Hydrological data UK

1991 YEARBOOK

INSTITUTE OF HYDROLOGY • BRITISH GEOLOGICAL SURVEY

HYDROLOGICAL DATA UNITED KINGDOM

1991 YEARBOOK

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Assistant Editor : S J Bryant

The acquisition, archiving and validation of the bulk of the hydrological data featured in this Yearbook is undertaken as part of the National Water Archive (NWA) project at the Institute of Hydrology. Under the leadership of M L Lees (NWA Manager) a team of regional representatives is responsible for liaison with the measuring authorities (see page 172). In addition to the editorial staff, this team currently includes:-

N W Arnell, D B Boorman, J D Dixon, I G Littlewood, S C Loader and D G Morris.

The style and contents of the Yearbook, and the scope of the data retrieval service which complements it, reflects a decade of archive system development supervised initially by D G Morris and latterly by R MacRuiri.

The British Geological Survey is responsible for the acquisition and archiving of the featured groundwater level data. R A Monkhouse is the Groundwater Level Archive manager and provides hydrogeological appraisal and advice relating to the groundwater material which appears in the Yearbook. The associated archiving and measuring authority liaison duties are undertaken by P Doorgakant.

S Black was responsible for the preparation of the text and supervises the sale and distribution of the Hydrological data UK publications through the National Water Archive Office at the Institute of Hydrology.

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The materials used in the production of this volume are made from the pulp of softwood trees in managed Scandinavian forests, in which every tree cut down is replaced by at least one more, thus replenishing the Earth's resources.

Cover: The River Ver near Redbournbury Mill upstream of St. Albans.
Photograph: Terry Marsh

HYDROLOGICAL DATA
UNITED KINGDOM

1991
YEARBOOK

An account of
rainfall, river flows, groundwater
levels and river water quality
January to December 1991

Institute of Hydrology **British Geological Survey**

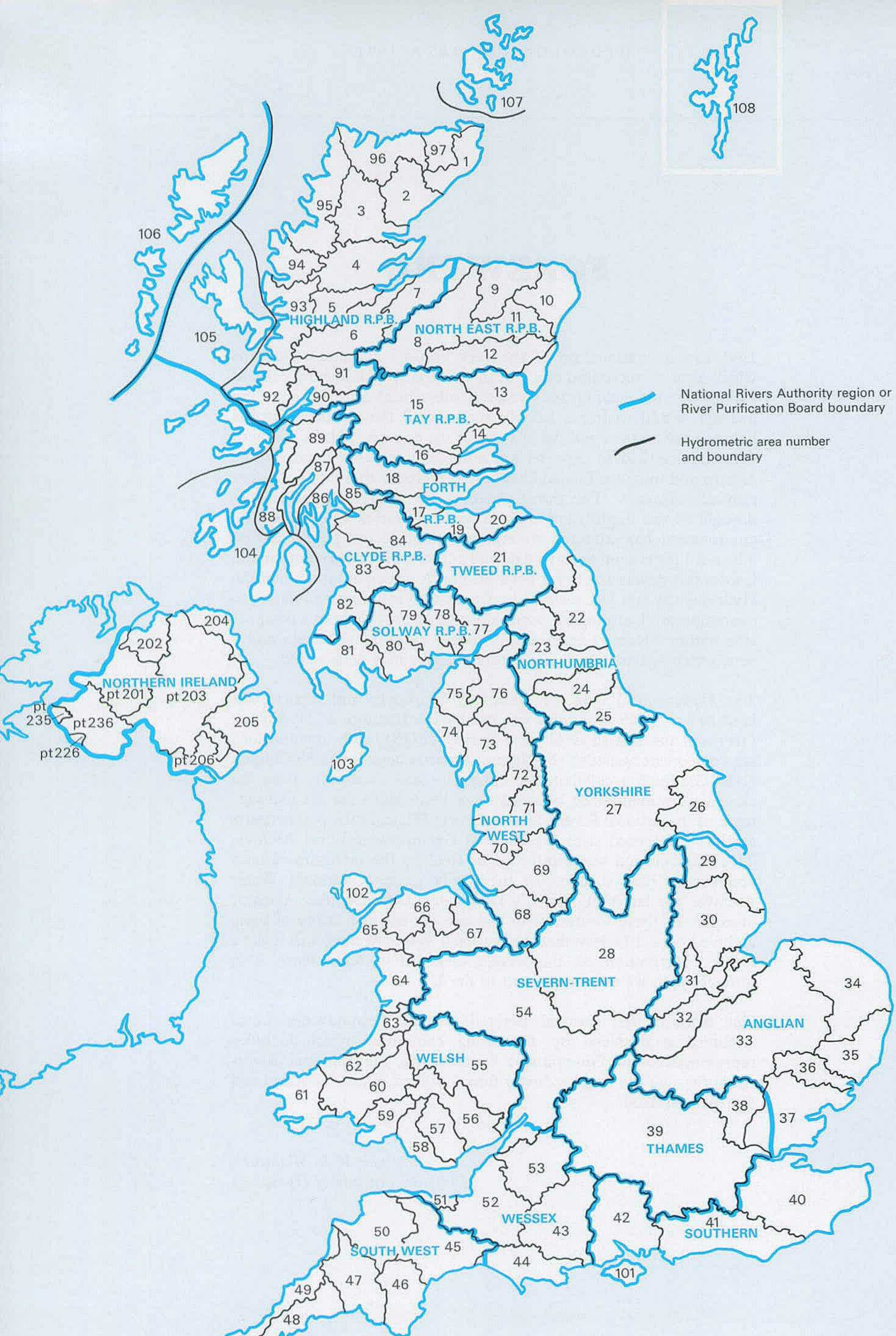
FOREWORD

1991 saw a continuation of the very unusual climatic conditions which have characterised much of the United Kingdom since early in 1988. Over the ensuing four years, a substantial disturbance to the average rainfall patterns heavily accentuated the normal contrasts between the wettest and driest parts of the country. Whilst northern Scotland has had to cope with a number of notable flood events, eastern and southern England has been afflicted with a very persistent rainfall deficiency. The threat posed by the remarkably protracted drought in the English lowlands to water resources and the aquatic environment has attracted widespread scientific and public debate. The need for comprehensive data and authoritative documentation to inform this debate has never been greater. A principal function of the Hydrological data UK series is to disseminate information relating to contemporary hydrological conditions and to provide both a perspective within which to examine the recent exceptional events and a benchmark against which any future changes may be assessed.

The Hydrological data UK series of Yearbooks and reports was launched in 1985 as a joint venture by the Institute of Hydrology (IH) and the British Geological Survey (BGS); both organisations are component bodies of the Natural Environment Research Council (NERC). Such a collaborative enterprise arose naturally from the close liaison maintained between those responsible for the management of the national River Flow Archive at IH, and their counterparts at BGS concerned with the national Groundwater Level Archive. This collaboration was reinforced in 1992 by the inclusion of both archives as core datasets in the newly created National Water Archive, the latest of NERC's Designated Data Centres. A major objective of these Centres is to increase the use and utility of basic archived data. I believe that the National Water Archive will make a major contribution to the development of water science and, ultimately, to water management in the UK.

The work of the national River Flow and Groundwater Level Archives is overseen by a steering committee which includes representatives of Government departments, the National Rivers Authority and the water industry from England, Wales, Scotland and Northern Ireland.

Professor W.B. Wilkinson
Director, Institute of Hydrology



National Rivers Authority region or River Purification Board boundary
Hydrometric area number and boundary
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.
NORTHERN IRELAND
NORTHUMBRIA
YORKSHIRE
NORTH WEST
SEVERN-TRENT
ANGLIAN
WELSH
THAMES
WESSEX
SOUTHERN
SOUTH WEST
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INTRODUCTION

The 1991 Yearbook is the third edition since responsibility for the publication of data, upon which assessments of water resources in England and Wales may be made, was transferred (under the Water Act 1989) from the Department of the Environment to the National Rivers Authority.

It is the eleventh Yearbook in the Hydrological data UK series and the first volume in the third five-year publication cycle (1991-95).

The 1991 Yearbook represents the thirty-second 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 fifteenth 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 1991 Yearbook brings together the principal data sets relating to river flow, groundwater levels and areal rainfall throughout the United Kingdom. Also included are water quality data for a selection of monitoring sites throughout the UK. A comprehensive hydrological review of the year includes an examination of the spatial and temporal variations in the intensity of the exceptionally persistent drought in eastern and southern Britain.

An outline description is given of the national River Flow and Groundwater Level Archives and the data retrieval facilities which complement them.

