL) 646 351	AWA	
037037	Toppesfield Brook	52 (TL) 675 377	AWA	13
037038 *	Wid	52 (TL) 672 000	AWA	98 6
037039	Blackwater	52 (TL) 835 090	AWA	337 0
038001 *	Lee	52 (TL) 390 092	TWA	1036 0
038002	Ash	52 (TL) 393 148	TWA	78 7
038003	Mimram	52 (TL) 282 133	TWA	133 9
038004	Rib	52 (TL) 360 174	TWA	136 5
038005 *	Ash	52 (TL) 380 138	TWA	85 2
038006 *	Rib	52 (TL) 335 158	TWA	148 3
038007	Canons Brook	52 (TL) 431 104	TWA	21 4
038011 *	Mimram	52 (TL) 225 169	TWA	98 7
038012	Stevenage Brook	52 (TL) 274 217	TWA	36 0
038013	Upper Lee	52 (TL) 118 185	TWA	70 7
038014	Salmon Brook	51 (TQ) 343 937	TWA	20 5
038015 *	Intercepting dr	51 (TQ) 355 932	TWA	7 4
038016	Stanstead Springs	52 (TL) 500 246	TWA	20 5
038017	Mimram	52 (TL) 184 212	TWA	29 1
038018	Upper Lee	52 (TL) 299 099	TWA	150 0
038020	Cobbins Brook	51 (TQ) 387 999	TWA	38 4
038021	Turkey Brook	51 (TQ) 359 985	TWA	42 2
038022	Pymmes Brook	51 (TQ) 340 925	TWA	42 6
038023	Lee flood relief	51 (TQ) 356 880	TWA	1243 0
038024	Small River Lee	51 (TQ) 370 988	TWA	41 5
038026	Pincey Brook	52 (TL) 495 126	TWA	54 6
038027	Start	52 (TL) 393 093	TWA	280 2
038028	Stanstead Brook	52 (TL) 506 241	TWA	25 9
038029	Quin	52 (TL) 392 248	TWA	50 4
038030	Beane	52 (TL) 325 131	TWA	75 1
039001	Thames	51 (TQ) 177 698	TWA	9948 0
039002	Thames	41 (SU) 568 935	TWA	3444 7
039003	Wandle	51 (TQ) 265 705	TWA	176 1
039004	Wandle	51 (TQ) 296 655	TWA	122 0
039005	Beverley Brook	51 (TQ) 216 717	TWA	43 6
039006	Windrush	42 (SP) 402 019	TWA	362 6
039007	Blackwater	41 (SU) 731 648	TWA	354 8
039008	Thames	42 (SP) 445 087	TWA	1616 2
039010	Colne	51 (TQ) 052 864	TWA	743 0
039011	Wey	41 (SU) 874 433	TWA	396 3
039012	Hogsmill	51 (TQ) 182 688	TWA	69 1
039013	Colne	51 (TQ) 123 987	TWA	352 2
039014	Ver	52 (TL) 151 016	TWA	132 0
039016	Kennet	41 (SU) 649 708	TWA	1033 4
039017	Ray	42 (SP) 680 211	TWA	18 6
039019	Lambourn	41 (SU) 470 682	TWA	234 1
039020	Cole	42 (SP) 122 062	TWA	106 7
039021	Cherwell	42 (SP) 482 183	TWA	551 7
039022	Loddon	41 (SU) 720 652	TWA	164 5
039023	Wye	41 (SU) 896 867	TWA	137 3
039025	Enbourne	41 (SU) 568 648	TWA	147 6
039026	Cherwell	42 (SP) 458 411	TWA	199 4
039027	Pang	41 (SU) 634 766	TWA	170 9
039028	Dun	41 (SU) 321 685	TWA	101 3
039029	Tilingbourne	51 (TQ) 000 478	TWA	59 0
039030	Gade	51 (TQ) 082 952	TWA	184 0
039031 *	Lambourn	41 (SU) 411 731	TWA	176 0
039032 *	Lambourn	41 (SU) 390 745	TWA	154 0
039033	Winterbourne St	41 (SU) 453 694	TWA	49 2
039034	Evenlode	42 (SP) 448 099	TWA	430 0
039035	Churn	41 (SU) 076 963	TWA	124 3
039036	Law Brook	51 (TQ) 045 468	TWA	16 0
039037	Kennet	41 (SU) 187 686	TWA	142 0
039038	Thame	42 (SP) 670 055	TWA	443 0
039040	Thames	41 (SU) 094 942	TWA	185 0
039042	Leach	41 (SU) 227 994	TWA	76 9
039043	Kennet	41 (SU) 295 710	TWA	295 0
039044	Hart	41 (SU) 755 593	TWA	84 0
039046	Thames	41 (SU) 516 946	TWA	3414 0
039049	Silk Stream	51 (TQ) 217 895	TWA	29 0
039051	Sor Brook	42 (SP) 475 346	TWA	106 4
039052	Thn Cut	41 (SU) 853 713	TWA	50 2
039053	Mole	51 (TQ) 271 434	TWA	89 9
039054	Mole	51 (TQ) 260 399	TWA	31 8
039055	Yeading Bk West	51 (TQ) 083 846	TWA	17 6
039056	Ravensbourne	51 (TQ) 372 732	TWA	67 6
039057	Crane	51 (TQ) 103 778	TWA	61 7
039058	Pool	51 (TQ) 371 725	TWA	38 3
039061	Letcombe Brook	41 (SU) 375 853	TWA	2 7
039065	Ewelme Brook	41 (SU) 642 916	TWA	13 4
039068	Mole	51 (TQ) 179 502	TWA	316 0
039069	Mole	51 (TQ) 262 462	TWA	142 0
039071	Thames	41 (SU) 007 973	TWA	63 7
039072	Thames	41 (SU) 982 773	TWA	7046 0
039073	Churn	42 (SP) 020 028	TWA	84 0
039074	Amipney Brook	41 (SU) 105 950	TWA	74 4
039075	Marston Meysey Bk	41 (SU) 128 964	TWA	25 0
039076	Windrush	42 (SP) 299 107	TWA	296 0
039077	Og	41 (SU) 194 697	TWA	59 2
039078	Wey(north)	41 (SU) 838 465	TWA	191 1
039079	Wey	51 (TQ) 068 641	TWA	1008 0
039081	Ock	41 (SU) 481 966	TWA	234 0
039085 *	Wandle	51 (TQ) 266 703	TWA	176 1
039086	Gatwick Stream	51 (TQ) 285 417	TWA	33 6
039087	Ray	41 (SU) 171 935	TWA	84 3
039088	Chess	51 (TQ) 066 947	TWA	105 0
039089	Gade	52 (TL) 053 077	TWA	48 2
039090	Cole	41 (SU) 208 970	TWA	140 0
039091	Misbourne	41 (SU) 975 963	TWA	66 3
039092	Dollis Brook	51 (TQ) 240 895	TWA	25 1
039093	Brent	51 (TQ) 202 850	TWA	117 6
039094	Crane	51 (TQ) 154 734	TWA	81 0
039095	Quaggy	51 (TQ) 394 748	TWA	
039096	Wealdstone Brook	51 (TQ) 192 862	TWA	21 7
039097	Thames	41 (SU) 230 981	TWA	997 0
039098	Pen	51 (TQ) 062 826	TWA	33 3
039099	Amipney Brook	42 (SP) 076 013	TWA	45 3
039100	Swill Brook	31 (ST) 997 927	TWA	53 3
039101	Aldbourne	41 (SU) 288 777	TWA	53 3
039102	Misbourne	51 (TQ) 046 866	TWA	136 0
040001 *	Medway	51 (TQ) 407 353	SWA	26 9

Station number	River name	Grid reference	Measuring authority	Area (sq km)
040002 *	Darwel	51 (TQ) 722 213	SWA	9 6
040003	Medway	51 (TQ) 708 530	SWA	1256 1
040004	Rother	51 (TQ) 773 245	SWA	206 0
040005	Beult	51 (TQ) 758 478	SWA	277 1
040006	Bourne	51 (TQ) 632 497	SWA	50 3
040007	Medway	51 (TQ) 517 405	SWA	255.1
040008	Great Stour	61 (TR) 049 470	SWA	230 0
040009	Teise	51 (TQ) 718 399	SWA	136 2
040010	Eden	51 (TQ) 520 437	SWA	224.3
040011	Great Stour	61 (TR) 116 554	SWA	345 0
040012	Darent	51 (TQ) 551 718	TWA	191 4
040013	Darent	51 (TQ) 525 584	TWA	100 5
040014 *	Wingham	61 (TR) 276 576	SWA	37 7
040015	White Oram	61 (TR) 055 606	SWA	3' 8
040016	Cray	51 (TQ) 511 746	TWA	'19 7
040017	Dudwell	51 (TQ) 679 240	SWA	27 5
040018	Darent	51 (TQ) 530 643	TWA	118 4
040020	Ercge Stream	51 (TQ) 522 367	SWA	53 7
040021 *	Hexden Channel	51 (TQ) 813 290	SWA	32 4
040022	Great Stour	51 (TQ) 973 423	SWA	72 5
040023	East Stour	61 (TR) 015 407	SWA	58 8
040024 *	Bartley Mill St	51 (TQ) 633 357	SWA	25 1
041001	Nunningham Stream	51 (TQ) 662 129	SWA	16 9
041002	Ash Bourne	51 (TQ) 684 141	SWA	18 4
041003	Cuckmere	51 (TQ) 533 051	SWA	'34 7
041004	Ouse	51 (TQ) 433 148	SWA	395 7
041005	Ouse	51 (TQ) 429 2'4	SWA	'80 9
041006	Uck	51 (TQ) 459 190	SWA	87 8
041009 *	Rother	51 (TQ) 034 178	SWA	345 8
041010	Adur W Branch	51 (TQ) '78 197	SWA	'09 :
041011	Rother	41 (SU) 852 229	SWA	'54 0
041012	Adur E Branch	51 (TQ) 219 190	SWA	93 3
041013	Huggletts Stream	51 (TQ) 871 138	SWA	14 2
041014	Arun	51 (TQ) 047 229	SWA	379 0
041015	Ems	41 (SU) 755 074	SWA	58 3
041016	Cuckmere	51 (TQ) 611 150	SWA	18 7
041017	Combehaven	51 (TQ) 765 102	SWA	30 5
041018	Kird	51 (TQ) 044 256	SWA	66 8
041019	Arun	51 (TQ) 117 331	SWA	139 0
041020	Bevern Stream	51 (TQ) 423 161	SWA	34 6
041021	Clayhill Stream	51 (TQ) 448 153	SWA	7 1
041022	Lod	41 (SU) 931 223	SWA	52 0
041023	Lavant	41 (SU) 871 064	SWA	87 2
041024	Shell Brook	51 (TQ) 335 286	SWA	22 6
041025	Loxwood Stream	51 (TQ) 060 309	SWA	91 6
041026	Cockhaise Brook	51 (TQ) 376 262	SWA	36 1
041027	Rother	41 (SU) 772 270	SWA	37 2
041028	Chess Stream	51 (TQ) 217 173	SWA	24 0
041029	Bull	51 (TQ) 575 131	SWA	40 8
041030	Ouse	51 (TQ) 333 283	SWA	37 2
042001	Wallington	41 (SU) 587 075	SWA	1'1 0
042003	Lymington	41 (SU) 318 0'9	SWA	98 9
042004	Test	41 (SU) 354 188	SWA	1040 0
042005	Wallop Brook	41 (SU) 311 330	SWA	53 6
042006	Meon	41 (SU) 589 141	SWA	72 8
042007	Aire	41 (SU) 574 326	SWA	57 0
042008	Cheriton Stream	41 (SU) 574 323	SWA	75 1
042009	Candover Stream	41 (SU) 568 323	SWA	71 2
042010	Itchen	41 (SU) 467 2'3	SWA	360 0
042011	Hamble	41 (SU) 523 149	SWA	56 6
042012	Anton	41 (SU) 379 393	SWA	185 0
042014	Blackwater	41 (SU) 328 174	SWA	104 7
042016 *	Itchen	41 (SU) 512 325	SWA	236 8
042021 *	Branch of Test	41 (SU) 355 159	SWA	1050 0
043001 *	Avon	41 (SU) '42 054	WWA	1649 8
043003	Avon	4' (SU) '58 154	WWA	1477 8
043004	Bourne	4' (SU) '57 304	WWA	163 6
043005	Avon	4' (SU) '51 413	WWA	323 7
043006	Nadder	4' (SU) 098 308	WWA	220 6
043007	Stour	40 (SZ) '13 958	WWA	1073 0
043008	Wylye	4' (SU) 086 343	WWA	445 4
043009	Stour	3' (ST) 820 147	WWA	523 1
043010 *	Allen	41 (SU) 006 085	WWA	94 0
043011 *	Ebble	41 (SU) 162 263	WWA	109 0
043012	Wylye	31 (ST) 909 428	WWA	1'2 4
043013 *	Mude	40 (SZ) 184 936	WWA	12 4
043014	East Avon	41 (SU) 133 559	WWA	86 2
043015 *	Wylye	31 (ST) 868 4'3	WWA	69 0
043017	West Avon	41 (SU) 133 559	WWA	76 0
043018	Allen	41 (SU) 008 007	WWA	176 5
043019	Shreen Water	31 (ST) 807 278	WWA	29 '
043021	Avon	40 (SZ) 155 943	WWA	1706 0
044001	Frome	30 (SY) 866 867	WWA	414 4
044002	Piddle	30 (SY) 9'3 876	WWA	183 1
044003 *	Asker	30 (SY) 470 928	WWA	49 '
044004	Frome	30 (SY) 708 903	WWA	206 0
044006	Syding Water	30 (SY) 632 997	WWA	12 4
044008 *	Sth Winterbourne	30 (SY) 629 897	WWA	19 9
044009	Wey	30 (SY) 666 839	WWA	7 0
045001	Exe	21 (SS) 936 016	SWWA	600 9
045002	Exe	21 (SS) 943 178	SWWA	421 7
045003	Culm	31 (ST) 021 058	SWWA	226 1
045004	Axe	30 (SY) 262 953	SWWA	288 5
045005	Otter	30 (SY) 087 885	SWWA	202 5
045006 *	Quarme	21 (SS) 9'9 356	SWWA	20 4
045008	Otter	30 (SY) 115 986	SWWA	104 2
045009	Exe	21 (SS) 935 260	SWWA	147 6
045010 *	Haddeo	21 (SS) 952 294	SWWA	50 0
0450'1 *	Barle	21 (SS) 927 258		128 0
0450'2	Creedy	20 (SX) 901 967	SWWA	261 6
046002	Teign	20 (SX) 856 746	SWWA	380 0
046003	Dart	20 (SX) 751 659	SWWA	247 6
046005	East Dart	20 (SX) 657 775	SWWA	21 5
046006	Erme	20 (SX) 642 532	SWWA	43 5
046007 *	West Dart	20 (SX) 643 742	SWWA	47 9
046008 *	Avon	20 (SX) 719 476	SWWA	102 3
047001	Tamar	20 (SX) 426 725	SWWA	916 9
047003 *	Tavy	20 (SX) 474 650	SWWA	205 9
047004	Lyner	20 (SX) 368 624	SWWA	135 5
047005 *	Ottery	20 (SX) 336 866	SWWA	120 7
047006 *	Lyd	20 (SX) 388 842	SWWA	218 1
047007	Yealm	20 (SX) 574 511	SWWA	54 9
047008	Thrushel	20 (SX) 398 856	SWWA	112 7
047009	Tiddy	20 (SX) 343 595	SWWA	37 2
047010	Tamar	20 (SX) 290 991	SWWA	76 7
047011 *	Plym	20 (SX) 522 613	SWWA	79 2
047013	Witley Brook	20 (SX) 244 763	SWWA	16 2
047014	Walkham	20 (SX) 513 699	SWWA	43 2
047015	Tavy	20 (SX) 476 68'	SWWA	197 3
047016	Lumburn	20 (SX) 459 731	SWWA	20 5
047017	Wolf	20 (SX) 419 898	SWWA	31 '
048001	Fowey	20 (SX) 227 698	SWWA	36 8
048002 *	Fowey	20 (SX) 108 613	SWWA	171 2
048003	Fal	10 (SW) 921 447	SWWA	87 0
048004	Warleggan	20 (SX) 159 674	SWWA	25 3
048005	Kenwyn	10 (SW) 820 450	SWWA	19 1
048006	Cober	10 (SW) 654 273	SWWA	40 1
048007	Kennall	10 (SW) 762 377	SWWA	26 6
048009 *	St Neot	20 (SX) 184 662	SWWA	22 7
0480'0	Seaton	20 (SX) 299 596	SWWA	38 1
048011	Fowey	20 (SX) 098 624	SWWA	169 1
049001	Camel	20 (SX) 017 682	SWWA	208 8
049002	Kaye	10 (SW) 549 342	SWWA	48 9
049003	De Lank	20 (SX) 132 765	SWWA	21 7
049004	Gannel	10 (SW) 829 593	SWWA	41 0
050001	Taw	21 (SS) 608 237	SWWA	826 2
050002	Torridge	21 (SS) 500 '85	SWWA	663 0
050004 *	Hole Water	21 (SS) 705 373	SWWA	5 4
050005	West Okement	20 (SX) 557 903	SWWA	13 3
050006	Mole	21 (SS) 660 211	SWWA	327 5
050007	Taw	21 (SS) 673 068	SWWA	'71 4
051001	Donford Stream	31 (ST) 088 428	WWA	75 8
051002 *	Horner Water	21 (SS) 898 458	WWA	20 8
051003	Washford	31 (ST) 040 395	WWA	36 3
052001 *	Axe	31 (ST) 527 458	WWA	18 2
052002 *	Yeo	31 (ST) 556 1'6	WWA	30 3
052003	Hase Water	31 (ST) 706 253	WWA	87 8
052004	Isle	31 (ST) 361 188	WWA	90 1
052005	Tone	31 (ST) 206 250	WWA	202 0
052006	Yeo	31 (ST) 573 162	WWA	213 1
052007	Parrett	31 (ST) 461 144	WWA	74 8
052008 *	Tone	31 (ST) 044 313	WWA	18 1
052009	Sheppey	31 (ST) 498 439	WWA	59 6
052010	Brue	31 (ST) 590 318	WWA	135 2
052011	Cary	31 (ST) 498 291	WWA	82 4
052014	Tone	31 (ST) 078 202	WWA	57 2
052015 *	Land Yeo	31 (ST) 483 716	WWA	23 3
052016	Curypoo Stream	31 (ST) 721 382	WWA	15 7
052017 *	Congresbury Yeo	31 (ST) 452 631	WWA	66 6
052020 *	Galica Stream	31 (ST) 571 100	WWA	16 4
053001 *	Avon	31 (ST) 903 64'	WWA	665 6
053002	Semington Brook	31 (ST) 907 605	WWA	157 7
053003 *	Avon	31 (ST) 753 645	WWA	'595 0
053004	Chew	31 (ST) 648 647	WWA	129 5
053005	Midford Brook	31 (ST) 763 61'	WWA	147 4
053006	Frome(Bristol)	31 (ST) 637 777	WWA	148 9
053007	Frome(Somerset)	31 (ST) 805 564	WWA	261 6
053008	Avon	31 (ST) 966 832	WWA	303 0
053009	Willow Brook	31 (ST) 741 58'	WWA	72 6
053013	Marden	31 (ST) 955 729	WWA	99 2
053017	Boyd	31 (ST) 681 698	WWA	48 0
053018	Avon	31 (ST) 786 671	WWA	1552 0
053019	Woodbridge Brook	31 (ST) 949 866	WWA	46 6
053020	Gauze Brook	31 (ST) 937 840	WWA	28 2
053022 *	Avon	31 (ST) 738 651	WWA	1605 0
053023	Sherston Avon	31 (ST) 891 870	WWA	89 7
053024	Tetbury Avon	31 (ST) 914 893	WWA	73 6
053025	Mells	31 (ST) 757 491	WWA	119 0
053026	Frome(Bristol)	31 (ST) 667 822	WWA	78 5
053028	By Brook	31 (ST) 815 688	WWA	102 0
053029	Biss		WWA	
054001	Severn	32 (SO) 782 762	STWA	4325 0
054002	Avon	42 (SP) 040 438	STWA	2710 0
054004	Sowe	42 (SP) 332 731	STWA	262 0
054005	Severn	33 (SJ) 412 144	STWA	2025 0
054006	Stour	32 (SO) 829 768	STWA	324 0
054007	Arrow	42 (SP) 086 536	STWA	319 0
054008	Teme	32 (SO) 597 686	STWA	1'34 4
054010 *	Stour	42 (SP) 208 507	STWA	319 0
054011 *	Salwarpe	32 (SO) 868 618	STWA	184 0
054012	Tern	33 (SJ) 592 123	STWA	852 0
054013 *	Clywedog	22 (SN) 944 855	STWA	57 0
054014	Severn	32 (SO) 164 958	STWA	580 0
054015 *	Bow Brook	32 (SO) 927 463	STWA	156 0
054016	Roden	33 (SJ) 589 141	STWA	259 0
054017 *	Leadon	32 (SO) 777 234	STWA	293 0
054018	Rea Brook	33 (SJ) 466 092	STWA	178 0
054019	Avon	42 (SP) 333 715	STWA	347 0
054020	Perry	33 (SJ) 434 192	STWA	180 8
054022	Severn	22 (SN) 853 872	IH	8 7
054023 *	Bacsey Brook	42 (SP) 063 449	STWA	95 8
054024	Worfe	32 (SO) 747 953	STWA	258 0
054025	Duras	22 (SN) 950 824	STWA	'52 7
054026 *	Chelt	32 (SO) 892 264	STWA	34 5
054027 *	Frome	32 (SO) 831 047	STWA	198 0
054028	Vyrnwy	33 (SJ) 252 195	STWA	778 0
054029	Teme	32 (SO) 735 557	STWA	1480 0
054032	Severn	32 (SO) 863 390	STWA	6850 0
054034	Dowles Brook	32 (SO) 768 764	STWA	40 8
054036 *	Isbourne	42 (SP) 023 408	STWA	90 7
054038	Tanat	33 (SJ) 252 225	STWA	229 0
054040	Meese	33 (SJ) 680 205	STWA	167 8
054041	Tern	33 (SJ) 649 230	STWA	192 0
054042 *	Clywedog	22 (SN) 914 867	STWA	49 0
054043 *	Severn	32 (SO) 863 399	STWA	6850 0
054044	Tern	33 (SJ) 629 316	STWA	97 6
054045 *	Perry	33 (SJ) 347 303	STWA	49 1
054046 *	Worfe	33 (SJ) 781 046	STWA	54 9
054047 *	Perry	33 (SJ) 403 223	STWA	155 0
054048 *	Dene	42 (SP) 273 556	STWA	102 0
054052	Bailey Brook	33 (SJ) 629 316	STWA	34 4
054054 *	Onny	32 (SO) 455 789	STWA	235 0
054055 *	Rea	32 (SO) 664 724	STWA	129 0
054056 *	Clun	32 (SO) 393 786	STWA	195 0

Station number	River name	Grid reference	Measuring authority	Area (sq km)
054057	Severn	32 (SO) 844 779	STWA	9895 0
054058 *	Stoke Park Brook	33 (SJ) 644 260	STWA	14 3
054059 *	Alford Brook	33 (SJ) 654 223	STWA	10 2
054060 *	Potford Brook	33 (SJ) 634 220	STWA	25 0
054061 *	Hodnet Brook	33 (SJ) 628 288	STWA	5 1
054062 *	Stoke Brook	33 (SJ) 637 280	STWA	13 7
054063 *	Stour	32 (SO) 865 858	STWA	89 9
054065 *	Roden	33 (SJ) 565 241	STWA	210 0
054066 *	Platt Brook	33 (SJ) 628 229	STWA	15 7
054067 *	Smestow Brook	32 (SO) 861 906	STWA	81 3
054068 *	Tetchill Brook	33 (SJ) 379 288	STWA	21 2
054069 *	Springs Brook	33 (SJ) 387 297	STWA	10 4
054070 *	War Brook	33 (SJ) 432 198	STWA	22 5
054080 *	Severn	22 (SN) 996 851	STWA	187 0
054081	Clywedog	22 (SN) 913 868	STWA	49 0
054083 *	Crow Brook	33 (SJ) 678 141	STWA	16 7
054084 *	Cannop Brook	32 (SO) 616 075	STWA	31 5
054085 *	Cannop Brook	32 (SO) 609 115	STWA	1 0 4
054086	Cowney Diversion	23 (SH) 999 179	STWA	3 2
054087 *	Alford Brook	33 (SJ) 667 228	STWA	4 7
054088	Little Avon	3 (ST) 683 988	WWA	134 0
054090 *	Tanllwyth	22 (SN) 844 876	IH	0 9
054091 *	Severn	22 (SN) 843 878	IH	3 6
054092 *	Hore	22 (SN) 846 873	IH	3 2
054094	Strine	33 (SJ) 640 175	STWA	134 0
054095	Severn	33 (SJ) 644 044	STWA	3717 0
055002	Wye	32 (SO) 485 388	WELS	1895 9
055003 *	Lugg	32 (SO) 548 405	WELS	885 8
055004 *	Irfon	22 (SN) 892 460	WELS	72 8
055005 *	Wye	22 (SN) 969 676	WELS	166 8
055006 *	Elan	22 (SN) 926 645	STWA	184 0
055007	Wye	32 (SO) 076 445	WELS	1282 1
055008	Wye	22 (SN) 829 838	IH	10 6
055009 *	Monnow	32 (SO) 419 251	WELS	357 4
055010 *	Wye	22 (SN) 843 825	WELS	27 2
055011 *	Ithon	32 (SO) 105 683	WELS	111 4
055012	Irfon	22 (SN) 995 507	WELS	244 2
055013	Arrow	32 (SO) 328 585	WELS	126 4
055014	Lugg	32 (SO) 364 647	WELS	203 3
055015 *	Honddu	32 (SO) 277 294	WELS	25 1
055016	Ithon	32 (SO) 024 578	WELS	358 0
055017 *	Chwefru	22 (SN) 998 531	WELS	29 0
055018	Frome	32 (SO) 615 428	WELS	144 0
055021	Lugg	32 (SO) 502 589	WELS	371 0
055022 *	Trothy	32 (SO) 503 112	WELS	142 0
055023	Wye	32 (SO) 528 110	WELS	4010 0
055025	Llynf	32 (SO) 166 373	WELS	137 0
055026	Wye	22 (SN) 976 676	WELS	174 0
055027 *	Rudhall Brook	32 (SO) 641 257	WELS	13 7
055028	Frome	32 (SO) 667 489	WELS	77 7
055029	Monnow	32 (SO) 415 249	WELS	354 0
055030 *	Cleerwen	22 (SN) 910 620	WELS	95 3
055031	Yazor Brook	32 (SO) 492 415	WELS	42 3
055032	Elan	22 (SN) 934 653	WELS	184 0
055033 *	Wye	22 (SN) 824 853	IH	3 9
055034 *	Cyff	22 (SN) 824 842	IH	3 1
055035 *	Iago	22 (SN) 826 854	IH	1 1
056001	Usk	32 (SO) 345 056	WELS	911 7
056002	Ebbw	31 (ST) 259 889	WELS	216 5
056003 *	Honddu	32 (SO) 051 297	WELS	62 1
056004 *	Usk	32 (SO) 127 203	WELS	543 9
056005	Lwyd	31 (ST) 330 924	WELS	98 1
056006 *	Usk	22 (SN) 947 295	WELS	183 8
056007	Senni	22 (SN) 928 255	WELS	19 9
056008 *	Monks Ditch	3 (ST) 372 885	WELS	15 4
056010 *	Usk	32 (SO) 358 042	WELS	927 2
056011 *	Sirhowy	3 (ST) 206 912	WELS	76 1
056012 *	Grwyne	32 (SO) 241 176	WELS	82 2
056013	Yscir	32 (SO) 003 304	WELS	62 8
056014 *	Usk	22 (SN) 840 290	WELS	17 0
056015 *	Olway Brook	32 (SO) 384 010	WELS	105 1
056016	Caerfanel outfall	32 (SO) 104 206	WELS	32 4
057001 *	Taf Fechan	32 (SO) 060 117	WELS	33 7
057002 *	Taf Fawr	32 (SO) 012 111	WELS	43 0
057003 *	Taff	31 (ST) 132 818	WELS	486 9
057004	Cynon	31 (ST) 079 956	WELS	106 0
057005	Taff	31 (ST) 079 897	WELS	454 8
057006	Rhondda	31 (ST) 054 909	WELS	100 5
057007	Taff	31 (ST) 089 951	WELS	194 5
057008	Rhymney	31 (ST) 225 821	WELS	178 7
057009	Ely	31 (ST) 121 770	WELS	145 0
057010	Ely	31 (ST) 034 827	WELS	39 4
057011 *	Blaen Taf Fawr	22 (SN) 987 193	WELS	5 1
057012 *	Garwnant	32 (SO) 004 129	WELS	43 1
057015	Taff	32 (SO) 043 068	WELS	104 1
057016	Taf Fechan	32 (SO) 060 115	WELS	33 8
058001	Ogmore	21 (SS) 904 794	WELS	158 0
058002	Neath	22 (SN) 815 017	WELS	190 9
058003 *	Ewenny	21 (SS) 914 780	WELS	62 9
058005	Ogmore	21 (SS) 904 844	WELS	74 3
058006	Melte	22 (SN) 915 082	WELS	65 8
058007	Llynf	21 (SS) 891 855	WELS	50 2
058008	Dulas	22 (SN) 778 008	WELS	43 0
058009	Ewenny	21 (SS) 920 782	WELS	62 5
058010 *	Hepste	22 (SN) 969 134	WELS	11 0
058011	Thaw	31 (ST) 017 716	WELS	49 2
058012	Afan	21 (SS) 771 910	WELS	87 8
059001	Tawe	21 (SS) 685 998	WELS	227 7
059002	Loughor	22 (SN) 623 127	WELS	46 4
060002	Cothi	22 (SN) 508 225	WELS	297 8
060003	Taf	22 (SN) 238 160	WELS	217 3
060004 *	Dewi Fawr	22 (SN) 290 175	WELS	40 1
060005	Bran	22 (SN) 771 343	WELS	66 8
060006	Gwil	22 (SN) 431 220	WELS	129 5
060007	Tywi	22 (SN) 762 362	WELS	731 8
060008	Tywi	22 (SN) 786 472	WELS	89 8
060009 *	Sawdde	22 (SN) 712 266	WELS	81 1
060010	Tywi	22 (SN) 485 206	WELS	1090 4
060012 *	Twrch	22 (SN) 650 440	WELS	20 7
060013 *	Cothi	22 (SN) 537 301	WELS	281 6
061001 *	Western Cleddau	12 (SM) 954 177	WELS	197 6
061002	Eastern Cleddau	22 (SN) 072 153	WELS	183 1
061003	Gwaun	22 (SN) 005 349	WELS	31 3
061004	Western Cleddau	12 (SM) 942 184	WELS	97 6
062001	Taf	22 (SN) 244 416	WELS	893 6
062002 *	Taf	22 (SN) 433 406	WELS	510 0
063001	Ystwyth	22 (SN) 591 774	WELS	69 6
063002 *	Rheidol	22 (SN) 601 804	WELS	82 1
063003 *	Wyre	22 (SN) 542 698	WELS	40 6
063004	Ystwyth	22 (SN) 791 737	WELS	
064001	Dyfi	23 (SH) 745 019	WELS	471 3
064002	Dysynni	23 (SH) 632 066	WELS	75 1
064006	Leri	22 (SN) 635 882	WELS	47 2
065001	Glaslyn	23 (SH) 592 478	WELS	68 6
065002 *	Dwyryd	23 (SH) 670 415	WELS	78 2
065004	Gwyrfa	23 (SH) 484 599	WELS	47 9
065005	Erch	23 (SH) 400 404	WELS	18 1
065006	Seiont	23 (SH) 493 623	WELS	74 4
065007	Dwyfawr	23 (SH) 499 429	WELS	52 4
066001 *	Clwyd	33 (SJ) 069 709	WELS	404 0
066002 *	Elwy	33 (SJ) 021 704	WELS	220 0
066003	Aled	23 (SH) 957 703	WELS	70 0
066004 *	Wheeler	33 (SJ) 105 714	WELS	62 9
066005 *	Clwyd	33 (SJ) 122 592	WELS	95 3
066006	Elwy	23 (SH) 952 718	WELS	194 0
066008	Aled	23 (SH) 915 598	WELS	11 6
066011 *	Conwy	23 (SH) 802 581	WELS	344 5
067001 *	Dee	23 (SH) 942 357	WELS	261 6
067002 *	Dee	33 (SJ) 357 413	WELS	1040 0
067003	Brenig	23 (SH) 974 539	WELS	20 2
067005 *	Cernog	33 (SJ) 295 373	WELS	13 7
067006	Alwen	33 (SJ) 042 436	WELS	184 7
067008	Alyn	33 (SJ) 336 541	WELS	227 1
067009	Alyn	33 (SJ) 206 667	WELS	77 8
067010 *	Gelyn	23 (SH) 843 420	WELS	13 1
067011 *	Nant Aberderfel	23 (SH) 851 392	WELS	3 7
067012 *	Tryweryn	23 (SH) 838 398	WELS	27 2
067013 *	Hirnant	23 (SH) 946 349	WELS	33 9
067015	Dee	33 (SJ) 348 415	WELS	1019 3
067016 *	Worthenbury Brook	33 (SJ) 418 464	WELS	142 1
067017	Tryweryn	23 (SH) 880 399	WELS	59 9
067018	Dee	23 (SH) 874 308	WELS	53 9
067025 *	Clywedog	33 (SJ) 396 483	WELS	98 6
067026 *	Dee	33 (SJ) 415 617	WELS	1816 8
067028 *	Ceidog	33 (SJ) 034 371	WELS	36 5
067029	Trystion	33 (SJ) 066 405	WELS	12 3
068001	Weaver	33 (SJ) 670 633	NWWA	622 0
068002 *	Gowy	33 (SJ) 443 714	NWWA	156 2
068003	Dane	33 (SJ) 668 718	NWWA	407 1
068004	Wistaston Brook	33 (SJ) 674 552	NWWA	92 7
068005	Weaver	33 (SJ) 653 431	NWWA	207 0
068006 *	Dane	33 (SJ) 845 644	NWWA	150 0
068007 *	Wincham Brook	33 (SJ) 697 757	NWWA	148 0
068010 *	Fender	33 (SJ) 281 880	NWWA	18 4
068015	Gowy	33 (SJ) 497 624	NWWA	49 0
068018 *	Dane	33 (SJ) 861 632	NWWA	145 0
068019	Weaver	33 (SJ) 574 762	NWWA	1370 0
068020	Gowy	33 (SJ) 448 711	NWWA	156 0
069001	Mersey	33 (SJ) 728 936	NWWA	679 0
069002	Irwell	33 (SJ) 824 987	NWWA	559 4
069003	Irk	33 (SJ) 841 992	NWWA	72 5
069004 *	Etherow	43 (SK) 023 971	NWWA	78 2
069005 *	Glaze Brook	33 (SJ) 685 939	NWWA	152 0
069006	Bollin	33 (SJ) 727 875	NWWA	256 0
069007	Mersey	33 (SJ) 772 936	NWWA	660 0
069008	Dean	33 (SJ) 846 830	NWWA	51 8
069011	Micker Brook	33 (SJ) 855 889	NWWA	67 3
069012	Bollin	33 (SJ) 850 815	NWWA	72 5
069013	Sinderland Brook	33 (SJ) 726 905	NWWA	44 8
069015	Etherow	33 (SJ) 962 908	NWWA	156 0
069017	Goyt	33 (SJ) 964 898	NWWA	183 0
069018 *	Newton Brook	33 (SJ) 585 933	NWWA	32 8
069019 *	Worsley Brook	33 (SJ) 753 980	NWWA	24 9
069020	Medlock	33 (SJ) 849 975	NWWA	57 5
069023	Roch	34 (SD) 807 077	NWWA	186 0
069024	Croal	34 (SD) 743 068	NWWA	145 0
069027	Tame	33 (SJ) 906 918	NWWA	150 0
069030	Sankey Brook	33 (SJ) 588 922	NWWA	154 0
069031 *	Ditton Brook	33 (SJ) 457 865	NWWA	47 9
069032	Alt	33 (SJ) 392 983	NWWA	90 1
069034 *	Musbury Brook	34 (SD) 775 213	NWWA	3 1
069035 *	Irwell	34 (SD) 797 109	NWWA	155 0
069037	Mersey	33 (SJ) 617 877	NWWA	2030 0
069040 *	Irwell	34 (SD) 793 188	NWWA	105 0
070002	Douglas	34 (SD) 476 126	NWWA	198 0
070003 *	Douglas	34 (SD) 587 061	NWWA	55 3
070004	Yarrow	34 (SD) 498 180	NWWA	74 4
070005	Lostock	34 (SD) 497 197	NWWA	56 0
071001	Ribble	34 (SD) 589 304	NWWA	1145 0
071003 *	Croasdale	34 (SD) 706 546	NWWA	10 4
071004	Calder	34 (SD) 729 360	NWWA	316 0
071005 *	Bottoms Beck	34 (SD) 745 565	NWWA	10 6
071006	Ribble	34 (SD) 722 392	NWWA	456 0
071007 *	Ribble	34 (SD) 709 379	NWWA	720 0
071008	Hodder	34 (SD) 704 399	NWWA	261 0
071009	Ribble	34 (SD) 702 376	NWWA	1053 0
071010	Pendle Water	34 (SD) 837 351	NWWA	108 0
071011	Ribble	34 (SD) 839 556	NWWA	204 0
071013 *	Darwen	34 (SD) 677 262	NWWA	39 5
071014	Darwen	34 (SD) 565 278	NWWA	128 0
072001 *	Lune	34 (SD) 503 647	NWWA	994 6
072002	Wyre	34 (SD) 463 411	NWWA	275 0
072004	Lune	34 (SD) 529 653	NWWA	983 0
072005	Lune	34 (SD) 622 907	NWWA	219 0
072006	Lune	34 (SD) 615 778	NWWA	507 1
072007	Brock	34 (SD) 512 405	NWWA	32 0
072008	Wyre	34 (SD) 488 447	NWWA	114 0
072009	Wenning	34 (SD) 615 701	NWWA	142 0
072011	Rawthey	34 (SD) 639 911	NWWA	200 0
072015	Lune	35 (NY) 612 029	NWWA	141 5