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 was 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 re-formed 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 the Board was disbanded in 1974. The work of collecting and publishing surface water information in England and Wales then passed to the newly created Water Data Unit of the Department of the Environment (DoE). Yearbooks were published jointly each year by these organisations and the Scottish Office for the water-years 1953-54 to 1965-66; 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 (now - The Scottish Office Environment 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 to 1990 - were published over the following six years.

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. Subsequently, groundwater level data have been included in the Hydrological data UK publications.

SCOPE AND SOURCES OF INFORMATION

The format of the 1991 Yearbook follows that of the recent editions in the Hydrological data UK series but an increased volume of basic data has been incorporated and some of the graphical presentations have been enhanced. The Hydrological Review examines rainfall, evaporation, soil moisture, river flow and groundwater conditions throughout the year. The following data sections provide detailed coverage for the featured year, and for comparison purposes, period of record reference statistics are also given.

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 second edition (for 1986–90) is being published concurrently with this yearbook, see page 174.

The Yearbook contents have been abstracted primarily from the National River Flow and Groundwater Level Archives. Water quality data have been provided from the Harmonised Monitoring Archive which is currently maintained by Her Majesty's Inspectorate of Pollution (DoE). Similar data from Northern Ireland have been provided by the Environmental Protection Division of the Department of the Environment (NI).

The National Rivers Authority (NRA) is responsible for the initial collection and processing of most river flow and groundwater level data in England and Wales. Following the 1989 Water Act, the new Water Service PLCs assumed responsibility for a small number of important monitoring sites for which historical – and a few contemporary – data sets are held on the River Flow and Groundwater Level Archives. The seven River Purification Boards (RPBs) are responsible for most hydrometric data acquisition in Scotland. In Northern Ireland responsibility is shared between the Departments of Environment and Agriculture. These organisations also supplied valuable material relating to significant hydrological events during 1991.

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 various 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 30). For details of monthly and annual rainfalls associated with individual raingauge sites reference should be made to the 'RAINFALL' series published regularly by the Met. 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 Met. Office, are given below.

The National Environment Research Council acknowledges and extends its appreciation to all who have assisted in the collection of information for this publication.

Rainfall and Climatological 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 Commercial Services Division. Summaries of the data are also published regularly and a list of current titles is given below:

1. *RAINFALL 19__/__*
   This contains monthly and annual rainfall totals for some 5000 raingauges and is available approximately one year after the title year at a cost of £9 (for the 1991 edition).
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 about £5.
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 six to nine months after the month concerned, costs around £3 and is available only from Her Majesty's Stationery Office (HMSO) or their stockists.
4. *MORECS (Meteorological Office Rainfall and Evaporation Calculation System).*
   This is a weekly issue of maps and tables of evaporation, soil moisture deficit, effective rainfall and the hydrometeorological 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, Commercial Services,
Johnson House, London Road, Bracknell,
Berks RG12 2SY   Tel: (0344) 420242

Summary

Following the remarkable hydrological and climatological conditions which characterised much of the preceding two years, 1991 saw a return to somewhat more familiar weather patterns. It was a quiet year for floods and there was no repetition of the inordinate temporal variations in rates of runoff and aquifer recharge which were a feature of 1990 especially. However, although less clear-cut than in 1989 and 1990, a strong accentuation in the normal north-west to south-east rainfall gradient across Britain was again evident in 1991. The exaggeration in the normal regional rainfall contrasts has been a persistent feature of the United Kingdom climate over much of the period beginning in the summer of 1988. As a consequence, long term rainfall deficiencies across a large proportion of eastern Britain - already substantial at the end of 1990 - increased over 1991 as a whole.

Generally, a significant amelioration in the drought conditions which afflicted much of eastern, central and southern England occurred throughout the first half of the year although May was notably dry. From August, however, dry conditions prevailed and the drought re-intensified into the winter of 1991/92. As in 1989 and 1990, the drought achieved its greatest severity in those regions where rainfall, even in an average year, provides only a modest surplus over evaporation losses. Annual runoff totals for 1991 in many eastern catchments were without recorded precedent and, by the late autumn, river flows were exceptionally depressed throughout much of the English lowlands.

The drought was even more severe in groundwater terms. Near the eastern seaboard little substantial groundwater replenishment occurred over the period October 1990 to March 1991, the third successive winter with very meagre recharge in some parts of the Chalk outcrop. Following a sustained summer and autumn recession in 1991, groundwater levels were the lowest on record across the greater part of the English lowlands (and beyond). Evidence from a number of observation boreholes indicates that, in parts of eastern England, the late-1991 water-table depression is unparalleled since at least the turn of the century. As a consequence, many spring sources failed in 1991 and river headwaters contracted further - representing a substantial loss of amenity and aquatic habitat.

1991 served to underline the particular vulnerability of lowland England - where population, commercial activity and intensive agriculture are concentrated - to periods of long term rainfall deficiency.

Rainfall

The 1991 rainfall total for the United Kingdom - 1020 mm - is well within the normal range but, nonetheless, is the lowest countrywide total for 15 years. England and Wales registered its driest year since 1975 and the 1991 rainfall total ranks among the lowest dozen this century. By contrast, 1991 saw a continuation of a protracted wet phase in most of Scotland. A few Highland localities recorded annual precipitation totals exceeding 5000 mm but rainfall totals were generally much more modest than in 1990. For Scotland as a whole, rainfall was marginally above average, just maintaining a very notable sequence - above average rainfall totals have been registered in all but one of the last 13 years; the annual average over this period has been around 10 per cent greater than the 1941-70 mean. Taken together, the three years beginning with 1989 registered rainfall anomalies of more than 20 per cent over much of the Highlands. However, rainfall amounts declined very steeply to the east; near the eastern seaboard rainfall totals were considerably below average for each of the three years up to and including 1991.

The rainfall pattern throughout the United Kingdom relative to the 1941-70 average is shown in Figure 1. The range of isopleths testifies to a slightly more subdued areal variability than in either 1989 or 1990 but regional and local contrasts were again significant. The prevalence of westerly and south-westerly airstreams tended to accentuate the effect of relief on rainfall and convectional rainfall contributed little to precipitation totals in most areas. These factors help to explain the very moderate annual rainfall totals throughout much of eastern and central Britain. Rain-shadow effects were also very evident, in northern Scotland especially but also, for example, in the lee of the mountains of north Wales. Figure 2 maps the actual rainfall totals in 1991. As in 1990 exceptionally low annual totals were common in eastern England where a few districts recorded less than 400 mm; Lowest Hilton (Cambridgeshire) registered a mere 345 mm. On a percentage basis, shortfalls relative to the 1941-70 average were greatest adjacent to the Humber estuary where a number of localities registered less than 65 per cent of the 1941-70 average. Dry conditions also characterised the Midlands and a zone extending westwards to the Cheshire Plain and south Lancashire - in the Manchester area, for instance, 1991 was the driest year since 1887. Parts of Northern Ireland were also particularly dry.

Table 1 provides a breakdown of monthly and half-yearly rainfall totals in 1991 both on a countrywide basis and according to the major administrative divisions within the water industry (see frontis-