Station number	River name	Grid reference	Measuring authority	Area (sq km)
072016	Wyre	34 (SD) 501 500	NWWA	88 8
073001 *	Leven	34 (SD) 371 863	NWWA	241 0
073002	Crake	34 (SD) 294 882	NWWA	73 0
073003	Kent	34 (SD) 507 956	NWWA	73 6
073005	Kent	34 (SD) 509 874	NWWA	209 0
073008	Bela	34 (SD) 496 806	NWWA	131 0
073009	Sprint	34 (SD) 514 961	NWWA	34 8
073010	Leven	34 (SD) 367 863	NWWA	247 0
073011	Mint	34 (SD) 524 944	NWWA	65 8
073013	Rathay	35 (NY) 371 042	NWWA	64 0
073014	Brathay	35 (NY) 360 034	NWWA	57 4
074001	Duddon	34 (SD) 198 896	NWWA	85 7
074002	Irt	35 (NY) 136 038	NWWA	44 2
074003	Ehen	35 (NY) 084 154	NWWA	44 2
074005	Ehen	35 (NY) 009 061	NWWA	125 5
074006	Calder	35 (NY) 035 045	NWWA	44 8
074007	Esk	34 (SD) 131 978	NWWA	70 2
074008	Duddon	34 (SD) 209 947	NWWA	47 9
075001	St Johns Beck	35 (NY) 313 195	NWWA	42 1
075002	Derwent	35 (NY) 038 305	NWWA	663 0
075003	Derwent	35 (NY) 199 321	NWWA	363 0
075004	Cocker	35 (NY) 131 281	NWWA	116 6
075005	Derwent	35 (NY) 251 239	NWWA	235 0
075006 *	Newlands Beck	35 (NY) 240 239	NWWA	33 9
075007 *	Glenderamackin	35 (NY) 323 248	NWWA	64 5
075009	Greta	35 (NY) 286 242	NWWA	145 6
075016	Cocker	35 (NY) 149 214	NWWA	64 0
075017	Ellen	35 (NY) 096 384	NWWA	96 0
076001	Haweswater Beck	35 (NY) 508 159	NWWA	33 0
076002	Eden	35 (NY) 470 567	NWWA	1366 7
076003	Eamont	35 (NY) 578 306	NWWA	396 2
076004	Lowther	35 (NY) 527 287	NWWA	158 5
076005	Eden	35 (NY) 605 283	NWWA	616 4
076007	Eden	35 (NY) 390 571	NWWA	2286 5
076008	Irthing	35 (NY) 486 581	NWWA	334 6
076009	Caldew	35 (NY) 378 469	NWWA	147 2
076010	Petteril	35 (NY) 412 545	NWWA	160 0
076011 *	Coal Burn	35 (NY) 693 777	IH	1 5
076014	Eden	35 (NY) 773 097	NWWA	69 4
076015	Eamont	35 (NY) 472 249	NWWA	145 0
077001	Esk	35 (NY) 390 718	NWWA	841 7
077002	Esk	35 (NY) 397 751	SRPB	495.0
077003	Liddel Water	35 (NY) 415 759	SRPB	319 0
077004	Kirtle Water	35 (NY) 285 893	SRPB	72 0
077005	Lyne	35 (NY) 412 662	NWWA	191 0
078001 *	Annan	35 (NY) 125 755	SRPB	730 3
078002 *	Ae	35 (NY) 068 852	SRPB	143 2
078003	Annan	35 (NY) 191 704	SRPB	925 0
078004	Kinnel Water	35 (NY) 077 868	SRPB	76 1
078005	Kinnel Water	35 (NY) 091 845	SRPB	229 0
078006	Annan	36 (NT) 099 010	SRPB	217 0
079001 *	Afton Water	26 (NS) 631 050	SRPB	8 5
079002	Nith	25 (NX) 923 851	SRPB	799 0
079003	Nith	26 (NS) 684 129	SRPB	155 0
079004	Scar Water	25 (NX) 845 940	SRPB	142 0
079005	Cluden Water	25 (NX) 928 795	SRPB	238 0
079006	Nith	25 (NX) 858 994	SRPB	471 0
080001	Urr	25 (NX) 822 610	SRPB	199 0
080002	Dee	25 (NX) 733 641	SRPB	809 0
080003	White Laggan Burn	25 (NX) 468 781	SRPB	5 7
080004	Blackwater	25 (NX) 478 797	SRPB	15 6
080005	Dargall Lane	25 (NX) 451 787	SRPB	2 1
080006	Green Burn	25 (NX) 481 791	SRPB	2 6
081001 *	Penwhirn Burn	25 (NX) 128 694	DGRW	18 2
081002	Cree	25 (NX) 412 653	SRPB	368 0
081003	Luce	25 (NX) 180 599	SRPB	171 0
081004	Bladnoch	25 (NX) 382 545	SRPB	334 0
081005	Piltanton Burn	25 (NX) 107 564	SRPB	34 2
082001	Girvan	25 (NX) 217 997	CRPB	245 5
082002	Doon	26 (NS) 338 160	CRPB	323 8
082003	Stinchar	25 (NX) 108 832	CRPB	341 0
083001 *	Coal Water	26 (NS) 245 514	SRCW	6 0
083002 *	Garnock	26 (NS) 293 488	CRPB	88 8
083003	Ayr	26 (NS) 525 259	CRPB	166 3
083004	Lugar	26 (NS) 508 217	CRPB	181 0
083005	Irvine	26 (NS) 345 369	CRPB	380 7
083006	Ayr	26 (NS) 361 216	CRPB	574 0
083007	Lugton Water	26 (NS) 315 420	CRPB	54 6
083009	Garnock	26 (NS) 307 424	CRPB	183 8
083010	Irvine	26 (NS) 532 372	CRPB	72 8
084001	Kelvin	26 (NS) 558 705	CRPB	335.1
084002 *	Calder	26 (NS) 309 638	SRCW	12 4
084003	Clyde	26 (NS) 835 452	CRPB	1092 9
084004	Clyde	26 (NS) 927 424	CRPB	741 8
084005	Clyde	26 (NS) 704 579	CRPB	1704.2
084006 *	Kelvin	26 (NS) 672 749	CRPB	63 7
084007	South Calder Wtr	26 (NS) 751 585	CRPB	93 0
084008	Rotten Calder Wtr	26 (NS) 679 604	CRPB	51 3
084009 *	Nethan	26 (NS) 809 429	CRPB	66 0
084011	Gryfe	26 (NS) 415 664	CRPB	71 0
084012	White Cart Water	26 (NS) 499 629	CRPB	227.2
084013	Clyde	26 (NS) 672 616	CRPB	1903 1
084014	Avon Water	26 (NS) 755 518	CRPB	265 5
084015	Kelvin	26 (NS) 638 739	CRPB	235 4
084016	Luggie Water	26 (NS) 739 725	CRPB	33 9
084017	Black Cart Water	26 (NS) 411 620	CRPB	103 1
084018	Clyde	26 (NS) 891 404	CRPB	932 6
084019	North Calder Wtr	26 (NS) 881 625	CRPB	129 8
084020	Gazert Water	26 (NS) 656 763	CRPB	51 9
084021 *	White Cart Water	26 (NS) 587 597	CRPB	91 6
084022	Duneaton	26 (NS) 929 259	CRPB	110 3
084023	Bothlin Burn	26 (NS) 680 717	CRPB	35 7
084024	North Calder Wtr	26 (NS) 828 678	CRPB	19 9
084025	Luggie Water	26 (NS) 668 734	CRPB	87 7
084026	Allander Water	26 (NS) 558 738	CRPB	32 8
084027 *	North Calder Wtr	26 (NS) 765 624	CRPB	80 6
084028	Monkland Canal	26 (NS) 765 626	CRPB	60 6
084029	Candor Water	26 (NS) 765 471	CRPB	24 5
084030	White Cart Water	26 (NS) 587 598	CRPB	111 8
085001	Leven	26 (NS) 394 803	CRPB	784 3
085002	Endrick Water	26 (NS) 485 866	CRPB	219 9
085003	Fa'loch	27 (NN) 321 197	CRPB	80 3
085004	Luss Water	26 (NS) 356 929	CRPB	35 3
086001	Little Eachaig	26 (NS) 143 821	CRPB	30 8
086002	Eachaig	26 (NS) 140 843	CRPB	139 9
090002 *	Creran	27 (NN) 019 468	CRPB	66 1
090003	Nevis	27 (NN) 116 742	HRPB	76 8
091002	Lochy	27 (NN) 145 805	HRPB	1252 0
093001	Carron	18 (NG) 942 429	HRPB	137 8
094001	Ewe	18 (NG) 859 803	HRPB	441 1
095001	Inver	29 (NC) 147 250	HRPB	137 5
095002	Broom	28 (NH) 184 842	HRPB	141 4
096001	Halladale	29 (NC) 891 561	HRPB	204 6
096002	Naver	29 (NC) 713 568	HRPB	477 0
096003	Strathy	29 (NC) 836 652	HRPB	111 8
09700 *	Calder Burn	39 (ND) 085 596	HRCW	24 5
097002	Thurso	39 (ND) 131 595	HRPB	412 8
101001 *	Eastern Yar	40 (SZ) 577 857	SWA	57 5
101002	Medina	40 (SZ) 503 874	SWA	29 8
101003	Lukely Brook	40 (SZ) 491 886	SWA	16 2
101004	Eastern Yar	40 (SZ) 583 853	SWA	59 6
101005	Eastern Yar	40 (SZ) 531 835	SWA	22 5
101006	Wroxall Stream	40 (SZ) 536 839	SWA	15 8
101007	Scotchells Brook	40 (SZ) 583 852	SWA	9 2
201002 *	Fairy Water	23 (IH) 406 758	DOEN	161 2
201005	Camowen	23 (IH) 460 730	DOEN	274.6
201006 *	Drumragh	23 (IH) 458 722	DOEN	324 6
201007	Burn Dennet	24 (IC) 372 047	DOEN	145 3
201008 *	Derg	23 (IH) 265 842	DOEN	337 3
201010	Mourne	23 (IH) 347 960	DOEN	1844 5
203010	Blackwater	23 (IH) 820 519	DOEN	951 4
203011 *	Main	34 (ID) 052 086	DOEN	228 8
203012	Ballinderry	23 (IH) 926 799	DOEN	419 5
203013	Main	33 (IJ) 092 973	DOEN	646 8
203017	Upper Bann	33 (IJ) 043 509	DOEN	335 6
203018	Six Mile Water	33 (IJ) 146 867	DOEN	277 3
203019	Claudy	24 (IC) 962 037	DOEN	130 1
203020	Moyola	23 (IH) 955 905	DOEN	306 5
203021	Kells Water	33 (IJ) 106 971	DOEN	127 0
203024	Cusher	33 (IJ) 048 471	DOEN	176 7
203025	Callan	23 (IH) 893 524	DOEN	164 1
203026	Glenavy	33 (IJ) 149 775	DOEN	44 6
203027	Braid	34 (ID) 097 014	DOEN	177 2
203028	Agivey	24 (IC) 883 193	DOEN	98 9
203029	Six Mile Water	33 (IJ) 282 902	DOEN	58 4
203033	Upper Bann	33 (IJ) 233 341	DOEN	100 9
203042	Crumlin	33 (IJ) 135 765	DOEN	54 1
204001 *	Bush	24 (IC) 942 362	DOEN	306 1
205003 *	Lagan	33 (IJ) 299 679	DOEN	444 7
205004 *	Lagan	33 (IJ) 329 693	DOEN	490 4
205005	Ravernet	33 (IJ) 267 613	DOEN	69 5
205006 *	Lagan	33 (IJ) 259 628	DOEN	315 9
205008 *	Lagan	33 (IJ) 236 525	DOEN	85 2
205010	Lagan	33 (IJ) 123 540	DOEN	189 8
206001 *	Clanrye	33 (IJ) 086 309	DOEN	132 7
206002 *	Jerretspass	33 (IJ) 064 332	DOEN	32 4

* = closed or no data for post 1984 have been received

Refer to page 192 for key to measuring authorities

Gauged daily flows, monthly peaks and monthly rainfall

KEY:

	Complete rainfall	Incomplete or missing rainfall
Complete daily and complete peaks	A	a
Complete daily and partial peaks	B	b
Complete daily and no peaks	C	c
Partial daily and complete peaks	D	d
Partial daily and partial peaks	E	e
Partial daily and no peaks	F	f
No flow data	†	–

Summary is presented in decade blocks

Stn number	Gauged daily flows, monthly peaks and rainfall			
002001	70s	-----aaaa	80s	aAAAAAAa
003001	50s	---aAAAa--	60s	----------
	70s	----------	80s	------1
003002	70s	----aaaaa	80s	aAAAAAAa
003003	70s	-------aAA	80s	AAAAAAAa
003004	70s	---------E	80s	AAAAAAAa
003005	80s	-aaaAaa		
004001	40s	-------'c'	50s	ccbAEAAFA
	60s	BABABAAAAA	70s	E:!!!'AAAA
	80s	AAAAAAAa		
004003	70s	----aaaaa	80s	aAAAAAAa
004004	80s	-aaaAaa		
004005	80s	-------aa		
005001	50s	---aAAAAAA	60s	AAF-!'''!!!
	70s	!'''		
005002	80s	-------aa		
006001	30s	-----aAAAB	40s	BBBABBBBAA
	50s	E!'EAAAAAA	80s	AAAF!!!''!
	70s	!'''		
006003	20s	----------1	30s	cccccccccc
	40s	ccccc!----	50s	---------
	60s	----------	70s	----------
	80s	------1		
006006	50s	---aAAAAAB	60s	BAa--------
	70s	----------	80s	------'
006007	70s	---AAAAAAA	80s	AAAAAAaa
006008	70s	----------F	80s	AAAAAAAa
007001	60s	aAAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
007002	50s	---------aA	60s	AAAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAAAa
007003	60s	---aAAAAAA	70s	AAABAAAAAa
	80s	AAAAAADf		
007004	70s	----------a	80s	aAAAAAAa
007005	70s	--------!f!	80s	'--aaAAa
007006	80s	-------1		
008001	30s	---------!c	40s	!!ccccccc
	50s	bBBAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAA!''		
008002	50s	-aAAABAAAA	60s	AAAAAAAAA
	70s	AAABAAAAAA	80s	AAAAAAAc
008003	50s	-aAAAAAAA	60s	AAAAAAAAA
	70s	AAAA!''!!!		
008004	50s	--EAAAAAAA	60s	AAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAFAAc
008005	50s	-aBAAAAAA	60s	AAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAACc
008006	50s	--eAAAAAAA	60s	AAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAAAc
008007	50s	--eAAAAAAA	60s	AAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAAAc
008008	50s	--eAAAAAAA	60s	AAAAAAAAA
	70s	AAAAAAAAa	80s	AAAAAAac
008009	50s	--EALbABBA	60s	AAAAAAAAA
	70s	AAAAAAAAa	80s	AAAACAAc
008010	50s	---eAAAAAA	60s	AAAAAAAAA
	70s	AAAAAAAAA	80s	AAAACAAc
008011	80s	-------!c		
009001	50s	----------e	60s	AAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAAA:
009002	60s	aAAAAAAAA	70s	AAAABAAAA
	80s	AAAAAAA		
009003	60s	-!!!'''!!E	70s	AAAAAAAAA
	80s	AAAA!AAc		
009004	80s	aaaacAc		
010002	60s	-!!!''!!!!	70s	!EAABAAAAA
	80s	AAAAAAc		
010003	80s	---aeAAc		
011001	60s	-!''!!!!'F	70s	AADAAAAAAA
	80s	AAAAAAc		
011002	60s	-!''!!!!'F	70s	CBAAAAAAAA
	80s	AAAACAAc		
011003	60s	-!''!!!!'!	70s	!!'EAAAAAA
	80s	AAAACAAc		
012001	20s	----------e	30s	BBBBBBAAAA
	40s	BABBAABCCC	50s	CCCCCCCCCC
	60s	CCCCCBAAAA	70s	BCBAAAAAAA
	80s	AAAAAAAc		
012002	70s	---aAAAAAA	80s	AAAAAAAc
012003	70s	-----aaaa	80s	aAAAAAAc
012004	60s	----------'	70s	aaaaabaia
	80s	bCCCCAAc		
012005	70s	-------aaa	80s	aAAAAAAc
012006	70s	---------aa	80s	aAAAAAAc
012007	80s	--aaAAc		
012008	80s	-----dac		
013001	70s	----------e	80s	aAAAAAAc
013002	80s	--cccAC		
013003	70s	----------c	80s	ccc----1
013004	80s	-----Ac		
013005	80s	-acccAC		
013007	70s	------CCCC	80s	CCCDAAA
013008	80s	---AAAA		
013009	80s	-----!C		
014001	60s	!!!!!'EAA	70s	AAAAAAAAAA
	80s	AAAAAAA		
014002	60s	-'!!!!''!E	70s	AAAAAAAAAA
	80s	ACCFCAC		
014005	80s	-----a c		
015001	50s	ea ---	60s	aAAAAAAAF!
	70s	!''''!!!''!	80s	!''''!!!
015002	50s	- --------e	60s	AAAAAAAFF'
	70s	!!''!!!!''	80s	!!''!!!
015003	40s	--------!cC	50s	CBAAAAAAAA
	60s	AAAAAAAAAA	70s	AAAAAAAAAA
	80s	ABCFCAc		
015004	20s	--------CCC	30s	CCCCCCBAe-
	40s	-- !'''	50s	LL!!''''!E
	60s	AAAAAAAFF!	70s	!!!''''!!''
	80s	!!''''!!		
015005	20s	--------CCC	30s	CCCCCCBAe-
	40s	---------''!	50s	FF!FFFF!'F
	60s	AEAAAAAAE!	70s	!!!''''!!!''
	80s	!!!''''1		
015006	50s	-eAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	BAAAAAA
015007	50s	-------eAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AACCCAc
015008	50s	--------LA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	BAFCCAc
015010	70s	--cAAAAAAA	80s	AFCFCAC
015011	50s	--------cc	60s	cccccccccc
	70s	cCBAAAAAAA	80s	ACCCCAA
015012	70s	-BAAAaaa	80s	AACCCAC
015013	50s	-----ccccc	60s	cCCCCCCCCC
	70s	CCCBAAAAAA	80s	AABCCAC
015015	80s	-- c		
015016	70s	----bAAAAA	80s	AACCCAc
015017	70s	-----eAAAA	80s	A'' !
015018	50s	---aaaaev		
015021	80s	-----!c		
015023	80s	ccAC		
015024	80s	--ccDC		
015025	80s	--- !Ac		
016001	40s	--- Cc	50s	cBAAbcAAAA
	60s	AAAAAAAAAA	70s	AAAAAAAAAA
	80s	BDFCCAC		
016002	50s	-----eAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAT!		
016003	60s	!!!!''!!!!	70s	!DAABAAAAA
	80s	AAAAAAA		
016004	70s	--eAAAAAAA	80s	ADDAAAA
017001	60s	----------t	70s	AAAAAAAAAB
	80s	AAAAAAaa		
017002	60s	----------t	70s	AAAAAAAAAA
	80s	AAAAAAAa		
017003	70s	!EAAAAAAAA	80s	AAAAAAAa
017004	70s	--EAAAAAAA	80s	AAAAAAAa
017005	70s	EAAAAAAAB	80s	AAAAAAFa
017012	80s	-----'!a		
017014	80s	- ''		
017015	80s	-------!a		
017016	80s	- aa		
017017	80s	-------ac		
018001	50s	-----LAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAa
018002	50s	---- b	60s	ABAAAAAAAA
	70s	BbbAAAAAAA	80s	AAAAAAaa
018003	50s	---------cc	60s	ccbAAAAAA
	70s	AAFAAAAAAA	80s	AAAAAAAa
018005	70s	!EAAAAAAAA	80s	AAAAAAAa
018007	80s	-----!'aa		
018008	70s	aAAAAAA	80s	AAAAAAAa
018010	80s	-----!'aa		
018011	80s	-'!aAAAAa		
018012	80s	!!aa		
018013	80s	-----!!a:		
018014	80s	- !!aa		
018015	80s	-----!!aa		
018016	80s	-----Aa		
018017	80s	---bbbC:		
018018	80s	bbbC		
018019	80s	-------'a		
019001	50s	- - AAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAb
019002	60s	!AAAAAAAA	70s	AAACAAAAAA
	80s	AAAAAAAa		
019003	60s	-eAAAAAAAA	70s	AAAAAAAAAA
	80s	D!' '		
019004	60s	AAAAAAAAAA	70s	AAACAAAAAA
	80s	AAAAAAAa		
019005	60s	--nAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
019006	60s	-!!AAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
019007	60s	-!BAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
019008	60s	-!''BAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
019009	60s	---AAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAA b		
019010	60s	----------A	70s	AAAAAAAAAA
	80s	AAAAAEBa		
019011	60s	- cccccc	70s	ccc:cc:aaaa
	80s	AAAAAAAa		
019012	80s	----!''aa		
019014	80s	----:!:a'		
019017	80s	----!'Aa		
020001	60s	-AAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
020002	60s	-!!!''!FAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
020003	60s	!!!'AAAAA	70s	AAAAAAAAAA
	80s	AAAAAAEa		
020004	60s	-!!!''!AAA	70s	AAAAAAAAAA
	80s	AAAAAFaa		
020005	60s	-!!!'CCCCC	70s	CCCCCCAAaa
	80s	AAAAAAEa		
020006	70s	---ccAAAD	80s	AAAAAAAa
020007	60s	---------!!	70s	'!!CCCAAAA
	80s	AAAAAAAa		
020008	80s	----!!Ab		
021001	50s	----------e	60s	AAAALLAALf
	70s	'''!!!''!!'	80s	------1
021002	50s	---- !! e	60s	aBCBAAAAF1
	70s	'''!!!''!--	80s	---!
021003	50s	---- e	60s	AAAAAAABAA
	70s	AAAAAAAAAA	80s	ABBCCAAa
021004	80s	eAAe-	70s	-------!!'
021005	60s	-EAAAAAAAB	70s	AAAAAAAAAA
	80s	AABCCAAa		
021006	60s	EAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
021007	60s	-LAAAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAa		
021008	60s	eAAAAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAa		
021009	60s	-'EAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
021010	60s	'F'EAAAAAA	70s	AAAAAABAAA
	80s	A!''!!!		
021011	60s	-''LAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAa		
021012	60s	''EAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
021013	60s	'''EAAAAA	70s	AAAAAAAAAA
	80s	AACCCAAa		
021014	60s	-EAAAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAa		
021015	60s	-''!!!EAAA	70s	AAAAAAAAAA
	80s	AACCCAAa		
021016	60s	-''!!!'EAA	70s	AAAAAAAAAA
	80s	AACCCAAa		
021017	60s	-'''!EAAAA	70s	AAAAAAAAAA
	80s	AABCCAAa		
021018	60s	''!!!''EA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
021019	60s	:!:!!''EA	70s	AAAAAAAAAA
	80s	AA'''1AAa		
021020	60s	:!:!!'EBA	70s	AAAAAAAAAA
	80s	AABCCAAa		
021021	60s	---- E	70s	AAAAAAAAAA
	80s	AABCCAAa		
021022	60s	-:!:!!''!E	70s	AAADAAAAAA
	80s	AAAAAAAa		
021023	60s	-!:!:!!''!!	70s	FAAAAAAAAA
	80s	AABCCAAa		
021024	60s	!:!:!!''!!	70s	!EAAAAAAAA
	80s	AACCCAAa		
021025	60s	-!!''!!!''	70s	''!EAAAAAAA
	80s	AACCCAAa		
021026	60s	-!!''!!!''	70s	'''!EAAAAAA
	80s	AACCCAAa		
021027	60s	!!''!!!''	70s	'''!EAAAAAA
	80s	AACCCAAa		
021030	60s	!!:!:!!EA	70s	BAAAAAAAAA
	80s	AABCCAAa		
021031	50s	eAAB	60s	AEAAAAAAAA
	70s	AAAAAAAAAF	80s	e ----!
021032	60s	-eAAA	70s	AAAAAAAFAA
	80s	AAAE--1		
021034	60s	'!!!''!FF	70s	CCCCCAAAAA
	80s	AAACCAAa		
022001	60s	!!!bAAA	70s	AAAAAAAAAA
	80s	AAAAAABaa		
022002	50s	---eAA	60s	LAFAAAAAAA
	70s	AAAAAAAAAA	80s	e- ---'
022003	50s	--------eAA	60s	BAFAAAAAAA
	70s	AAAAAAAAAA	80s	e-----'
022004	60s	------eAAA	70s	AAAAAAAAAE
	80s	F!!'- '		
022006	60s	---eDAA	70s	CAAAAAAAAA
	80s	BAAAAAAaa		
022007	60s	- - !EA	70s	AAAAAAAAAA
	80s	AAAAAAAaa		

Stn number	Gauged daily flows. monthly peaks and rainfall				Stn number	Gauged daily flows. monthly peaks and rainfall				Stn number	Gauged daily flows. monthly peaks and rainfall			
022008	60s	----------E	70s	AAAAAAABAA	027012	50s	---eAAAAA	60s	AAAAAAAAAA	028014	60s	bBABBC:EAA	70s	AAAAAAAE:
	80s	AAAE:::				70s	AAAF:::::				80s	::::::		
022009	70s	--EDAAAAAA	80s	AAAAAAAe	027013	50s	----eBBBB	60s	BBBBBBAAAA	028015	60s	------eeF:A	70s	EEE:::::::E
						70s	AAABBBCBEE	80s	B::::::		80s	--eAEEAe		
023001	50s	------eAAA	60s	AAAAEAAAAA	027014	50s	----eA	60s	AAAAAAAABA	028016	60s	-----eAAAA	70s	AAAAAAAAF:
	70s	AAAAAAAAAA	80s	AAAAAAAbe		70s	EE::::::::::	80s	---::::		80s	::::::		
023002	50s	----fCCCCB	60s	AAAAAAAAAA	027015	60s	-eAAAAAAAA	70s	AAAAAF::::	028017	60s	------eeee	70s	aaAFAAEAE:
	70s	AAABAAAAAA	80s	AAAAAAAae		80s	---::::				80s	::::::		
023003	50s	----------e	60s	AAAAAAAADA	027016	50s	-------e888	60s	BBBBBBAAAA	028018	60s	-eAAAAAAAA	70s	AAAEAAAAAA
	70s	AAAABAAAAA	80s	EAEAAAaee		70s	AEBBEBCELE	80s	B::::::		80s	AAAAAAAe		
023004	60s	--eAAAAAAA	70s	AAEAAAABAA	027017	50s	----eBBB	60s	BBBBBBAAAA	028019	60s	------eAAA	70s	AAAFAAAAAA
	80s	AAAAAAAee				70s	AEBBBBCEBF	80s	E::::::		80s	AAAAAAAe		
023005	60s	---eAAADAD	70s	AAAAAAAAAA	027018	50s	------eAAB	60s	BBABBBAAAB	028020	50s	----fCFCFC	60s	BAAAAAAEee
	80s	AAAAAAAe				70s	BBbbe--:::	80s	---:::		70s	aaAAAAAAAA	80s	AAE:::
023006	60s	------eAAA	70s	AAAAAAAEEA	027019	50s	-- -eAAA	60s	AAEBAAAAFE	028021	60s	----:EAAEA	70s	FFEEAAAA::
	80s	AAAAAAAee				70s	EAAAe--::::	80s	---::::		80s	---::::		
023007	60s	--eAAAAAAA	70s	AAAAAAAEAA	027020	50s	------eBBB	60s	BBBBBBABAB	028022	60s	---------aa	70s	aaAAAAAAAA
	80s	BAAAAAAee				70s	BBBBEBCEEE	80s	B::::::		80s	AAAAE::e		
023008	60s	---------FA	70s	AAAAAAABAA	027021	50s	----------e	60s	eEEAAAAAAA	028023	60s	-----eeeaa	70s	aaAAAAAE::
	80s	AEAAAAAee				70s	AAAAAAL:::	80s	::Aaaaaa		80s	::--:::		
023009	60s	----------e	70s	AAADDAAAE:	027022	60s	eAAAAAABAA	70s	EE::::::::	028024	60s	--------eee	70s	aaAAAAAAAA
	80s	EAAE:::				80s	---:::				80s	AEEALEEe		
023010	60s	----------1	70s	EAAAAAAAAA	027023	60s	eAAAAAAAAA	70s	AAAAAAAAAA	028025	60s	------eaaa	70s	aaAAAAAAAA
	80s	e--11-*				80s	AAAAAAEd				80s	AAAAE::		
023011	60s	----------1	70s	EDAAAAABAA	027024	60s	-eAAAAAAAA	70s	AAAAAAEAAA	028026	60s	------eeaa	70s	aaAAEAAAAA
	80s	EAAAAAAee				80s	E:--:::				80s	AAAAE::e		
023012	70s	*EBAAAAAAA	80s	e--11-*	027025	60s	-eAAAAAAAA	70s	AAAEIIAAAA	028027	60s	-----EAEAA	70s	AAAAAAF**1
023013	70s	IEAAAAAAAA	80s	AII***1		80s	AAAAAAAa				80s	1EAee-1		
023014	60s	fccccccccc	70s	cBAEEI:*11	027026	60s	---eAAAAAA	70s	AAAAAAAAAF	028029	60s	------eeee	70s	neFAAAAEAA
	80s	------*				80s	I***1AAAa				80s	AAAAF1:		
023015	40s	-*FEEEEEEE	50s	EAEAEEB88=	027027	60s	-eAAAAAAEA	70s	AAAAAE*:::	028030	60s	--------aEE	70s	AEEAAAAAAA
						80s	----- :				80s	AAAAE::		
024001	60s	-------ICC	60s	CCCCCCBAAA	027028	60s	-AAAAAAAAA	70s	AAAAAAAAEA	028031	60s	--------eE'	70s	AeAAAAAAAA
	70s	AAAAAAEAAA	80s	EAAAAAAee		80s	AAAAADee				80s	AAAAAAAe		
024002	60s	---------eA	60s	AAAAAAAAAA	027029	60s	-eAAAAAAAE	70s	:EAAAAAAAA	028032	60s	-----EAAAA	70s	AAAAAAEAAA
	70s	AAAABAAAAA	80s	AAAE::		80s	AAEAAAAe				80s	AEAAE1		
024003	50s	---------eA	60s	AAAAAAAEAA	027030	60s	---eAAAAAA	70s	AAAAEEAAEA	028033	60s	-----eeeaa	70s	aaAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAADAee		80s	AADAAAAa				80s	AAE***1		
024004	60s	----------e	60s	AAAAAAAAAA	027031	60s	AAAAAA	70s	AAAAAAEAEA	028036	60s	----------e	70s	eeAEAE:::'
	70s	AAAAAAAAEA	80s	AAAAAAAee		80s	AAAAAAAa				80s	---:::		
024005	60s	----eeEAAA	60s	AAAAAAALAA	027032	60s	---:EEAA	70s	AAAAAEEAAA	028037	70s	--1I-*11EA	80s	aaaAE1:
	70s	AAAAAAAEEA	80s	AAAAABAee		80s	AFAAAAAa			028038	60s	----------e	70s	aaAEAAEAAA
024006	50s	-------fcc	60s	bAAAAAAAAA	027033	60s	----------I	70s	CCCCCBEAAA		80s	AAE::::		
	70s	AAAAAAAAAA	80s	e------1		80s	AAAAAAae			028039	60s	--------aAE	70s	AaEAEAAAAA
024007	60s	--------:EA	70s	AAAAAAAAAA	027034	60s	--------eBA	70s	BAAAAAAAAA		80s	AAAAAAAe		
	80s	AAAE:::				80s	AAAAAAAa			028040	60s	---------E:	70s	AAAAAAAAAA
024008	70s	--eeeeeeee	80s	AAEAAAAee	027035	60s	---------FA	70s	AAAABAEAAA		80s	AAAAAAAe		
024009	70s	--------eAA	80s	AAAAAADee		80s	EAAAAAAa			028041	60s	---------ee	70s	aeAAAAAAAA
					027036	60s	--------:E	70s	EE::::::::		80s	AAE::::		
025001	50s	------eAAA	60s	AAAAAAADAA	027038	70s	EAAAAAAAAA	80s	EAADADAe	028043	60s	----::::EA	70s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAde	027039	60s	--------eAB	70s	BBAE:::::		80s	AAAAEAAe		
025002	50s	------:f--e	60s	eAAAAAAAAB		80s	---:::			028044	60s	----------e	70s	aeAAAAAAAA
	70s	BAAAe--:::	80s	-------:	027040	70s	EBAAAAAAAA	80s	AAAAAAAa		80s	AAAAE1		
025003	50s	--------eAA	80s	AAAEAAAAAA	027041	70s	--:EAAAAAA	80s	AAAAAAAa	028045	60s	-----eeeee	70s	aeAAADAAAA
	70s	AAAAAaeABA	80s	e------1	027042	70s	::EAAAAAAA	80s	AAAAAAAa		80s	AAAAE1		
025004	50s	------eAAA	80s	AAAAAAAAAA	027043	70s	----AAAAAA	80s	EAAAAAAa	028046	60s	-------- e	70s	AAAAAAAAAA
	70s	AAAAAAAAAD	80s	AAEADDDee	027044	70s	- ::EAAAAA	80s	AAAADAAe		80s	AAAAAAAe		
025005	50s	----------e	60s	AAAAAAAAAA	027047	70s	:BAAAAAAAE	80s	ALADAEDd	028047	70s	aaeAAAAAAA	80s	AAEEEf
	70s	AAAABAAEAA	80s	AAAAAAAde	027048	70s	-fEAAAEEAA	80s	AAAAAAee	028048	70s	-eeAAAAAAA	80s	AAABAAAe
025006	60s	eAAAAAAAAA	70s	AAABAABAAA	027049	70s	----eAAAAA	80s	AAAAAAAa	028049	70s	aaaaaaAAA	80s	AAAAE:1
	80s	AAAAAAAee			027050	70s	*cc***-	80s	1::eddAe	028050	70s	-eeeAAAEAA	80s	AAAAF**1
025007	60s	-eAAAAAAAA	70s	AAAAAAAAAA	027051	70s	--eAAEAAAF	80s	AADAAAAa	028052	70s	-eDEAAAAAA	80s	AAAAE*1e
	80s	E1-----*			027052	70s	-------eeee	80s	AAAAAAAa	028053	70s	---:::EAAA	80s	AAAEF*
025008	60s	-----*EAAA	70s	AAAABAAAEA	027053	70s	------eEAAA	80s	AAAAAAAa	028054	70s	-eAAAAAAAA	80s	AAAAF*1
	80s	AEAE11			027054	70s	--- FFFAAE	80s	AAAAAAAa	028055	70s	-eAAALAAAA	80s	AAF1**
025009	60s	----------e	70s	ABAE:AAAAA	027055	70s	----ICCFAF	80s	AADAAAAa	028056	70s	---qAAAAEA	80s	AAAAL**e
	80s	AAAAAAaee			027056	70s	--- fFCEAE	80s	AAAAAAAa	028058	70s	--I*EAAAAA	80s	AAAAE::
025010	60s	-------EAA	70s	AEAAE:::1*	027057	70s	----fFCFAF	80s	AAAAAAAa	028059	60s	------eeee	70s	aeAAAAAAAA
025011	60s	----------E	70s	AAAAAAAAAA	027058	70s	--:CCEAE	80s	AAAAAAAa		80s	AAALE:		
	80s	AAAE1**			027059	70s	-------eAF	80s	EAAAAAAa	028060	70s	--eqAAAAAA	80s	AAAEF1
025012	60s	----------E	70s	BAAAAAAAAA	027060	70s	----------n	80s	AAAAAAAa	028061	70s	--I*-AAAAA	80s	AAAALF:a
	80s	AAAAAAAee			027061	70s	----- --qA	80s	AAAAAAAa	028062	70s	-----:::I:	80s	I***1**
025013	60s	----------E	70s	EEAFEI***1	027062	70s	----------a	80s	AEAAAAAa	028065	70s	-----:::1:	80s	---*:1
025014	60s	----------E	70s	AFE:::*	027063	80s	endeDAad			028066	70s	---qAAAAAA	80s	AAARAFAe
025015	60s	----------e	70s	eee	027064	70s	----------n	80s	aaaeADAa	028067	70s	---aAAAAAA	80s	AAAAAAAe
025018	70s	IEEAAAAAAA	80s	AFFAAAAee	027065	70s	----- --e	80s	edaeAAAe	028070	60s	-----H***	70s	eeeeeeaaaa
025019	70s	IEAAAAAAAA	80s	AAAAAAAee	027066	80s	----AAAa				80s	AAEI1*1		
025020	70s	--EAAAEAEA	80s	AAAAAAAee	027067	80s	----AAAa			028072	70s	-----EAAAA	80s	AAAFE::
025021	70s	I**EBAAAAA	80s	AAAAADAee	027068	80s	aaaa			028073	70s	------eeee	80s	aaaee
025022	70s	----eeheee	80s	e---11	027069	80s	----AAAa			028075	70s	----------e	80s	eee----1
025023	70s	-EAELAAEAA	80s	AAEE1**	027070	80s	-------aa			028079	80s	-eaaaaAe		
025024	70s	-------ee			027071	80s	eaaAAAAa			028080	50s	--------ICF	60s	FCCFCCCCCC
					027072	80s	----AAAa				70s	CCCCCCCCCC	80s	CBAAAAAe
026001	50s	---eAAABBB	60s	BBBBBABABB	027073	80s	-AAAa			028082	70s	-eAAAAAAA	80s	AAAAEAAe
	70s	AEABE1*1**	80s	---****	027074	80s	----AAAa			028083	80s	--eaaeEe		
026002	60s	-eAAAEEBBE	70s	EAAAAAALBE	027075	80s	--aa			028085	30s	-----:fFCC	40s	CCCFCCCCCC
	80s	B1CCCFcc			027076	80s	-------aa				50s	CCCCFCCCCC	60s	CCCCCCCCCC
026003	50s	----------e	60s	AAAAAAAAAB	027077	80s	-------aa				70s	CCCCBAAAAA	80s	AAAAAAAe
	70s	AAAAEEEAAA	80s	AAAAAAAe	027080	80s	------aa			028086	80s	---eeeAe		
026004	70s	IEE1BEFEBA	80s	AAAAABI						028091	80s	-----eeAe		
026005	80s	-DeeAAAe			028001	30s	---cccbAAA	40s	BCCCCCCCCB	028093	80s	-------Ee		
026006	80s	----aaaa				50s	AAARBAAAAA	60s	AAAAAAAAAA	028094	80s	-------I		
026007	60s	-----*Iccc	70s	Icccfcccc		70s	AAAAAABAAA	80s	AAAAAAAa	028095	80s	-------:		
	80s	-------1			028002	30s	-----eAA	40s	AAAAAAAAAA					
						50s	AABAAAAAAA	60s	AAAAADTIEE	029001	60s	eBBAAAAAAB	70s	AAAAAAAAAF
027001	30s	-----eAAE1	40s	:EBAABCCF1		70s	EAAAAEAAAA	80s	AAAAE11		80s	AAAAAAAa		
	50s	I**EAAAAAE	60s	AAAAAAAAAA	028003	50s	--- eAAAA	60s	AAAAAAAAAA	029002	60s	--eAAAAABA	70s	AAAAADAAAA
	70s	AAAAAAAAAA	80s	AE11111		70s	AAEAAAAAAA	80s	AAE:::		80s	AAAAAAEe		
027002	30s	--------EE1	40s	::::::::::	028004	50s	------IbAE	60s	FAAEAAAAAA	029003	60s	---------FA	70s	AAAAAAAAAA
	60s	I**11EAAAA	60s	AAAAABABAA		70s	AAAAAAAAAA	80s	AAE:::		80s	AAAAAAAa		
	70s	AAAAAAAAAA	80s	AAAAAAAa	028005	50s	-----*:ccbA	60s	AAAAAAAAAA	029004	60s	---------EA	70s	AAAAAAAAAA
027003	50s	---------aE	60s	EEAAAAAAAA		70s	AAAAAAAAAA	80s	AAAAEt		80s	AAAAAAAa		
	70s	AAAAABBAEE	80s	AAAAAAee	028006	50s	--------aeA	60s	AAAAE1**1	029005	70s	-FAAAAAAAA	80s	AAAAAAEa
027004	60s	eAAAAAAAET	70s	*IEAAAE::1		70s	I**1111***	80s	I:**11	029009	70s	----eAAAAA	80s	AAAAAAAe
027005	30s	------ICF1	40s	*111IEAAAA	028007	50s	----eAA	60s	AAAAAAE*11					
	50s	ABCCCCCCCB	60s	BBBBBBAAAA		70s	I**1111:*	80s	I:**11	030001	50s	----------E	60s	AAAAAAAAAA
	70s	AABBCCCCCC	60s	C:CFCFIc	028008	50s	-- eAAAAA	60s	AAAAAAAAAA		70s	AAAAAAAAA	80s	AAAAAAAa
027006	60s	-----eAAAA	70s	AAAAAAAAAA		70s	AAAAAAAAAA	80s	AAAAAAAe	030002	60s	eAAAAAAAA	70s	AAAAAAAAF*
	80s	AAAAAAAa			028009	50s	----eA	60s	AAAAAAAAAB		80s	EEEEAEAAa		
027007	50s	---------eA	60s	AAAAAAAAAA		70s	AAAAAAAAAA	80s	AAAAAAAe	030003	60s	--eAAAAABE	70s	AAAAAAAAAA
	70s	EBDAAAAAEE	80s	AAAAAAAa	028010	30s	-----IFFCC	40s	CCCFCCCCCC		80s	AAAAABEe		
027008	50s	-----eAAAE	60s	AAAAAAAAAA		50s	CCCCFCCCCC	60s	CCCCCCCCCC	030004	60s	--eEABAAAB	70s	AAAAAAAAAE
	70s	AAAAAEEEAE	80s	AEIXEII		70s	CCCCBAAAAA	80s	AAAAAAA		80s	AAAAAAAa		
027009	60s	-I1***1**E	70s	AAABBLAAAD	028011	50s	. -------eE	60s	LEBAAAAAAA	030005	60s	---------*:	70s	cccccccccc
	80s	ADAAAAAa				70s	EEAAAAAAAA	80s	AAAAAAAe		80s	cccc*--e		
027010	30s	------*c*c	40s	**********	028012	50s	----------e	60s	AAAAADAAAF	030006	70s	----EBBBAA'	80s	AFFAAAEe
	50s	c**bAAAAA	60s	BAAEAAAAAA		70s	AAAAAAAAAA	80s	AAAAAAAe	030011	70s	-EAAAAAAAA	80s	AAAAAAEe
	70s	ABAAAAEEAE	80s	------I	028013	70s	---:*:::11	80s	---111	030012	70s	EAAAAAAAAA	80s	DFBABBEe
										030013	70s	------eAAA	80s	AAAAAAAa

Stn number	Gauged daily flows, monthly peaks and rainfall			
030014	70s	--eCAABAAA	80s	BAAAAAAa
030015	70s	-------eAAA	80s	AAAAAAaa
030017	70s	---------eA	80s	AAAAAAaa
031001	30s	--------fCF	40s	CCCCCf----
	50s	---'BBBBBB	60s	BBBBBBAAEA
	70s	AABAAAAEAB	80s	BAAAAAaa
031005	80s	---11!'		
031006	60s	-------EAA	70s	BAAAAAAAAA
	80s	AAAAAAAa		
031007	60s	---------EE	70s	BBCCCBCBAA
	80s	AAAAAAAa		
031008	60s	---------ff	70s	eEEEEEEDEF
	80s	AEEEEEee		
031009	70s	fEEBEEEEEE	80s	EEEEEFee
031010	60s	---------DA	70s	ABAABAAAAA
	80s	AAAAAABe		
031011	60s	----------E	70s	EEEEEEEEEE
	80s	EEEeeeEe		
031012	60s	----------E	70s	EEEEEEEEEE
	80s	EEEeee		
031013	60s	----------E	70s	EFBBBEEEDA
	80s	DEEEEEEe		
031014	60s	----------E	70s	EEEBEEEEEE
	80s	EEEeee		
031015	60s	----------f	70s	eeEEEEEEEE
	80s	EEEeeff		
031016	60s	----------E	70s	ABAAAAAAAA
	80s	AAAAAAAe		
031017	70s	EEBEEBEEEE	80s	EEEeee'
031018	70s	fEEEEEEEEE	80s	EEEeee
031019	70s	fEEEEEEEEE	80s	EEEeeeEe
031020	70s	eEEBEEEEEE	80s	EEEeee'
031021	70s	eEAEEBBEAA	80s	AEEEEEEe
031022	60s	---------'	70s	EEEEBBEEEE
	80s	EEEeeeEe		
031023	70s	--EBABBBAB	80s	AAAAAAAe
031024	70s	-EAABBBBBB	80s	BBAaaaaa
031025	70s	---------eA	80s	FAAAAAAb
031026	70s	-''111''FA	80s	AAAAAAAe
031027	80s	-eddeeEe		
031028	80s	--fbeeAe		
032001	30s	----------f	40s	eBAAAAAAAA
	50s	ABAAAAAAAB	60s	BAAABAABCC
	70s	BAAABBCCAA	80s	BAAAAAAe
032002	30s	---------eA	40s	AABABABABA
	50s	BABABBAAAB	60s	AABBAAAAAA
	70s	BAAAAAAAAA	80s	AAAAAAAe
032003	30s	---------eA	40s	ABBAABAAAB
	50s	AAAAABABAB	60s	BBAABEAAAA
	70s	AAAAAAAADA	80s	AAAAAAAe
032004	40s	---eAABAAA	50s	AAAAAAAAAB
	60s	BBBAEEAAAB	70s	AAAAAAFAAA
	80s	AAAAAAAb		
032006	30s	----------e	40s	BAAABAABAA
	50s	ABAAAABBBB	60s	BBBBAAAAAb
	70s	cccccccCCC	80s	CcccccCe
032007	30s	----------e	40s	AAAAABAABA
	50s	ABAABABAAA	60s	BBAAAABAAb
	70s	cccccccCCC	80s	BccccCe
032008	40s	------eAAAB	50s	ABAAABABAA
	60s	BBBBBAEABA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
032012	60s	---------fE	70s	EEEEEEFFFF
	80s	EEE		
032016	60s	----------B	70s	EEBBEEEEEE
	80s	EEEeeeEe		
032016	70s	-EEEEEEEEE	80s	FFEeeeee
032018	60s	----------e	70s	fEEEEEEEEE
	80s	FFFf		
032019	70s	ffEEEEEEEE	80s	FEEeeeEe
032020	70s	EAAAABABAB	80s	ABAEAEI
032023	70s	fFBEBEEEEE	80s	FF!-ee'
032024	70s	-EEEEEEEEE	80s	FEEeee'
032025	70s	-EEEEEEEEE	80s	EEEeee
032026	70s	feeeeeeEEE	80s	FEEeeeee
032027	70s	-EEEEEEEEE	80s	EEEeee'
032029	70s	---eeeeeee		
032030	70s	----------E	80s	FFE ff
032031	80s	--eeeeFe		
033001	30s	------fcCC	40s	ECCCCCCCCC
	50s	FFCCCCCCCC	60s	CCF''1f!''
	70s	1''111f''1	80s	---- -'
033002	30s	---cCCcCBB	40s	BBBBBCCCCC
	50s	CCCCCCCCCB	60s	BAAAAAAAAB
	70s	BAAAAAAAAB	80s	BAABAABe
033003	30s	------'CCC	40s	CCFCFCCCCC
	50s	BAEABBABCC	60s	BAAAAAAAAA
	70s	BCCCCCCCCC	80s	CCCCCFFf
033004	30s	------'CCC	40s	CCCCCCFFCC
	50s	CCCCCBABCC	60s	CCCCCCFCFC
	70s	CCCCFCCCCC	80s	CFCCCFF
033005	50s	-cbCCCCCCC	60s	BAAAABBCCB
	70s	BCBBBBBBCB	80s	BBBBBBFe
033006	50s	-------eBCC	60s	BAAAAAABBB
	70s	ABAABAABAB	80s	ABBBBBBb
033007	50s	---eBCCCCC	60s	CCCCCBBBAB
	70s	BAAAAABAAA	80s	AABBAAAa
033008	50s	---------fc	60s	cbaaabbbf-
	70s	----------	80s	------'
033009	50s	------eABCC	60s	BAEAAAAABA
	70s	BABBAAAAAA	80s	BAAABAE
033011	40s	---------ff	50s	fffclccfl
	60s	eeAAAAAAEA	70s	BAAAAAAAAA
	80s	BAAAAAAb		
033012	60s	eAAAAAAAEA	70s	BAAAAAAAAA
	80s	AAAAAAAe		
033013	40s	---------'	50s	'fl'cccc'f
	60s	eAAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAABABe		
033014	60s	eAAAAAAAAA	70s	ABAAAAAAAA
	80s	AAAAAAAe		
033015	60s	--AAAAAAAA	70s	AAAAAAAABB
	80s	DAAAAAEe		
033016	50s	---------'	60s	bAAEEEFEAB
	70s	BCCCCCCCCC	80s	CCCFf'
033018	60s	--FAAAAFFA	70s	AAAAAAAAAA
	80s	BAAABBAe		
033019	50s	---- -1ff'	60s	'1eAAAAAFA'
	70s	ABAAAAAAAB	80s	AAAAAABe
033020	50s	--------f''	60s	'1-eAFBBEE
	70s	EBBBBAAAAA	80s	AABAABAe
033021	60s	--eAAAAABB	70s	BBBAAAAAAA
	80s	BAABABba		
033022	50s	----------f	60s	ebeeeBAAAB
	70s	AAAAAAAAAA	80s	AAAAAABb
033023	60s	--eAAAAAFA	70s	AABAAAAAAA
	80s	AAAAAABb		
033024	40s	----------e	50s	FFBCCCFCCC
	60s	CCCeAAAAAA	70s	ABAAAAAAAA
	80s	AAAAAAAe		
033025	60s	---fEAAAAA	70s	AAFABCF'11
033026	70s	fcCCCCCCCC	80s	CCCCCCf
033027	60s	-----eAABE	70s	BBAAAAAAAA
	80s	ABBAAAAa		
033028	60s	------FAFF	70s	ABAAAAAAAA
	80s	ABAAAABa		
033029	60s	-----eAAFA	70s	ABCAAAABAA
	80s	AAAABABe		
033030	50s	-- - fcc	60s	cccf--eeee
	70s	aababaaaaa	80s	e ---'
033031	70s	-AAABAABAA	80s	AAAAAAF
033032	60s	-----FAAAA	70s	AAAAABAAAA
	80s	AAAAAAAb		
033033	70s	- FAAAAAA	80s	AAAAAAAb
033034	60s	--------'EA	70s	AAAAAAAAAA
	80s	AAAAAAAb		
033035	50s	---------fC	60s	CCCCCCCCCC
	70s	CCCCCCCfff	80s	f!''11fc
033037	60s	----------F	70s	ABAAAAAAAA
	80s	AAAAABBb		
033039	70s	--EAAADBAA	80s	AABBABAc
033040	60s	--- 'fff	70s	CBAAAAAAAA
	80s	AAAABBab		
033044	60s	------ fcc	70s	ccCABBAAAA
	80s	ABAAAABb		
033045	60s	--------fcc	70s	ccCAAAAAAA
	80s	BABAAABb		
033046	60s	--------fcc	70s	cCCAABAAAA
	80s	BAAAABBa		
033048	60s	---------'	70s	cccAAAAAAA
	80s	BBBAAeAe		
033049	60s	--------fcc	70s	cc-eeeeee
	80s	e -f		
033050	60s	'ffffffcc	70s	'---fCCCCC
	80s	BCCBeeaa		
033051	60s	----fCCCCC	70s	CAAABAAAAA
	80s	AAAAAAE		
033052	60s	-f ccc ccc	70s	ceeeAAAABA
	80s	AAABAAe		
033053	40s	----------'	50s	ffcccccccc
	60s	cccfcffbcc	70s	ccccccccc
	80s	ccbaabaa		
033054	70s	--- 'CAA	80s	AABAABaa
033055	60s	fcccf--	70s	-------'BAA
	80s	AAAAAAaa		
033056	60s	------ccffc	70s	''ffCCCB
	80s	BAAAAAa		
033057	70s	-- FBAA	80s	AAAAAAe
033058	70s	-------fEA	80s	AAAAaaee
033059	60s	----------f	70s	cclcaccccc
	80s	ccccae		
033060	60s	---f	70s	ccccccccc
	80s	ccccccf		
033062	60s	-- - 'c'	70s	---------fc
	80s	ccccbBe		
033063	80s	eAAabAAb		
033064	80s	eaaabae		
033065	80s	fCCcaAE		
033066	80s	-eAaaBBa		
033067	80s	eaeAE		
033068	80s	--'cbBe		
034001	50s	------- e	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAa
034002	50s	--- eAA	60s	AAAAAAAAAA
	70s	EAAAAAAAAA	80s	AFBAAAAa
034003	50s	---- e	60s	AAAAAAAAAA
	70s	AAAAAAAAAB	80s	AABAAAAe
034004	50s	eAAAAAAAAA	70s	AAAAAAAAAB
	80s	ABAAAAAb		
034005	60s	-eAAAAAAAA	70s	AAAAAAAAAB
	80s	ABAAAAAe		
034006	60s	---eAAABAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
034007	60s	-------eAAB	70s	AAAAAAAAAA
	80s	AAAAAAAe		
034008	60s	------FABA	70s	AAAEEAAAAF
	80s	FCFDBBBe		
034010	60s	---------FA	70s	AAAAAAAAAA
	80s	FABAAEAa		
034011	60s	-------AAA	70s	ABAABAABBE
	80s	ABAAAAAa		
034012	60s	-------eAAA	70s	AADABAAAAA
	80s	AAAAAAAe		
034013	70s	--FFFAFADB	80s	ADECDE'
034014	60s	---------'	70s	cfcclcc'fc
	80s	ccf'cbCa		
034018	70s	--FFCCADDF	80s	AAAAAEAe
034019	70s	-EAAAAA	80s	AAAAAAAa
035001	60s	-ff!FEEf!'	70s	'111'FFCFE
	80s	belababc		
035002	60s	----eAAAAA	70s	AAAABAEAAB
	80s	AAAAAAAb		
035003	60s	-eAAAAAAAA	70s	ABAAAAAAAA
	80s	ABBAAAaa		
035004	60s	-----FAAAA	70s	AAAAAAAAAB
	80s	ABBAAAAa		
035008	60s	----'fEAAA	70s	AAAAAAAAAA
	80s	ABBAAAAe		
035010	60s	---- e	70s	AAAAAAAAAF
	80s	ABBAAAaa		
035013	60s	---------'	70s	EAAAAAAAAB
	80s	ABAAAAAa		
036001	20s	--------CC	30s	fFCCCCCCCC
	40s	CCCCCCCCCC	50s	CCCCCCBAAA
	60s	BBBAABAAAA	70s	BBBBABCCCC
	80s	CCCCCCF		
036002	60s	eAABAAAABA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
036003	60s	'BAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
036004	60s	-- -- 'BAAA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
036005	60s	--eBAAAAAA	70s	AAAAAAAAAA
	80s	AAABAAAa		
036006	60s	eBABAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
036007	60s	'CCFBDABAA	70s	AAAAAAAAAA
	80s	AAAAABfe		
036008	60s	EAAAABAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
036009	60s	---------FA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
036010	60s	----- EA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
036011	60s	-- - EA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
036012	60s	----EA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
036013	60s	!ff''1ff'!	70s	fFFFFEEFFF
	80s	FFFFFFff		
036015	70s	--EAAAAAAA	80s	AAABAAAe
036016	70s	eeeeeeea		
036017	70s	-ebaaaaaa	80s	bae
037001	50s	eAAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAae
037002	30s	--FCCCCBBB	40s	BBABABABAA
	50s	BBBBBBBEBB	60s	BFBBABBBAA
	70s	BAAAAAAAAA	80s	AAAAAAAa
037003	30s	FCCCCCCC	40s	CCCCCCCCCC
	50s	CCCCCCCCCC	60s	CCCBAAAAAA
	70s	AAAAAAAAAA	80s	AAAAABAe
037005	50s	- ------e	60s	AAAABAAAAB
	70s	AAAAAAAAAA	80s	AAAAAAAe
037006	60s	eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
037007	60s	-eBAAAA	70s	AAAAAAAAAA
	80s	AAAABAAe		
037008	60s	---eAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
037009	60s	--eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
037010	60s	--eBAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAa		
037011	60s	---eAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
037012	60s	- eBAAAAA	70s	AAAAAABAAA
	80s	AAAABAAa		
037013	60s	eAAAAAA	70s	AAAAAAAAAA
	80s	AAAABAAa		
037014	60s	---fCBAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAae		
037015	70s	---- efE	80s	EEAAAAAae
037016	60s	--EAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAe		
037017	60s	---- E	70s	AAAAAAAAAA
	80s	AAAAAAAe		
037018	70s	EAAAAAAAAA	80s	AAAAABAae
037019	60s	-----FAAAE	70s	AAADAABFFA
	80s	AAAAAAAae		
037020	60s	-------- f	70s	EAAAAAAAAA
	80s	AAAABAAa		
037021	60s	---------f	70s	EAAAAAAAAA
	80s	AAAAAAAe		
037022	60s	---- 1	70s	EAAAAAAAAB
	80s	AAAABBBe		
037023	70s	-FAAAAAAAA	80s	AAE''11
037024	70s	-EAAAAAAAA	80s	AAABBBAe
037025	60s	-----CBAAE	70s	EEEEf!'---
	80s	---f--!		
037026	60s	-ebaaebaaa	70s	aaaaaee
037027	60s	'eeeaebaaa	70s	ae
037028	60s	'eeaaebaaa	70s	aaaeeee
037029	60s	eeaaaf:aaa	70s	baaaeae
037030	60s	EEEBBAAB	70s	e-
	80s	-'		
037031	70s	-------eBAA	80s	AAABAAAe
037033	70s	--- eAAAA	80s	AAAAAFea
037034	70s	---feeaaa	80s	aaedaaaa
037036	70s	-bbaaaaaa	80s	aaaaaa
037037	80s	-eebbeEe		
037038	50s	eaeee--ea	60s	beeebabbab
	70s	abbae		
037039	70s	---'eeebeE	80s	FEEEEEee
038001	30s	--fCCC	40s	CCCCCCCCCC
	50s	CCCCCCCCCC	60s	CCCCCAAAAB
	70s	BAAABCFfEA	80s	AAAAAAAae
038002	80s	eaaaaaabe		
038003	50s	--eAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAae
038004	70s	----------e	80s	AAAAAAAae
038005	30s	---ff''	40s	''fff''fff
	50s	'!ff'-----	60s	EAAAABABAA
	70s	AAAAAAAAAE	80s	EE''ff
038006	50s	------'CCC	60s	CBAAAAAABA
	70s	AAAABAAAAA	80s	EEE
038007	60s	-----EAAAA	70s	AAAAAAEAAA
	80s	AAAAAAAae		
038011	50s	-'CC	60s	CCCCCBBBBB
	70s	BABBBBBAAA	80s	AAAAEf
038012	50s	---------''	60s	ff!'ff!''1
	70s	f!!!FAAAAA	80s	AAAAAAaae
038013	30s	-----f''!1	40s	fff'fff''1
	50s	f!!!------	60s	eabbbeaaa
	70s	aaaaabaaa	80s	AAAAABaee
038014	50s	---- eCCC	60s	CCCCCCCCCC
	70s	CCCCCCBAAA	80s	EAAAAAAae
038015	60s	----------F	70s	AAAABAAAAA
	80s	A'e		

Stn number	Gauged daily flows, monthly peaks and rainfall				Stn number	Gauged daily flows, monthly peaks and rainfall				Stn. number	Gauged daily flows,' monthly peaks and rainfall			
038016	60s	----------f	70s	CCBBBCCCBA	039079	70s	----------f	80s	f'ededcbe	042005	50s	-----fCCCC .	60s	CCCCCCCCCC
	80s	AABCCCc'			039081	60s	- -eAAAAAAA	70s	AAAAAAAAEn		70s	CCCCCCFCFF5	80s	FCCCCCEd
038017	70s	eBAAAAAAAA	80s	AAAAAAdae		80s	AAAaaaAae			042006	50s	---------fC	60s	CCCCCCCCCC
038018	70s	-eAAAABAAA	80s	AAAAAAAbe	039085	30s	-------eeee	40s	aae--------		70s	CCCCCBAAAA	80s	AAAAAAAa
038020	70s	-EAAAAAAAA	80s	AAEEAADae		50s	-- ---eaAAAA	60s	e	042007	70s	'CCCCFCCcc	80s	cfcccCc
038021	70s	-eAAAAAAAA	80s	AAAAAAAen	039086	70s	-----nAAAA	80s	AAAaAAaee	042008	70s	FCDCCHAAAA	80s	AAAAAAAa
038022	70s	--ICCCAAAA	80s	AAAAAAAbe	039087	70s	----eAAAAA	80s	aAAAAAaee	042009	70s	'CCCCBAAAA	80s	AAAAAAAa
038023	80s	aeeaaaee			039088	70s	-----nAAAA	80s	AAAAABAae	042010	50s	---------fc	60s	ccccccccc
038024	70s	---EAAAAAA	80s	AAAAAAAae	039089	70s	-----eeaa	80s	aeaaeedae		70s	ccCCCCcccC	80s	CCCCcCCc
038026	70s	----EAAAAA	80s	AAAAAAAde	039090	80s	-e			042011	70s	fCCBAAAA	80s	AAAAAaa
038027	80s	-----edae			039091	70s	---------ee	80s	aeaaen'	042012	70s	---'HHHHC	80s	CCCCCCCc
038028	70s	------eEAA	80s	AAAAAAAae	039092	80s	ee-----Eee			042014	60s	---------f'	70s	1f'''11EDAA
038029	70s	---------aA	80s	AAAABDae	039093	80s	en-----ean				80s	AAAaaaAa		
038030	70s	----------a	80s	AAAAAAAae	039094	70s	--------'aa	80s	beaaeeean	042016	70s	-----IcM	80s	cicl
					039095	80s	ee f eae			042021	70s	.'	80s	fee
039001	80s	----CCCCCC	90s	CCCCCCCCCC	039096	80s	en-----ean							
	00s	CCCCCCCCCC	10s	CCCCCCCCCC	039097	80s	fccccCcf			043001	60s	eAAAAE111' .	70s	f'''111''11
	20s	CCCCCCCCCC	30s	CCCCCCCCCC	039098	80s	-----nchae			043003	60s	-- . fCFCC	70s	CCCCCCCCCC
	40s	CCCCCCCCCC	50s	CCCCCCCCCC	039099	80s	---aaaaen				80s	CCCcCCf		
	60s	CCCCCCCCCC	70s	CCCCCBAAAA	039100	80s	eecce			043004	60s	-----EAEAA	70s	AAAAAEAAAA
	80s	BBAAAAAae			039101	80s	--eaaaAae				80s	BEFFFBFae		
039002	30s	---------IC	40s	CCCCCCCCCC	039102	80s	----edede			043005	60s	-----EAAAA	70s	AAAAAAAAAA
	50s	CCCCCCCCCC	60s	CCCCCCCCCC							80s	AAAAAAAae		
	70s	CCCCCCCCCf	80s	CCCCCCCf	040001	50s	---FAAAAAA	60s	AAAAARAF11	043006	60s	AAAA	70s	AAAAAAAAAA
039003	60s	--eAAEEEE	70s	eEEALLELDA		70s	1111'''111'	80s	111---'		80s	AAAAAABbe		
	80s	AABAAAaae			040002	50s	------eAAA	60s	AAAAAAAAEA	043007	70s	--:AAAAAAA	80s	AAAAAAAbe
039004	30s	------eEEA	40s	AAE'1EEEEf		70s	BBAAAe 11'	80s	111 '	043008	60s	-----AAA	70s	AABAAAAAAA
	50s	1111EAAAAA	80s	AAAAEAEEEE	040003	50s	-------aAAA	80s	AAAAABEEEE		80s	AABAAABbe		
	70s	1EEAEEAF1E	80s	EEEEAAAbe		70s	FFCFCCCCCC	80s	BBBAAACc	043009	60s	---------nA	70s	AAAAAAAAAA
039005	30s	-----eAAE'	40s	1''''11''''11	040004	60s	eAAAAEEB	70s	AAAAAEAAAE		80s	AAAAAAAae		
	50s	111'EFAAAA	60s	EFAEEEEEEE		80s	AAAAADAa			043010	60s	'	70s	EAAAAAABAA
	70s	EEEAEEEEEA	80s	ALLBBDAae	040005	50s	---------nA	60s	AAAAAAAABB		80s	AA1''11		
039006	50s	eAAAAAAAA	60s	AAAAAAAAA		70s	AAAEAEAAAE	80s	AAAAADDa	043011	70s	Eeccf'''11	80s	------f
	70s	AAAAAAAAA	80s	AAAAAAAae	040006	50s	-- -------e	60s	AAAAAAABB	043012	60s	:'11	70s	1EAAAAABAA
039007	50s	--eAAAAAA	60s	AAAAAAAAA		70s	AABEAEAEEE	80s	LEE1''''e		80s	AAALABAae		
	70s	AAAAAAAAA	80s	AAAAAAAae	040007	60s	eAAAAEEEA	70s	AAAAAAAAAE	043013	60s	----------1	70s	fEBABBBAAA
039008	50s	-ICCCCCCC	60s	CCCCCCCCC		80s	DEDDDAAa				80s	AFBE1''		
	70s	CCCCCCCCC	80s	CCCCCCCf	040008	60s	eFAAAABA	70s	AAAABEAAEE	043014	60s	------''11'	70s	ILAAAAAAAA
039010	50s	--eAAAAAAA	60s	AAAAAAAAA		80s	ADDDDDDd				80s	AAAAAAAae .		
	70s	AAAAAAAAA	80s	AAAAAAae	040009	60s	-eABBBAABA	70s	AAAAAABAAA	043015	60s	---:---'11'	70s	1FFFFFF11'
039011	50s	----eAAAA	60s	AAAAAAAAA		80s	AAAAAAAa			043017	60s	------'111 :	70s	1FAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAAae	040010	60s	eAAAAAAEA	70s	AAEAEAEAAA		80s	AAABABBbe		
039012	50s	------EAAA	60s	AAAAAAAAA		80s	DDDDDDDd			043018	70s	----nAAAAA	80s	AAAAAAabe
	70s	AAAAAAAAA	80s	AAEEEAAae	040011	50s	-----aABAA	70s	AAAAABABAA	043019	70s	---EAAAAAA	80s	AABAABaae
039013	30s	----eAAAA	40s	AAAAAAAAA		80s	BADDAAAa			043021	70s	-----BBBAB	80s	BBBCCCCc'
	50s	AAAAAAAAA	60s	AAAAAAAAA	040012	60s	---eAAAAAA	70s	AAAAAAAAA					
	70s	AAAAAAAEA	80s	AAAAAAae		80s	AAAAAAAae			044001	60s	------cccC	70s	CCCCCCCccc
039014	50s	------eAAA	60s	AAAAAAAAA	040013	60s	---------fE	70s	AAAAAAAAA		80s	cccCCf '		
	70s	AAAAAAAAA	80s	AAAAAADae		80s	AAAAAAAae			044002	60s	---eAAAAA	70s	AAAAAAAAAA
039016	60s	-eAAAAAAA	70s	AAAAAAAAA	040014	70s	-e'EEEEAEE	80s	DEDEf''		80s	AAAAAAAbe ,		
	80s	AAAAAAae			040015	60s	----------E	70s	EEAAAAAAAE	044003	60s	------EAAA	70s	AAAAA8BAAA
039017	60s	--eABAABBC	70s	CCCCCCCCCC		80s	EDEE''n				80s	e- ---f '		
	80s	CCFCCF'e			040016	60s	---------fE	70s	AAAAAAAAAA	044004	70s	-fCCCCCccc]	80s	cebcBBf
039019	60s	--EAAAAAAA	70s	AAAAAAAAA		80s	AAAAAAaae			044006	60s	------11'E)	70s	AAAAA8BAAA
	80s	AAAAAAAae			040017	70s	-BEAEEBBDf	80s	FEDEE'Dc		80s	AAAAAHBBf		
039020	60s	---eAAAAAA	70s	AAAAAAAAA	040018	60s	--------1EE	70s	AAAAAAAAAA	044008	70s	---'EBAAAA	80s	AA1111'
	80s	AAAAAAAae				80s	AAAaaaAae			044009	70s	eAAAA	80s	ABAABBAbe
039021	60s	-----FAAAA	70s	AAAAAAAAA	040020	70s	eEAEEDE	80s	EEAE111e					
	80s	AAAAAAAae			040021	70s	-----EEEAE	80s	DDEDE1'	045001	50s	------nAAA	60s	AAAAAAAAAA
039022	60s	-----eAAAA	70s	AAAAAAAAA	040022	80s	'1111'				70s	AAAAABAAAA	80s	AAAAAAAc
	80s	AAAAAAAae			040023	70s	------dmmA	80s	ADDAFEDDd	045002	60s	eAAAAAAAB	70s	AAAAAAAAAA
039023	60s	----eAAAAA	70s	AAAAAAAAA	040024	70s	----eEEEAA	80s	EF''11f		80s	AAAAAAAc ;		
	80s	AAAAAAAae								045003	60s	--eAAAAAAA	70s	AAAAAAAAAA
039025	60s	--------eAA	70s	AAAAAAAAAA	041001	50s	eeAaaAAAAA	60s	AAAAaAAAAA		80s	AAAAAAAa		
	80s	AAAAAAAbe				70s	AAAAAAAADA	80s	AAAAAAAa	045004	60s	----eAAAAA	70s	AAAAAAAAAA
039028	60s	-------nAAA	70s	AAAAAAAAAA	041002	50s	-eAAAAAAAA	60s	AAAAAAAAAD		80s	AAAAAAAa '		
	80s	AAAAAAAe				70s	AAABAAAAAA	80s	ADDDDDDDa	045005	60s	---nAAAAAA	70s	AAAAAAAAAA
039027	60s	--------eA	70s	AAAAAAAAAA	041003	50s	----------e	60s	AAAAAAAAAA		80s	AAAAAAAa		
	80s	AAAAAAAae				70s	AAAAAAAAAA	80s	DDDDDDDd	045008	60s	egAE11	70s	1111'''111'
039028	60s	---------EA	70s	AAAAAAAAAA	041004	50s	-------eAAA	60s	AAAAAAAAAA	045008	70s	--'1EAAAAA	80s	ABAAAAAc
	80s	AAAAAAAae				70s	ABBBAAAAAE	80s	IFCCFFCc	045009	80s	-AAaaaAc		
039029	60s	--------'LA	70s	AAAAAAAAAA	041005	60s	nAAAAAAAAA	70s	AAAAAADAAA	045010	70s	---cccccc	80s	--f
	80s	AAAAAAAae				80s	AADDAAAa			045011	60s	---------cl;	70s	-----fcrcc
039030	70s	EAAAAAAAAA	80s	AAAAADabe	041006	60s	----eBAAAA	70s	AAAAAAAAAA		80s	cf----'		
039031	60s	--nAAAAAAA	70s	AAAAAAAAAA		80s	AAAAAAAa			045012	60s	fcfccc	70s	ccccccccc
	80s	AAAF''1			041009	50s	-- - - --F	60s	CCCCCCCCCC		80s	ccccccAe		
039032	60s	------eAAA	70s	AAAAAAAAAA		70s	CCCCCCFff'							
	80s	AAAF''1			041010	60s	-eEAEADDAA	70s	ABEDDDCDOA	046002	50s	------eAAA	60s	AAAAAAAAAA
039033	60s	--eAAAAAAA	70s	AAAAAAAAAA		80s	DDDADADDc				70s	AAAAAAAAAA	80s	AAAAAAAa
	80s	AAAAAAAae			041011	60s	- -EAAA	70s	AAAAAAAAAA	046003	50s	--------eA	60s	AAAAAAAAAA
039034	70s	eAAAAAAAAA	80s	AAAAAAAen		80s	DDADAAAa				70s	AAAAAAAAAA	80s	AAAAAAAa
039035	60s	--------1F	70s	AAAAAAAAAA	041012	60s	- - - --fEAD	70s	AAAAAAADAA	046005	60s	----EAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAaae				80s	DDAADDAa				80s	AAAAAAAc .		
039036	60s	--------eA	70s	AAAAAAAAAA	041013	50s	eAAAAAAAAA	60s	AAAAAAAAAA	046006	70s	----AAAAAA	80s	AAAAAAAa
	80s	AAAAALDae				70s	AAAAAAAAAA	80s	DDAFDDCa	046007	70s	-eAAAAAAA	80s	AF----f
039037	70s	-'EAAAAAAA	80s	AAAAAAAae	041014	70s	eADAAADAD	80s	AAADDAAa	046008	70s	-eaaaaaaa	80s	aF '
039038	60s	---------nA	70s	AAAAAAAAAA	041015	60s	- ---- FAD	70s	DAADDDADDD					
	80s	AAEEBEEde				80s	DDAAAAAa			047001	50s	------nAAA	60s	AAAAAA8888
039040	70s	-'FAAAAAAA	80s	AAAAAAAae	041016	30s	F	40s	IFFFFFFFFF		70s	AAAAAAAAAA	80s	AAAAAAAa
039042	70s	--EAAAAAAA	80s	AAAAAAAae		50s	FFFFFFFFFF	60s	FFFFFFFFAA	047003	50s	eBE	60s	11''111f''1
039043	60s	--eFAAAAAA	70s	AAAAAAAAAA		70s	AAAAAAAAAD	80s	AAAAAAAa		70s	1''1EELEAAE	80s	EFF''11
	80s	AAAAAAAae			041017	60s	----------e	70s	AAFAAADDDA	047004	60s	---eAAFAFA	70s	AAAAAAAAAA
039044	70s	--nAAAAAAA	80s	AAAAaaAae		80s	AAAAAAAa				80s	AAAAAAAa		
039046	70s	---eAEEEEA	80s	E''1EDDde	041018	60s	----------e	70s	AABAAABADA	047005	60s	---nAAAAAA	70s	AFF'111'EA
039049	70s	---EEE1''E	80s	DAABFAAae		80s	DADADDAa				80s	AF-----1		
039051	60s	--------FAA	70s	AAAAAAAAAA	041019	70s	eAAAAAAAAA	80s	AAADAAAa	047006	60s	---nAALAEE	70s	FF'11EAAAF
	80s	AALAAAAae			041020	80s	----------e	70s	AARAAAAAAA		80s	AF '		
039052	50s	--------eAA	60s	FeAAAAAAAA		80s	AAADAAAa			047007	60s	---eAAABAA	70s	AALLAAAAAA
	70s	aaaaaaaae	80s	AAAAAAAae	041021	60s	----------e	70s	EBABAABBED		80s	AAAAAAAc .		
039053	60s	-eAAAAAAAA	70s	AAAAAAAAAA		80s	AABBBABa			047008	60s	--- -e	70s	AAAAAAAAAA
	80s	AAAAAAAae			041022	70s	eAAAAADDDD	80s	AAAAAAAa		80s	AAAAAAAa		
039054	60s	-eAAAAAAAA	70s	AAAAAAAAAA	041023	70s	fBBCBBBBBB	80s	BBFEDEBae	047009	60s	----------E	70s	AAAAAAAAA9
	80s	AAAAAAAae			041024	70s	-EAAAAABBA	80s	DAAAAADa		80s	AAAAAAAa		
039055	70s	----------e	80s	LELAALEae	041025	70s	-EAAAADDDA	80s	DAAAADAa	047010	70s	fFAAAAAAA	80s	AAAAEfAe
039056	70s	--------eae	80s	aeaaeeae	041026	70s	EAAAADAAA	80s	AAADAAAa	047011	70s	-EAAAAAAAA	80s	AF-----1
039057	70s	---------ea	80s	daaaeeae	041027	70s	eAAAAADD	80s	DAAAAAAa	047013	70s	--fDAAAAAA	80s	AAAAAAAe
039058	70s	---------ea	80s	daaaeeae	041028	60s	----nFFAAA	70s	AAAAAAAAAD	047014	80s	- aaaeAe		
039061	70s	-eaaaaaae	80s	ee.aaDDe		80s	DADDDADa			047015	80s	eaaaaf		
039065	70s	eaaaae---	80s	abeebbAae	041029	80s	---edeAe			047016	70s	-------fcf '	80s	f!!fccCc
039068	70s	-eAAAAEfEA	80s	AAAAAAADe	041030	80s	------'			047017	70s	-------fcc	80s	crcccA
039069	70s	--eAEfEAAA	80s	AAAAAAAae										
039071	70s	----------a	80s	eeeeeeee	042001	50s	'CCCCCCCC	60s	CCCCCCCCCC	048001	50s	--------eAA	60s	AAAAEAAELE
039072	70s	----------a	80s	bdcaeddee		70s	CCCCCBDAAA	80s	AEDAAAAa		70s	AAAAAAAAAA	80s	AAAAAAAa
039073	70s	----------a	80s	aaaaaAae	042002	50s	----------1	60s	1111''1111'	048002	60s	FebAAABBA	70s	AAABABFccc
039074	80s	aaaaaAae				70s	'1-----''1-	80s	111		80s	fcfcf-1 '		
039075	80s	aaaaaAde			042003	60s	fCCCCCCCCC	70s	CCCCCCBAAA	048003	80s	-AABAAAa		
039076	70s	------eeee	80s	aeeeeAae		80s	DAAAAAAa			048004	60s	----------	70s	AAAAAAAAAF
039077	80s	eeeeeAee			042004	50s	--------fCC	60s	FCCCCCCCCC		80s	AAAAAAAc ;		
039078	70s	---------ee	80s	aaaaaAae		70s	CCCCCCCCCF	80s	FCCCCCCc					