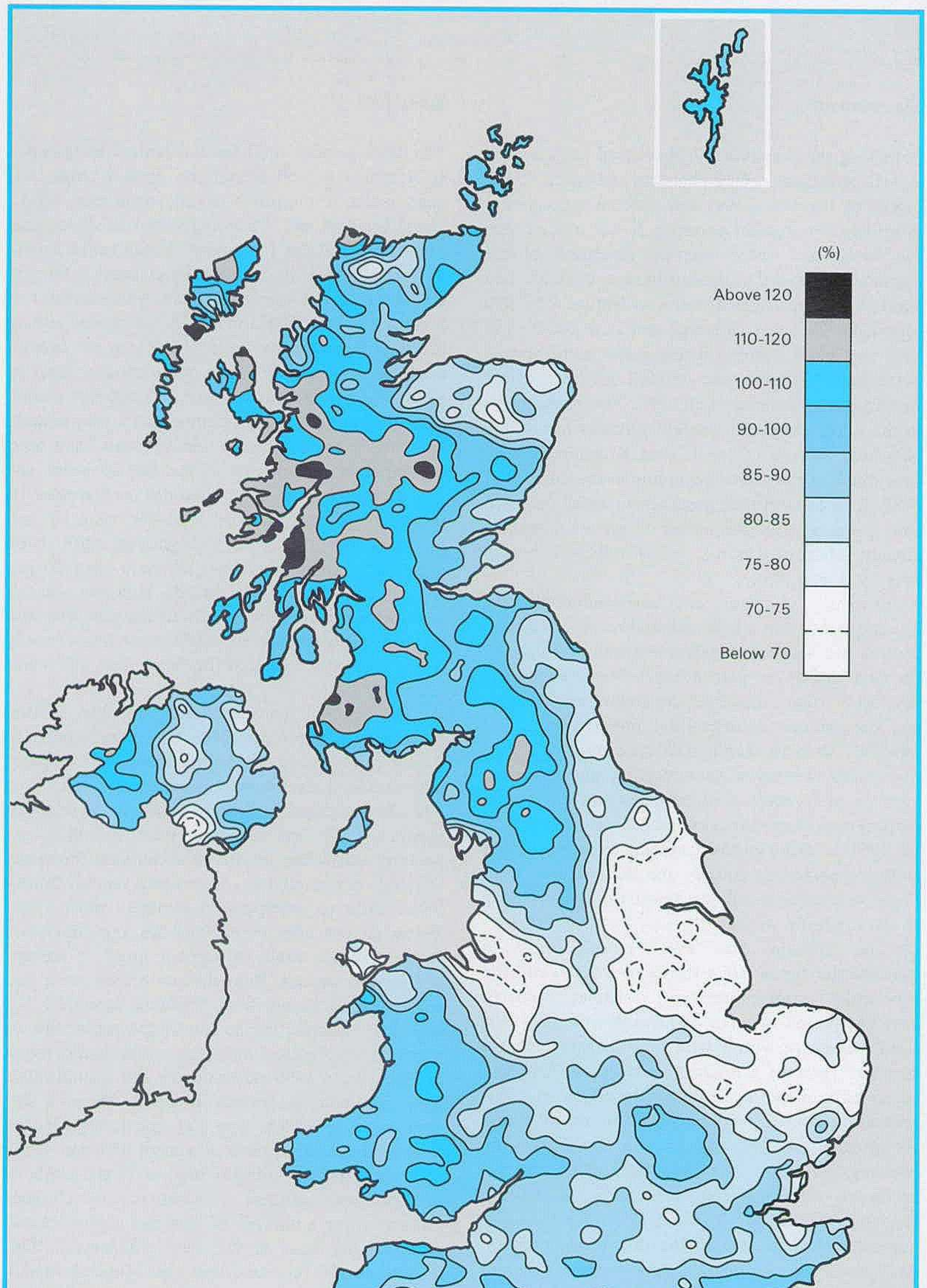


Figure 1. Annual rainfall in 1991 as a percentage of the 1941–70 average

Source: Meteorological Office

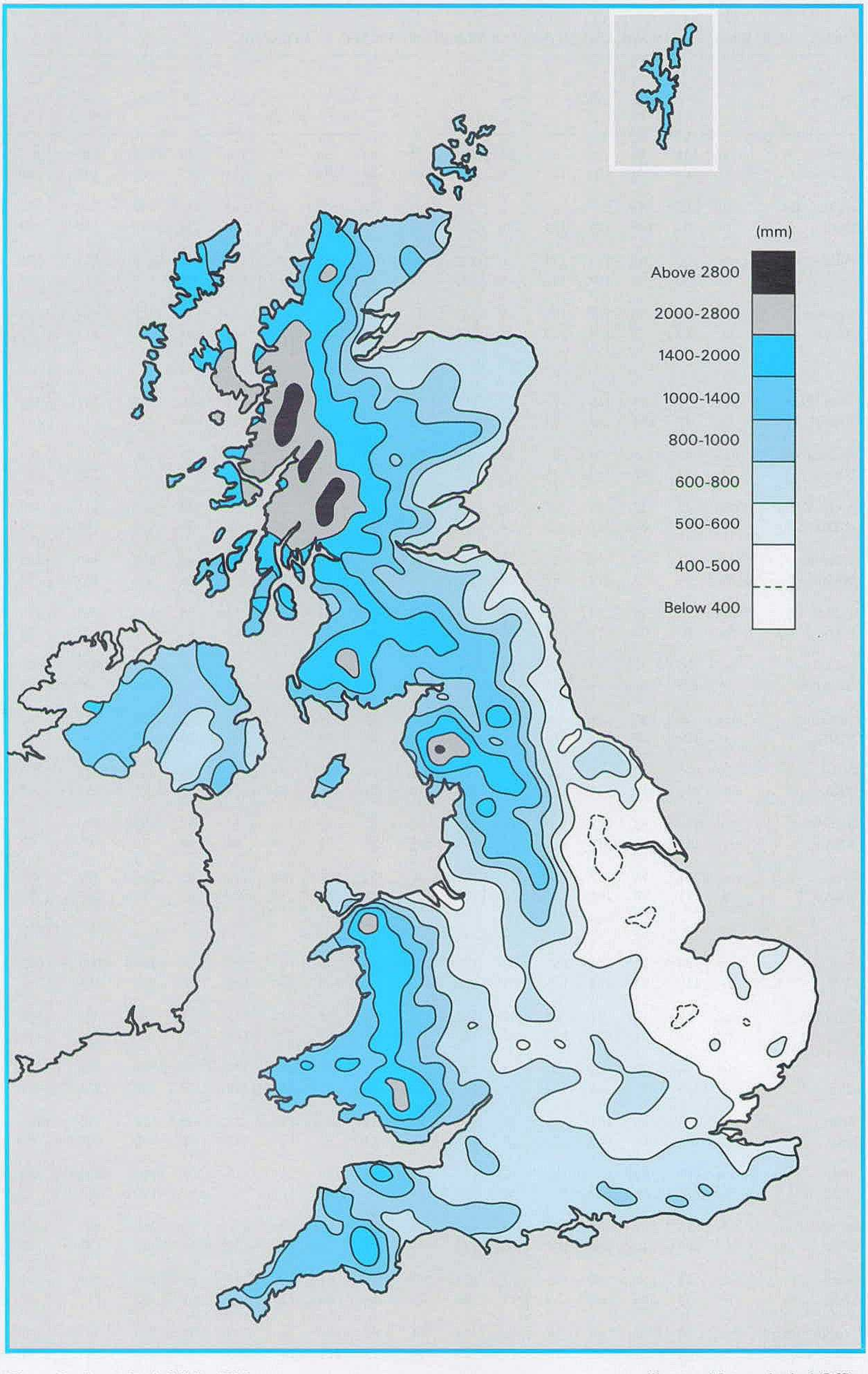


Figure 2. Annual rainfall in 1991 Source: Meteorological Office

TABLE 1 1991 RAINFALL IN MM AND AS A PERCENTAGE OF THE 1941-70 AVERAGE

1991				M	A	M			A		O	N	D	Year	Oct-Mar 1990/91	Apr-Sep 1991
United	mm	111	70	94	89	22	102	75	43	84	107	140	83	1020	630	415
Kingdom	%	108	90	134	129	29	142	86	42	82	101	125	73	94	108	82
England and	mm	92	65	75	69	14	93	68	31	62	77	95	49	790	503	337
Wales	%	107	100	127	119	21	153	93	34	75	93	98	54	87	105	78
Scotland	mm	151	83	127	123	41	122	91	67	131	165	227	141	1469	867	575
	%	110	80	138	137	45	133	81	52	96	111	160	90	103	111	88
Northern	mm	98	55	109	115	10	93	63	38	60	109	143	119	1012	669	379
Ireland	%	94	73	156	169	14	118	68	37	56	102	140	104	92	117	72
North West	mm	98	94	110	72	18	105	67	65	69	125	169	119	1106	701	396
(NRA)	%	87	116	153	94	22	127	65	52	56	106	140	99	91	112	67
Northumbria	mm	83	113	85	41	22	69	53	36	42	75	109	78	806	576	263
(NRA)	%	104	171	163	75	34	113	69	36	53	100	116	104	92	130	60
Severn-Trent	mm	77	43	59	67	11	74	77	21	54	55	68	39	645	411	304
(NRA)	%	112	81	113	129	17	132	119	26	81	85	86	56	83	106	79
Yorkshire	mm	71	88	63	49	14	73	36	21	40	63	94	62	674	490	233
(NRA)	%	92	137	119	87	23	126	51	23	56	91	106	84	81	115	57
Anglian	mm	44	39	29	45	13	77	38	18	63	26	54	24	470	263	254
(NRA)	%	85	93	73	113	28	157	67	28	121	50	87	45	77	87	82
Thames	mm	80	38	45	63	13	96	79	18	52	36	66	16	602	323	321
(NRA)	%	129	81	98	137	23	185	132	26	84	56	90	24	86	90	93
Southern	mm	98	39	59	56	17	125	88	15	51	51	81	23	703	429	352
(NRA)	%	129	68	113	117	31	250	149	21	72	65	86	28	89	98	99
Wessex	mm	108	40	81	72	10	107	73	19	71	83	72	30	766	445	352
(NRA)	%	129	68	140	133	15	198	118	23	90	101	74	33	88	95	88
South West	mm	153	82	127	100	9	127	90	32	85	123	112	52	1092	720	443
(NRA)	%	119	91	151	141	11	195	107	32	82	109	84	39	91	105	87
Welsh	mm	151	94	127	124	15	111	97	54	85	154	142	65	1218	799	486
(NRA)	%	111	98	146	144	17	135	102	45	68	119	99	45	91	109	81
Highland	mm	180	71	141	131	63	125	105	86	182	193	305	166	1748	1005	692
R.P.B.	%	110	53	124	115	61	114	83	58	115	104	180	85	102	104	91
North East	mm	58	77	81	62	46	131	57	34	58	120	133	53	910	546	388
R.P.B.	%	64	104	131	102	60	187	62	32	67	124	129	52	89	103	79
Tay	mm	154	90	117	110	23	135	93	40	111	155	154	97	1279	759	512
R.P.B.	%	130	98	143	147	24	163	91	34	97	127	129	72	102	114	87
Forth	mm	133	86	103	90	18	110	97	38	103	111	124	108	1121	715	456
R.P.B.	%	134	112	149	132	21	147	99	33	95	105	115	99	100	126	83
Clyde	mm	187	90	156	184	33	129	108	87	157	193	274	208	1806	1054	698
R.P.B.	%	116	80	149	179	34	125	83	61	90	105	164	112	108	115	93
Tweed	mm	110	102	93	62	21	90	65	36	67	101	127	92	966	669	341
R.P.B.	%	118	148	160	102	28	132	73	32	72	115	122	102	96	133	68
Solway	mm	144	108	150	148	17	122	77	69	81	173	203	162	1454	889	514
R.P.B.	%	103	116	165	168	19	136	70	53	54	120	140	107	102	116	78
Western Isles	mm	136	68	104	80	48	68	76	87	147	154	240	124	1332	727	506
Orkney and Shetland	%	100	66	113	96	71	89	90	93	117	107	175	81	103	95	95

piece). The main features of the temporal distribution of rainfall during 1991 were the wet conditions in the late winter and early spring, especially in western and northern Britain, a further unsettled interlude in the summer and notably dry conditions from August culminating in an exceptionally dry end to the year. Within individual regions these general characteristics were evident to a greater or lesser degree but in the English lowlands the wet episodes were of limited duration and, as in the previous three years, of less hydrological significance than the extended periods of low or exceptionally low rainfall.

Winter (December 1990–February 1991) rainfall was above average in northern Britain and well within the normal range, albeit appreciably below average, in most southern regions. The combined January and February rainfall total in the English lowlands closely approached the 1941–70 mean but did little to redress the exceptional accumulated rainfall deficiencies built up from the summer of 1988. Considering the full winter half-year (October-March), precipitation totals were well within the normal range in most regions but, importantly, fell considerably below average in those areas where the drought had achieved its greatest intensity during 1990. Parts of Lincolnshire and Cambridgeshire, for instance, registered only around three-quarters of the average winter rainfall. Such a shortfall within a normal sequence of winters would not be a matter of concern. Following as it did an extended drought period, it signalled a further year of stress on water resources and the aquatic environment.