Stn number	Gauged daily flows, monthly peaks and rainfall			
048005	60s ---------EA	70s AAAAAAAAAA		
	80s AAAAAAAe			
048006	60s ---------EA	70s AAAAAAAAAA		
	80s AAAAABAe			
048007	60s ---------EA	70s AAAAAAAAAA		
	80s AAAAAAAe			
048009	70s 'EAAAAAAAA	80s A1'''111		
048010	50s --------'!-	60s ---- ----!		
	70s cCBAAAAAAA	80s AAAAAAAa `		
048011	60s -FcbAAABBA	70s AAAAAAAAAA		
	80s AAAAAAAe			
049001	60s ----aAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAe			
049002	50s -------EE1	60s !!!!''''1EA		
	70s AAABAAAAAA	80s AAAAAAAc		
049003	60s --------eEB	70s CBEFFAAADA		
	80s AAAAAAAe			
049004	60s ----------E	70s AAAAAAAAAA		
	80s AAAAABDe			
050001	50s ---------eA	60s AAAAAAAAAA		
	70s AAAAAAAAAA	80s AAAAAAA:		
050002	60s --eAAAAAAA	70s BAAAAAAAAA		
	80s AAAAAAAe			
050004	60s -----eE1''	70s !''''!!''!!		
	80s ---!!!			
050005	70s -----fcccc	80s ccccccac		
050006	60s -----daaae	70s aaaaaaaaa		
	80s aaaaa!			
060007	70s ---fcccccc	80s ccc!:cCr		
051001	60s --------AAA	70s AAAAAAAAAA		
	80s AAAEeaAae			
051002	70s ---aaaaaa	80s -----aAaa		
051003	60s ------febb	70s bcbbaab'ee		
	80s e---eeaAae			
052001	60s ------aaaa	60s aaaaaAAE1		
	70s '''11---1''			
052002	50s ------aAAB	60s BBBBBBAAe-		
	70s -------!!!			
052003	60s -eBAAAAAAA	70s AAAAAAAAAA		
	80s AEAAAAAae			
052004	80s --aAAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
052005	80s -EAAAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
052006	60s ---eAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
052007	60s ------eAAA	70s AAAAABAAAA		
	80s AAAAAAAae			
052008	60s eBBBBBAAE1	70s '''11-'!!!!		
052009	60s ----AAAAAA	70s AAAAAAAAAA		
	80s ABBAA!!aa			
052010	60s ----eAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
062011	60s -----aAAAA	70s AABAAAAAAA		
	80s AAAADADae			
062014	60s ------!EAA	70s BAAAEEEEE:		
	80s !EEaaaEae			
062015	70s -EAAAAAAAE	80s -----aaae		
062016	70s !EAAAAAAAA	80s AAAAaaAae		
062017	70s ---EEE1!!'	80s -----aaae		
052020	60s ------'cc!	70s !!FEAAAA'		
	80s ------!			
053001	50s ---aAAAAA	60s AAAAAAAAAA		
	70s AAAAAAAAA	80s E!		
053002	50s ---aAAAAA	60s AAAAAAAAAA		
	70s AAAAAAAAA	80s AAAaaaAae		
053003	30s ---------!	40s 'cbbbbbc-b		
	50s bbabAAAAAA	60s AAAAAAAAAF		
	70s !''''!!''!!	80s '!-----'		
053004	50s ---------EA	60s AAAAAAAAFF		
	70s AAAAAAAAAA	80s AAAAAAAee		
053005	60s -EAAAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
053006	60s -aAAAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
053007	60s -aAAAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
053008	60s ----AAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
053009	60s ------AAAA	70s AAAAAAAAAA		
	80s AAAAAAAae			
053013	70s AAAAAAAAAA	80s AAAAAAAee		
053017	70s ---EAAAAAA	80s AAAAAAAae		
053016	60s ----------e	70s AAAAAAAAAA		
	80s AAAAAAAae			
053019	60s ----------n	70s aaaaaaaaa		
	80s AAAAaaaae			
053020	60s ----------ee	70s aaaaaAaae		
	80s AAAaaaaae			
053022	70s -------aAAA	80s AAAAE!!		
053023	70s -------aADL	80s AAAAAAAae		
053024	70s ---------AA	80s AAAAAAAae		
053025	80s AAAAAAAae			
053026	70s ---------AA	80s AAAAAAAae		
053028	80s --aaaAae			
053029	80s ----aaaae			
054001	20s -FCCCCCCCC	30s CCCCCCCCCC		
	40s CCCCCCCCCC	50s CCCCCCCCCC		
	60s CCCCCCCCC	70s CCAAAARAAA		
	80s AAAAAAAe			
054002	30s ------!bAA	40s AAAAAAAABC		
	50s CCCCBAAAAA	60s AAAAAAAAAA		
	70s BCBABABAAA	80s AAAAAAAe		
054004	50s --'CBAAAAA	60s AAAAAAAAAA		
	70s BEEEBAAAAE	80s AAAABAAe		
054005	50s ---ICBAAAA	60s AAAAAAAAAA		
	70s ABBAAABAAA	80s AAAAAAAe		
054008	50s ---!BAAAAA	60s AAAAAAAAAA		
	70s BCBAAARRAB	80s AAAAAAAe		
054007	50s --------aAA	60s AAAAAAAAAA		
	70s BCEEBBBAAA	80s AAAAS''e		
054008	50s -------eAAA	60s AAAAAAAARR		
	70s CCAAAAAAAA	80s AAAAAAAe		
054010	50s ----------e	60s AAAAAAAAAA		
	70s BCbAAAAAQD	80s AADE!!!		
054011	60s -eAAAAAAAR	70s CCBABBABAB		
	80s AAAAE!'			
054012	60s aAAAAAAAB	70s ABAAABABAA		
	80s AAAAAAAe			
054013	50s --------e	60s AAAAAAAABA		
	70s AARARRBAAE	80s !'''1---!		
054014	60s --'BAAAAAB	70s BAAAAAAAAA		
	80s AAAAAAAe			
054015	60s ------ -E	70s CLEEEEAAAA		
	80s AaAAI!'			
054016	60s -eAAAAAAAA	70s HAAAAAAAAA		
	80s AAAAAAAe			
054017	60s ---eAAAAAAA	70s RRAAAAAAAA		
	80s AAAAI1			
054018	60s ---aAAAAAAA	70s AAAAAAAALA		
	80s AAAAE!1e			
054019	60s ---aAAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAAn			
054020	60s -eAAAAAB	70s AAAAAAAAAA		
	80s AAAAAAAn			
054022	50s ---eAEAAE1	60s 111''''!!!EB		
	70s AFAAAQAEAA	80s AAAAAAA		
054023	60s ---------aA	70s BBAE'1BAAA		
	80s AAAA''1			
054024	60s !!!!''''11E	70s AAAAAAAAAA		
	80s AAAAAAam			
054025	60s ----E	70s ABAAAARAAA		
	80s AADAAAAe			
054026	60s ---------F	70s 'EAAEAAAAA		
	80s AAEAI!'			
054027	60s . . --e	70s aAAAAAAAAA		
	80s AAAAE!'			
054028	60s ----------'	70s 'BBAAAAAAA		
	80s AAAAAAae			
054029	70s 'BBAAAAAAA	80s AAABAAAe		
054032	70s 'BRAAAAAAA	80s AAAAAAAn		
054034	70s -EAAAAAAAA	80s AAAAI'''e		
054036	70s -'EAAAAAAA	80s AAAAE!!		
054038	70s --!EABAAAA	80s AAAAEAAe		
054040	70s ---FABABAA	80s AAAAAAae		
054041	70s ---FCCCAAAA	80s ABAAAAAe		
054042	70s !EAEAAEE!!			
054043	50s -----'ccc	60s ccccfccccc		
	70s F1-----!!!	80s -------'		
054044	70s 'EAAAAAAA	80s AAAAAAAe		
054045	70s ---!AAAAAF			
054046	70s --'eaae	80s aAAAE!		
054047	70s -----fbem-	80s -'''!!!		
054048	70s . eAAA	80s AAAAE!!		
054052	70s 'bDAAAAAAA	80s AAAA!!!e		
054054	70s --EAAAE --	80s ---!!''		
054055	70s --abaaa---	80s --!		
054056	70s --EEEEE			
054057	70s -fcc:baaaa	80s aaaaaAn		
054058	70s --eaabee			
054059	70s --eaabbE1!	80s . !		
054060	70s --ebaaeaae	80s fcl' 1e		
054061	70s ebaaBe			
054062	70s --EAEEBEAE	80s AAAA''1		
054063	70s --aabaaan	80s aaae		
054065	70s ---EAABEAE	80s ------1		
054066	70s ---FBBBAAA	80s AAAA''1		
054067	70s bcbae			
054068	70s --- eee			
054069	70s ----aaaa			
054070	70s --- eabcba	80s aaa1		
054080	70s --------'ed	80s aaae--1		
054081	70s -- EBA	80s AAAABAAe		
054083	70s ---------ea	80s aaa--'		
054084	70s -------- ea	80s aaa--'		
054085	70s ----------a	80s aaa .'		
054086	70s -------- e	80s baaae--e		
054087	70s ---BAEE---	80s aaee 1		
054088	70s ---------aa	80s aaaaaAae		
054090	70s ---edaddaa	80s aaaa-'		
054091	70s ------AJAA	80s AAAae 1		
054092	70s ---aDAAAAA	80s AAAae-1		
054094	80s aaeeee			
054095	80s ----aaae			
055002	30s -----eEAA	40s AAAAAAAAAA		
	50s AAAAAABAAA	60s AAAEAAAAAA		
	70s CCCBAAAAAA	80s AAACCCAc		
055003	30s --- e	40s AAAAAAAAAA		
	50s AAAAAAAAAA	60s AAAAAAAAAA		
	70s AAAABAAAAA	80s AE1		
055004	30s -------eAA	40s AAAAAAAAAA		
	50s AAAAAAAAAA	60s AAAEAAAAAA		
	70s AAAAAAAAAA	80s FFF''11		
055005	30s ---- eBA	40s AAAAAAAAAA		
	50s AAAAAAAAAA	60s AAAEAAAAAA		
	70s -- ---!!'	80s -------1		
055006	00s -----CC	10s CCCCCCCCCC		
	20s CCCCCCCCCC	30s CCCCCBAAAA		
	40s AAAAAAAAAA	50s AAAAAAAAAA		
	60s AAAAAAAAAA	70s AAAAAABCC		
	80s cCCFCI			
055007	30s -------nAA	40s AAAAAAAAAA		
	50s AAAAAAAAAA	60s AAAEAAAAAA		
	70s CCCCCCCCCC	80s CAACCCac		
055008	50s -aAAAAFFaA	60s AAAEAAALLA		
	70s AAAAADAAAA	80s AAAAAAA		
055009	40s --------eA	50s AAAAAAAAAA		
	60s AAAFAAAAAA	70s AAE1!!''''11		
	80s ---- '			
055010	50s -----aAAAA	60s AAAFAAAAAA		
	70s AAAAAAAFAA	80s EFF'!!!		
055011	50s ----------e	60s AAAAAAAAAA		
	70s AAAAAABAAA	80s OBF'!!!		
055012	60s ------eAAA	70s AAAAAAAEEA		
	80s AAAAAAAc			
055013	60s -------eAAA	70s AAAAAAAAAA		
	80s AAAAAAAc			
055014	60s - -eAAA	70s AAAAAAAAAA		
	80s AAAAAAAc			
055015	60s -------eAAA	70s AAAAAAAALE		
	80s FADf!''			
055016	60s ------ eA	70s EAEAAAAAAA		
	80s AAAAAAA:			
055017	60s ---------aA	70s BAAEEAAAAA		
	80s AF- 1			
055018	60s ---------eA	70s AAAAAAAAAF		
	80s AAAAAAAc			
055021	60s ------''1E	70s AAAAAAAAAA		
	80s AAE!FAAc			
055022	60s --1-e	70s AAAABAAAAE		
	80s 1FF!'!1			
055023	30s ------IBAA	40s AABAAAAAAA		
	50s AAAAAAAAAA	60s AAAAAAAAAA		
	70s CCCCCCCCCC	80s CAAAAAA:		
055025	60s ------1'''1	70s EAAAAAAAAA		
	80s AAAAAAAc			
055026	30s -------eBA	40s AAAAAAAAAA		
	50s AAAAAAAAAA	60s AAAEAAAAAA		
	70s AAAAAAAAAA	80s AAAAAAAc		
055027	70s -eAAAAAAEf	80s '''!---'		
055028	70s eAAAAAAAE	80s ADAAAADc		
055029	40s -------- aA	50s AAAAAAAAAA		
	60s AAAEAAAAAA	70s AAAAAAAAAA		
	80s EAAAADAc			
055030	20s ------Icrc	30s cccccccfc		
	40s cccccccccc	50s c--------		
	60s ----------	70s ---'!!!		
055031	70s -'!EAAAAAA	80s AAAAAAAc		
055032	00s - CC	10s CCCCCCCCCC		
	20s CCCCCCCCCC	30s CCCCCBAAAA		
	40s AAAAAAAAAA	50s AAAAAAAAAA		
	60s AAAAAAAAAA	70s AAAAAAABCC		
	80s cAAAAAa'			
055033	60s ---------c	70s ---edaadae		
	80s aDaae-'			
055034	70s - eeeeaa	80s naaan-1		
055035	70s ---eadaaaa	80s aaaae-'		
058001	50s --------LAA	60s AAAAAAAAAA		
	70s AAAAAABAAA	80s AAAAAAAc		
058002	50s --------nAA	60s AAAAAAAAAE		
	70s AAAAAE!!AA	80s AAAAAAAc		
058003	60s ---aAAAAAA	70s AAAAABAAAA		
	80s AA' 1			
058004	60s -----nAAAA	70s AAAAAAAAAA		
	80s F!! '			
058005	60s -----ILAAA	70s AAAAAAAAAA		
	80s AAAAAAAc			
058008	60s -eAAAAAA	70s AAAAAAAAAA		
	80s AA!'!!!			
058007	60s -- fEAE	70s LAAAAAAAAA		
	80s AAAAAAAc			
058008	70s ntaAAFF'!!	80s '1-----'		
058010	60s ----------e	70s eeeeeeeee		
	80s ae !			
058011	70s ntaAAAAAAA	80s AA1---!		
058012	70s -AAAAAAABB	80s AAf '		
058013	70s --eAAAAAA	80s AAAAAAA!		
058014	70s -- e	80s ne-!'		
058015	70s !''EAAAE	80s AA11--1		
058016	70s ----- a	80s aaabaaar		
057001	30s --eeLB	40s e-----		
	50s --eaAAAAA	60s ABBBBBAAEA		
	70s AAAA!''!!'	80s '''!!		
057002	30s -naaaaaAA	40s AAAAAEAAAA		
	50s AADDAABAAA	60s AAAAAAAAAA		
	70s ARAA!!!'!1	80s '''1		
057003	60s -----eAAAA	70s AAAI!'''!!!		
	80s !'''!!!'			
057004	50s --------eAA	60s AEEAAAAAAA		
	70s AAAAAAAAAA	80s AAAAAAAc		
057005	70s aAAAAAAAAA	80s AAAAAAAc		
057008	70s nAAAAAAAAA	80s E!!FAAAc		
057007	70s --!EAAAAAA	80s AAAAAAac		
057008	70s TAAAAAAA	80s AAAAAAA-		
057009	70s -- AAAAA	80s AAAAAAA:		
057010	70s -----aAAAA	80s EAAAAAAc		
057011	70s ----- aaae	80s e		
057012	70s -------aaae	80s e		
057015	70s -------- eA	80s ABACCCac		
057016	70s --------a	80s AAAAAAac		
058001	60s eAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAFc			
058002	70s --- AAEEB	80s LAADAAAc		
058003	60s --aAAF'!!!	70s '!!!''!!!'		
	80s ------1			
058005	70s aAAAAAAAAA	80s AAADFADc		
058006	70s FAAAAAAAA	80s EAAAAAAc		
058007	70s nBAAAAAAAA	80s EAAAAAAc		
058008	70s -FAAAAAAAA	80s EOADADAc		
058009	70s -EAAAAAAAA	80s AAADAADc		
058010	70s ---eaaae	80s eF1!---!		
058011	70s -------aAAA	80s AAAAAAAc		
058012	80s ------1			
059001	50s --------eFA	60s AAABAAAAAA		
	70s AEAEEAAAAA	80s DAAAAAAc		
059002	60s --------FEB	70s AARRRRAAAA		
	80s AAAAAAAc			
060002	60s -eAAAAAAE1	70s BAAAAAAALL		
	80s EAADAAAI			
060003	60s -----FAAAA	70s AEEAAAAAAA		
	80s AAAAAADc			
060004	60s --------!!E	70s FFAAAAAAAA		
	80s AA'----!			
060005	60s ------ fe	70s BADAAAAAAA		
	80s AAAAAAAc			
060006	60s ---------FB	70s BBBABAAAAA		
	80s AAAAAAAc			
060007	60s - '*A	70s AAAAAAAAAA		
	80s AAAAAAAc			
060008	80s 'aaaf			
060009	70s FCCCCFF!!!	80s !!!''!!		
060010	50s ---------rB	60s AAAAAAAAAA		
	70s AAAAAaaae-	80s naaaaaa!		
060012	70s 'AARRRAFFA	80s LL1---!		
060013	70s -EBCCCF!!!	80s 11--- 1		

Stn number	Gauged daily flows, monthly peaks and rainfall																			
061001	60s	-----eAEAE	70s	EAAE':::::	069004	40s	-----fBBBB	50s	BBBBBBBBAA	076001	50s	--1EABAE::	60s	EAABAAAAAA						
	80s	::::':::				60s	AAAAAAAAF1	70s	BBCCCCCCCC		70s	E::::1E1EA	80s	AEAAAAaa						
061002	60s	aABAAAABBA	70s	AAFADAAAAA		80s	CC::			076002	60s	----'1EBBA	70s	AABABBCAAF						
	80s	AAAAAFAf			069005	50s	----aEAAA	60s	AAAAAAAEAA		80s	ABAAAAAa								
061003	60s	----------	70s	AEAAAAAAAA		70s	AAAEAA::::A	80s	FAAE::	076003	60s	-aAAAAAAEA	70s	AAAAAAAAAA						
	80s	AAAAAAA'			069006	50s	-----aAAAA	60s	AAAAAAAAAA		80s	ABBAAAaa								
061004	60s	-----aAEAE	70s	EAaaaaaae		70s	DAAEAEAAAA	80s	AAAAAAAa	076004	60s	--aAAAADAA	70s	AEAEAAATAA						
	80s	aaaaclAf			069007	70s	-::::':::	80s	'AAAAAAAa		80s	tAAAAAAa								
					069008	80s	''::eaf			076005	60s	----aAABBB	70s	AAAABBBAAA						
062001	50s	----------E	60s	AAAAAAAAAA	069011	80s	::::--:				80s	AAAAAAAa								
	70s	EAAAAAAAAA	80s	AAAAAAAc	069012	80s	-----aAa			076007	60s	-------aAA	70s	AAAAAAAA'1						
062002	70s	-eaaAAAEAE	80s	EET----f	069013	80s	--e-ee!				80s	tAAAAAAa								
					069015	70s	--------AEE	80s	AAAAAAAa	076008	60s	-------aAA	70s	EAAAAFF1A1						
063001	60s	---aAAAAAA	70s	AAAAAAAAAA	069017	70s	--------AA:	80s	tAAAAAAa		80s	tAAAAAAa								
	80s	EAAAAAAc			069018	60s	----------:	70s	::::::::-::	076009	60s	---------ef	70s	BAAAAAE:::						
063002	60s	-----aAEAA	70s	AAAAAAAAEE		80s	::----:				80s	tBBAAAAa								
	80s	AAAADI			069019	60s	----------e	70s	eaaaaacctbb	076010	60s	----------1	70s	EAAAAAE:::						
063003	70s	eeeeAAEAAE	80s	::----:		80s	bee---1				80s	tAAAAAAa								
063004	80s	-------1			069020	70s	-------AAAA	80s	AAAAAAAa	076011	60s	--------ccc	70s	ccfiecccce						
					069023	70s	---------EA	80s	'AAAAAae		80s	cccc--:								
064001	60s	--EAAAAEAA	70s	AE::'E':::::	069024	80s	'AAAAAa			076014	70s	-FAAAAAAA::	80s	tAAABAAa						
	80s	'DAAAAAc			069027	70s	--------DI	80s	'AAAAAAa	076015	70s	EAABAABAAA	80s	AAAAADAa						
064002	60s	-----IAEEA	70s	EEDDDDDAAA	069030	70s	-------eIDA	80s	AAAAAAa											
	80s	AAAAAAAc			069031	80s	-eeee=A			077001	60s	---eDAEEAE	70s	EEEBAAAAAI						
064008	80s	fccccccccc	70s	cBABAAAAAA	069032	70s	----------A	80s	AAAAAA		80s	tAAAAAAa								
	80s	AAAAAAAc			069034	80s	-----e-'			077002	60s	-:fCCBAAAA	70s	AAAAAAAAAA						
					069035	70s	--------ALA	80s	'AAADI		80s	AAAAAAAee								
065001	60s	-eAABAABAE	70s	EEEEAAAAAD	069037	80s	-----fCc!			077003	70s	---DAAAAAA	80s	AAAAAAAae						
	80s	AAAAAAAc			069040	80s	---ae			077004	70s	----------d	80s	aAAAAAAe						
065002	60s	--------eee	70s	eEEEE1EE::						077005	70s	--------e--	80s	---eaaAa						
065004	70s	eEEEAAAAAA	80s	AAAAAAAc	070002	80s	BAABAAAa													
065005	70s	--tAAAAAAAA	80s	AAAAAAAc	070003	70s	--------e--	80s	---ae	078001	50s	----------eA	60s	AE:::-----						
065006	70s	------eAAA	80s	AAAAAAAc	070004	70s	-------AAAA	80s	AAAAAAA		70s	::::::----	80s	-------'						
065007	70s	----tEAAAA	80s	AAAAAAAc	070005	70s	---------e-	80s	-aaae---a	078002	60s	---aAF::::	70s	::::::::						
											80s	-------1								
066001	50s	----------e	60s	AAAAAAAAAA	071001	60s	fCCCbAAAAA	70s	BCBBBAAAAA	078003	60s	-:::::tDAA	70s	AAAAAAAAAA						
	70s	AAAAAAACCF	80s	CI::::		80s	AAAAAAAn				80s	AAAAAAAee								
066002	60s	-aABAAAAAC	70s	BAAAE::::	071003	50s	--------nAA	60s	AAAAAAAAAA	078004	60s	-1IEBECAAA	70s	AAAAAAAAAA						
	80s	-------:				70s	AAAaE'--1::	80s	-------t		80s	AAAAAAAe=								
066003	80s	---eAE'EA1	70s	t:::'EEEEEE	071004	60s	---=HAAAAA	70s	AE1tAEAAAB	078005	70s	----------A	80s	AAAAAAAe						
	80s	AAD111ac				80s	AAAAAAAa			078006	80s	---eaaAae								
066004	70s	aAAAAAAI'	80s	::---:	071005	60s	eAAAAAAAAA	70s	AABbE1-111											
066005	70s	-EAEAAA:::	80s	::----:		80s	-------:			079001	60s	-1:::EBBEF	70s	FFCCCFCCcc						
066006	70s	---EAAAAAA	80s	AAAAAAAc	071006	60s	---------FC	70s	CFCCAAFAAA		80s	cf I								
066008	70s	--------eee	80s	bbaaaeAc		80s	DAAAAAAa			079002	50s	-------eAA	60s	AAAAAAAAAA						
066011	60s	----eLEEEA	70s	AAEAAAAAAA	071007	80s	::::				70s	AAAAAAAAAA	80s	AAAAAAAee						
	80s	AAAAAAAc			071008	70s	-------AE1	80s	1AAAAA1a	079003	50s	---------e	60s	AAAAAAAAAA						
					071009	80s	aaaaaA				70s	AAAAAAAAAA	80s	AAAAAAAee						
067001	50s	-------eAA	60s	AAAAAAAAAA	071010	70s	-'ccccfAA1	80s	1AAAAAA	079004	60s	-11FCBAAAA	70s	AAAAAAAAAA						
	70s	ABAAAAAAAA	80s	AAACCCac	071011	60s	------FFFC	70s	CCF::::1EAE		80s	AAAAAAAee								
067002	30s	-------eAA	40s	AAAAAAAAAA		80s	EAAAA'Aa			079005	60s	-1:EAAAAAA	70s	AAAAAAAAAA						
	50s	AAAAAAAAAA	60s	AAAAAAAAAA	071013	80s	aaaae				80s	AAAAAAAee								
	70s	A1111'-:::			071014	70s	--------aaa	80s	-aaaae	079006	60s	-:::::1EAA	70s	AAAAAAAAAA						
067003	20s	--eAAAAAAA	30s	AAAAAAAAAA							80s	AAAAAAAae								
	40s	AAAAAAAAAA	50s	AAAAAAAAAA	072001	50s	----------c	60s	cCCCCCBCC											
	60s	AAABBAAAAA	70s	AABAABCAAA		70s	CAAAAAB'1:	80s	-------t	080001	60s	-11FAAAAAA	70s	AAAAAAAAAA						
	80s	AAAI'AAc			072002	60s	---eAAAAAA	70s	AAABCCAAAF		80s	AAAAAAAee								
067005	50s	---:::tEAAA	60s	AAAAAAAAAA		80s	AAAAAAAa			080002	70s	------dAA	80s	AAAAAAaee						
	70s	AAAAAAA:::	80s	:::----'	072004	50s	----- - -C	60s	cCCCCCCCBB	080003	80s	daaaa'								
067006	80s	eAAAAAAAAA	70s	BAAAAAAAAA		70s	CCCCCCC:::1	80s	-aeAAAAa	080004	80s	--:cccc								
	80s	AAAAAAAc			072005	60s	-------- F	70s	CCCCCCFAAI	080005	80s	---fccf								
067008	60s	-----EBAAA	70s	AAAAAAAAAA		80s	1AAAAADa			080006	80s	---fcc								
	80s	AAAAAAAc			072006	60s	---------:1	70s	::::::::::											
067009	60s	-----EE:EB	70s	BBBBEBEBAB		80s	::::--:			081001	60s	-----eBBe-	70s	--- :::						
	80s	B:DDDDd!			072007	80s	---- aI			081002	60s	-11EAAAAAA	70s	AAAAAAAAAA						
067010	60s	------EAAA	70s	AAAAAA::::1	072008	60s	--------1f1	70s	EABCCCAAAA		80s	AAAAAAAee								
	80s	11----'				80s	AAAAAAEa			081003	60s	-1:'::1tAAA	70s	AAAAAAAAAA						
067011	60s	-------ccc	70s	ccfiecccf!	072009	70s	::::::':::::	80s	1AAAAAAa		80s	AAAAAAAee								
	80s	!!			072011	60s	----------fc	70s	'------EEA	081004	70s	-------dAA	80s	AAAAAAAae						
067012	60s	-------EE:	70s	t::::i-'::i		80s	'DAFFAEa			081005	80s	-----eaee								
067013	60s	-------EDE	70s	AAAAAa='11	072015	80s	-----eDa													
	80s	-------1			072016	80s	-aaaae			082001	60s	·11EAAAAAA	70s	AAAAAAADAA						
067015	30s	-------eAA	40s	AAAAAAAAAA							80s	AAAAAAA								
	50s	AAAAAAAAAA	60s	AAAAAAAAAA	073001	70s	fccccc'---	80s	-------t	082002	70s	---'EAAAAA	80s	AAAAAAa						
	70s	AAAAAAAAAA	80s	AAAAAAAc	073002	60s	---EAAAADA	70s	BBBCAAAAAA	082003	70s	---AAAEEAA	80s	AAAAAAA						
067016	60s	-------EAE	70s	t::'E::::'		80s	AAAAAAAa													
	80s	!!			073003	80s	-aaaaEa			083001	60s	·---::::--	70s	-fFFFFF!!!						
067017	60s	---------!B	70s	AAAAAAAAAA	073005	60s	--------EB	70s	BBABAACAAA		80s	N								
	80s	AAAAAAc				80s	AAAAAAAa			083002	60s	---eAAAAa	70s	AAAAAAAa						
067018	60s	---------tE	70s	AAAAAAAAAA	073008	60s	----------L	70s	AAEIAAA:::	083003	60s	-:::::::11	70s	EAAAAAAAAA						
	80s	AAAAAAAc				80s	1AAAAAAa				80s	AAAAAAA								
067025	70s	-------aaaa	80s	aAAAEtt	073009	70s	:::::::::::	80s	1AAAAAAa	083004	70s	-tEAAAAAAA	80s	AAAAAAA						
067026	70s	----cccccc	80s	ctt:::	073010	30s	----------C	40s	CCCCCCCCCC	083005	70s	--EAAAAAAA	80s	AAAAAAA						
067028	70s	---------ea	80s	ee		50s	CCCCBCCCCC	60s	CCCCeCCCCC	083006	70s	-------edab	80s	aaaaaaA						
067029	70s	--------aae	80s	eeddfdc		70s	CBBBCCCAAA	80s	AAAAAAAa	083007	70s	--------aae	80s	aaaaaaA						
					073011	70s	fCCCCC'A11	80s	1AAAAEEa	083009	70s	---------ae	80s	aaaaaaA						
068001	30s	--------aAB	40s	AABCBBABBB	073013	80s	::::'--a			083010	80s	aaaaaaA								
	50s	BAAAAAAAAA	60s	AAAAAAAEAE	073014	80s	::::--:													
	70s	AAAAAEAAAI	80s	EAAAAAAa						084001	40s	----------eE	50s	EEEBBBBLEB						
068002	40s	----------e	50s	AAAAAAAAAA	074001	80s	--------FC	70s	CCBCCCBAAA		60s	AAAAAAAAAA	70s	AAAAAAAAAA						
	60s	AAAAAAAEAA	70s	AAAAAAE:::		80s	AAAAAAAa				80s	AAAAAAA								
	80s	'1-----!			074002	60s	--------aBB	70s	AAAAABBADA	084002	50s	--eAIEAEEE	60s	AAFFAEFFFC						
068003	40s	----------e	50s	AAAAAAAAAA		80s	AAAAAAAa				70s	AAEEEEE::	80s	:::::::						
	60s	AAAAAAAEAA	70s	AAAAAE:::::	074003	70s	---eEADAAA	80s	AAAAAAAa	084003	50s	-------eBOA	60s	AAAAAAAAAA						
	80s	!DAAAAA			074005	70s	---:BAAAAA	80s	AAAAAAAa		70s	AAAAAAAAAA	80s	AAAAAAA						
068004	50s	--------eAA	60s	AAAAADADAA	074006	60s	----fCCFCC	70s	CCF1BBBAAA	084004	50s	--------eAA	60s	AAAAAAAAAA						
	70s	AAAAAEAA1:	80s	tAAAAAA		80s	AABAAAAa				70s	AAAAAAAAAA	80s	AAAAAAA						
068005	50s	---eAAAAAA	60s	AAAABAAEAA	074007	70s	-----:AAAA	80s	AAAAAAAa	084005	50s	---------eA	60s	AAAAAAAAAA						
	70s	AAAAAFFEAA	80s	AAAAAAAe	074008	70s	--------na-	80s	-babeeee		70s	AAAAAAAAAA	80s	AAAAAAA						
068006	50s	---eAAAAAA	60s	AAAAAAAEEA						084006	60s	-11EAAAAAA	70s	AAAAAAAEAA						
	70s	AAAAAEE::1	80s	1EEAA::	075001	30s	-:::'EAE:1	40s	'::::'EAAAA		80s	AAAE:!'								
068007	60s	--eBAAAAAA	70s	AAAAAFAAEA		50s	AAAAAAAAAA	60s	AAABAAAAEF	084007	60s	-----eEAAA	70s	AAAAAAABBA						
	80s	AAFEA1'				70s	F''AAAFAAA	80s	AAAAAAAa		80s	AAAAAAa								
068010	70s	---'::::'1	80s	::----'	075002	80s	fcBCB8888A	70s	AAAAAAAAAA	084008	60s	------aAAA	70s	AAAAAAAAAA						
068015	80s	-aaaaA				80s	AAAAAAEa				80s	AAAAAAA								
068018	70s	-------1			075003	60s	---------eA	70s	BAABAABAAA	084009	60s	------aAAA	70s	AAAAAAAAAA						
068019	80s	'::::'				80s	AAAAAAAa				80s	AAAEI::								
068020	80s	-AAAAAAa			075004	60s	-------'BA	70s	BBABAACAAA	084011	60s	---eAAAAAA	70s	AAAAAAAAAA						
						80s	AAAAAAAa				80s	AAAAAAA								
069001	30s	----aaab68	40s	88888888B8	075005	70s	--AAABCAAA	80s	AAABAAAa	084012	60s	-:1EAAAAAA	70s	AAAAAAAAAA						
	50s	AAAAAAAABA	60s	BAAAAAABLA	075006	80s	---------eA	70s	AAAAAAAAAA		80s	AAAAAAA								
	70s	AAABABAAAI	80s	1AAAe-a		80s	a---- :			084013	60s	---eAAAAAA	70s	AAAAAAAAAA						
069002	40s	----------e	50s	AAAAAAAAAA	075007	80s	-------- a	70s	AAAAAAAAA:		80s	AAAAAAA !								
	80s	AAAAAAAEAA	70s	AAEFA:AAAA		80s	-------:			084014	60s	----eAAAAA	70s	AAAAAAAAAA						
	80s	AAAAAAA			075009	70s	-aAAABBAAA	80s	ABAAAAAa		80s	AAAAAAA !								
069003	30s	--------eE1	40s	t:::'::::::E	075018	70s	--------DDD	80s	AAABAAaa	084015	60s	e:::1EAAAA	70s	AAAAAAAFAA						
	50s	AAAAAAAAAA	60s	AAAAAAAEAA	075017	80s	--aAAAAa				80s	AAAAAAA								
	70s	AAAEE1A1AE	80s	AAAAAAA						084016	60s	- :::::::'A	70s	AAAAABBAAA						
											80s	AAAAAAA								