Unsettled conditions characterised the English lowlands in April, but although rainfall deficiencies were modestly reduced the rain was too little to impact significantly on river flows or groundwater levels. May was the driest this century in England and Wales and, as in 1990, the hot, dry conditions foreshadowed a period of very low river flows and groundwater levels. In meteorological terms an amelioration of the drought occurred in June and July when rainfall was recorded on the majority of days in many areas. Taken together, the two months were the wettest June/July pairing in the Thames Valley for over 50 years and, with modest soil moisture deficits, an autumn recovery in runoff and recharge rates was anticipated. However in August, earlier in East Anglia, the drought reasserted itself.

Rainfall over the summer half-year tended to be very unevenly distributed but overall the regional six-month rainfall totals were generally well below average, notably so in northern England. The ratio of summer half-year (April-September) rainfall to that for the preceding winter half-year for England and Wales was close to 1:1.5, the fourth successive year that the ratio comfortably exceeded the average for the period 1941–70. This average has been surpassed in every year bar one since 1974 and the ratio over the 1987–1991 period is without parallel in the last 200 years; in much of the nineteenth century values close to unity were typical. This tendency for the half-yearly partitioning of rainfall to favour the winter period, when evaporation losses are very modest, has considerable water resources benefits. These can however be counterbalanced when, as in 1990, a dry, hot spring and summer produces a very early onset of the seasonal decline in river flows and generates heavy water demand.

The dry end to the 1991 summer half-year heralded below average autumn rainfall, and a notably dry beginning to the winter served to ensure that the impact of an already very extended drought would continue well into 1992 at least. Some very notable rainfall deficiencies were registered during the second half of 1991. For England and Wales as a whole, drier August-December periods this century have occurred only in 1947 and 1933. The five-month rainfall total in parts of south-eastern England was below half the 1941–70 average. Yorkshire recorded only a little over half of average rainfall from July to September but conditions became relatively unsettled thereafter. A particularly vigorous frontal system – with associated thundery activity – terminated a prolonged dry spell on the 26–28th September in southern Britain. The scope and intensity of the precipitation on the 28th is confirmed by Table 2 which lists all daily rainfall totals for Britain in 1991 with associated return periods in excess of 100 years (those greater than 160 years are termed 'very rare' by the Meteorological Office). Thereafter, relatively dry conditions again prevailed.

Notable though the post-July 1992 deficiencies are, the severity of the drought in lowland Britain – particularly in groundwater terms – reflects a shortage of rainfall extending over a far longer period. In much of eastern England the modest autumn and early winter rainfall totals in 1991 overlay a substantial and remarkably persistent deficiency which can be traced back to the late-spring of 1988. For Great Britain as a whole the subsequent period has seen near-average rainfall but regional contrasts have been extreme. These are well illustrated on Figure 3 which maps MORECS (Meteorological Office Rainfall and Evaporation Calculation System) rainfall, as a percentage of the average for each 40 kilometre square, for the period August 1988 to December 1991. Western Scotland was exceptionally wet over this timespan with large areas registering 15–20 per cent above average rainfall. By contrast a few districts in eastern England experienced only around three-quarters of average rainfall. Long term rainfall data suggest that such notable and persistent anomalies would be expected less frequently, on average, than once in fifty years.

Whilst the protracted lowland drought has been punctuated by a number of wet interludes – most

TABLE 2 DAILY RAINFALLS IN 1991 WITH RETURN PERIODS EXCEEDING 100 YEARS

Date (Rain-day)	Station Number	Name	County	Grid Reference	Amount (mm)	Return Period (1 in X years)*
22.02.91	521437	Llanymawddwy,Troed-y-Foel	Gwynedd	SH910195	133.5	130
22.02.91	521469	Llanymawddwy	Gwynedd	SH901187	133.5	140
22.02.91	542519	Tryweryn Dam No. 2	Gwynedd	SH881399	E126.7	160
28.09.91	218699	Framlingham	Suffolk	TM304684	82.3	140
28.09.91	346876	Branksome, Bourne Valley	Dorset	SZ060925	E113.9	540
28.09.91	346992	Poole Nuffield Road	Dorset	SZ016934	E101.3	260
28.09.91	347013	Poole	Dorset	SZ006937	109.9	400
28.09.91	398896	New Cross	Somerset	ST416191	83.0	130
28.09.91	399762	Curry Rivel	Somerset	ST387250	80.5	130
28.09.91	403138	East Lyng	Somerset	ST333287	93.3	240
28.09.91	403143	Currymore .	Somerset	ST344289	106.2	510
28.09.91	403490	Durleigh Reservoir	Somerset	ST275363	84.5	110
28.09.91	470042	Velindre	Powys	SO186371	95.7	180
28.09.91	470080	Tregoyd	Powys	SO196378	87.3	110

*Based on the methods and findings of the Flood Studies Report Vol.[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 = 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.

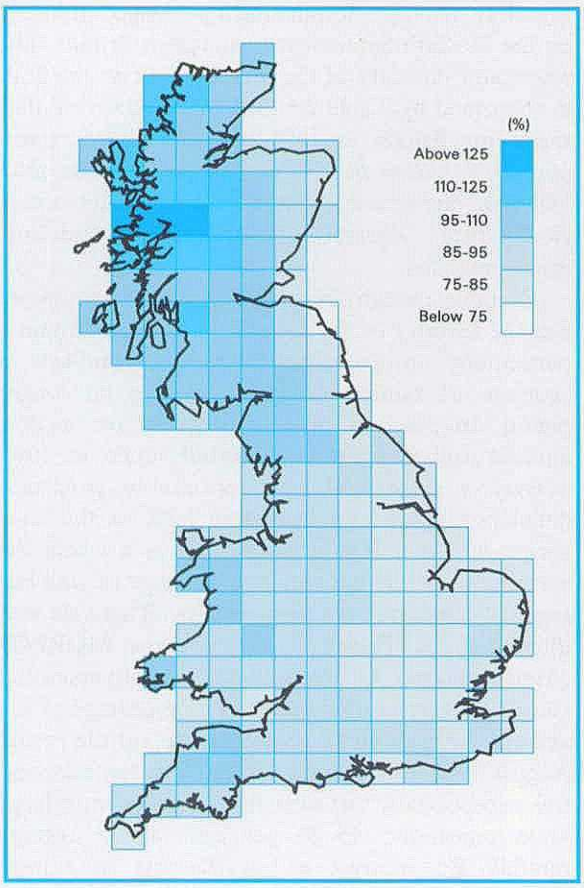


Figure 3. August 1988 to December 1991 rainfall as a percentage of the 1961–90 average

Data source: MORECS

notably the winter (December–February) of 1989/90 – the accumulated shortage of rainfall, within a number of timeframes, is without recent parallel. For the 22-month period ending in December 1991 rainfall for England and Wales was around 20 per cent below average. More significantly, this timespan constitutes the second driest 22-month period (starting in March) in the entire England and Wales rainfall series which extends back to 1767. For accumulations beginning in any month, drier sequences this century are restricted to the droughts of 1975/76, 1933/34 and 1921/22. The very extended nature of the drought is underlined by the deficiencies over the period beginning in August 1988. The rainfall total for England and Wales up to the end of 1991, when the drought was still intensifying, is comparable to the 41-month minima for the twentieth century – these were registered at the end of the summer in both 1944 and 1976. Appreciably drier periods in the 41-month timeframe occurred only during the protracted droughts of the 1780s, 1800s and 1850s. The 1988–91 shortfalls were modest in parts of northern England, Wales and the West Country but exceptional in the east. The percentage rainfall figures and the associated return period estimates presented in Table 3 provide a guide both to the distinct regional variations in drought intensity and the spatial extent of the remarkably wet phase in western Scotland.

Substantial differences in drought severity could be recognised within the National River Authority regions – this was especially true of the Severn-Trent and Yorkshire regions. The areal figures given in Table 3 also disguise the magnitude of the rainfall deficiency near to the north-eastern seaboard, in

TABLE 3 NATIONAL AND REGIONAL RAINFALL ACCUMULATIONS FOR SELECTED DURATIONS WITH ESTIMATES OF RETURN PERIODS

		Aug-Dec 91	Est.R.P. (yrs)	Mar 90-Dec 91	Est.R.P. (yrs)	May 89-Dec 91	Est.R.P. (yrs)	Aug 88-Dec 91	Est.R.P. (yrs)
England and	mm	314		1353		2132		2775	
Wales	% LTA	71	10–20	81	40–60	86	15–25	87	20–30
NRA REGIONS									
North West	mm	547		1977		2993		4003	
	% LTA	90	<	88	5–10	91	5–10	94	
Northumbria	mm	340		1424		2041		2640	
	% LTA	80	5–10	88	5–10	86	20–30	86	25–45
Severn-Trent	mm	237		1117		1801		2306	
	% LTA	66	15–25	78	40–60	86	10–25	86	20–30
Yorkshire	mm	280		1221		1863		2447	
	% LTA	71	10–20	80	30–50	83	30–60	85	30–60
Anglian	mm	185		815		1293		1672	
	% LTA	65	15–25	72	>200	78	150–200	79	>200
Thames	mm	188		949		1560		2009	
	% LTA	56	30–60	73	90–140	82	30–60	82	40–70
Southern	mm	221		1145		1813		2296	
	% LTA	56	30–60	79	25–45	84	15–25	83	40–60
Wessex	mm	275		1226		2014		2603	
	% LTA	64	10–20	77	40–60	86	10–20	86	15–25
South West	mm	404		1834		2963		3839	
	% LTA	69	10–20	85	10–20	92		92	5–10
Welsh	mm	500		2065		3301		4322	
	% LTA	76	5–10	85	10–20	92	5–10	93	5–10
Scotland	mm	731		2843		4188		5623	
	% LTA	103	$\underline{\text{<5}}$	109	$\underline{\text{5–10}}$	108	$\underline{\text{5–10}}$	112	$\underline{\text{40–60}}$
RIVER PURIFICATION BOARDS									
Highland	mm	932		3583		5250		7119	
	% LTA	109	$\underline{\text{<5}}$	114	$\underline{\text{10–20}}$	113	$\underline{\text{20–40}}$	118	$\underline{\text{<200}}$
North East	mm	398		1733		2440		3184	
	% LTA	80	5–10	92	5–10	88	15–25	89	15–25
Tay	mm	557		2267		3419		4631	
	% LTA	92		99		101	$\underline{\text{<5}}$	106	
Forth	mm	484		2075		3089		4112	
	% LTA	88		101	$\underline{\text{<5}}$	102	$\underline{\text{<5}}$	105	$\underline{\text{<5}}$
Tweed	mm	423		1747		2545		3268	
	% LTA	87		95	<5	93	<5	93	5–10
Solway	mm	688		2565		3828		5144	
	% LTA	95		98		99		103	$\underline{\text{<5}}$
Clyde	mm	919		3463		5115		6833	
	% LTA	108	$\underline{\text{<5}}$	113	$\underline{\text{10–20}}$	113	$\underline{\text{20–35}}$	117	$\underline{\text{130–180}}$

R.P. = Return Period

% LTA = percentage of 1941-70 average

Return period assessments are based on tables provided by the Meteorological Office*. These assume a start in a specified month; return periods for a start in any month may be expected to be an order of magnitude less – for the longest durations the return period estimates converge. "Wet" return periods are underlined. The tables reflect rainfall totals over the period 1911-70 only and assume a sensibly stable climate.

*Tabony, R.C., 1977, The variability of long duration rainfall over Great Britain, Scientific Paper No. 37, Meteorological Office (HMSO).

parts of Northumbria and the Grampian Region especially. Overall, the drought achieved its greatest severity, thus far, in a zone from Humberside to Bedfordshire. For some districts inland from the Wash both 1990 and 1991 rank amongst the three driest years this century. Over a larger proportion of East Anglia only two or three months with above average rainfall were experienced in the twenty-two months to December 1991. For some localities the rainfall deficiency from the late summer of 1988 to the end of 1991 was the equivalent of about a year's average rainfall; this was true of parts of the Thames Valley also. At the end of 1991 the drought showed no signs of ending and had already extended across twelve seasons. This, together with the persistently warm conditions, inevitably produced considerable hydrological stress (see pages 13 to 26) but an overall appraisal of the impact of the rainfall deficiency and an objective comparison with important historical droughts can only be undertaken following a full termination of the drought.

Evaporation and Soil Moisture Deficits

In 1991 temperatures and sunshine hours for much of Great Britain were well within the normal range in contrast to the record or near-record totals over the preceding two years. Nonetheless, potential evaporation (PE) losses were above average in most regions for the fourth successive year. Actual evaporation (AE) losses for 1991 were also relatively close to the long term average except near to the north-eastern seaboard where annual totals in some areas were the lowest in the 30-year MORECS series. Soil moisture deficits (SMDs) were generally much less notable than in 1989 and 1990 throughout the spring and summer but the persistence of substantial deficits well into the autumn, and beyond in the lowlands, was an important factor in extending an already very protracted hydrological drought. In particular, the dry soils over the latter half of 1991 in eastern and southern England, where most of the major aquifer outcrops are located, served once again to greatly reduce the period over which groundwater recharge could occur.