Stn number	Gauged daily flows. monthly peaks and rainfall			
084017	60s --------tAA	70s AAAAAAAAAA		
	80s AAAAAAa			
084018	60s ----------A	70s AAAAAAAAAA		
	80s AAAAAAA			
084019	60s ---AAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAa			
084020	60s --------eF	70s AAAAADAtAE		
	80s AAAAAAA			
084021	60s ----------E	70s AAtFFt***tt		
084022	60s -------eEtt	70s EEEAALAAtA		
	80s AAAAAAE			
084023	70s ---tAAAAEA	80s AAAAAAA		
084024	70s --aAAAAAAL	80s AAEAAAa		
084025	70s ---t*AAAAL	80s AAAAAAA		
084026	70s ----eaabae	80s asaaaaA		
084027	70s ---EDttDEt	80s ------en		
084028	70s -----aeaae	80s abaaaae		
084029	70s -----eaaed	80s aaaaaaA		
084030	80s -aaaaaa			
085001	80s ---aAAAAAA	70s AAAAAAAAAA		
	80s AAAAAAA			
085002	80s -11tAAAAAA	70s AAAAAAAAAA		
	80s AAAAALA			
085003	60s -*ttt**ttt	70s tAAAAtAAEE		
	80s AAAAAAA			
085004	70s ------aaae	80s aaae-eA		
086001	60s --------aA	70s AAAAAA8988		
	80s AAAAABa			
086002	60s -t**ttt*EE	70s AAAAA88AAA		
	80s AAAAAAA			
090002	70s --------eee	80s ee		
090003	80s --eaaaAa			
091002	80s eAAAAAae			
093001	70s ----------A	80s AAAAAAAa		
094001	60s -*ttttt**t	70s tAAAAAAAae		
	80s AAAAAAAa			
095001	70s --------eAA	80s AAAAAAAa		
095002	80s ------eee			
096001	70s ------AAAA	80s AAAAAAAa		
096002	70s --------aAA	80s AAAAAAAa		
096003	80s -- -eae			
097001	50s ----1--	60s - *ttt--		
	70s -ttttt**---	80s tt-ttt		
097002	60s *tttt***tt	70s ttAAAAAAAA		
	80s AAAAAAAa			
101001	60s -tcttttcttt	70s FcCCIcC:tt		
	80s tt***ttt			
101002	60s ------aeee'	70s eeebbentEt		
	80s FREABAAd			
101003	80s '--eddJe			
101004	80s --eaaaAa			
101005	80s - eaaaAa			
101006	80s ------1			
101007	80s eeeJAa			
201002	70s --aeaeaaa	80s aaAA:		
201005	70s -tEAAAAAAA	80s AAAAAAE		
201008	70s --aaaaAAA	80s AAAAAt		
201007	70s *ttt*EAEAA	80s AAAAAAA		
201008	70s ------ e	80s aaaAAt		
201010	80s --eeaan			
203010	60s -ttt*ttt*t	70s tAAAAAAAAA		
	80s AAAAAAA			
203011	70s eaaaaaaaa	80s e tt:		
203012	70s eaaaaaaaa	80s aaaAAAa		
203013	70s eaaaaaaaa	80s aaaaaaa		
203017	70s eAAAAAAAAA	80s AAAAeAA		
203018	70s eaaaaaAAA	80s AAAAAAa		
203019	70s -----aaan	80s aaaaaa		
203020	70s -aaaaaaaa	80s aaaAAAa		
203021	70s -aaaaaaaa	80s aaaAAA		
203024	70s -eaeeeeaa	80s eaaeaa		
203025	70s -eaaaaaaa	80s aaaAAAa		
203026	70s -aeeaeaaa	80s aaaaa		
203027	70s -tEAAAAAAA	80s AAAAAAa		
203028	70s -tEAAAAAAA	80s AAAAAAA		
203029	70s ---aaaaaa	80s aaaaae		
203033	70s -----aaaaa	80s eAeAAt		
203042	80s -eaaaa			
204001	80s ---FFt			
205003	70s cheaaaaa	80s aaaea		
205004	70s --eaaaaea	80s aaaAAt		
205005	70s -EAAAAAAA	80s AAAAAAA		
205006	70s --eaaaaaa	80s a		
205008	70s ----naaaaa	80s aaeAA:		
205010	70s -aeaae	80s aaaaae		
206001	70s -------aaaa	80s a		
206002	70s --aaaa	80s a		

Produced 24th October 1988 New summaries available on request

Naturalised daily and monthly flows

KEY:

Complete daily and complete monthly	A
Partial daily and complete monthly	B
Partial daily and partial monthly	C
Partial daily and no monthly	D
No daily and complete monthly	E
No daily and partial monthly	F
No naturalised flow data	–

Summary is presented in decade blocks

Stn number	Naturalised daily and monthly flows				Stn number	Naturalised daily and monthly flows				Stn number	Naturalised daily and monthly flows			
006007	70s	---EEEEEEF			023015	40s	--FFFFFFFF	50s	FEFEFFEEEF	032026	70s	-FFFFF		
007003	60s	-----FEEEE	70s	EEEEEEEEEE	024001	60s	---------CA	70s	AC	033001	50s	-FEFFFFF		
	80s	F			024003	50s	. . . . ---FE	60s	EEEEEBACAA	033002	60s	--FEEBAAAA	70s	AAAAAAA
008001	30s	--------FF	40s	FFEEEEEEEE		70s	AC--CC			033003	50s	FF-FEEEF		
	50s	EEEEEEEEE	60s	FEEEEF	025001	50s	------FFFF	60s	EEEEEBAAAA	033004	40s	-----FFFEE	50s	FFFFFFFF
008005	70s	-F-E				70s	AC--CAAAC			033005	50s	--FEEEEEEE	60s	EEEEEEBBAA
					025002	70s	FFFF				70s	AC		
012002	70s	--FF------	80s	F	025004	50s	--------FF	60s	EEFFBAACC	033006	50s	------FEEE	60s	EEEEF
012004	70s	--------EE	80s	F		70s	C			033007	50s	---FFFFFF	60s	EEEFEECCCF
					025008	60s	------CAAB	70s	BBFF		70s	EF		
013007	70s	------EEEE	80s	FEEEEE						033011	60s	-FFFF		
					026002	60s	FFEEF	70s	FFFF	033026	70s	-CAAAAC		
014001	70s	-----F--E								033035	50s	--------CA	60s	AAAAHAAAAA
014002	70s	-----E--E			027001	30s	--------FF-	40s	-FFFFF----		70s	AAAAAC		
						50s	---FEEEEEF	60s	EEEEEEEF-F	036001	30s	--CAAAAAAA	40s	AAAAAAAAAA
015003	70s	---EEFEEEE	80s	EEEEEE		70s	F				50s	AAAAAAAAA	60s	AAAAAAAAA
015008	60s	--------FEE	70s	F--EEEEEEE	027002	50s	-----FFFFF	60s	EEEFFFFFFF		70s	AAAAAAC		
	80s	EEEEEF				70s	E			036002	60s	CAAAAAAAAA	70s	AAAAAC
015007	70s	---EFFFFFF	80s	EEEEEE	027003	60s	--FEEEEEEE	70s	EF	036003	60s	-CAAAAAAAA	70s	AAAAAAC
015008	70s	---EEEEEEE	80s	EEEEEE	027004	60s	FEEEEEEEF			036004	60s	-----CAAAA	70s	AAAAAAC
015010	70s	---EEEEEEE	80s	EEEEEE	027005	40s	-----FFFFF	50s	FFFFFFEEFF	036005	60s	--CAAAAAAA	70s	AAAAAAC
015011	70s	---EEEEEEE	80s	EEEEEE		60s	EEEEEEEEEE	70s	FF	036006	60s	--CAAAAAAA	70s	AAAAAAC
015012	70s	---EEEEEEE	80s	EEEEEE	027006	60s	---FEEEE	70s	EF	036007	60s	-----CAAAA	70s	AAAAAAC
015013	70s	---EEEEEEE	80s	EEEEEE	027007	50s	---------FE	60s	EEEEEEEEEE	036008	60s	CAAAAAAAAA	70s	AAAAAAC
015018	70s	----EEEEEE	80s	EEEEEE		70s	EF			036009	60s	--------CC	70s	AAAAAAC
015017	70s	--------F			027009	60s	---------F	70s	EF	036010	60s	--------CA	70s	AAAAAAC
015024	80s	--EEEE			027012	50s	----FEEEEE	60s	EEEEEEEEEE	036011	60s	--------CA	70s	AAAAAAC
						70s	FF			036012	60s	--------CA	70s	AAAAAAC
016001	60s	---FEEEEEE	70s	EEEEEEEEEE	027013	50s	...---FEEEEE	60s	EEEEEEEEFE	036015	70s	--CAAAC		
	80s	EEEEEE				70s	EF							
016004	70s	-----EEEEE	80s	E	027015	60s	--- CAAC			037001	50s	CAAAAAAAAA	60s	AAAAAAAAC-
					027016	50s	------FEEE	60s	EEEEEEEEEE		70s	-CAAC		
017001	60s	---------F	70s	EF----E		70s	EF			037002	30s	--CAAAAAAA	40s	ACCAAAAAAA
017002	60s	---------F	70s	EF----E	027017	50s	------FEEE	60s	EEEEEEEEFE		50s	AAAAAAAAA	60s	AAAAAAAAA
017003	70s	------E				70s	EEEF				70s	AAAAAAC		
017004	70s	------E			027018	50s	---FEEE	60s	EEEEEEEEEE	037003	30s	--CAAAAAAA	40s	AAAAAAAAAA
017005	70s	------E				70s	EEEF				50s	AAAAAAAAA	60s	AC--CAAAAA
					027019	50s	- FEEE	60s	EEFEEEEEFF		70s	AAAAAAC		
018001	70s	------E				70s	-FEF			037005	50s	---------C	60s	AAAAAAAAAA
018002	60s	-----FEEEE	70s	F-----E	027020	50s	------FFFF	60s	FFEEEEEEFE		70s	AAAAAAC		
018003	60s	----FEEEEE	70s	EF----E		70s	FEEF			037006	60s	--CAAAAAAA	70s	AAAAAAC
018005	70s	------E			027021	60s	FFFEEEFEEE	70s	EF	037007	60s	----CAAAAA	70s	AAAAAAC
018008	70s	------E			027022	60s	----FFFFFE	70s	FF	037008	60s	-----CAAAA	70s	AAAAAAC
					027023	60s	----FEEEEE	70s	EF	037009	60s	--CAAAAAAA	70s	AAAAAAC
018001	50s	--------EEE	60s	EEEEEEEEEL	027024	60s	-FFFFF			037010	60s	--CAAAAAAA	70s	AAACCAC
	70s	EEEEEEE			027025	60s	-FEEEEEEEE	70s	EF	037011	60s	---CAAAAAA	70s	AAAAACC
019002	60s	--EEEEEEEE	70s	EEE-EEE	027026	60s	- -FEEEEEF			037012	60s	---CAAAAAA	70s	AAAAAAC
019003	60s	-FEEEEEEEE	70s	FFFFFFF	027027	60s	-FEEFFLLFL	70s	LLLF	037013	60s	---CAAAAAA	70s	AAAAAAC
019004	60s	EEEEEEEEE	70s	EEE-EEE	027028	60s	EFFEEEEEE	70s	EF	037014	60s	---CAAAAAA	70s	AAAAAC
019005	60s	--FFFFFFFF	70s	EFEEEEE	027029	60s	-FEEEEFFFF			037016	60s	-----CAAAA	70s	AAAACAC
019006	60s	---EEEEEEE	70s	EFFFFFF	027030	60s	----FEEEEE	70s	LF	037017	60s	---------C	70s	AAAACAC
019007	60s	--FFFFFFFE	70s	EEEEEEE	027031	60s	----EFFFFF	70s	FF	037018	70s	CAAAC		
019008	60s	----FEEEE	70s	EFFFFFF	027032	60s	------FFEF			037019	60s	-----CAAAC	70s	AAAAC
019009	60s	---EFEEEFE	70s	EEFFEEE	027039	60s	-------FFF	70s	EF	037020	70s	CAAAAAC		
019010	60s	---------E	70s	LLLLLLE						037021	70s	CAAAAAC		
019011	70s	------F			028001	30s	--------FFF	40s	F---------F	037022	70s	CAAAAAC		
						50s	FFEFFFFFEE	60s	EEELEBAAAA	037023	70s	-CAAC		
020001	80s	-EEEEEEEEF	70s	EEEEEEE		70s	AAAAACAA			037024	70s	-CAAAAC		
020002	60s	--------EE	70s	EEELLLL	028002	40s	. . . -FFEEE	50s	EEEEEEEEEE					
020003	60s	-----EEEEF	70s	EEFEEEE		60s	EEEELBAACC	70s	CC--CC	038001	80s	---DAAAAAA	90s	AAAAAAAAAA
020004	60s	--------EEE	70s	EEEELEE							00s	AAAAAAAAA	10s	AAAAAAAAA
020005	70s	-------E			030003	60s	-----FF				20s	AAAAAAAAA	30s	AAAAAAAAA
020006	70s	-------E									40s	AAAAAAAAA	50s	AAAAAAAAA
020007	70s	-------E			031001	40s	FEFFEF-----	50s	---FEEEEEF		60s	AAAAAAAAA	70s	AAAAAAC CA
						60s	ELFEEBAACA	70s	ABFEFFFFFF		80s	AAAAAAAA		
021001	50s	----------F	60s	EEEEFFEEF		80s	CF							
021002	50s	----------F	60s	FFFFEEEEF	031006	70s	FEEEEF			039001	80s	---AAAAAAA	90s	AAAAAAAAAA
021003	50s	----------F	60s	EEEEEEEEE	031007	60s	---------FF	70s	FF--FF		00s	AAAAAAAAA	10s	AAAAAAAAA
	70s	EEEEEEEEE	80s	FF----FF	031009	70s	--FFFF				20s	AAAAAAAAA	30s	AAAAAAAAA
021004	60s	-----FEEF			031010	70s	-FEEEF				40s	AAAAAAAAA	50s	AAAAAAAAA
021005	60s	-FEEEEEEEE	70s	EFFFEEEEEF	031011	70s	---FFF				60s	AAAAAAAAA	70s	AAAAAAAAA
	80s	EF----EE			031012	70s	---FFF				80s	AAAAAAAD		
021006	60s	-FEEEEEEE	70s	FFFFFFFFF	031013	70s	---FFF			039002	30s	--------CA	40s	AAAAAAAAA
	80s	F-----FE			031015	70s	-FFFFF				50s	AAAAAAAAA	60s	AAAAAAAAA
021007	80s	------EE			031016	70s	-FEEEF				70s	AAAAAAAAA	80s	AAAAAAAA
021009	60s	--FEEEEEEE	70s	EEEFEEEEE	031017	70s	---FFF			039008	50s	-CAAAAAAAA	60s	AAAAAAAAA
	80s	F-----EE			031018	70s	---FFF				70s	AAAAAAAAA	80s	AAAAAAAD
021010	60s	---FEEEEEE	70s	EF-FF-EE--	031019	70s	---FFF							
	80s	E			031020	70s	-FFFFF			040001	50s	---FEELEF-	60s	-FEEFEEF
021011	80s	------EE			031021	70s	-FFFFF			040002	50s	------FLEF	60s	FFFFFEEF
021014	60s	-FEEEEEEE	70s	FFEEEFFFFF	031022	70s	FFF			040003	50s	------FEFE	60s	EEEEEEFF
	80s	F-----EE								040004	60s	--FEEELF		
021018	60s	--------FE	70s	FFFFFFFFF	032001	40s	FEEEEEEEEE	50s	EEEEEEEEE	040005	60s	-----FFF		
	80s	F-----EE				60s	FFFFFFFFF	70s	FEEEF	040006	60s	-----FEF		
021019	60s	--------FE	70s	FFFEEFFFF	032002	30s	- ------FF	40s	EEEEEEEEE	040007	60s	FFFFFFF		
	80s	F-----EE				50s	FFFFF-----	60s	-FEEEEEEEE	040008	60s	-----FEE		
021020	80s	------EE				70s	EEEEEF			040009	60s	-----FFF		
021021	60s	---------F	70s	EEEEEEEFEE	032003	70s	FEEEEF			040010	60s	-----FEE		
	80s	F-----EE			032004	40s	- FEFEEEE	50s	EEEEEEEEE	040011	60s	-----FEEF		
021022	60s	---------F	70s	EEEEEEEEE		60s	EEELFFEEEF	70s	FFFFF					
	80s	F-----EE			032006	30s	---------F	40s	EEEEEEEEE	043005	60s	-----FEEEF	70s	LF
021025	70s	--FEEEEEE	80s	F-----EF		50s	EEEEEEEEE	60s	EEEEEEEEF					
021030	80s	------EE			032007	30s	---------F	40s	EEFFEEEEE	045003	60s	--FEEEEF		
021034	80s	------EE				50s	EEEEEEEEE	60s	EEEEEEEEF	045004	60s	--------CA	70s	C
					032008	40s	-----FFEEE	50s	EFFFFFFFF	045005	60s	---FFFFFCA	70s	C
023001	50s	------FEEE	60s	EEEEFEACAA		60s	FFFFFFFFF	70s	EEEEEF					
	70s	CC			032012	70s	FFFFF			046002	60s	FFEEFEEEF		
023002	60s	-----CAAAA	70s	AC	032018	70s	FFF			046003	60s	--------CA	70s	C
023003	50s	----------F	60s	EEEEEBAAAA	032019	70s	---FFF			046008	70s	----AAAAAA	80s	AAAAAAA
	70s	AAAC			032020	70s	FEEEFF							
023007	60s	-----CAAAA	70s	BCAC	032023	70s	-F-FFF			047004	60s	----FBCEFF		
023008	70s	--CC			032025	70s	FFFFF			047005	60s	-------C		

Stn number	Naturalised daily and monthly flows			
047015	50s --------AAA	60s AAAAAAAAAA		
	70s AAAAAAAAAA	80s AAAAAA		
048001	60s ----FBACCC			
048002	80s ----FF---C			
048006	60s ---------CC			
048007	80s ---------CC			
049003	60s --------CCC			
050001	50s ---------DA	60s AAAAAAAAAA		
	70s AAAAAAAAAA	80s AAAAAAAAD		
050002	60s --FEE88EBA	70s C		
050006	60s -----DAAAA	70s AAAAAAAAAA		
	80s AAAAAAAAD			
051002	70s ---FEEEF			
052002	50s ------FEEE	60s EEEEEBEEF		
052005	60s -FEEEBEEEE	70s FFFFEEFF		
052006	60s ---FEEEEEE	70s EEEEEEEF		
052008	60s FEEEEBFEF			
052014	60s --------FEL	70s FEEEFFFF		
053004	60s ---------FE	80s FFFFFFFFF		
	70s FEEEEEEAAA	80s A		
054001	20s -CAAAAAAAA	30s AAAAAAAAAA		
	40s AAAAAAAAAA	50s AAAAAAAAAA		
	60s AAAAAAAAAA	70s AAAAAAA		
054005	50s ------FEEE	60s EEEEEEBAAC		
	70s ------AA			
054010	60s --------CC			
054013	60s ------CACA	70s C------AA		
054014	60s --------CAA	70s C------AA		
054017	60s --------CC			
055002	30s --------FEF	40s EEEEFFFEEE		
	50s EFFFFFFFFF	60s EEEFFFFFFF		
	70s AAAAAAAAAA	80s AAD		
055006	30s -----FLLLE	40s EEEEEEEEEE		
	50s EEEEEEEEEE	60s EEEEEEEEEE		
	70s EEEEEEEF			
055007	30s --------FE	40s EELELEEEEE		
	50s EEEEEEEEEE	60s EEEFFEEEFE		
	70s AAAAAAAAAA	80s ADA		
055023	60s ----------F	70s AAAAAAAAAA		
	80s AAA			
056001	50s --------FEE	60s EEEEEEEEEE		
	70s FEEEEEFF			
056002	50s --------FEE	60s EEEEEEEEEF		
	70s EEEEEF			
056003	60s ----FEF			
056004	60s -----FEEEF	70s FFFEEEF		
056006	60s ---FEEEEEE	70s FFEEEEF		
056011	70s FEEEEEFF			
056012	70s FEEEEF			
057001	50s --FEEEEEEE	60s EEEEEEEBC		
057002	30s --------FFF	40s EEEEEFEFFE		
	50s LLLLLFFLF-	60s -FLEEEBAAA		
	70s C			
057003	60s ····CAAAC			
057004	50s --------FEE	60s EFFFFBAAAC		
058001	60s ---FEF --C	70s C		
058003	60s --FEEF			
059001	50s ---------FE	60s EEEEEBACC		
061002	60s FEEEEBCC			
062001	50s ----------F	60s EEEEEEEF		
064001	60s --FF			
066002	60s -FEEEEEEE-	70s FFE		
066003	60s ---FEF-FE			
066011	60s ---------CA	70s AC		
067001	50s --------FEE	60s LLLLLLLLLL		
	70s FFFF			
067002	50s ---FLLLEEL	60s FFFFFFFFFF		
067003	60s -------FE	70s EEEE		
067006	60s FFFFFFFFF			
067015	70s FFEE			
067017	60s F	70s EE		
068001	60s -FEEEEEFEF	70s ----E		
068003	40s ·· ·····F	50s EEEEEEEEEE		
	60s FEFEF-----	70s ---FE		
068004	60s FFFEELLEF	70s ---FE		
068005	60s -FEEEEEFEF	70s ---FE		
068006	60s -FFFFFFFFF	70s ----E		
069004	40s - ·FEEEE	50s EEEEEEEEEE		
	60s EEEEEEEEF			
071001	60s -----CC			
072001	60s FEEEEEEE	70s FFEF		
075001	60s ----FEF			
075002	80s -FLEEEF			
076001	50s ---FLEEF--	60s FFEFEEEEEE		
	70s F			
076003	60s -FEEEEF			
076004	60s --FEEF			
077002	60s -------FEE	70s EF		
078004	70s -F			
079002	50s ----------F	60s EEFFFEEEEE		
	70s EF			
079003	50s ----------F	60s EEEEEEEEEL		
	70s FEF			
079006	60s -------FEL	70s EF		
081003	60s --------FE	70s FF		
082001	60s ---FEEEEEE	70s FF		
084001	70s FEEEF			
084002	60s ---------FE	70s ELFFF		
084003	60s -----FEEEE	70s EEEEF		
084004	50s -------FFF	60s EEEEEEEEEE		
	70s FFEEF			
084005	50s ---------FE	60s EEEEEEEEEE		
	70s EEEEEF			
084008	70s FEEEF			
084007	60s -------FFF	70s FFEEF		
084008	60s -------FEE	70s FEEEF		
084009	60s -------FFF	70s FFFFF		
084011	60s ----FEEEEE	70s EEEEF		
084012	60s ---FFFFFFF	70s FFFFF		
084013	60s -------FEE	70s EEEEF		
084014	60s ----FEEEEF	70s EEEEF		
084015	70s FLEEF			
084016	70s FEEEF			
084017	60s -------FFF	70s EEFEF		
084018	60s ----------F	70s LFFFF		
084019	60s ---------FE	70s EEFFF		
084020	70s FEEEF			
084021	70s FLF			
084022	70s ---FF			
084023	70s ---FF			
084024	70s ---FF			
084027	70s ---FF			
085001	60s ---FEEEEEE	70s EFFFF		
085002	60s -------FEF	70s EEEEF		
085003	70s FEEEF			
086001	70s FEEEF			
086002	70s FEEEF			
097002	70s --EEEEEF			

Produced 24th October 1988. New summaries available on request

GROUNDWATER LEVEL MEASUREMENT

Background

Groundwater may be obtained from almost any stratum in the sedimentary succession in the British Isles, as well as from igneous and metamorphic rocks. In many, such as clays and shales, volcanics and metamorphics, the permeable zone may well be limited to the depth to which weathering may reach which is unlikely to be more than some 50 metres beneath the ground surface. In those strata which are not generally recognised to be aquifers, well-yields tend to be small (of the order of only a few cubic metres per day), uncertain as a continuous source (tending to fail in prolonged droughts), with an indifferent groundwater quality, and with the sources vulnerable to pollution.

The more generally recognised aquifers are listed in Table 7, with the Chalk and Upper Greensand, the Lincolnshire Limestone and the Permo-Triassic sandstones as the most important from the viewpoint of public supply. From such aquifers as these, yields of 3000 to 4500 cubic metres a day are not unusual. For the next category, including the Lower Greensand and the Magnesian Limestone, yields to individual wells of 1500 to 3000 cubic metres a day can generally be expected. In the other aquifers, while occasional sources sufficient for large supplies may be developed, they tend to be important only locally.

The groundwater resources of an aquifer are naturally replenished from rainfall. During the summer months, when the potential evapotranspiration is high and soil moisture deficits are appreciable, little infiltration takes place. There is a notable exception to this rule in the Eden valley of Cumbria where, enclosed between the massifs of Cross Fell and the Lake District, sufficiently heavy and continuous summer rainfall occurs to maintain infiltration through part, at least, of most summers. The normal recharge of an aquifer takes place during the winter months when the potential evapotranspiration is low and soil moisture deficits are negligible.

There are few artificial reservoirs in the United Kingdom which are sufficiently large to support demands through the driest summers, assuming that they were full at the start of the summer, without some continuous contributions from river intakes. Prolonged dry spells lead in many rivers to reduced flow, particularly where the natural groundwater contribution (baseflow) is limited. Consequently, while surface water droughts may be in part due to the failure of runoff from winter rainfall to fill the reservoirs, they are more frequently caused by a decrease in the summer flows of streams and rivers. Surface water droughts do, however, lead to increased consumption of groundwater (where available). By way of contrast, a groundwater drought is caused by a lack of winter rainfall. Potentially, the most serious droughts occur when, as in 1975/6, a dry summer succeeds a notably dry winter.

The Observation Borehole Network

Groundwater level observation wells (in this context, a well includes both shafts - constructed by hand digging - and boreholes - constructed by machinery) are generally used for one of two purposes, either to monitor levels regionally and thus to estimate groundwater resource fluctuations, or to monitor the effects locally of groundwater abstractions. The number of observation wells required in different areas varies widely. Over the last two decades, a target density was sought of one well to 25–35 km^2. During the last few years, it has become apparent in some districts that satisfactory information can be obtained with fewer wells, while in others the densities had to be substantially increased.

The observation well network was reviewed in 1981 by the British Geological Survey (then the Institute of Geological Sciences) with the aim of selecting 200 to 300 sites from the National Groundwater Archive (then maintained by the Water Data Unit) to be used for periodical assessments of the national groundwater situation. The selection was based upon the hydrogeological units identified in an investigation of the groundwater resources of the United Kingdom[1]; one site was chosen for each aquifer present within each unit. For Scotland and for Northern Ireland this was not possible due to the very limited number of observation wells available. In England and Wales, the total number finally selected was 175[2].

Details of the wells in this national network are given in the Register of Selected Groundwater Observation Wells (see below).

Measurement and Recording of Groundwater Levels

The majority of observation wells are measured manually either weekly or monthly. The usual instrument is an electric probe suspended upon a graduated cable or tape, contact being made by the water to complete a circuit which gives either an audible or visual signal at the surface. Measurements are normally made to the nearest 10 millimetres.

Some observation wells are equipped with continuous water level recorders, almost invariably activated by a float on the water surface. These recorders may be driven by clockwork or by electric battery power, and are capable of running unattended for periods of one to six months. Levels are usually recorded on paper charts or on punched paper tapes, and experiments have been made recording directly onto magnetic tapes. Water levels are generally recorded to the nearest 10 millimetres, although instruments may be accurate to 1 millimetre.

Pressure transducers have also been considered for water level measurement. However, available

TABLE 7 GENERALISED LIST OF AQUIFERS IN THE UNITED KINGDOM

Era	System	Subsystem	Aquifer	Importance
CAINOZOIC	Quaternary	Holocene	Superficial deposits	*
	Tertiary	Pleistocene	Upper and Middle Pleistocene	*
			Crag	**
		Pliocene	Coralline Crag	**
		Oligocene		
		Eocene	Bagshot Beds	
			Lower London Tertiaries	
			Blackheath & Oldhaven Beds	
			Woolwich & Reading Beds	*
			Thanet Beds	**
MESOZOIC	Cretaceous	Upper Cretaceous	Chalk and Upper Greensand	****
		Lower Cretaceous	Lower Greensand	***
			Hastings Beds	**
	Jurassic	Upper Jurassic	Portland & Purbeck Beds	*
			(with Spilsby Sandstone)	(**)
			Corallian	**
		Middle Jurassic	Great & Inferior Oolitic limestones	**
			(with Lincolnshire Limestone)	(****)
		Lower Jurassic	Bridport & Yeovil Sands	**
			Marlstone Rock	*
UPPER PALAEOZOIC	Triassic	Keuper		
		Bunter	Permo-Triassic sandstones	****
	Permian	sandstones		
			Magnesian Limestone	***
	Carboniferous	Upper Carboniferous	Coal Measures	**
			Millstone Grit	**
		Lower Carboniferous	Carboniferous Limestone	**
	Devonian		Old Red Sandstone	*

Key to aquifer importance:
- * aquifer of minor importance only
- ** aquifer producing small, but useful, local supplies
- *** aquifer of local importance, often providing public supplies
- **** aquifer of major importance

transducers will measure accurately over only a narrow range of fluctuation (up to 2 to 3 metres), or much less accurately over a wider range. They are not yet in general use.

Observation Well Hydrographs 1983–6

The main aquifers in the United Kingdom are the Chalk (with the Upper Greensand), the Magnesian Limestone and the limestones of the middle Jurassic (principally the Lincolnshire Limestone). Outcrop areas of the major aquifers are shown in Figure 17; throughout Wales, Scotland and Northern Ireland, aquifers are less extensively developed and tend to be only of relatively local importance.

Well hydrographs for eighteen observation sites are shown in Figure 18. Except for the Killyglen borehole in Northern Ireland which has only recently been incorporated in the network of featured sites, the 1983 to 1986 groundwater levels are illustrated. For comparison the average and the extreme monthly levels are shown where sufficient historical data are available. Four-year plots have been used because the volume of groundwater stored in aquifers can reflect not only the infiltration taking place during the winter months of 1985–86, but also that occurring in previous years. A break in the well hydrograph trace indicates a recording interval of greater than eight weeks. When comparing the hydrographs for a number of sites, account should be taken of the differing scales used to illustrate the water table fluctuations.

The behaviour of several wells is influenced by local, or regional, pumping for water supply or other purposes. For instance, the Westonbirt borehole provides water for Westonbirt School, and groundwater levels at Rusheyford now stand substantially higher than a decade ago, due partly to a rundown of the coal industry and the consequent cessation of continuous pumping for mine dewatering.

Register of Selected Groundwater Observation Wells

The listed sites were selected so as to give a reasonably representative cover for aquifers throughout England and Wales. The wells are grouped according to the aquifer to which the water level variations in the wells are attributed. A generalised list of aquifers is given opposite. While the aquifers are tabulated in stratigraphical order, most of the local names for individual strata are omitted and the intervening aquicludes are not shown.

Network Changes

Since the original selection of boreholes for incorporation in the national network a number of changes have been made to the list of wells included in the Register. At some locations, observations could no longer be continued, and new sites have been added from time to time. Replacements are being sought for discarded sites. In the Coal Measures and the Millstone Grit, certain sites have not been monitored for some years due to the presence of methane in the wells; these sites have been discarded until either they have been made safe or have been replaced. The following sites, listed in the Register in the 1985 Yearbook, are no longer in use for the observation of groundwater levels:

Chalk and Upper Greensand

SU76/46	Riseley Mill
TQ86/55	Stockbury Valley
TR05/6	Step Cottage
TR14/42	Kingsmill Down
TR15/58	Cotterell Court

Lower Greensand

SU72/47	Westmark Farm
TQ75/86	Kiln Barn Farm
TR23/32	Morehall Depot

Hastings Beds

TQ43/16	Garde Wych Cross
TQ62/89	Rose Lodge

Middle Jurassic

ST77/8	Tormartin 1

Permo-Triassic sandstones

SE44/4B	Healaugh Pumping Station
SJ37/2H	Bowater 6
SJ69/138	Kenyon Lane
SK68/21	Crossley Hill Wood

Magnesian Limestone

SE51/2	Westfield Farm

Coal Measures

SD62/35	Lion Brewery
SJ98/6	Chadkirk Marple

Millstone Grit

SD55/5	Abbeystead
SD75/6	Hersley Farm
SD83/111	Red Scar Mill

Carboniferous Limestone

ST64/36	Waterlip Quarry

The two new sites listed below have been added to the list of selected wells. Further sites in Scotland and in Northern Ireland will be added in future years. The number of selected observation sites is now 150.

Middle Jurassic

ST88/62A Didmarton 1

Carboniferous Limestone

ST64/33 Oakhill 1

The Register - data items

The five columns of the register are:

Well Number

The well numbering system is based on the National Grid. Each 100 kilometre square is designated by prefix characters, e.g. SE, and is divided into 100 squares of 10 kilometre sides designated by numbers 00 (in the south-west corner to 99 (in the north-east corner). Thus, the site SE93/4, is located in the 10 kilometre square SE93, while the number after the solidus denotes that the site is the fourth accessed in this square into the National Well Record collection. A suffix such as A, B, etc., defines the particular well when there are several at the same site. For Northern Ireland, which is on the Irish Grid, the first of the prefix characters is always 'I'.

Two asterisks following the well number indicates a well or borehole for which hydrographs are shown on pages 168 to 173; the locations of these wells are shown on Figure 17.

Grid Reference

The six or eight-figure references given in the register relate to the 100 kilometre National (or Irish) Grid square designated by the preceding two-figure code (shown in italics when referring to the Irish Grid); the corresponding two-letter code appears as the prefix characters in the Well Number.

Site

The name by which the well or borehole is normally referenced. The locations of all the sites listed in the Register are shown on Figure 17.

Water Authority

An abbreviation referencing the water authority, or other body, responsible for groundwater level measurement. A full list of codes, together with the corresponding names and addresses appears on pages 192 and 193.

Records Commence

The first year for which records are held on the Groundwater Archive.

Indicated % Annual Recharge

The difference between the level measured at the end of the summer recession and that measured at the beginning of the summer recession in the following year; expressed as a percentage of the mean fluctuation. Details of the method of calculation are given in the Hydrometric Register and Statistics 1981–5 (see page 195).

References

1. Monkhouse, R.A., and Richards, H.J. 1983. Groundwater resources of the United Kingdom. Commission of the European Communities, pub. Th. Schaeffer Druckerei GmbH, Hannover, 252 pages.
2. Monkhouse, R.A., and Murti, P.K. 1981. The rationalisation of groundwater observation well networks in England and Wales. Institute of Geological Sciences, Report No WD/81/1, 18 pages.

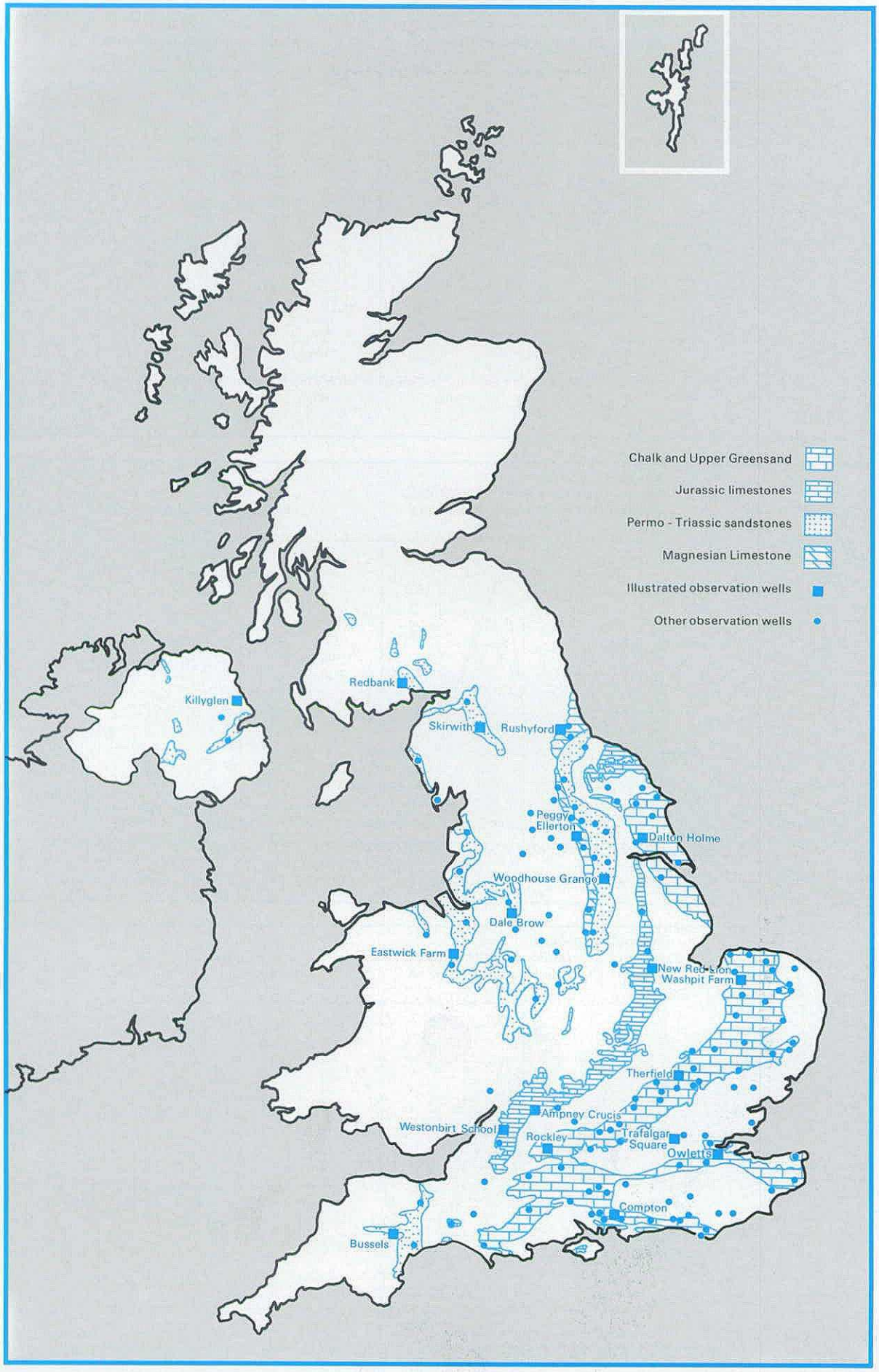


Figure 17. Principal aquifers and representative borehole locations.

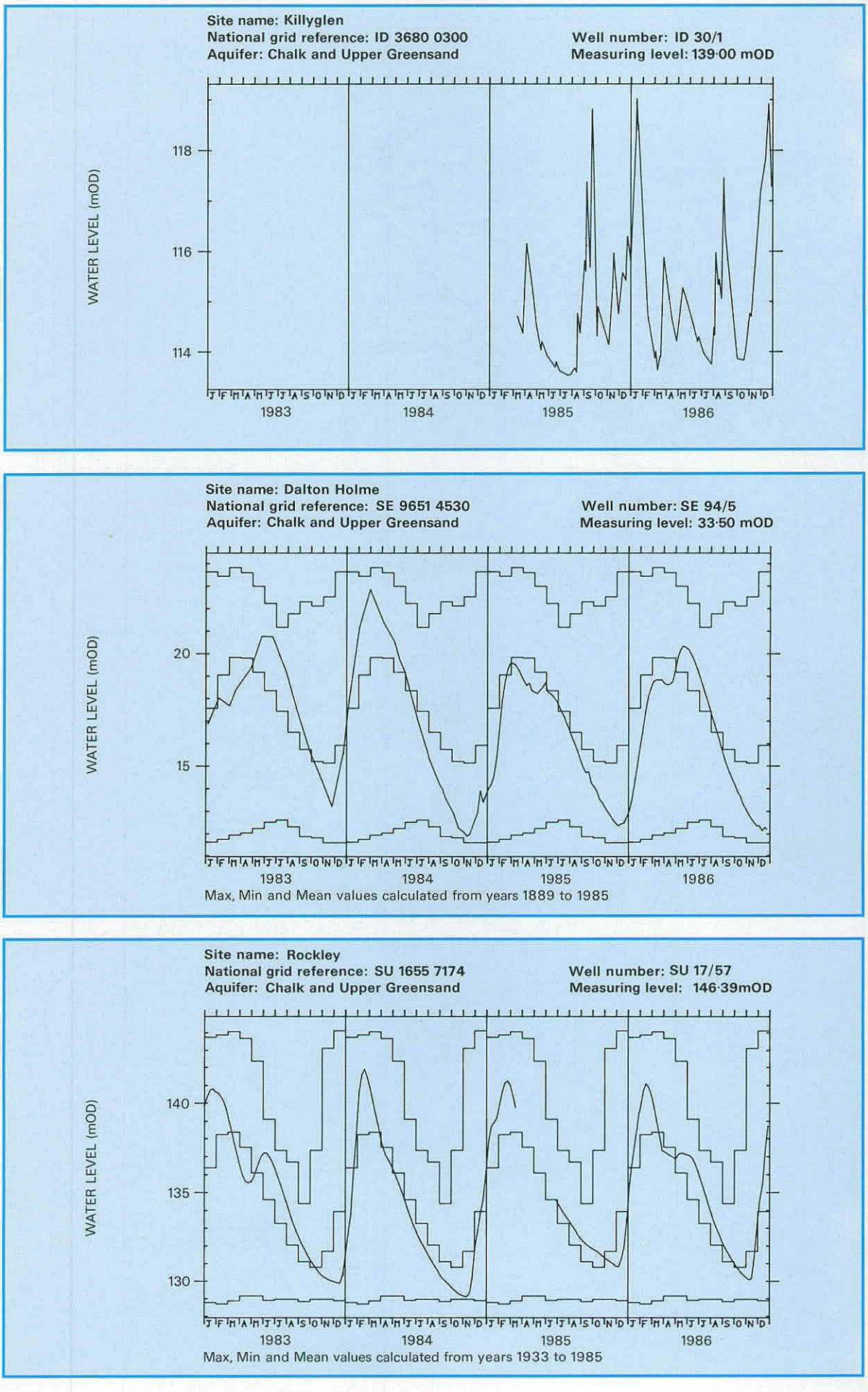
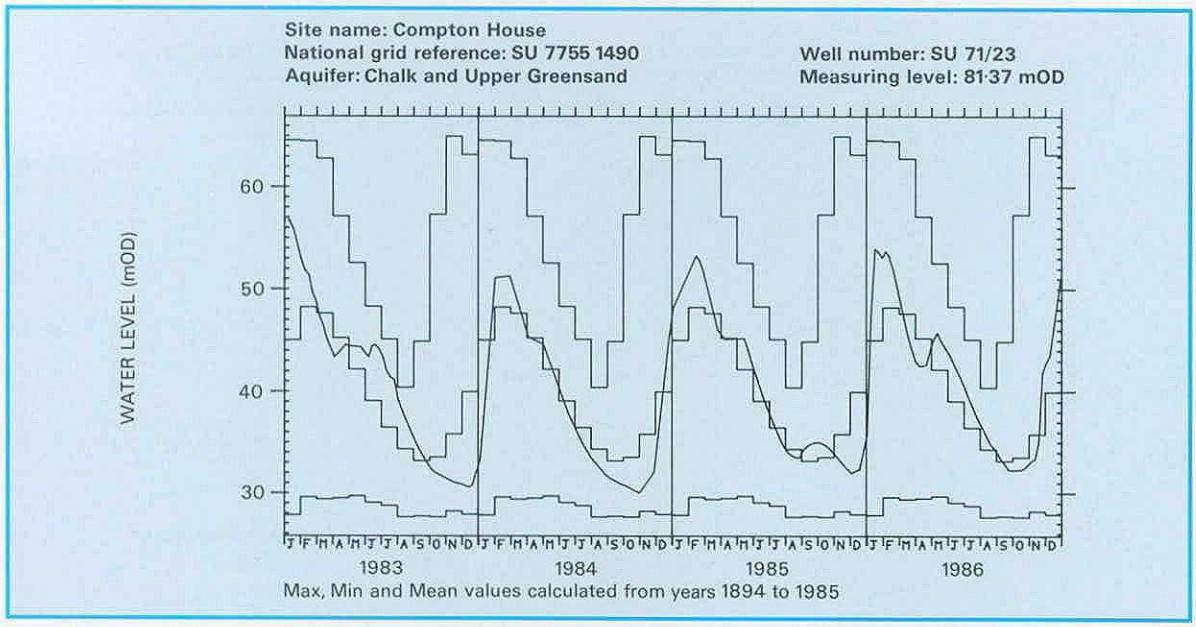
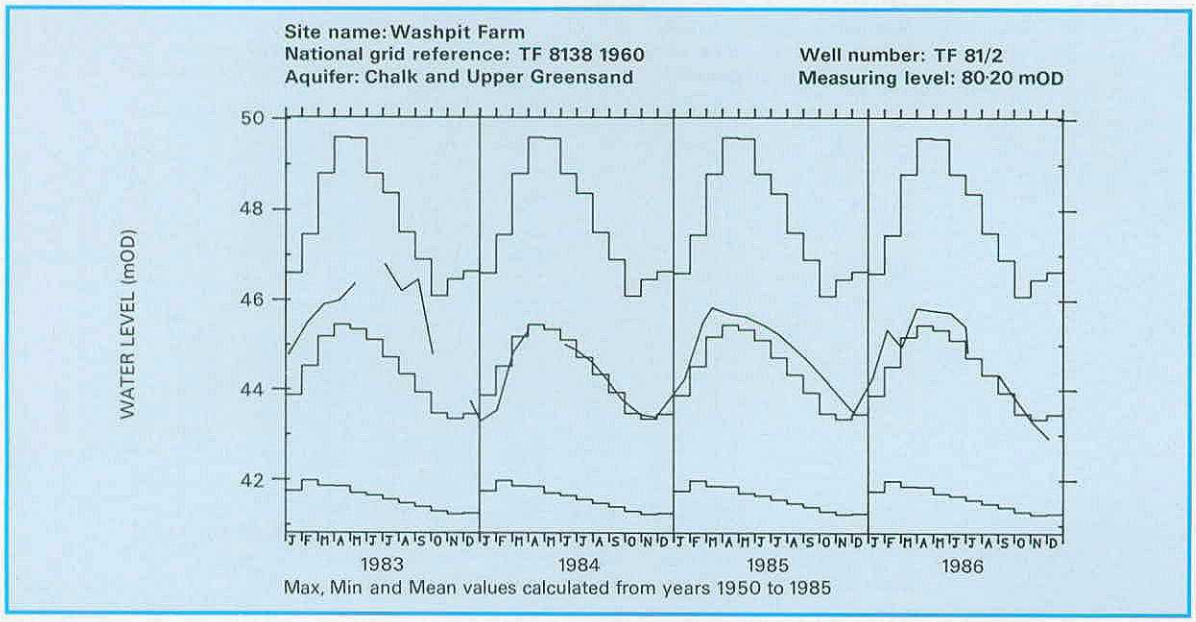


Figure 18. Hydrographs of groundwater level fluctuations 1983–6.





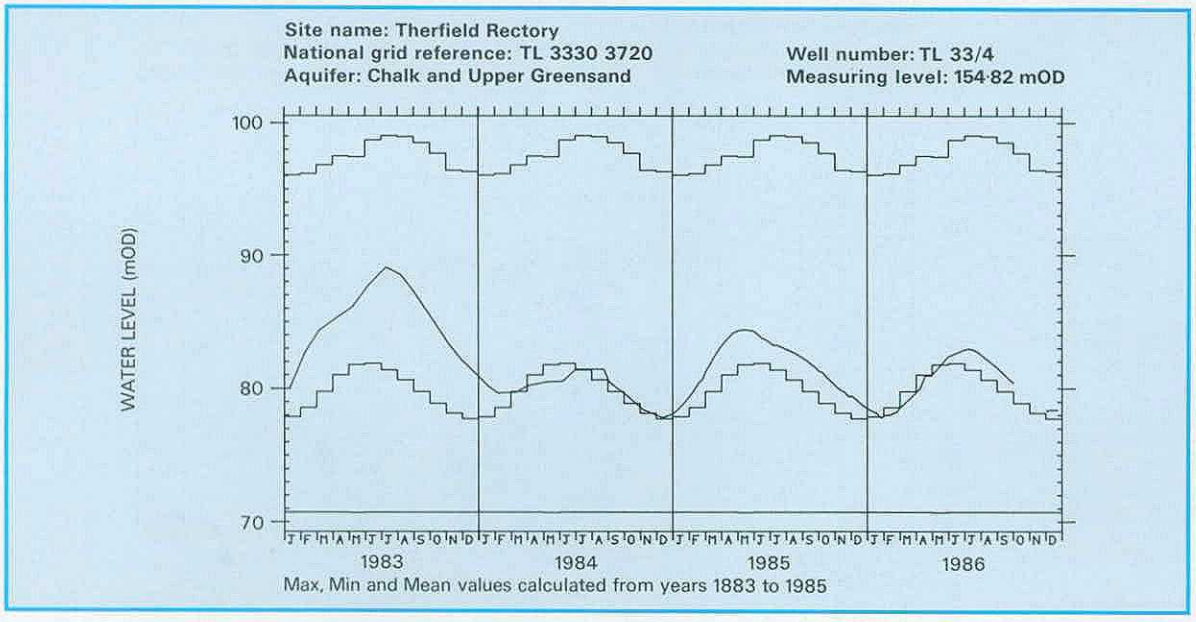
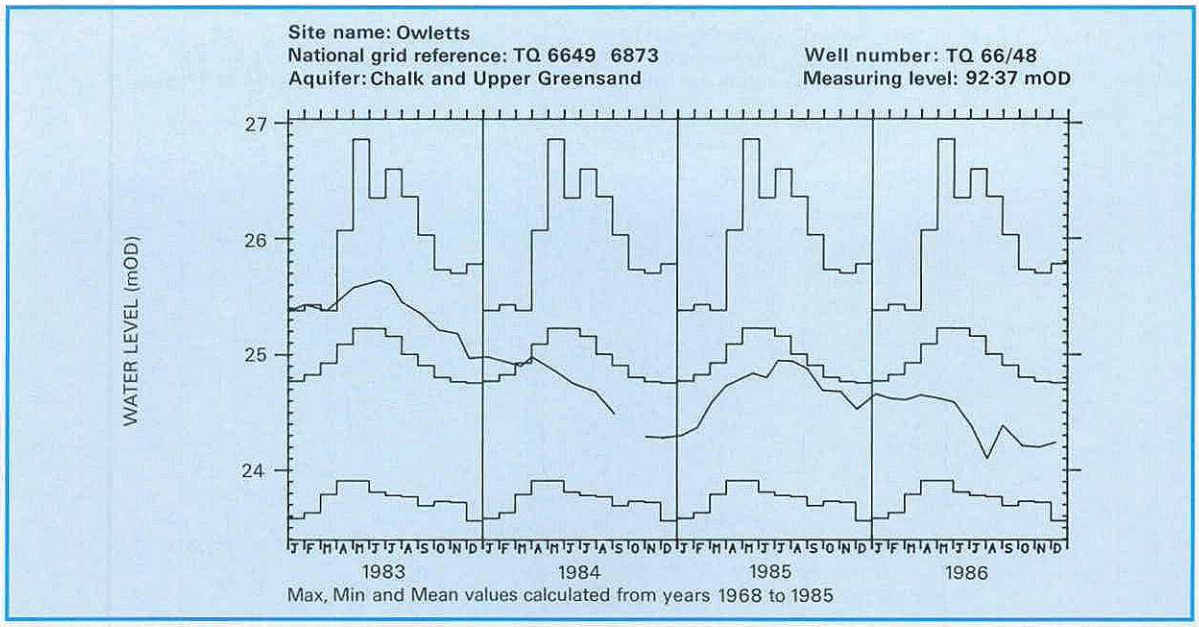
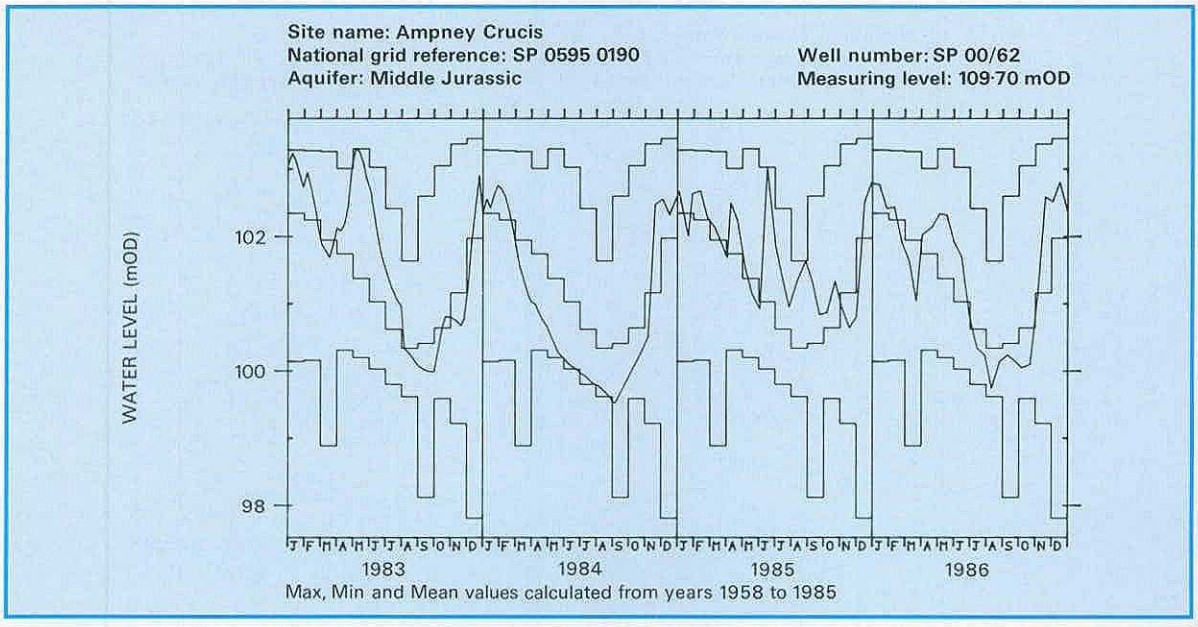


Figure 18 – (continued)





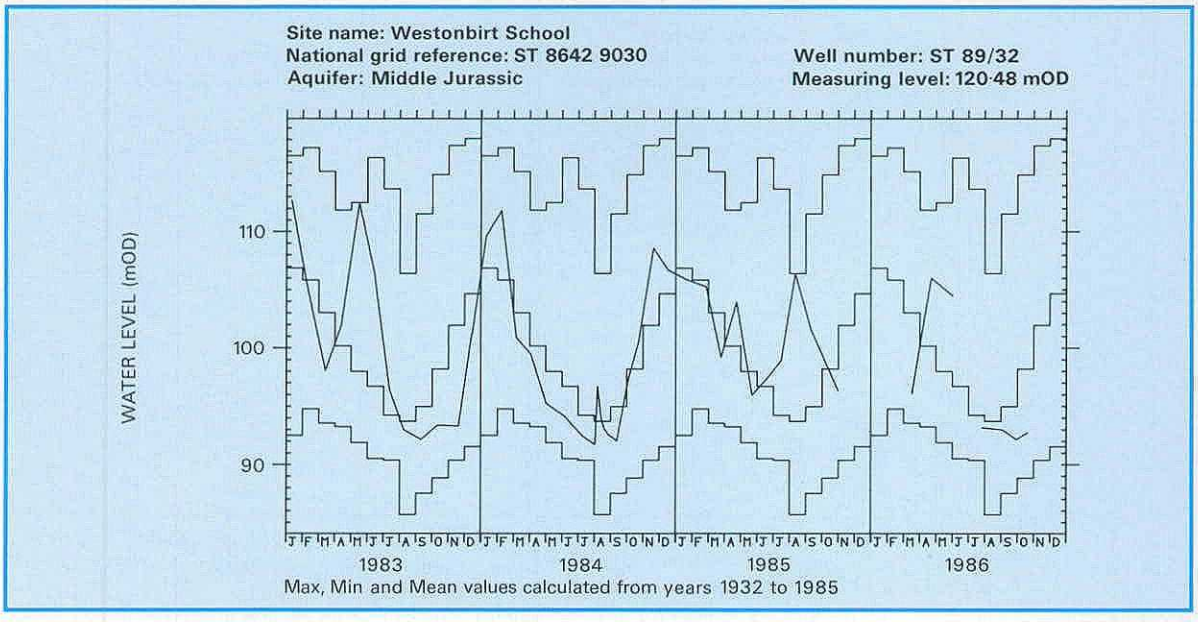
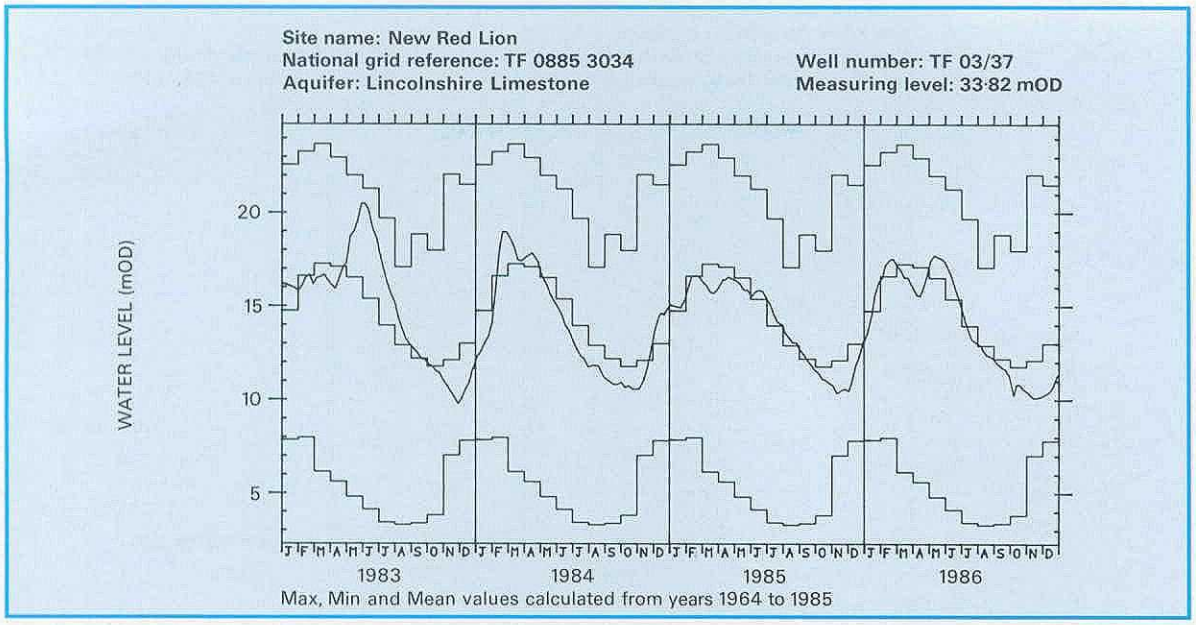
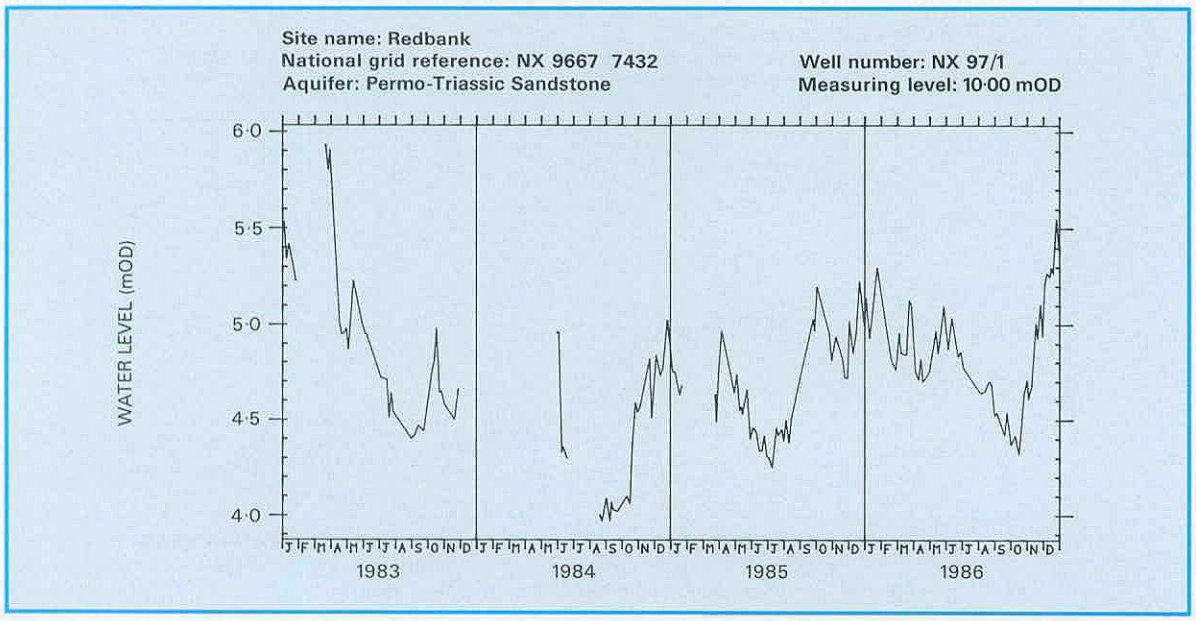


Figure 18 – (continued)





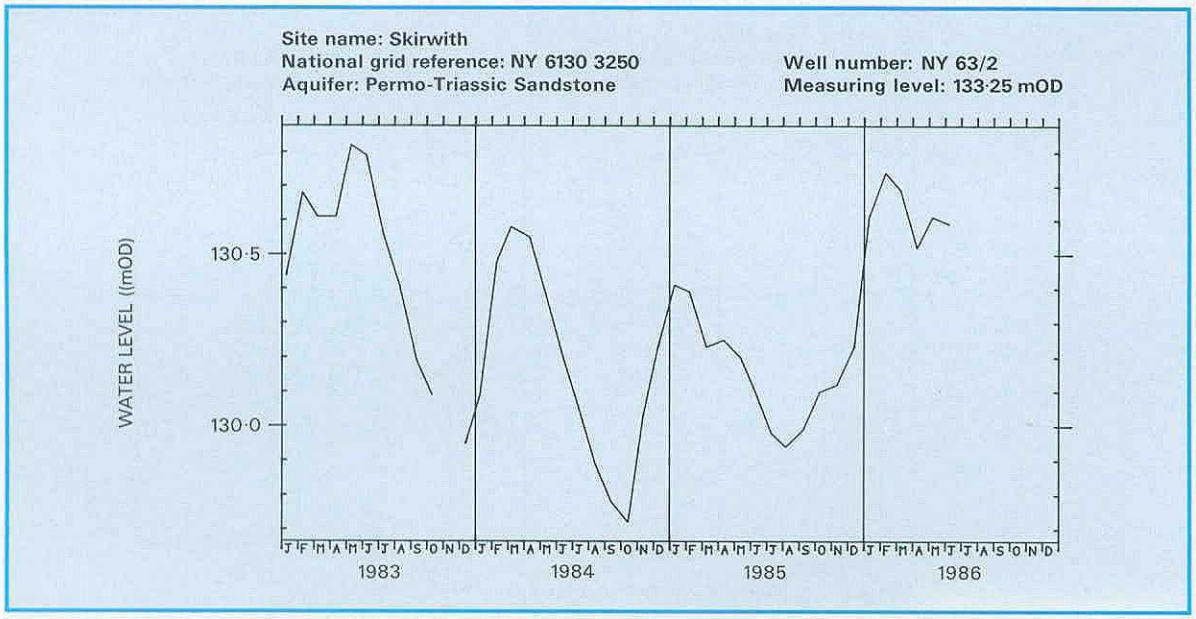
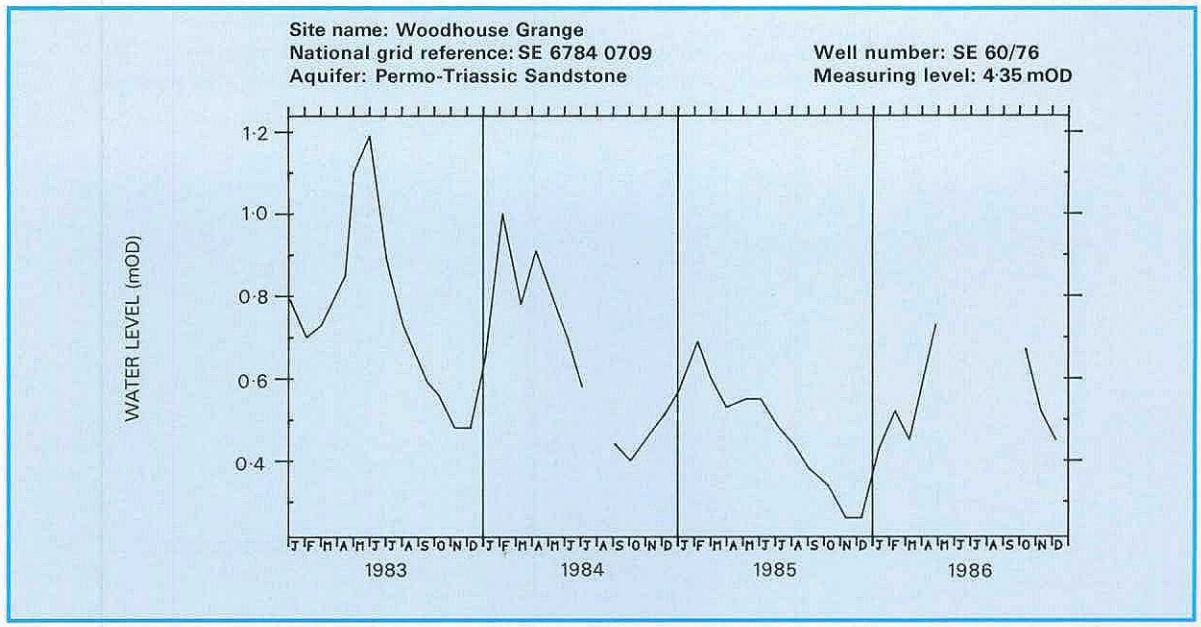
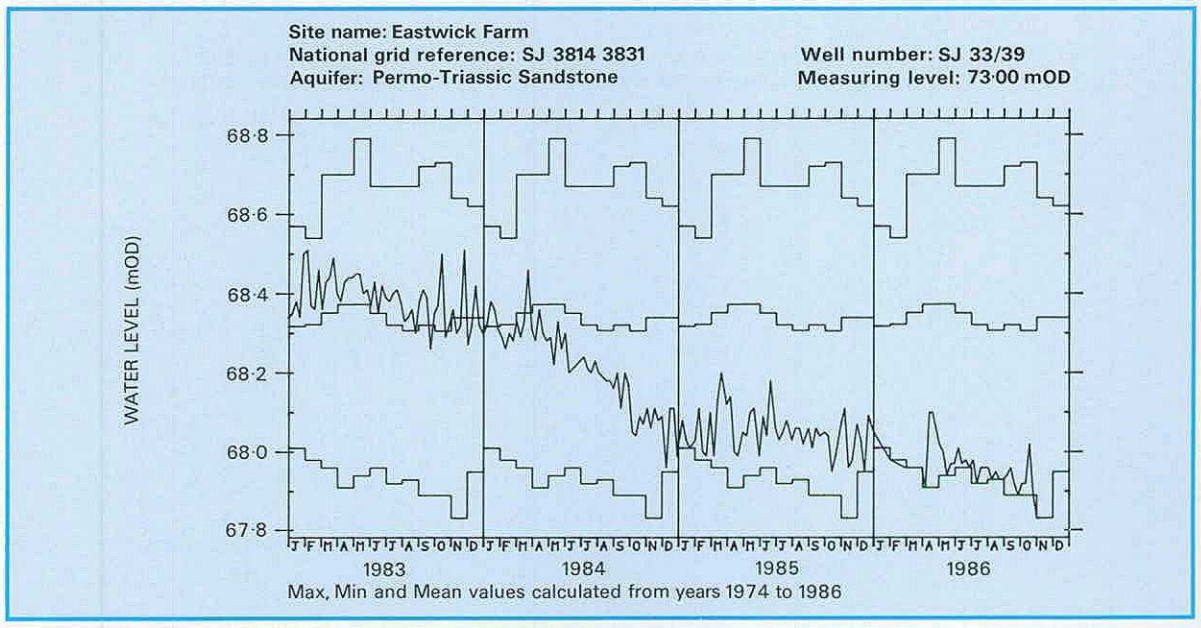


Figure 18 – (continued)





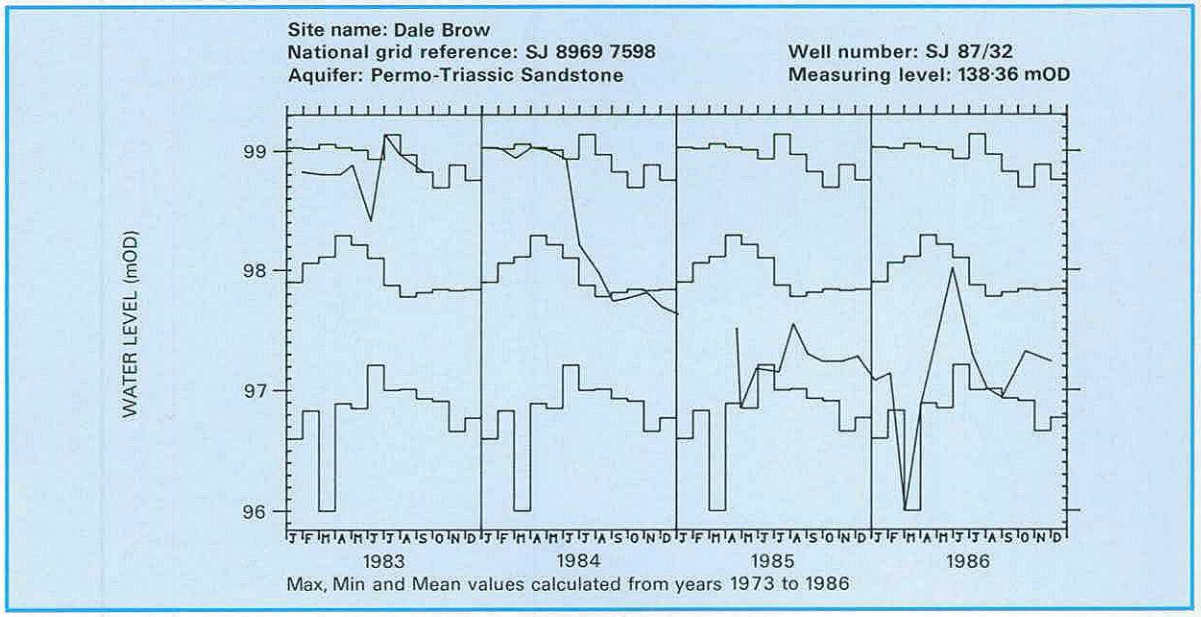
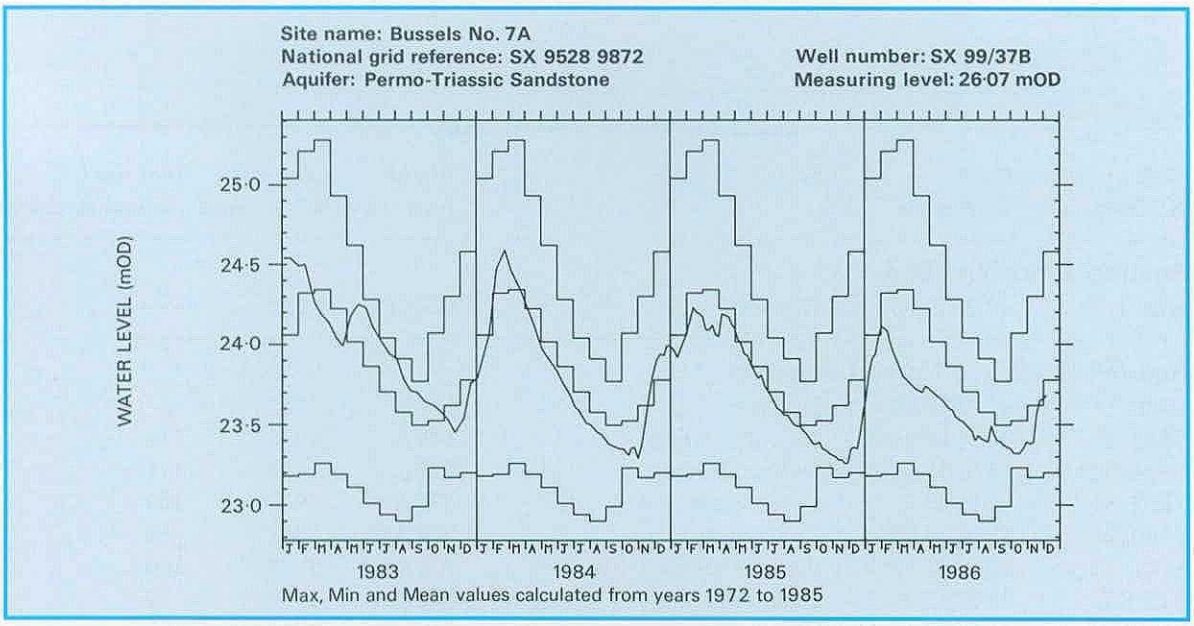
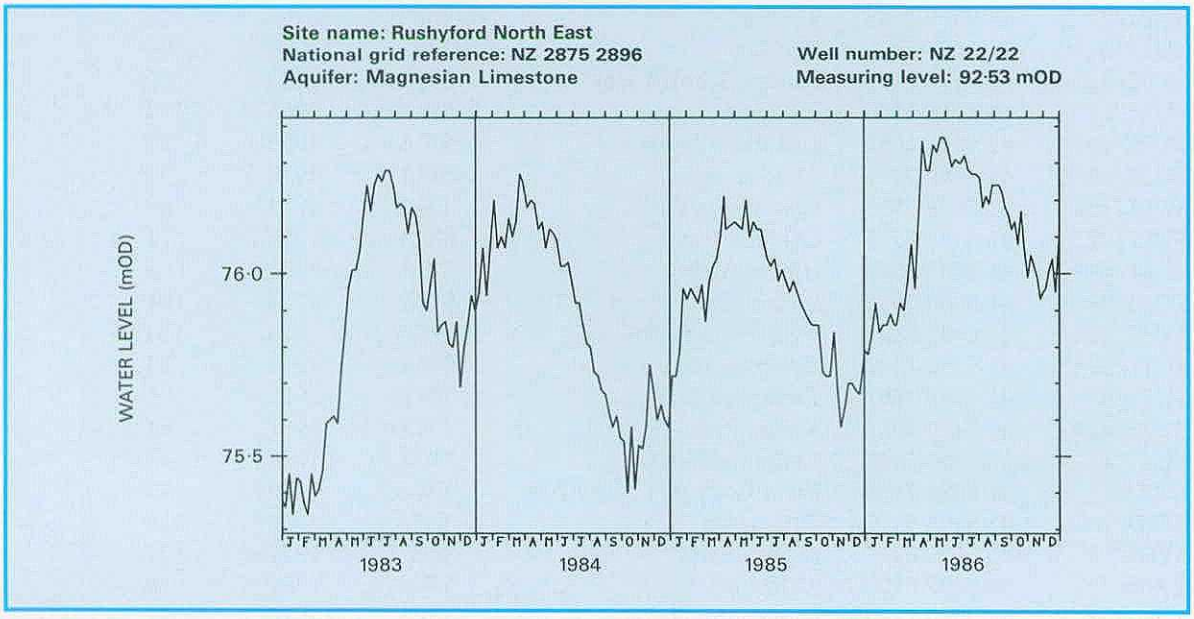