Figure 4 maps 1991 MORECS potential evaporation totals for Britain. Over most of southern Britain PE losses were moderate by comparison with the exceptionally high totals recorded during 1989 and 1990. Nonetheless, in large parts of lowland England PE losses approached, and in some localities exceeded, 600 mm; especially high annual totals were registered adjacent to the Thames Estuary and the Wash. By contrast, losses in the Scottish Highlands and parts of the Southern Uplands were close to 400 mm. Throughout most of southern Britain annual PE totals were appreciably above average but typically 80–100 mm or more below the remarkable totals

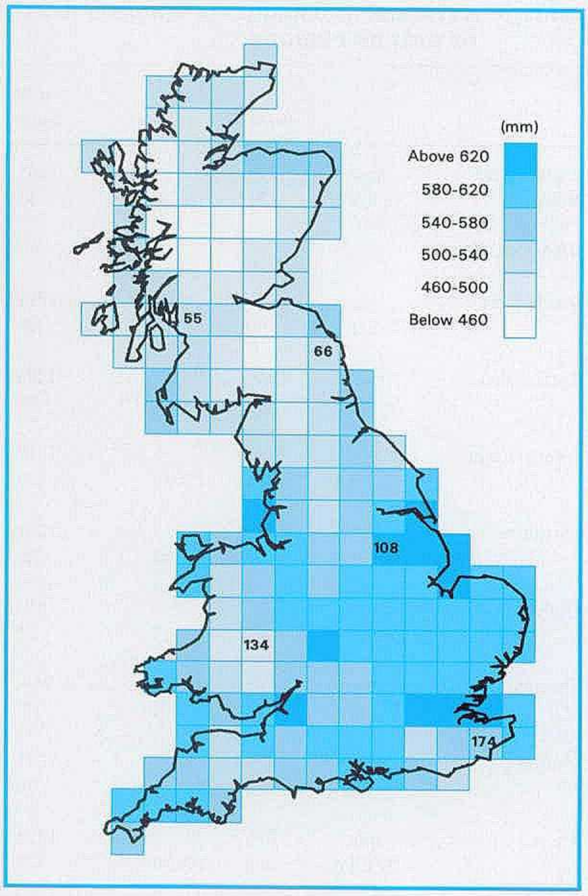


Figure 4. Potential evaporation (for a grass cover) in 1991
Data source: MORECS

calculated for 1989 and 1990. Conversely, AE totals in the English lowlands, although displaying considerable spatial variability, were, away from the London area, well below normal but still appreciably greater than in 1990 and 1976 – both exceptionally warm years when persistently high SMDs served to greatly inhibit transpiration losses.

Figure 5 illustrates the variation in PE, AE and SMDs for five representative MORECS squares; the locations of the featured squares are indicated on Figure 4. The persistence of substantial SMDs through the autumn has been a recurring feature of lowland England from the late 1980s (see, for instance, Square 108 in Figure 5). Whilst in 1991 SMDs were unremarkable through most of the summer they declined only sluggishly and by the end of October remained well above average.

The contrast between 1991 and the preceding two years is well illustrated in Kent (as represented by Square 174) where, following a rapid build-up of soil moisture deficits in May, the ensuing wet, cloudy conditions prevented a repetition of the parched summer soils which typified 1989 and 1990. In these two years significant deficits had become established by the late spring and the soils continued to dry out through the summer; SMDs (for a grass cover) exceeded 80 mm for five or six months of each year over much of lowland England. In 1991 SMDs failed

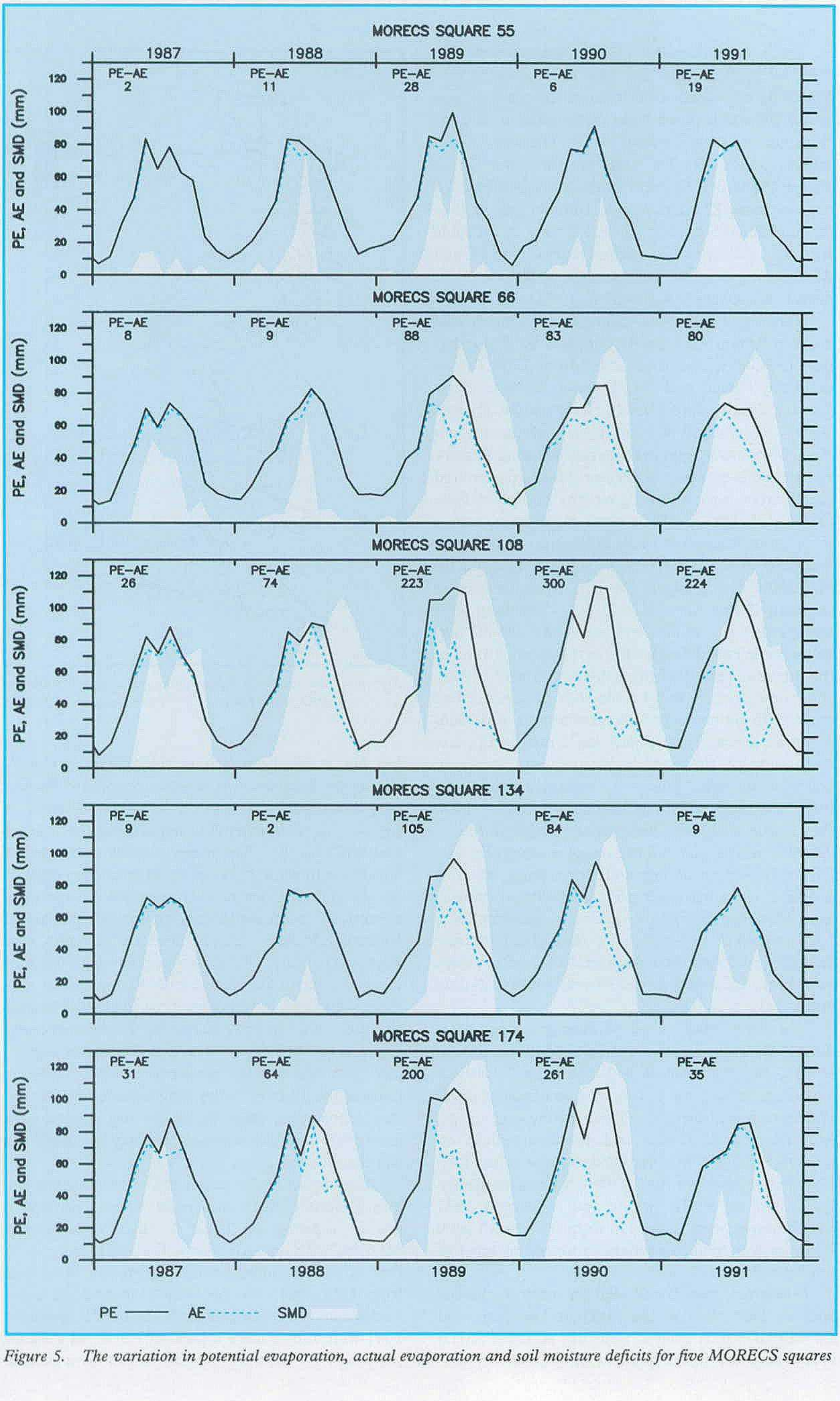


Figure 5. The variation in potential evaporation, actual evaporation and soil moisture deficits for five MORECS squares

to reach this threshold. As a consequence the shortfall of the annual AE total relative to PE (see Figure 5) was much lower than in the previous two years. Shortfalls were more substantial in a zone from the Thames Estuary to the Humber. As an example, the 1991 PE total for the lower Trent Valley (Square 108) exceeds the corresponding AE total by some 224 mm, around 100 mm greater than the annual average shortfall and closely comparable with the 1989 figure. In western regions both PE and AE losses, for 1991, tended to be well within the normal range (see Squares 55 and 134).

Entering 1991, soils throughout northern and western Britain were wet but appreciable soil moisture deficits were carried over from 1990 for an unusually large area of lowland Britain. Early January deficits were close to 50 mm in the Thames Valley and reached 60 mm in parts of Cambridgeshire. Very low evaporative demands during January allowed soils to moisten further despite the limited precipitation and, following healthy rainfall in February, early spring SMDs were at, or near, zero – allowing infiltration to occur in some districts for the first time in about a year. The subsequent build-up of SMDs was gradual. By late April deficits in southern Britain were a little below the long term average for the month-end and some 40–60 mm below those calculated for the corresponding time in the previous year. Deficits increased briskly in May almost everywhere and by the start of summer had reached 55–80 mm across the greater part of Britain.

In an average year SMDs build rapidly in June, responding to the warmer weather and increased hours of daylight. However, sustained rainfall in June 1991 moderated, and in some regions reversed, the growth of SMDs – declines of 50 mm relative to late May were registered in parts of southern Britain. By the beginning of July soils throughout much of Scotland, the north especially, were close to saturation. More remarkably, zero deficits characterised a zone close to the Sussex coast at the end of both June and July, the first time such end-of-month values have been registered in the 30-year MORECS data series.