Figure 18 – (continued)





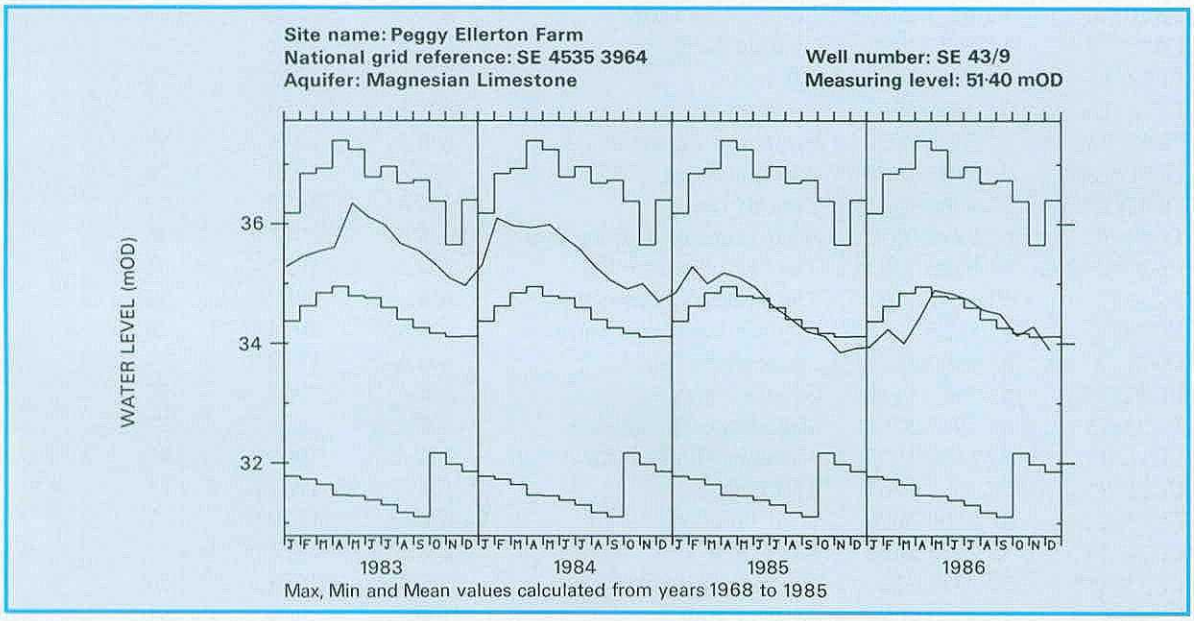


Figure 18 – (continued)

Well Number	Grid Reference	Site	Water Authority	Records Commence	Indicated % Annual Recharge
Aquifer: Superficial Deposits					
IJ28/1	*33* 225 862	Dunadry	GSNI	1985	---
Aquifer: Chalk and Upper Greensand					
ID30/1**	*33* 368 030	Killyglen	GSNI	1985	---
SE93/4	44 9212 3634	Dale Plantation	YWA	1970	110
SE94/5**	44 9651 4530	Dalton Holme	YWA	1889	112
SE97/31	44 9345 7079	Green Lane	YWA	1972	109
SP90/26	42 9470 0875	Champneys	TWA	1962	83
SP91/59	42 9380 1570	Pitstone Green Farm	AWA	1970	100
ST30/7	31 3763 0667	Lime Kiln Way	SWWA	1969	59
SU01/5B	41 0160 1946	Woodyates	WWA	1942	105
SU04/2	41 0310 4883	Tilshead	WWA	1966	103
SU17/57**	41 1655 7174	Rockley	TWA	1933	94
SU32/3	41 3816 2745	Bailey's Down Farm	SWA	1963	80
SU35/14	41 3318 5647	Woodside	SWA	1963	124
SU51/10	41 5877 1654	Hill Place Farm	SWA	1965	87
SU53/94	41 5589 3497	Abbotstone	SWA	1976	43
SU57/159	41 5628 7530	Calversleys Farm	TWA	1973	69
SU61/32	41 6575 1775	Chidden Farm	SWA	1958	71
SU61/46	41 6892 1524	Hinton Manor	SWA	1953	---
SU64/28	41 6360 4048	Lower Wield Farm	SWA	1961	101
SU68/49	41 6442 8525	Well Place Farm	TWA	1976	134
SU71/23**	41 7755 1490	Compton House	SWA	1893	83
SU73/8	41 7048 3491	Faringdon Station	TWA	1961	106
SU78/45A	41 7419 8924	Stonor Park	TWA	1961	84
SU81/1	41 8356 1440	Chilgrove House	SWA	1836	83
SU87/1	41 8336 7885	Farm Cottage, Coldharbour	TWA	1950	97
SU89/7	41 8103 9417	Piddington	TWA	1966	114
SY68/34	30 662 881	Ashton Farm	WWA	1977	101
TA06/16	54 0490 6120	Nafferton	YWA	1964	86
TA07/28	54 0940 7740	Hunmanby Hall	YWA	1976	97
TA10/40	54 1375 0885	Little Brocklesby	AWA	1926	114
TA21/14	54 2670 1890	Church Farm	YWA	1971	116
TF72/11	53 7710 2330	Off Farm	AWA	1971	96
TF74/1A	53 7541 4087	Choseley Farm	AWA	1950	74
TF80/33	53 8738 0526	Houghton Common	AWA	1971	56
TF81/2A**	53 8138 1960	Washpit Farm	AWA	1950	79
TF94/1	53 9160 4135	Cuckoo Lodge	AWA	1952	100
TG00/92	63 0440 0020	High Elm Farm, Deopham	AWA	1971	108
TG03/25B	63 0382 3583	The Hall, Brinton	AWA	1952	85
TG11/5	63 1691 1101	The Spinney, Costessey	AWA	1952	54
TG12/7	63 1126 2722	Heydon Pumping Station	AWA	1974	70
TG21/9	63 2400 1657	Frettenham Depot	AWA	1952	---
TG21/10	63 2699 1140	Grange Farm	AWA	1952	50
TG23/21	63 2932 3101	Melbourne House	AWA	1974	67
TL11/4	52 1560 1555	Mackerye End House	TWA	1960	96
TL11/9	52 1692 1965	The Holt	TWA	1964	74
TL13/24	52 1200 3026	West Hitchin	AWA	1970	77
TL22/10	52 2978 2433	Box Hall	TWA	1964	---
TL33/4**	52 3330 3720	Therfield Rectory	TWA	1883	76
TL42/6	52 4536 2676	Hixham Hall	TWA	1964	87
TL42/8	52 4669 2955	Berden Hall	TWA	1964	83

Well Number	Grid Reference	Site	Water Authority	Records Commence	Indicated % Annual Recharge
TL44/12	52 4522 4182	Redlands Hall	TWA	1964	64
TL66/2	52 6191 6013	Hall Farm	AWA	1964	49
TL72/54	52 7982 2516	Rectory Road	AWA	1968	---
TL84/6	52 8465 4106	Smeetham Cottages, Bulmer	AWA	1963	---
TL86/110	52 8850 6470	Cattishall Farm	AWA	1969	---
TL89/37	52 8131 9001	Grimes Graves	AWA	1971	54
TL92/1	52 9657 2562	Lexden Pumping Station	AWA	1961	---
TM15/112	62 1201 5618	Dial Farm	AWA	1968	61
TM18/2	62 1983 8600	Pulham Market	AWA	1952	60
TM26/46	62 2461 6109	Fairfields	AWA	1974	---
TM26/95	62 2786 6397	Strawberry Hill	AWA	1974	112
TQ01/133	51 0850 1170	Chantry Post, Sullington	SWA	1977	65
TQ21/11	51 2850 1289	Old Rectory, Pyecombe	SWA	1958	146
TQ28/119B	51 2996 8051	Trafalgar Square	TWA	1845	---
TQ31/50	51 3220 1180	North Bottom	SWA	1979	85
TQ35/5	51 3363 5924	Rose & Crown	TWA	1876	71
TQ38/9A	51 3509 8536	Hackney Public Baths	TWA	1953	77
TQ50/7	51 5592 0380	Old Rectory, Folkington	SWA	1965	129
TQ56/19	51 5648 6124	West Kingsdown	TWA	1961	76
TQ57/118	51 5880 7943	Thurrock A13	AWA	1979	135
TQ58/2B	51 5622 8408	Bush Pit Farm	TWA	1967	62
TQ66/48**	51 6649 6873	Owlets	SWA	1968	---
TQ99/11	51 947 971	Burnham	AWA	1975	---
TR34/81	61 3173 4725	Church Farm	SWA	1971	---
TR36/62	61 3208 6634	Alland Grange	SWA	1969	77
TV59/7C	50 5290 9920	Westdean 3	SWA	1904	103
Aquifer: Lower Greensand					
SU84/8A	41 8716 4087	Tilford Pumping Station	TWA	1971	107
TL45/19	52 4110 5204	River Farm	AWA	1973	114
TQ41/82	51 4370 1320	Lower Barn Cottages	SWA	1975	135
TR13/21	61 1132 3881	Ashley House	SWA	1972	---
Aquifer: Hastings Beds					
TQ22/1	51 2348 2770	The Bungalow	SWA	1964	80
TQ32/19	51 3760 2890	Horsted Keynes	SWA	1968	92
TQ61/44	51 6658 1803	Dallington Herrings	SWA	1964	49
TQ71/123	51 7969 1659	Red House	SWA	1974	---
Aquifer: Upper Jurassic					
SE68/16	44 6890 8590	Kirkbymoorside	YWA	1973	83
SE77/76	44 7690 7300	Broughton	YWA	1975	63
SE98/8	44 9910 8540	Seavegate Farm	YWA	1971	107
SU49/40B	41 4117 9307	East Hanney	TWA	1978	74
Aquifer: Middle Jurassic					
SP00/62**	42 0595 0190	Ampney Crucis	TWA	1958	64
SP20/113	42 2721 0634	Alvescot Road	TWA	1975	98
ST51/57	31 591 169	Over Compton	WWA	1971	99
ST88/62A	31 8275 8743	Didmarton 1	WWA	1977	---
ST89/32**	31 8642 9030	Westonbirt School	WWA	1932	49
Aquifer: Lincolnshire Limestone					
SK97/25	43 9800 7817	Grange de Lings	AWA	1975	94
TF03/37**	53 0885 3034	New Red Lion	AWA	1964	80
TF04/14	53 0429 4273	Silk Willoughby	AWA	1972	76

Well Number	Grid Reference	Site	Water Authority	Records Commence	Indicated % Annual Recharge
Aquifer: Permo-Triassic sandstones					
IJ26/1	*33* 291 694	Dunmurry	GSNI	1985	---
NX97/1**	25 9667 7432	Redbank	SRPB	1981	50
NY00/328	35 0511 0247	Brownbank Layby	NWWA	1974	131
NY45/16	35 4947 5667	Corby Hill	NWWA	1977	---
NY63/2**	35 6130 3250	Skirwith	NWWA	1978	90
NZ41/34	45 4861 1835	Northern Dairies	NWA	1974	73
SD27/8	43 2172 7171	Furness Abbey	NWWA	1972	83
SD41/32	43 4400 1164	Yew Tree Farm	NWWA	1971	---
SD44/15	43 4396 4928	Moss Edge Farm	NWWA	1961	111
SE36/47	44 3945 6575	Kelly's Cafe	YWA	1977	86
SE39/20B	44 3004 9244	Scruton Village	YWA	1969	100
SE45/3	44 4470 5580	Cattal Maltings	YWA	1969	88
SE52/4	44 5473 2363	Southfield Lane	YWA	1955	90
SE55/4	44 5829 5383	Clifton Hospital	YWA	1967	43
SE60/76**	44 6784 0709	Woodhouse Grange	STWA	1980	98
SE64/1	44 6751 4463	Wheldrake Station	YWA	1971	---
SE72/3B	44 7047 2149	Rawcliffe Bridge	YWA	1971	95
SJ15/15	33 1374 5556	Oaklands Bridge	WELSH	1972	109
SJ33/38	33 3809 3112	Hordley Wharf	STWA	1975	---
SJ33/39**	33 3814 3831	Eastwick Farm	WELSH	1974	71
SJ56/45E	33 5042 6953	Ashton 4	NWWA	1969	---
SJ83/1A	33 8969 3474	Stone	STWA	1974	97
SJ87/32**	33 8969 7598	Dale Brow	NWWA	1973	147
SJ88/93	33 8611 8645	Bruntwood Hall	NWWA	1972	---
SJ96/41	33 9310 6301	Rushton Spencer 1	NWWA	1969	---
SK00/41	43 067 012	Nuttal's Farm	STWA	1974	112
SK21/111	43 2731 1419	Grange Wood	STWA	1967	96
SK24/22	43 2539 4431	Burtonshuts Farm	STWA	1972	132
SK56/53	43 5632 6440	Peafield Lane	STWA	1969	---
SK73/50	43 7693 3228	Woodland Farm	STWA	1980	---
SO71/18	32 7170 1970	Stores Cottage	STWA	1973	67
SO87/28	32 8160 7970	Hillfields	STWA	1961	75
ST12/48	31 108 267	Milverton Bypass	WWA	1972	50
SX99/37B**	20 9528 9872	Bussels 7A	SWWA	1972	73
SY09/21A	30 0666 9235	Heathlands	SWWA	1951	96
Aquifer: Magnesian Limestone					
NZ22/22**	45 2875 2896	Rusheyford NE	NWA	1967	110
NZ32/19	45 3575 2650	Heley House	NWA	1969	104
NZ33/20	45 3349 3501	Garmondsway	NWA	1974	116
SE28/28	44 2460 8520	Bedale	YWA	1972	110
SE35/4	44 3830 5830	Castle Farm	YWA	1970	72
SE43/9**	44 4535 3964	Peggy Ellerton Farm	YWA	1968	74
SE43/14	44 4660 3550	Coldhill Farm 35	YWA	1971	87
SK46/71	43 4800 6030	Stanton Hill	STWA	1973	112
SK58/43	43 5248 8018	Southeads Lane	STWA	1973	62
Aquifer : Coal Measures					
SE23/4	44 2850 3414	Silver Blades Ice Rink	YWA	1971	65

Well Number	Grid Reference	Site	Water Authority	Records Commence	Indicated % Annual Recharge
Aquifer: Millstone Grit					
SD92/8	34 9833 2660	Horsehold Farm	YWA	1971	83
SE04/7	44 0295 4792	Lower Heights Farm	YWA	1971	---
SE24/2B	44 2067 4053	Green Lane Dyeworks	YWA	1971	148
SE27/8	44 2120 7380	Kirkby Moor Farm	YWA	1971	---
Aquifer: Carboniferous Limestone					
NT95/21	36 9695 5055	Middle Ord	NWA	1974	182
SE06/1	44 0241 6183	Jerry Laithe Farm	YWA	1971	67
SK15/16	43 1292 5547	Alstonfield	STWA	1974	85
SK17/13	43 1778 7762	Hucklow South	STWA	1969	70
ST64/33	31 6560 4790	Oakhill 1	WWA	1977	158

Sites marked "**" are indicator wells; well hydrographs are shown in Figure 18. Where the annual percentage recharge cannot be estimated, the entry "---" is substituted.

THE GROUNDWATER DATA RETRIEVAL SERVICE

A suite of retrieval programs has been written in order to facilitate data usage. At the present time, retrievals using the options described below are available for most of the sites listed in the Register of Selected Groundwater Observation Wells, although not all the data contained within this archive have been validated.

Five options are available for retrieving data. A description of each option is given below and examples of the computer listings and graphical output are given on pages 180 to 183. Options 1 to 4 give details of the well site, the period of record available, and maximum and minimum recorded levels in addition to the output specific to each option. Data may be retrieved for a specific well or for groups of wells by well reference numbers, by area (using National Grid References), by aquifer, by hydrometric area, by water authority, or by any combination of these parameters.

Cost of Service

To cover the computing and handling costs, a moderate charge will be made depending on the output options selected. Estimates of these charges may be obtained on request; the right to amend or waive charges is reserved.

Requests for retrieval options:

Requests for retrieval options should include: the name and address to which the output should be directed, the sites, or areas, for which data are required together with the period of record of interest (where appropriate) and the title of the required option. Where possible, a daytime telephone number should be given.

Requests should be addressed to:

The British Geological Survey
Hydrogeology Research Group
Maclean Building
Crowmarsh Gifford
WALLINGFORD
OXFORDSHIRE OX10 8BB

Telephone (0491) 38800

LIST OF GROUNDWATER DATA RETRIEVAL OPTIONS

OPTION	TITLE	NOTES
1	Table of groundwater levels	All recorded observations of groundwater level in metres above Ordnance Datum, with dates of observation and maximum and minimum levels for each year. Specific years, or ranges of years, may be requested, otherwise the full period of record is given.
	Table of annual maximum and minimum groundwater levels	Annual maximum and minimum groundwater levels in metres above Ordnance Datum with dates of occurrence. Specific years, or ranges of years, may be requested, otherwise the full period of record is given.
	Table of monthly maximum, minimum and mean groundwater levels	Monthly maximum, minimum and mean groundwater levels in metres above Ordnance Datum, together with the number of years contributing values to the calculation of each monthly mean. A specific period of years may be nominated, otherwise the full period of record is given.
	Hydrographs of groundwater levels	Provides a well hydrograph for a number of specified years. Castellated annual plots of monthly maximum and mean groundwater levels calculated from a nominated period of years are superimposed upon the hydrograph, provided that the nominated periods exceeds 10 years. Tabulations of the monthly maximum, minimum and mean values are also listed,

together with the number of years of record used in the calculations, and the number of observations used for each month.

Site details

The output comprises the well reference number of the British Geological Survey, the original (Water Data Unit) station number (where applicable), the hydrometric area, the aquifer name and code, the site name and location, the National Grid Reference, the depth of the well, the datum points (from which measurements are made), the altitude of the ground surface, the period of record and the water authority area in which the well or borehole is located.

OPTION 1 TABLE OF GROUNDWATER LEVELS

Station number	TF03/37
Station name	NEW RED LION, ASLACKBY (CONTINUES OLD RED LION)
Grid Reference	TF 0885 3034
Water Authority	AWA
Hydrometric Area	30
Aquifer	Lincolnshire Limestone
Aquifer Code	13
EEC Unit	ANO3
Surface Level (MOD)	33.82
Datum Point (MOD)	33.45
Well Depth (M)	50.00
Max. Expected (MOD)	33.45
Min. Expected (MOD)	5.00
Period of records in Archive:-	1964 to 1985

Maximum GW Level for period of records 23.69
Number of Maxima 1
Date(s):-
14 03 1977

Minimum GW Level for period of records 3.29
Number of Minima 1
Date(s):-
24 08 1976

(Note: The above reference information is also provided with the output from options 2-4)

Station Number	TF03/37
Year of record	1975
Date	Level (MOD)
03 Jan	17.29
31 Jan	16.68
28 Feb	17.85
04 Apr	20.31
24 Apr	20.12
02 May	20.13
30 May	18.58
13 Jun	17.34
11 Jul	15.77

01 Aug	14.44
29 Aug	13.24
26 Sep	12.11
10 Oct	11.57
07 Nov	10.42
21 Nov	9.85
19 Dec	8.98

Maximum GW level for year 20.31
Number of maxima 1
Dates 04 Apr
Minimum GW Level for year 8.98
Number of minima 1
Dates 19 Dec

OPTION 2 TABLE OF ANNUAL MAXIMUM AND MINIMUM GROUNDWATER LEVELS

Year	Max/Min	Level(MOD)	Date(s)	No. of occasions
1965	Max	21.50	26 Dec	1
	Min	7.85	24 Jan	
1966	Max	23.51	06 Mar	1
	Min	14.43	09 Oct-16 Oct	1 Period
1967	Max	19.79	04 Jun	
	Min	12.69	29 Oct	
1968	Max	22.06	17 Nov	
	Min	14.08	07 Jul	
1969	Max	23.17	30 Mar	
	Min	11.83	16 Nov	
1970	Max	20.21	26 Apr	
	Min	10.76	15 Nov	1

OPTION 3 TABLE OF MONTHLY MAXIMUM, MINIMUM AND MEAN GROUNDWATER LEVELS

Period maximum, minimum and mean groundwater levels for years 1964 to 1985

	Maximum	Minimum	Mean	No. of years
Jan	22.58	7.85	14.75	21
Feb	23.29	7.97	16.50	21
Mar	23.69	6.14	17.27	21
Apr	22.97	5.61	17.17	22
May	22.00	4.80	16.52	21
Jun	21.28	4.11	15.40	21
Jul	19.69	3.42	14.03	21
Aug	17.08	3.29	12.97	21
Sep	18.84	3.37	12.23	21
Oct	17.98	3.82	11.78	21
Nov	22.06	7.03	12.08	21
Dec	21.51	7.81	13.04	21

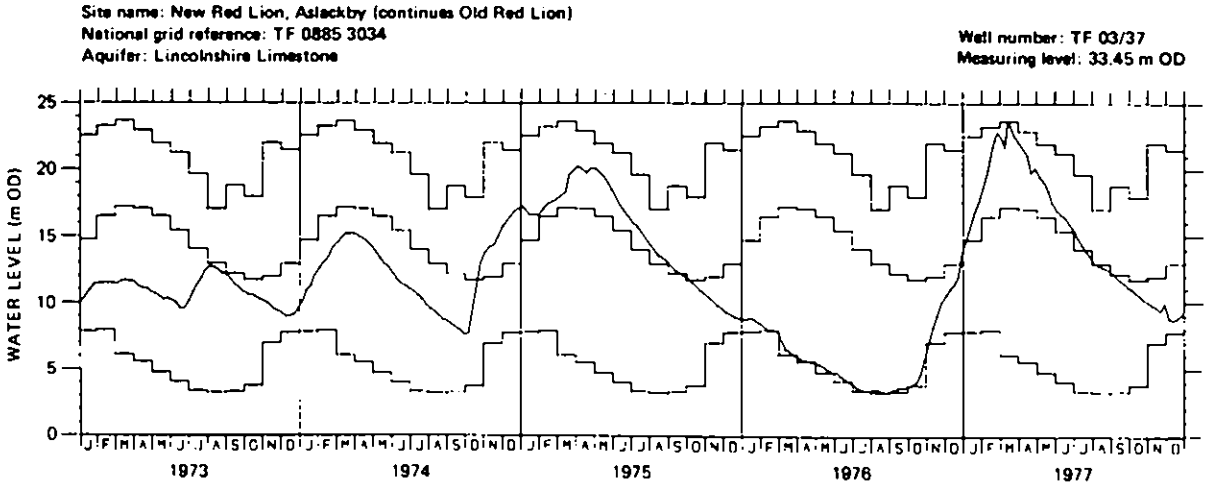
OPTION 4 HYDROGRAPHS OF GROUNDWATER LEVELS

Hydrograph of monthly maximums, minimums and means calculated from years 1964 to 1982

Therefore maximum number of years from which monthly maxs, mins and means may be calculated is 19

	Maximum	Minimum	Mean	No. of Years contributing values to mean calculations
Jan	22.58	7.85	14.77	18
Feb	23.29	7.97	16.47	18
Mar	23.69	6.14	17.34	18
Apr	22.97	5.61	17.23	19
May	22.00	4.80	16.42	19
Jun	21.28	4.11	15.23	19
Jul	19.69	3.42	13.97	19
Aug	17.08	3.29	12.98	19
Sep	18.84	3.37	12.28	19
Oct	17.98	3.82	11.85	19
Nov	22.06	7.03	12.20	19
Dec	21.51	7.81	13.09	19

Hydrograph(s) plotted for year ranges:- 1973 to 1977



Max, Min and Mean values calculated from years 1964 to 1982

OPTION 5 SITE DETAILS

BGS NUMBER	COMPUTER NUMBER	IIA	AQ	NAME—LOCATION REC—PERIOD—WA AQUIFER	GRID REF	DEPTH (M)	DATUM POINT	SURFACE LEVEL
NZ22/22	25624	25	17	RUSHYFORD NORTH EAST, GREAT CHILTON 1957-1985 NWA MAGNESIAN LIMESTONE	NZ 2875 2896	62.50	92.65	92.53
SE94/5	26352	26	6	DALTON ESTATE, DALTON HOLME 1889-1985 YWA CHALK AND UPPER GREENSAND	SE 9651 4530	28.50	34.57	33.50
SE43/9	27360	27	17	PEGGY ELLERTON FARM, HAZLEWOOD 1968-1985 YWA MAGNESIAN LIMESTONE	SE 4535 3964	55.42	51.40	51.40
TF03/37	30229	30	13	NEW RED LION, ASLACKBY (CONTINUES OLD RED LION) 1964-1985 AWA LINCOLNSHIRE LIMESTONE	TF 0885 3034	50.00	33.45	33.82
TF81/2	33343	33	6	WASHPIT FARM 1950-1985 AWA CHALK AND UPPER GREENSAND	TF 8138 1960	40.40	80.21	80.69
TL33/4	38511	38	6	THERFIELD RECTORY, THERFIELD 1883-1984 TWA CHALK AND UPPER GREENSAND	TL 3330 3720	84.10	154.82	154.82
SU17/57	39350	39	6	ROCKLEY, OGBOURNE ST. ANDREW 1933-1985 TWA CHALK AND UPPER GREENSAND	SU 1655 7174	17.60	146.57	146.39
SU71/23	41426	41	6	COMPTON HOUSE, COMPTON 1894-1985 SWA CHALK AND UPPER GREENSAND	SU 7755 1490	53.80	81.37	81.37
SJ87/32	68476	68	16	DALE BROW, MACCLESFIELD 1973-1984 NWWA PERMO-TRIASSIC, SANDSTONES	SJ 8969 7598	152.40	138.66	138.36

SURFACE WATER QUALITY DATA

Background

A national archive of water quality data is maintained by Her Majesty's Inspectorate of Pollution (Department of the Environment) to provide information concerning the quality of rivers throughout the United Kingdom and to satisfy certain international obligations - mostly concerned with the exchange of information. Data for this archive are collected as part of the Harmonised Monitoring programme which provides for the sampling and analysis of water quality on a national basis.

The Harmonised Monitoring Scheme was established, for England and Wales, in 1974; a similar scheme was instituted for Scotland, under the aegis of the Scottish Development Department, in July 1975. Responsibility for the collection and analysis of the samples rests with the 10 Water Authorities in England and Wales and the 7 River Purification Boards in Scotland.

Measuring authorities send analytical results of routinely collected samples of river water from approximately 220 monitoring stations; sampling frequencies vary substantially but are, typically, in the range 6 to 52 per year. Most of the monitoring stations are located on major rivers at, or near, the tidal limit.

The monitoring programme can embrace a large number - over 80 - of physical and chemical attributes of river water (termed determinands) but typically only 25 are measured. A number are measured as standard but a larger proportion are monitored only where it is considered necessary to do so.

The measuring authorities maintain major programmes of chemical and biological sampling of rivers for their own purposes. From the 31st July 1985 Water Authorities and River Purification Boards have been required, under the Control of Pollution Act, to maintain registers of the results of all samples of water and effluent taken for pollution control purposes together with details of all consented discharges. These registers are open for inspection by the public - free of charge - at the offices of the Water Authorities. Persons wishing to consult the registers are advised to first contact the individual authorities; a list of addresses is given on pages 192 to 193.

Data Retrieval

A comprehensive range of retrieval options has been developed by Her Majesty's Inspectorate of Pollution to make available the water quality data held on the Harmonised Monitoring Archive and to provide statistical summaries based on that data. Requests for data, and guidance concerning its availability, should be addressed to:

Department of the Environment
HMIP
Room A4.26
Romney House
43 Marsham Street
London SW1P 3PY

Telephone: 01 276 8245

Scope of the Water Quality Data Tabulations

River water quality data are presented for 16 monitoring sites on rivers throughout the United Kingdom. The location of each monitoring site is given on Figure 19. For each site data are given for 1986 and for the preceding record. The range of determinands featured may differ between monitoring sites reflecting the character of the rivers themselves and differences in the sampling regimes between monitoring stations.

The following notes are provided to assist in the interpretation of particular data items.

Harmonised Monitoring Station Code

A five-digit reference number which serves as the primary identifier of the station on the Harmonised Monitoring Archive. The first two digits refer to the measuring authority, the remainder refer to individual sites within each measuring authority.

Measuring Authority

An abbreviation referencing the organisation responsible for the operation of the monitoring site. See page 192 for a full list of the codes together with the corresponding authority names and addresses.

Grid Reference

The initial two-letter and two-figure codes each designate the relevant 100 kilometre National Grid square; the standard six-figure map reference follows.

Associated Flow Measurement Station

The reference number, name, catchment area and grid reference of the gauging station whose flow record is used to determine the discharge data stored

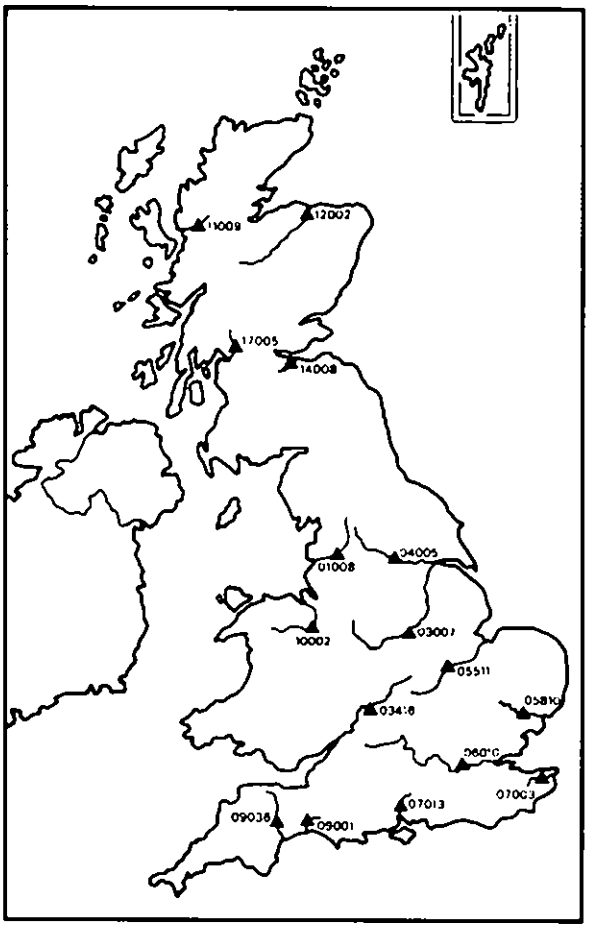


Figure 19. Water quality monitoring station location map.

on the Harmonised Monitoring Archive. For most sites the flow corresponding to the time the quality sample was taken is archived; at other locations the corresponding daily mean flow is utilised. Where the gauging station and water quality monitoring site are not coincident some method of flow adjustment may have been employed to allow for the differing catchment areas.

1986 flow data for all but one of the relevant gauging stations may be found in the River Flow Data section. The shortness of the flow record for the Fleet Weir gauging station on the River Aire precludes its incorporation in the River Flow Data section; summary river flow data for 1986 are, however, included at the head of the water quality listing.

Determinands

The featured list of determinands varies slightly from station to station reflecting the availability of suitable data. Inadequate or unrepresentative sampling frequencies, or the presence of substantial number of samples with concentrations recorded at or below the limit of detection, will normally result in the omission of a particular determinand.

Notes:

i. Conductivity results are standardised to 20°C.
ii. The biochemical oxygen demand data normally relate to the inhibited analytical results - BOD(atu)
iii. Nitrate concentrations are normally derived by subtracting the nitrite concentration from the reported Total Oxidised Nitrogen (TON) concentration; if the nitrite determination is below the limit of detection, nitrate is recorded as equivalent to TON.

Units

The standard units used to record and report each determinand. The precision with which individual data values, for each determinand, are presented corresponds to the way the data are stored on the Harmonised Monitoring Archive and reflects the uncertainty associated with the relevant analytical procedures.

1986 Data

Samples

The number of samples taken for each determinand during 1986. Where a proportion of analytical results were below the limit of detection, the number of samples in this category is given in parentheses.

Mean

The average* of all the sample values for each determinand in 1986. Where concentrations below the limit of detection are held on the Harmonised Monitoring archive, the threshold value itself is used to compute the mean.

Maximum / Date

The maximum determinand value recorded during 1986 together with its date of occurrence. Where the maximum value recurs, the date refers to the initial occurrence.

Minimum / Date

The minimum determinand value together with its date of occurrence. Where the minimum value recurs, the date refers to the initial occurrence. A '<' symbol indicates a value below the limit of detection.

Period of Recorded Data

Generally, the pre-1986 summary statistics are presented for the decade beginning in 1976; where individual stations were not incorporated into the Harmonised Monitoring network until after 1976,

the appropriate first complete year of data is given. For certain stations the sampling frequency varies significantly from year to year and data for a few determinands may not extend over the full period of record.

Where the pre-1986 data series includes values below the limit of detection, the threshold value has been used in the computation of the summary statistics.

For a number of the featured monitoring stations, a considerable amount of pre-1976 data, at least for certain determinands, may be stored on local, or regional, archives maintained by the measuring authorities. Also, for the period 1976–85, such archives may hold analytical results for substantially more samples than are represented on the Harmonised Monitoring Archive. Hence full equivalence between statistical summaries derived from national and regional databases cannot be expected for all monitoring sites.

Mean

The average* value of all the sample values for each determinand.

Percentiles

The 5, 50 and 95 percentile values for each determinand based on all the samples taken over the 1976–85 period.

Quarterly Averages

The mean quarterly average* for each of the three-monthly periods: January to March, April to June, July to September and October to December.

* In all cases this refers to the temporal mean rather than the flow-weighted average.