The low rainfall and above average temperatures during August resulted in a steady and general rise in SMDs. Deficits reached 125 mm (the MORECS maximum for a grass cover) in Lincolnshire, south Humberside and the lower Trent Valley; on average, end-of-month MORECS soil moisture deficits do not reach the 125 mm ceiling anywhere in the UK. The spatial extent of the MORECS squares registering maximum SMDs at the end of August 1991 was, however, very limited in comparison with 1990 when such deficits were found throughout most of southern Britain.

Maximum month-end deficits were registered later in 1991 than in the previous two years and substantial SMDs existed well into autumn. SMDs everywhere continued to build throughout September but in southern Britain they declined sharply during the final week as weather conditions became very unsettled. In parts of the Midlands and much of eastern England (extending north along the Scottish seaboard) the late-September deficits were equivalent to six to eight weeks of average autumn rainfall. By the end of October soils were wet over most of western and northern Britain but around the Thames Estuary SMDs remained close to 110 mm (see Figure 6), some 45–55 mm greater than the long term average for October and 10–30 mm greater than those computed for the same time in 1990. Although the substantial deficits in eastern England declined steadily through November and December significant year-end deficits remained in many areas; in parts of the Thames Valley they exceeded 80 mm. As in the preceding three years, the dry autumn soils greatly delayed the seasonal recovery in runoff and aquifer recharge rates.

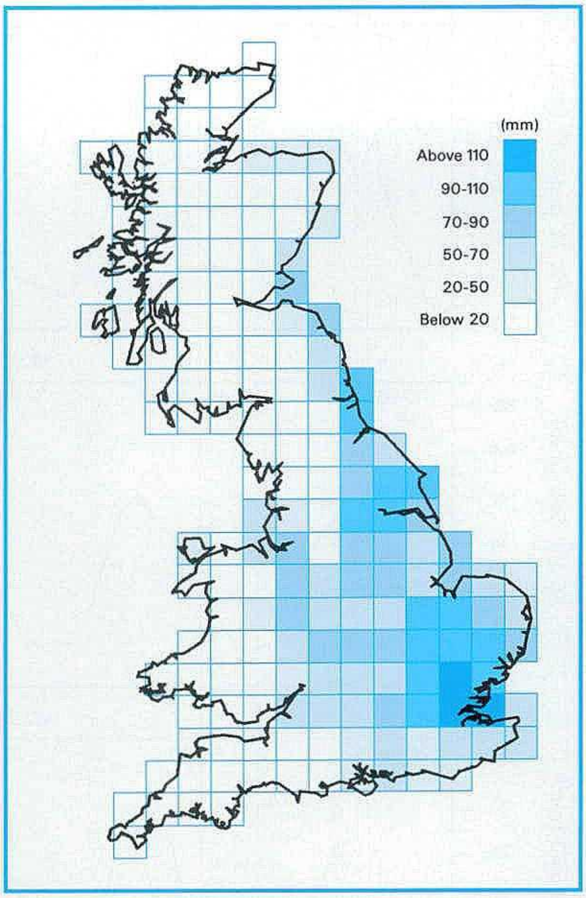


Figure 6. Soil moisture deficits (for a grass cover) at the end of October 1991 Data source: MORECS

The impact of the recent run of mild winters and mostly warm or hot summers on evaporation rates is readily apparent in Table 4 which ranks annual MORECS PE and AE losses. For the London area, four of the six highest annual PE totals, in a series from 1961, relate to the 1988–91 period. In Cambridgeshire, where in percentage terms PE losses for 1991 were rather more typical of Britain as a whole, the post-1987 annual PE totals do not form such an

TABLE 4 RANKED MORECS ANNUAL PE AND AE TOTALS (FOR A GRASS COVER)

MORECS SQUARE 161 (LONDON)				MORECS SQUARE 128 (CAMBRIDGESHIRE)			
YEAR	PE (mm)	YEAR	AE (mm)	YEAR	PE (mm)	YEAR	AE (mm)
1981	506	1976	331	1968	540	1976	317
1978	514	1990	394	1978	543	1990	402
1979	531	1972	402	1981	549	**1991**	**416**
1977	536	1978	434	1987	553	1972	421
1980	549	1975	455	1972	555	1964	445
1963	551	1983	463	1963	563	1961	452
1962	551	1979	463	1971	568	1979	462
1968	554	1989	463	1969	569	1978	462
1965	558	1969	465	1977	573	1970	463
1971	561	1961	470	1966	578	1962	464
1987	565	1977	479	1965	579	1984	466
1972	565	1981	479	1979	580	1977	467
1966	571	1984	480	1980	580	1983	473
1982	575	1974	485	1988	581	1963	480
1974	578	1962	486	1962	582	1971	483
1973	578	1964	486	1982	586	1981	483
1964	583	1973	498	**1991**	**587**	1975	485
1975	586	1980	500	1985	587	1965	488
1961	586	1970	502	1983	590	1969	489
1983	588	1963	506	1973	591	1989	495
1985	591	1971	514	1984	606	1980	508
1969	594	1982	517	1986	619	1985	512
1986	598	1986	519	1964	621	1973	512
1967	598	1985	521	1974	621	1982	512
1970	612	**1991**	**523**	1967	626	1988	516
1988	612	1988	530	1961	636	1968	517
1984	627	1968	532	1970	638	1974	518
1991	**637**	1965	533	1975	646	1987	518
1976	672	1987	540	1976	683	1967	523
1989	731	1966	547	1989	689	1986	540
1990	741	1967	562	1990	725	1966	543
Av.	587		486		598		478

outstanding cluster. Nonetheless, the three- and four-year evaporation totals, up to and including 1991, are the highest on record. This is true of most of the country, the 1989–91 average annual PE totals commonly exceeding the mean for the preceding record by a considerable margin, around 100 mm in some areas.

A particular climatic feature of the four years beginning with 1988, in a large proportion of southern and eastern Britain especially, has been the extension of summer weather well into the autumn. Consequently SMDs have typically remained high for several months and have not become satisfied in some eastern districts until the following year. Inland from the Thames Estuary, for example, end-of-month SMDs have exceeded 80 mm for at least six months during 1989, 1990 and 1991 – appreciably longer than is normal. As a direct result, aquifer replenishment has been meagre and patchy, a tendency exacerbated in recent years by the dryness of the late winter and early spring in the lowlands. Taken together, these factors have led to a narrowing of the timespan over which significant recharge can occur, in the east particularly. In turn this has resulted in a continual decline in groundwater levels.

Runoff

Runoff in 1991 for Great Britain totalled approximately 590 mm, significantly below average and the lowest annual total since 1976. In the 1961–90 national runoff series only 1964 and 1973 registered appreciably lower totals. The tendency towards increased GB runoff totals, which was evident over the 1977–87 period, has not been sustained in recent years, nationwide outflows being a little below average in 1989 as well as 1991. A notable feature of the runoff distribution since 1988 has been a strong accentuation in the normal west-to-east runoff gradient across Great Britain. The effect of evaporation losses has been to make the regional runoff contrasts more dramatic than for rainfall. An exaggeration in the normal regional runoff contrasts was very evident in 1989, achieved an extreme expression in 1990 and was again clearly discernible in the 1991 runoff pattern.

Figure 7 provides a guide to 1991 runoff totals expressed as a percentage of the 1961–90 mean. Notwithstanding recent extensions to the gauging station network, the map is least precise in north-western Scotland, the Welsh mountains and parts of the coastal lowlands of eastern England where gauging station density is low or where data availability for 1991 was limited. In such areas assessments of residual rainfall (rainfall minus evaporation) totals were used to help delineate percentage runoff isopleths. Insufficient confirmatory flow data exist for the Scottish islands, and for Anglesey, to allow runoff to be assessed with any confidence. Due to a delay in the processing of the majority of the 1991 Northern Ireland river flow data, the runoff map covers Great Britain only.