Ribble at Samlesbury — 1986

Harmonised monitoring code : 01 008
Measuring authority : NWWA
Grid reference : 34 (SD) 590 305

Flow measurement station 071001 - Samlesbury
Catchment area (sq km) : 1145.0
Grid reference : 34 (SD) 589 304

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	49	8 8	18 0	03/07	0 0	27/02	9 3	0 9	9 5	17 8	3 8	11 3	14 8	7 3
pH	pH units	50	8 0	9 2	24/07	7 1	03/07	7 7	7 0	7 7	8 5	7 4	7 8	7 9	7 6
Conductivity	µS/cm	50	366	733	27/02	154	04/12	432	235	423	658	432	462	454	376
Suspended solids	mg/l	50(2)	18 7	136 0	04/12	<2 0	31/07	19 7	3 0	9 0	65 0	20 9	15 5	14 6	29 1
Dissolved oxygen	mg/l O	48	10 51	15 40	13/02	6 90	09/10	10 3	7 9	10 3	13 0	11 8	9 7	8 9	10 9
Biochemical oxygen demand	mg/l O	49(1)	2 7	7 0	23/10	0 8	02/10	3 0	1 7	2 6	6 5	2 9	3 3	2 8	3 0
Chemical oxygen demand	mg/l O	50	23 6	61 0	22/05	7 0	24/04	24 2	10 0	22 0	48 0	21 6	24 3	25 4	25 8
Ammoniacal nitrogen	mg/l N	50(16)	0 320	2 150	27/02	<0 050	29/05	0 28	0 05	0 19	0 90	0 53	0 20	0 15	0 25
Nitrite	mg/l N	50(4)	0 600	0 180	03/07	<0 020	14/08	0 08	0 03	0 07	0 20	0 06	0 12	0 09	0 06
Nitrate	mg/l N	50	3 55	9 55	17/07	0 45	31/07	4 3	1 3	3 6	10 0	3 5	5 5	5 2	3 0
Chloride	mg/l Cl	50	31 0	101 0	30/01	10 0	04/12	33 8	15 0	30 0	61 6	40 7	34 3	33 6	26 2
Total alkalinity	mg/l $CaCO_3$	50	116 5	167 0	03/07	20 0	13/03	111 9	65 0	115 0	146 0	105 6	118 7	116 5	106 0
Fluoride	mg/l F	31	0 14	0 95	20/11	0 08	23/01	0 13	0 01	0 11	0 20	0 11	0 16	0 14	0 11
Orthophosphate	mg/l P	50	0 470	1 550	03/07	0 050	24/04	0 36	0 10	0 27	0 91	0 22	0 41	0 56	0 25

Trent at Nottingham — 1986

Harmonised monitoring code 03 007
Measuring authority STWA
Grid reference : 43 (SK) 581 383

Flow measurement station : 028009 - Colwick
Catchment area (sq km) 7486.0
Grid reference : 43 (SK) 620 399

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	23	11 6	19 0	16/06	3 5	28/11	13 6	6 0	13 5	22 0	8 1	15 6	19 5	11 6
pH	pH units	23	7 7	8 3	29/05	6 8	10/12	7 7	7 3	7 7	8 1	7 6	7 7	7 8	7 6
Conductivity	µS/cm	23	871	1197	10/12	546	28/08	902	647	920	1144	802	918	1007	891
Suspended solids	mg/l	23	21 8	71 0	21/11	6 0	23/09	25 7	8 0	17 0	76 0	31 2	22 2	18 3	30 1
Dissolved oxygen	mg/l O	22	10 35	12 70	28/01	8 40	13/08	9 6	7 6	9 6	11 7	10 6	9 5	8 7	9 7
Biochemical oxygen demand	mg/l O	23	3 1	7 0	24/07	1 8	10/10	3 6	1 6	3 5	6 1	3 3	4 0	3 8	3 2
Ammoniacal nitrogen	mg/l N	23	0 460	1 360	26/02	0 010	29/05	0 37	0 01	0 30	0 98	0 64	0 29	0 22	0 38
Nitrite	mg/l N	23	8 72	11 40	10/10	6 10	28/08	8 6	6 1	8 7	11 3	8 3	8 6	8 7	8 8
Chloride	mg/l Cl	23	91 7	147 0	10/10	48 0	28/08	101 1	56 0	99 6	150 0	85 1	98 3	123 1	99 5
Total alkalinity	mg/l $CaCO_3$	22	162 3	315 0	04/11	93 0	28/08	160 1	120 0	165 0	188 4	156 2	163 8	167 4	153 6
Fluoride	mg/l F	10	0 38	0 66	29/07	0 30	13/08	0 36	0 20	0 37	0 52	0 31	0 37	0 41	0 35
Orthophosphate	mg/l P	23	1 620	3 200	10/10	0 060	04/11	1 50	0 49	1 49	2 70	0 92	1 52	2 07	1 55

Avon at Evesham Road Bridge — 1986

Harmonised monitoring code : 03 416
Measuring authority STWA
Grid reference : 42 (SP) 034 431

Flow measurement station 054002 - Evesham
Catchment area (sq km) 2210 0
Grid reference : 42 (SP) 040 438

Determinand	Units	1986 Samples	Mean	Max	Date	Min	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	9 5	20 0	16/06	0 5	10/02	11 1	2 9	11 0	20 5	5 1	12 9	17 3	8 7
pH	pH units	26	8 0	8 8	16/06	7 2	31/12	8 0	7 6	7 9	8 7	7 9	8 2	8 1	7 8
Conductivity	µS/cm	26	907	1184	30/09	430	26/03	924	614	930	1188	824	893	1030	951
Suspended solids	mg/l	26	30 4	163 0	31/12	7 0	17/10	27 9	6 0	18 0	89 2	36 3	21 1	17 0	31 5
Dissolved oxygen	mg/l O	24	11.31	14 40	27/02	9 20	30/07	10 4	7 6	10 2	13 2	10 6	9 5	8 7	9 7
Biochemical oxygen demand	mg/l O	23	3 5	8 5	16/06	1 0	28/01	3 1	1 1	2 7	6 5	2 9	4 3	2 9	2 3
Ammoniacal nitrogen	mg/l N	26(1)	0 400	1 550	27/02	<0 010	06/05	0 24	0 01	0 15	0 73	0 47	0 14	0 10	0 25
Nitrate	mg/l N	26	10 92	13 60	16/01	6 60	11/03	10 4	7 5	10 1	14 2	11 3	9 4	9 8	11 1
Chloride	mg/l Cl	26	76 4	117 0	17/10	48 0	18/04	73 5	36 7	72 5	105 7	63 8	64 3	88 3	78 4
Total alkalinity	mg/l $CaCO_3$	26	204 0	255 0	26/03	145 0	27/11	193 7	144 2	197 0	230 0	186 6	197 8	194 8	195 3
Fluoride	mg/l F	14	0 39	0 52	30/07	0 27	09/04	0 37	0 20	0 35	0 51	0 30	0 34	0 49	0 35
Orthophosphate	mg/l P	26	1 780	3 880	17/10	0 540	11/03	1 65	0 40	1 40	3 40	0 98	1 34	2 40	1 90

Aire at Fleet Weir — 1986

Harmonised monitoring code 04 005
Measuring authority : YWA
Grid reference : 44 (SE) 381 285

Flow measurement station 027080 - Fleet Weir
Catchment area (sq km) : 865.0
Grid reference : 44 (SE) 381 285

Determinand	Units	1986 Samples	Mean	Max	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Flow	m^3/s	365	20 98	144 5	15/04	4 540	11/10								
Temperature	°C	51	10 7	20 0	02/07	2 0	08/01	12 6	4 3	12 0	21 0	7 0	14 6	18 1	10 6
pH	pH units	53	7 5	7 9	03/11	7 2	19/06	7 5	7 1	7 5	7 8	7 6	7 5	7 4	7 5
Conductivity	µS/cm	53	715	956	24/02	393	26/11	696	388	660	1181	674	695	795	617
Suspended solids	mg/l	53	26.5	147 0	16/04	6 0	12/08	28 0	9 2	17 6	85 5	31 8	29 5	17 7	33 2
Dissolved oxygen	mg/l O	53	7 76	11 70	02/01	0 30	25/07	7 9	3 8	8 1	11 5	10 3	7 1	5 6	8 4
Biochemical oxygen demand	mg/l O	53	8 9	15 4	22/10	3 8	22/12	7 6	3 8	6 6	14 5	7 4	8 5	7 3	7 1
Ammoniacal nitrogen	mg/l N	53	2 050	6 090	10/10	0 110	14/01	2 30	0 47	1 80	5 80	2 20	2 45	2 61	1 92
Nitrite	mg/l N	53	0 340	1 030	14/07	0 050	16/04	0 35	0 07	0 30	0 84	0 17	0 42	0 53	0 26
Nitrate	mg/l N	53	4.24	7 25	22/09	1 79	26/11	5 1	2 7	5 0	7 9	4 4	5 3	5 9	4 7
Chloride	mg/l Cl	53	73.7	165 0	06/02	26.3	22/10	84 4	31 0	75 8	168 0	83.1	85 4	97 4	71 4
Total alkalinity	mg/l $CaCO_3$	25	114.7	157 0	16/09	66 4	16/04	120 3	75 0	123 0	159.5	114 0	123 0	128 3	115 7
Fluoride	mg/l F	26	0 17	0 32	22/05	0 11	28/10	0 17	0 11	0 17	0 26	0 13	0 18	0 21	0 16
Orthophosphate	mg/l P	53(2)	1 340	5 360	02/07	<0 100	14/01	1 47	0 20	1 19	3 69	0 89	1 54	2 22	1 21

Nene at Wansford 1986

Harmonised monitoring code 05 511
Measuring authority : AWA
Grid reference : 52 (TL) 082 996

Flow measurement station : 032001 - Orton
Catchment area (sq km) 1634.3
Grid reference : 52 (TL) 166 972

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	57	10 9	22 0	02/07	1 0	11/02	11 6	3 0	11 0	21 0	5.3	13 7	18 0	8 4
pH	pH units	56	8 0	8 6	14/05	7 6	01/12	8 1	7 7	8 0	8 9	7 9	8.3	8 2	7 9
Conductivity	µS/cm	56	967	1162	15/09	612	14/01	920	706	895	1289	893	887	946	955
Suspended solids	mg/l	56	24 4	172 0	31/12	1 0	15/09	20 0	4 0	13 4	51 5	28 4	20 2	14 1	18 5
Dissolved oxygen	mg/l O	57	10 46	13 30	26/02	7.15	15/07	10 7	7 9	10 8	13 2	12 0	10 9	9 2	10 8
Biochemical oxygen demand	mg/l O	57	3.5	9 4	20/05	1 0	18/08	3 8	1 4	3 0	9 0	3 2	5 7	3 5	2.5
Ammoniacal nitrogen	mg/l N	57(7)	0 320	1 800	05/03	<0 020	07/05	0 37	0 05	0 19	1 38	0 76	0 18	0 12	0 53
Nitrite	mg/l N	56(5)	0 120	0 400	23/06	<0 010	23/09	0 11	0 03	0 10	0 20	0 09	0 12	0 08	0 13
Nitrate	mg/l N	57	11 31	17 27	04/02	5 10	30/07	9 4	5 3	9 0	14 8	12 0	9 1	6 7	10 3
Chloride	mg/l Cl	55	73 5	105 0	11/02	39 0	01/04	73 3	40 1	69 0	120 7	65 4	66 4	83 1	77 8
Total alkalinity	mg/l $CaCO_3$	55	200 6	248 0	23/06	150 0	07/01	209 7	170 0	210 0	240 0	209 9	209 9	211.1	207.5
Orthophosphate	mg/l P	54	1.280	2 520	20/10	0 360	14/01	1 07	0 24	0 98	2 21	0 68	0 84	1 42	1 40

Stour at Langham 1986

Harmonised monitoring code : 05 810
Measuring authority : AWA
Grid reference : 62 (TM) 026 345

Flow measurement station : 036006 - Langham
Catchment area (sq km) 578 0
Grid reference 62 (TM) 020 344

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	36	11.7	23 0	17/07	1 0	03/03	11.1	2 0	11 0	20 0	4 8	13 5	17 1	8 7
pH	pH units	47	8 2	8 8	08/05	7 2	27/02	8 2	7 8	8 1	8 9	8 0	8 4	8 2	8 0
Conductivity	µS/cm	47	926	1300	09/06	760	18/08	911	740	920	1100	925	873	894	957
Suspended solids	mg/l	47	10 8	45 0	20/11	2 0	06/11	16 5	3 0	10 0	47 9	20 5	20 2	11 4	14 4
Dissolved oxygen	mg/l O	45	10 86	13.90	27/05	6 00	06/11	10 8	7 5	10 8	14 0	12 1	11 6	8 9	10 5
Biochemical oxygen demand	mg/l O	45(1)	3 0	9 4	27/05	<1 0	17/07	3 1	1 0	2 3	9 7	2 3	5 5	2 8	2 2
Ammoniacal nitrogen	mg/l N	47(20)	0 120	0 730	24/04	0 020	18/03	0 13	0 02	0 08	0 40	0 22	0 08	0 08	0 15
Nitrite	mg/l N	13	0 090	0 210	19/08	<0 020	31/07	0 08	0 02	0 07	0 16	0 07	0 10	0 05	0 09
Nitrate	mg/l N	47	9 47	21.00	24/04	3 10	03/07	8 5	2 3	7 9	16 0	11 3	8 1	4 2	9 0
Chloride	mg/l Cl	47	66 0	85 0	08/07	44 0	24/04	67 4	39 0	66 0	99 1	54 8	60 5	77 9	75 1
Total alkalinity	mg/l $CaCO_3$	24	242 9	270 0	27/02	210 0	24/04	242 2	190 0	250 0	280 0	237 8	238 6	247 3	245 1
Orthophosphate	mg/l P	48	0 870	1 400	08/07	0 320	30/12	0 63	0 12	0 59	1 40	0 40	0 46	0 76	0 87

Thames at Teddington Weir 1986

Harmonised monitoring code 06 010
Measuring authority TWA
Grid reference 51 (TQ) 171 714

Flow measurement station : 039001 - Kingston
Catchment area (sq km) 9948.0
Grid reference 51 (TQ) 177 698

Determinand	Units	1986 Samples	Mean	Max.	Date	Min	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	11 7	20 0	10/07	2 0	20/02	11 5	3 5	11 0	20 5	5 9	13 6	18 3	9 3
pH	pH units	28	8 0	8 7	22/04	7 6	30/01	8 1	7 7	8 0	8 7	8 0	8 3	8 0	7 9
Conductivity	µS/cm	23	653	745	17/03	548	19/11	573	480	578	660	571	554	594	572
Suspended solids	mg/l	22	28 3	94 0	18/12	4 8	08/10	22 3	4 8	14 1	78 0	23 0	7 8	5 9	16 5
Dissolved oxygen	mg/l O	15	10 87	13.20	13/05	7 80	13/08	10 1	7 1	10 1	13 1	11 4	10 6	8 8	9 8
Biochemical oxygen demand	mg/l O	28(1)	3 6	8 6	24/06	<1 0	11/09	2 9	1 0	2 3	6 5	2 1	4 1	3 1	2 2
Ammoniacal nitrogen	mg/l N	27(5)	0 280	1.300	05/03	0 040	22/04	0 33	0 01	0 22	1 00	0 29	0 22	0 42	0 38
Nitrate	mg/l N	27	6 85	8 90	22/04	4 80	10/07	7 5	5 5	7 2	10 6	8 5	6 6	6 8	7 9
Chloride	mg/l Cl	27	43.4	61 0	17/04	27 0	19/11	41 1	30 0	40 0	58 0	38 8	37 5	45 2	42 9
Total alkalinity	mg/l $CaCO_3$	22	189 4	216 0	12/05	110 0	19/11	185 7	148 0	189 0	213 0	184 9	191 6	190 5	175 7
Orthophosphate	mg/l P	27	1.310	2 700	08/10	0 520	09/01	1 30	0 39	1 08	2 94	0 77	1 05	2 03	1 41

Great Stour at Bretts Bailey Bridge 1986

Harmonised monitoring code : 07 003
Measuring authority SWA
Grid reference 61 (TR) 187 603

Flow measurement station : 040011 - Horton
Catchment area (sq km) 345.0
Grid reference 61 (TR) 116 554

Determinand	Units	1986 Samples	Mean	Max.	Date	Min	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	23	11 0	21 0	30/08	3 5	30/01	11.6	4 5	11 9	18 0	6 8	13 0	16 4	10 3
pH	pH units	25	7.9	8 4	13/05	7 4	30/01	7 8	7 3	7 8	8 3	7 7	7 9	7 9	7 7
Conductivity	µS/cm	23	657	801	24/03	540	26/08	689	570	698	785	683	675	689	712
Suspended solids	mg/l	25	13 4	44 0	24/11	1.7	30/06	13 0	2 0	6 9	52 0	23 0	7 8	5 9	16 5
Dissolved oxygen	mg/l O	19	9 26	11 30	03/11	6 00	26/08	11 0	7 7	10 9	15 0	11 6	11 7	10 1	10 4
Biochemical oxygen demand	mg/l O	25	2 6	4 1	19/02	1 1	14/10	2 8	1 2	2 6	5 4	3 1	3 1	2 4	2 6
Ammoniacal nitrogen	mg/l N	25(1)	0 290	0 820	19/02	<0 020	22/07	0 35	0 01	0 15	1 35	0 52	0 39	0 11	0 37
Nitrite	mg/l N	25	0.100	0.200	19/02	0 040	22/09	0 11	0 03	0 08	0 33	0 10	0 13	0 11	0 12
Nitrate	mg/l N	25	6 21	8 80	29/04	3 50	02/07	5 7	3 8	5 5	8 5	6 7	5 2	4 8	6 3
Chloride	mg/l Cl	25	57.1	91 0	11/03	40 0	26/08	48 5	36 0	47 0	64 5	48 8	45 5	47 9	52 2
Total alkalinity	mg/l $CaCO_3$	22	207 0	250 0	14/10	165 0	22/10	214 1	148 6	224 0	243 0	198 5	219 9	228 0	209 5
Orthophosphate	mg/l P	25	1 010	1.700	14/10	0 110	16/01	0 89	0 31	0 83	1 64	0 62	0 86	1.10	1 07

Itchen at Gatersmill — 1986

Harmonised monitoring code : 07 013
Measuring authority : SWA
Grid reference : 41 (SU) 434 156

Flow measurement station 042010 - Highbridge
Catchment area (sq km) : 360.0
Grid reference : 41 (SU) 467 213

Determinand	Units	1986 Samples	Mean	Max.	Date	Min	Date	Period of record: 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	31	11 0	18 0	03/07	4 0	26/02	10 7	4 0	10 0	18 3	6 9	13 0	16 3	9 7
pH	pH units	32	8 1	8 6	06/08	7 8	02/01	8 1	7 8	8 1	8 4	8 1	8 1	8 7	8 0
Conductivity	µS/cm	31	519	605	06/08	415	02/01	489	431	490	558	493	477	478	503
Suspended solids	mg/l	23	10 8	75 0	24/03	2 4	04/09	13 2	2 5	8 6	38 2	23 2	10 5	4 8	13 9
Biochemical oxygen demand	mg/l O	28	2 2	3 8	07/05	0 9	04/09	2 1	1 0	2 1	3 5	2 2	2 4	1 6	2 2
Ammoniacal nitrogen	mg/l N	32(4)	0 150	0 374	24/03	<0 050	20/06	0 10	0 01	0 09	0 23	0 15	0 05	0 05	0 10
Nitrite	mg/l N	32	0 050	0 110	03/12	0 780	12/08	0 05	0 03	0 04	0 09	0 04	0 04	0 05	0 06
Nitrate	mg/l N	31	5 31	6 36	26/02	3 77	04/09	5 2	4 1	5 2	6 0	5 6	5 1	4 6	5 0
Chloride	mg/l Cl	32	22 4	28 8	09/10	15 5	12/08	20 6	17 4	20 0	24 6	20 6	19 5	20 1	21 9
Fluoride	mg/l F	23	0 08	0 11	06/08	0 03	10/04	0 07	0 04	0 07	0 10	0 07	0 07	0 07	0 07
Orthophosphate	mg/l P	32	0 390	0 830	09/10	0 049	07/05	0 36	0 18	0 35	0 66	0 29	0 35	0 43	0 46

Axe at Whitford Road Bridge — 1986

Harmonised monitoring code 09 001
Measuring authority SWWA
Grid reference 30 (SY) 262 953

Flow measurement station 045004 - Whitford
Catchment area (sq km) : 288 5
Grid reference 30 (SY) 262 953

Determinand	Units	1986 Samples	Mean	Max	Date	Min	Date	Period of record: 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	17	10 6	19 0	15/07	0 5	26/02	11 0	4 0	10 3	19 0	6 2	12 3	16 5	8 7
pH	pH units	17	7 9	8 3	04/06	7 4	08/12	7 9	7 4	7 9	8 5	7 8	8 1	8 0	7 7
Conductivity	µS/cm	17	373	450	28/07	250	08/12	386	295	390	460	360	386	420	375
Suspended solids	mg/l	17	19 4	165 0	08/12	2 0	01/09	13 8	2 0	5 2	51 7	18 7	10 7	5 9	19 8
Dissolved oxygen	mg/l O	17	11 01	14 40	26/02	8 40	28/07	10 9	8 3	10 9	13 7	11 9	11 2	9 9	10 7
Biochemical oxygen demand	mg/l O	17	2 4	8 4	08/12	0 6	29/09	2 1	0 8	1 7	4 5	2 2	2 3	1 9	1 9
Ammoniacal nitrogen	mg/l N	17	0 160	0 510	08/12	0 020	05/08	0 10	0 01	0 06	0 30	0 16	0 08	0 06	0 11
Nitrite	mg/l N	17	0 060	0 134	11/06	0 026	12/02	0 05	0 01	0 04	0 10	0 04	0 06	0 03	0 05
Nitrate	mg/l N	17	4 08	5 30	26/02	3 40	11/06	3 8	2 1	3 3	5 7	3 9	3 0	2 8	4 7
Chloride	mg/l Cl	17	21 6	29 0	28/07	18 9	01/09	23 2	19 0	22 0	29 0	23 7	21 0	23 1	25 0
Total alkalinity	mg/l $CaCO_3$	17	135 5	171 0	28/07	81 0	21/11	135 8	86 9	139 0	168 1	117 1	141 5	155 1	128 2
Orthophosphate	mg/l P	17	0 270	0 440	08/12	0 180	14/01	0 24	0 12	0 22	0 44	0 18	0 23	0 30	0 22

Exe at Thorverton Road Bridge — 1986

Harmonised monitoring code 09 036
Measuring authority : SWWA
Grid reference : 21 (SS) 936 016

Flow measurement station : 045001 - Thorverton
Catchment area (sq km) 600 9
Grid reference 21 (SS) 936 016

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	15	11 2	18 0	21/07	5 0	06/01	11 4	4 1	10 5	19 0	6 4	13 0	16 8	9 5
pH	pH units	15	7 6	8 1	27/05	7 3	30/01	7 5	6 8	7 5	8 2	7 3	7 7	7 5	7 3
Conductivity	µS/cm	15	177	244	22/07	126	27/11	171	121	162	245	154	178	195	158
Suspended solids	mg/l	15	10 5	35 0	08/04	2 0	29/09	11 4	2 0	6 0	41 7	14 5	10 1	7 0	14 0
Dissolved oxygen	mg/l O	15	11 49	13 90	14/03	8 60	21/07	11 0	8 8	11 2	13 3	12 2	11 0	9 6	11 3
Biochemical oxygen demand	mg/l O	15	1 8	3 8	08/04	0 7	24/11	1 7	0 8	1 6	3 1	1 6	2 2	1 5	1 5
Ammoniacal nitrogen	mg/l N	15	0 070	0 320	08/04	0 010	29/09	0 07	0 01	0 05	0 16	0 07	0 08	0 06	0 06
Nitrite	mg/l N	15	0 030	0 087	30/06	0 006	30/01	0 02	0 01	0 02	0 06	0 02	0 04	0 03	0 02
Nitrate	mg/l N	15	2 76	3 50	30/01	2 10	05/08	2 4	1 4	2 3	3 8	2 9	2 3	1 9	2 4
Chloride	mg/l Cl	15	15 1	20 3	22/07	12 1	27/05	18 1	13 2	17 0	27 5	17 3	17 8	20 4	16 7
Total alkalinity	mg/l $CaCO_3$	15	43 0	65 0	21/07	27 0	24/10	40 6	23 4	37 0	67 6	32 7	44 6	49 3	35 7
Orthophosphate	mg/l P	15(1)	0 110	0 250	22/07	<0 010	24/10	0 12	0 03	0 08	0 32	0 06	0 12	0 21	0 08

Dee at Overton — 1986

Harmonised monitoring code 10 002
Measuring authority : WELS
Grid reference . 33 (SJ) 354 427

Flow measurement station 067015 - Manley Hall
Catchment area (sq km) 1019.3
Grid reference : 33 (SJ) 348 415

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	27	9 1	16 2	07/07	0 2	27/02	10 0	3 0	9 6	18 0	4 9	11 7	15 4	7 9
pH	pH units	27	7 3	7 8	11/06	6 8	14/11	7 2	6 5	7 2	7 8	7 1	7 2	7 2	7 1
Conductivity	µS/cm	27	166	287	27/02	74	28/08	172	98	163	263	160	209	178	138
Suspended solids	mg/l	27	12 6	99 0	18/04	1 0	14/02	8 3	1 0	3 0	33 2	11 8	4 6	5 4	12 0
Dissolved oxygen	mg/l O	25	11 44	15 12	27/02	9 2	04/08	11 1	9 1	11 2	13 2	12 5	10 8	9 7	11 7
Biochemical oxygen demand	mg/l O	27(5)	1 0	2 1	21/10	<0 5	19/01	1 2	0 5	1 1	2 6	1 2	1 5	1 2	1 1
Ammoniacal nitrogen	mg/l N	27(3)	0 070	0 220	27/11	<0 020	14/02	0 04	0 01	0 03	0 12	0 06	0 04	0 03	0 05
Nitrite	mg/l N	26(7)	0 020	0 090	06/10	<0 010	19/01	0 02	0 01	0 01	0 04	0 02	0 02	0 02	0 02
Nitrate	mg/l N	26(1)	1 17	2 05	18/04	<0 10	06/01	1 1	0 4	1 0	2 1	1 5	1 2	0 8	1 1
Chloride	mg/l Cl	27	20 4	35 3	27/02	12 1	27/11	19 1	10 0	17 8	32 0	18 7	22 2	20 1	15 4
Orthophosphate	mg/l P	26(8)	0 090	0 280	19/01	0 040	06/01	0 04	0 01	0 03	0 13	0 04	0 05	0 06	0 05

Carron at A890 Road Bridge — 1986

Harmonised monitoring code 11 009
Measuring authority HRPB
Grid reference 18 (NG) 938 425

Flow measurement station 093001 - New Kelso
Catchment area (sq km) 137.8
Grid reference 18 (NG) 942 429

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	7 7	13 1	09/07	2 4	12/02	8 6	2 0	8 7	15 2	3 6	11 6	12 9	7 2
pH	pH units	12	6 4	7 1	09/07	5 4	29/01	6 7	5 9	6 7	7 5	6 9	6 8	6 7	6 6
Conductivity	µS/cm	12	47	75	29/01	30	27/10	46	27	47	65	51	50	44	41
Suspended solids	mg/l	12	1 4	4 4	27/10	0 6	29/01	1 5	0 2	0 9	4 9	2 0	1 4	1 4	1 5
Dissolved oxygen	mg/l O	12	11 59	13 67	12/02	10 06	06/08	11 3	9 8	11 3	13 2	12 7	11 0	10 1	11 4
Biochemical oxygen demand	mg/ O	12	0 7	1 2	22/05	0 2	06/08	0 8	0 2	0 8	1 4	0 9	0 7	0 8	0 9
Ammoniacal nitrogen	mg/ N	12	0 010	0 016	22/05	0 003	26/11	0 01	0 00	0 01	0 03	0 01	0 01	0 01	0 01
Nitrate	mg/l N	12	0 06	0 10	12/02	0 03	27/10	0 1	0 0	0 1	0 1	0 1	0 1	0 1	0 1
Chloride	mg/l Cl	12	13 1	25 5	29/01	8 0	27/10	10 9	5 7	10 0	18 2	14 3	11 4	8 2	9 8
Total alkalinity	mg/l $CaCO_3$	12	3 3	8 0	12/02	0 8	27/10	7 5	2 5	5 0	15 0	7 2	8 0	8 0	7 0

Spey at Fochabers — 1986

Harmonised monitoring code 12 002
Measuring authority NERPB
Grid reference 38 (NJ) 341 596

Flow measurement station 008006 - Boat o Brig
Catchment area (sq km) 2861 2
Grid reference 38 (NJ) 318 518

Determinand	Units	1986 Samples	Mean	Max.	Date	Min	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	11	9 4	19 0	16/07	3 0	24/04	9 1	1 7	9 0	18 7	3 2	10 0	15 2	6 4
pH	pH units	12	7 2	7 8	16/07	6 6	03/12	7 2	6 2	7 2	7 9	6 9	7 2	7 5	7 0
Conductivity	µS/cm	12	74	103	17/07	50	03/12	77	50	77	110	82	71	84	70
Suspended solids	mg/l	12	2 7	9 0	19/08	1 0	27/05	4 0	0 0	2 0	16 6	3 1	4 5	3 7	4 4
Biochemical oxygen demand	mg/l O	12	0 9	1 0	24/04	0 7	16/09	0 9	0 4	0 9	1 8	0 8	1 1	0 9	0 9
Ammoniacal nitrogen	mg/l N	12	0 050	0 280	19/08	0 006	13/07	0 04	0 00	0 03	0 12	0 03	0 05	0 04	0 04
Nitrite	mg/l N	12	0 010	0 019	02/09	0 002	21/10	0 01	0 00	0 01	0 01	0 01	0 01	0 01	0 01
Nitrate	mg/l N	12	0 26	0 55	19/08	0 12	01/07	0 4	0 2	0 3	0 7	0 5	0 3	0 3	0 3
Chloride	mg/l Cl	12	10 8	26 0	19/08	6 0	21/05	11 0	7 0	11 0	16 0	12 9	10 7	11 2	9 8
Total alkalinity	mg/l $CaCO_3$	12	26 1	35 0	16/07	20 0	13/02	27 0	15 3	25 0	40 0	23 7	25 5	31 3	26 3
Orthophosphate	mg/l P	12	0 033	0 178	17/07	0 002	13/02	0 03	0 00	0 01	0 11	0 02	0 02	0 04	0 02

Almond at Craigiehall — 1986

Harmonised monitoring code 14 008
Measuring authority FRPB
Grid reference 36 (NT) 165 752

Flow measurement station 019001 - Craigiehall
Catchment area (sq km) 369.0
Grid reference 36 (NT) 165 752

Determinand	Units	1986 Samples	Mean	Max.	Date	Min.	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	17	9 1	20 0	26/06	1 0	08/01	9 8	2 2	10 0	18 0	4 3	11 9	14 8	7 2
pH	pH units	18	7 6	7 8	26/06	6 9	05/03	7 5	7 1	7 5	8 0	7 4	7 7	7 5	7 5
Conductivity	µS/cm	16	585	990	14/07	205	25/11	605	321	585	878	512	684	680	527
Suspended solids	mg/l	12	38 2	186 0	05/03	4 0	23/07	19 5	3 0	12 0	62 5	23 0	11 5	17 7	26 0
Dissolved oxygen	mg/l O	11	9 50	12 00	05/02	6 70	24/09	9 3	5 2	9 6	12 2	11 4	9 4	6 9	9 9
Biochemical oxygen demand	mg/l O	10	3 2	4 2	23/07	1 7	20/08	3 4	1 5	2 8	7 3	3 4	3 8	3 2	3 2
Ammoniacal nitrogen	mg/l N	11	1 230	3 100	08/01	0 210	25/11	1 20	0 22	0 95	3 05	1 19	1 49	1 27	0 83
Nitrite	mg/l N	10	0 160	0 940	23/07	0 040	25/11	0 25	0 04	0 15	0 82	0 06	0 33	0 46	0 12
Nitrate	mg/l N	10	3 73	6 60	24/09	2 21	25/11	3 8	2 1	3 7	5 5	3 7	4 0	3 7	3 7
Chloride	mg/l Cl	10	62 6	137 0	08/01	21 0	25/11	64 0	29 2	62 0	103 0	57 7	73 0	72 4	51 1
Total alkalinity	mg/l $CaCO_3$	14	120 7	225 0	23/07	45 0	25/11	122 3	55 8	122 5	190 0	101 2	141 9	137 4	105 2
Orthophosphate	mg/l P	11	0 620	2 040	23/07	0 110	05/02	0 74	0 09	0 43	2 09	0 23	0 87	1 34	0 37

Leven at Renton Foot Bridge — 1986

Harmonised monitoring code 17 005
Measuring authority CRPB
Grid reference 26 (NS) 389 783

Flow measurement station 085001 - Linnbrane
Catchment area (sq km) 784 3
Grid reference 26 (NS) 394 803

Determinand	Units	1986 Samples	Mean	Max	Date	Min	Date	Period of record 1976 - 1985 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	9 0	17 0	16/07	2 0	11/02	9 3	2 2	9 0	17 8	3 7	10 8	15 3	7 8
pH	pH units	12	7 2	7 5	16/04	6 8	11/11	7 1	6 7	7 1	7 6	7 0	7 1	7 1	6 9
Conductivity	µS/cm	12	73	88	09/10	65	11/02	73	60	70	97	73	75	71	74
Suspended solids	mg/l	12(1)	3 3	6 0	16/04	<1 0	11/08	5 2	1 0	4 0	13 0	7 4	4 4	4 4	4 8
Dissolved oxygen	mg/l O	12	11 24	12 90	13/03	9 20	16/07	10 9	9 2	10 9	12 7	12 4	11 3	9 6	10 7
Biochemical oxygen demand	mg/l O	12	1 8	3 4	12/05	0 8	16/07	1 7	0 6	1 6	2 8	2 3	1 8	1 2	1 4
Nitrate	mg/l N	12	0 33	0 45	16/04	0 20	11/08	0 3	0 1	0 3	0 5	0 4	0 3	0 2	0 3
Chloride	mg/l Cl	12	8 7	11 0	16/04	7 0	04/12	10 4	6 0	10 0	20 6	11 3	10 8	10 4	9 3
Total alkalinity	mg/l $CaCO_3$	12	12 4	16 0	16/04	8 0	13/03	17 6	12 0	18 0	23 8	16 7	17 9	18 2	17 7

DIRECTORY OF MEASURING AUTHORITIES

Water Authorities*

	Address	Code
Anglian Water	Ambury Road, Huntingdon PE18 6NZ	AWA
Northumbrian Water	PO Box 4, Regent Centre, Gosforth, Newcastle-upon-Tyne, NE3 3PX	NWA
North West Water	Dawson House, Great Sankey, Warrington, WA5 3LW	NWWA
Severn-Trent Water	Abelson House, 2297 Coventry Road, Sheldon, Birmingham, B26 3PU	STWA
Southern Water	Guildbourne House, Worthing, W. Sussex BN11 1LD	SWA
South West Water	Peninsula House, Rydon Lane, Exeter EX2 7HR	SWWA
Thames Water	Nugent House, Vastern Road, Reading RG1 8DB	TWA
Welsh Water	Plas-y-ffynnon, Cambrian Way, Brecon, Powys LD3 7HP	WELS (WELSH)
Wessex Water	Wessex House, Passage Street, Bristol BS2 0JQ	WWA
Yorkshire Water	West Riding House, 67 Albion Street, Leeds LS1 5AA	YWA

* The Government's current legislative programme provides for the creation of water utility plcs to take over the Water Authorities' responsibilities for water supply and sewerage and for the setting up of a new body, the National Rivers Authority, to operate their regulatory and river management functions. Responsibility for most hydrometric activities will pass to the NRA. As part of the necessary restructuring prior to this major water industry reorganisation, regional NRA units are being established in each Water Authority. The addresses of these units will be given in the 1987 Yearbook.

River Purification Boards

Clyde River Purification Board	Rivers House, Murray Road, East Kilbride, Glasgow G75 0LA	CRRP
Forth River Purification Board	Colinton Dell House, West Mill Road, Colinton, Edinburgh, EH13 0PH	FRPB
Highland River Purification Board	Strathpeffer Road, Dingwall IV15 9QY	HRPB
North East River Purification Board	Woodside House, Persley, Aberdeen AB2 2UQ	NERPB
Solway River Purification Board	Rivers House, Irongray Road, Dumfries DG2 0JE	SRPB
Tay River Purification Board	1, South Street, Perth PH2 8NJ	TRPB
Tweed River Purification Board	Burnbrae, Mossilee Road, Galashiels TD1 1NF	TWRP

Other measuring authorities

Borders Regional Council (Directorate of Water and Drainage Services)	West Grove, Waverley Road, Melrose TD6 9SJ	BRWD
Corby (Northants) and District Water Company	Geddington Road, Corby, Northants NN18 8ES	CDWC
Department of the Environment for Northern Ireland	Water Service 3 Federick Street Belfast BT1 2NS	DOEN
Dumfries and Galloway Regional Council (Water and Sewerage Department)	70 Terregles Street, Dumfries DG2 9BB	DGRW
Essex Water Company	Hall Street, Chelmsford, Essex CM2 OHH	EWC
Geological Survey of Northern Ireland	20 College Gardens, Belfast BT9 6BS	GSNI
Grampian Regional Council (Water Services Department)	Woodhill House, Ashgrove Road West, Aberdeen AB9 2LU	GRWD
Highland Regional Council (Water Department)	Regional Buildings, Glenurquhart Road, Inverness IV3 5NX	HRCW
Institute of Hydrology	Maclean Building, Crowmarsh Gifford, Wallingford, OX10 8BB	IH
Lothian Regional Council (Department of Water and Drainage)	8 Cockburn Street, Edinburgh EH1 1NZ	LRWD
Newcastle and Gateshead Water Company	P O Box 10, Allendale Road, Newcastle-upon-Tyne NE6 2SW	NGWC
North of Scotland Hydro-Electric Board	16 Rothesay Terrace, Edinburgh EH3 7SE	NSHE
Strathclyde Regional Council (Water Department)	419 Balmore Road, Glasgow G22 6NU	SRCW
Tayside Regional Council (Water Services Department)	Bullion House, Invergowrie, Dundee DD2 5BB	TRWS

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Hydrometric Register and Statistics 1981-5[1]	1988	£12	£15
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Crowmarsh Gifford
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OXFORDSHIRE OX10 8BB

Telephone: Wallingford (0491) 38800

Enquiries or comments regarding the series, or individual publications are welcomed and should be directed to the Surface Water Archive Office at the above address.

[1] Hydrometric Register and Statistics 1981-5

This reference volume includes maps, tables and statistics for over 800 river basins and 150 representative observation boreholes throughout the United Kingdom. The principal objective of the publication is to assist data users in the selection of monitoring sites for particular investigations and to allow more effective interpretation of analyses based upon the raw data. To this end, concise gauging station and catchment descriptions are given for the featured flow measurement stations - particular emphasis is placed on hydrometric performance, especially in the high and low flow ranges, and on the net effect of artificial influences on the natural flow regime.

Summary hydrometric statistics, for each of the years 1981-5, are provided alongside the corresponding long term averages, or extremes, to allow the recent variability in surface and groundwater resources to be considered in a suitable historical context.

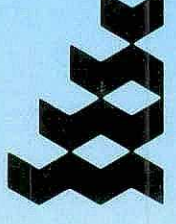
The 1984 Drought

This, the first, occasional report in the Hydrological data UK series concerns the 1984 drought. The report documents the drought in a water resources framework and its development, duration and severity are examined with particular reference to regional variations in intensity. Assessments are made of the likely frequency of occurrence of the drought and its magnitude is considered both in the perspective provided by historical records of rainfall and runoff, and in the context of the recent somewhat erratic climatic behaviour.

ABBREVIATIONS

Note: The following abbreviations do not purport to represent any standardised usage; they have been developed for use in the Hydrological data UK series of publications only. Where space constraints have required alternative forms of these abbreviations to be used, the meaning should be evident from the context.

AOD	Above Ordnance Datum
Bk	Beck
Blk	Black
Br	Bridge
Brk or B	Brook
Brn	Burn
Ch	Channel
C/m	Current meter(ing)
Com	Common
Dk	Dike
Dr or D	Drain
D/s	Downstream
E	East
Frm	Farm
G/s	Gauging station
Gw	Groundwater
HEP	Hydro-electric power
Ho	House
Hosp	Hospital
L	Loch or lake
Lb	Left hand river bank (looking downstream)
Ln	Lane
Lst	Limestone
Ltl	Little
MAF	Mean annual flood
Mkt	Market
Ml/d	Megalitres per day
Mnr	Manor
N	North
NSHEB	North of Scotland Hydro-Electricity Board
Ntch	Notch
NW	North West
O/f	Outfall or outflow
ORS	Old Red Sandstone
Pk	Park
Pop	Population
POR	Period of record
PS	Pumping station
Pt	Pont
PWS	Public water supply
Rb	Right hand river bank (looking downstream)
R/c	Racecourse
RCS	Regional communications system
Rd	Road
Res	Reservoir
Rh	Right hand
S	South
SAGS	Stour Augmentation Groundwater Scheme
Sch	School
S-D	Stage-discharge relation
SDD	Scottish Development Department
SE	South East
Sl	Sluice
Sp	Spring
St	Stream
STW	Sewage Treatment Works
SW	South West
TS	Transfer scheme
US	Ultrasonic gauging station
U/s	Upstream
W	West
W'course	Watercourse
Wd	Wood
Wht	White
Wr	Weir
WRW	Water reclamation works
Wtr	Water
WTW	Water treatment works



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