Annual runoff totals for 1991 were close to, or a little above, average in most of Scotland, Wales, the West Country and northern England although in the latter two regions variations between catchments were notable. As in the previous three years especially, elevated runoff rates typified large parts of western Scotland. By contrast annual mean flows were amongst the lowest on record throughout the eastern lowlands. Runoff rates were also depressed over much of the Midlands, notably so throughout the Trent basin. New minimum runoff totals were registered in the headwaters and in the lower valley where most west-bank tributaries recorded very modest average flows in 1991. Average flows were even more depressed in parts of East Anglia and the Thames Valley – unprecedented in many rivers sustained principally from groundwater. Over a substantial proportion of Lincolnshire, Cambridgeshire, Bedfordshire and Norfolk, runoff in 1991

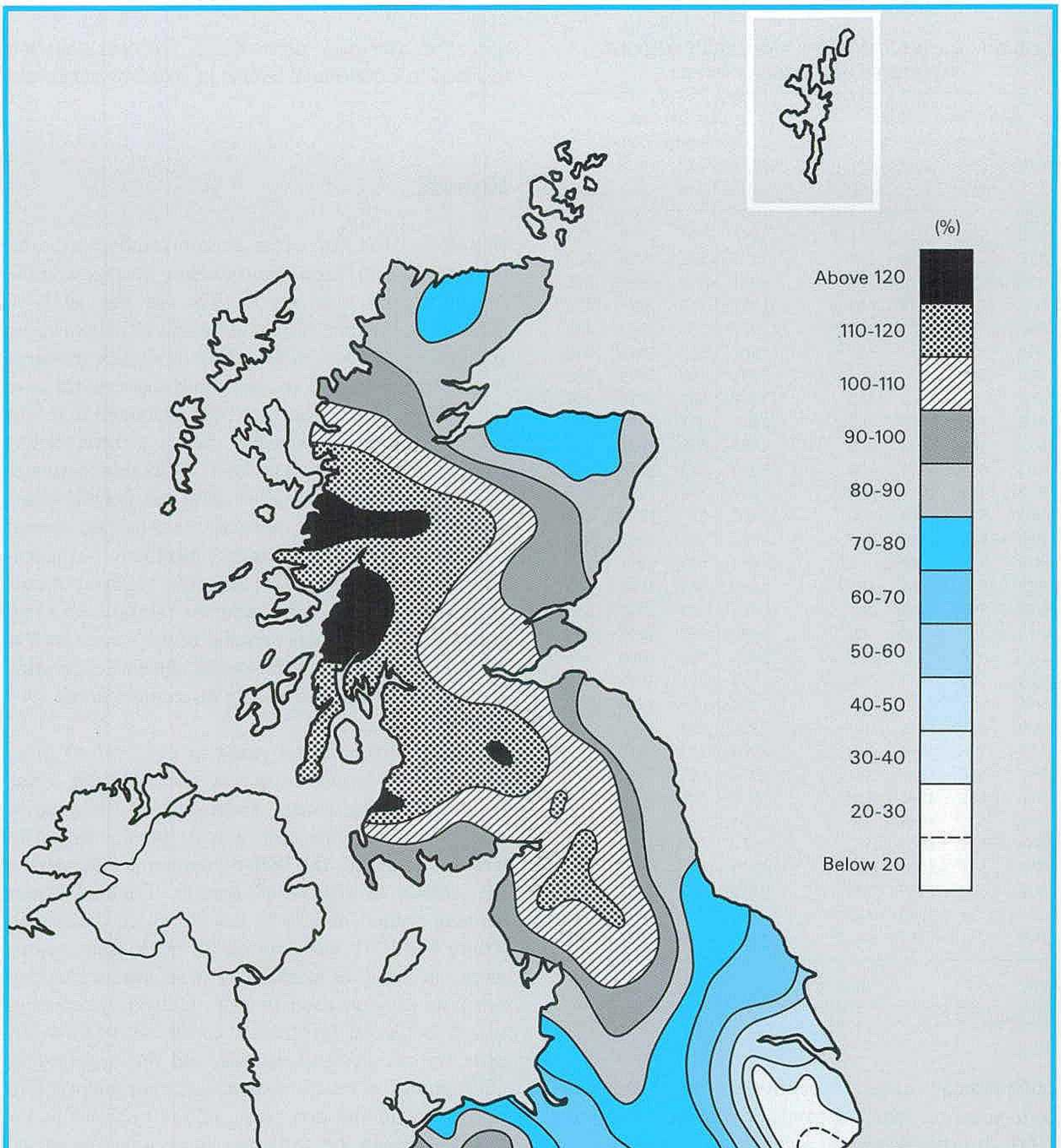


Figure 7. A guide to 1991 runoff expressed as a percentage of the 1961–90 average

was less than a quarter of the long-term average. For many gauging stations the minimum annual runoff totals established in 1976 or 1973 were eclipsed. Over a much wider area, spring-supported rivers commonly recorded substantially less than half the long term average and, typically, monthly runoff totals remained well below average throughout the whole of 1991. The failure of springs and shrinkage of headwater streams was commonplace in the latter half of 1991. For small headwater catchments annual percentage runoff totals will have been considerably lower than is suggested by the regionally smoothed isolines shown on Figure 7. The generalised isopleths also disguise considerable local variations in percentage catchment runoff totals especially where impervious and permeable catchments are in close juxtaposition. This is particularly true of the South-East.

The normal seasonal contrasts in runoff were evident in 1991 for most rivers in western and northern Britain. However only a modest seasonal flow variation could be recognised in most lowland catchments where the wet, late-winter early-spring rainfall helped to maintain baseflows, albeit at a very moderate level, through much of the summer. Subsequently, as in the three previous years, the autumn runoff recovery was a faltering and incomplete affair and from August runoff rates displayed a remarkable consistency in many eastern and southern catchments over the ensuing five months. The stability in monthly runoff totals from the summer of 1991 implies an increasing departure from the average monthly flow through the autumn and early winter. By year-end flows were exceptionally depressed relative to the early winter average in many lowland catchments.

Temporal variations in flow rates during 1991 are illustrated in Figure 8 which shows daily mean flows for eight representative catchments together with the daily extreme flows for the preceding record; the flows for the Kingston gauging station on the River Thames have been adjusted to take account of major upstream abstractions for public supply. The adjacent plots show the flow duration curves for 1991 and for the pre-1991 record; the flow duration curves enable the proportion of time that river flows fall below a given threshold to be identified. Figure 12 (page 34) maps the location of the featured gauging stations. A number of factors complicate comparisons between contemporary and early low flows on the River Thames (see page 21); the duration curves for the Trent and, particularly, the Little Ouse provide a more representative basis for comparisons between the 1991 and period-of-record flow regimes.

Figure 8 provides clear evidence of the disparity between the relatively normal 1991 flow regimes in western and northern catchments and the sustained low flows which characterised the lowlands. In the more maritime regions of the UK, spates and recessions occurred throughout the year and seasonal contrasts were generally more muted than average, certainly much less exaggerated than in 1990. Winter/summer runoff differences in 1991 were, however, emphasised by the steep recessions which characterised May and the brisk recoveries, in western catchments, during October and November. By contrast, many eastern rivers supported principally from groundwater recorded notably low flows over the October-December period.

In 1991 extreme flood events were rare and the overall flow range was also considerably more restricted than in the previous year. Nonetheless, the range of recorded variation in runoff rates was extended downwards in a large number of eastern, and some southern, catchments. Table 5 provides a summary of river flow and runoff records established in 1991 at primary gauging stations in Great Britain; entries are confined to monitoring sites having at least 20 years of record on the River Flow Archive. A number of entries in Table 5 may be subject to revision as stage-discharge relations are reviewed in the light of recent current-metre gaugings. New hydrometric records of one category or another were established at the majority of gauging stations in 1990. 1991 was less outstanding but gauging stations where low flow records were eclipsed show a wide distribution. But for the low network density and the shortness of most river flow records in the Scottish Highlands, new annual maximum runoff totals would also have featured in Table 5 (the outstanding nature of the longer term runoff accumulations may be judged from the data presented in Table 6).

The new runoff records detailed in Table 5 confirm the unusual nature of 1991 in hydrological terms but the drought can only be properly characterised by examining flow patterns over the full period since appreciable runoff deficiencies became established – the late summer of 1988 in the lowlands. Table 6 confirms that runoff accumulations for the 20 months ending in December 1991 were the lowest, or close to the lowest, on record for a number of rivers in eastern and southern Britain. More notably, the 20-month runoff totals for a significant proportion of lowland rivers sustained principally from groundwater – examples include the Lud (Lincolnshire) and the Hampshire Itchen – were unprecedented for *any* start month. Evidence of the drought's persistence is provided by the rankings, in Table 6, of the runoff accumulations for the periods beginning in May 1989 and August 1988. A revealing counterpoint to the record, or near record, long term runoff minima in the English lowlands is furnished by the 41-month runoff total for the Tay – the highest in a 36-year record. The limited recovery in baseflows by the end of 1991 in the English lowlands heralded a continuation of seasonally depressed river flows well into 1992 with the expectation that extremely low long term runoff accumulations would result.

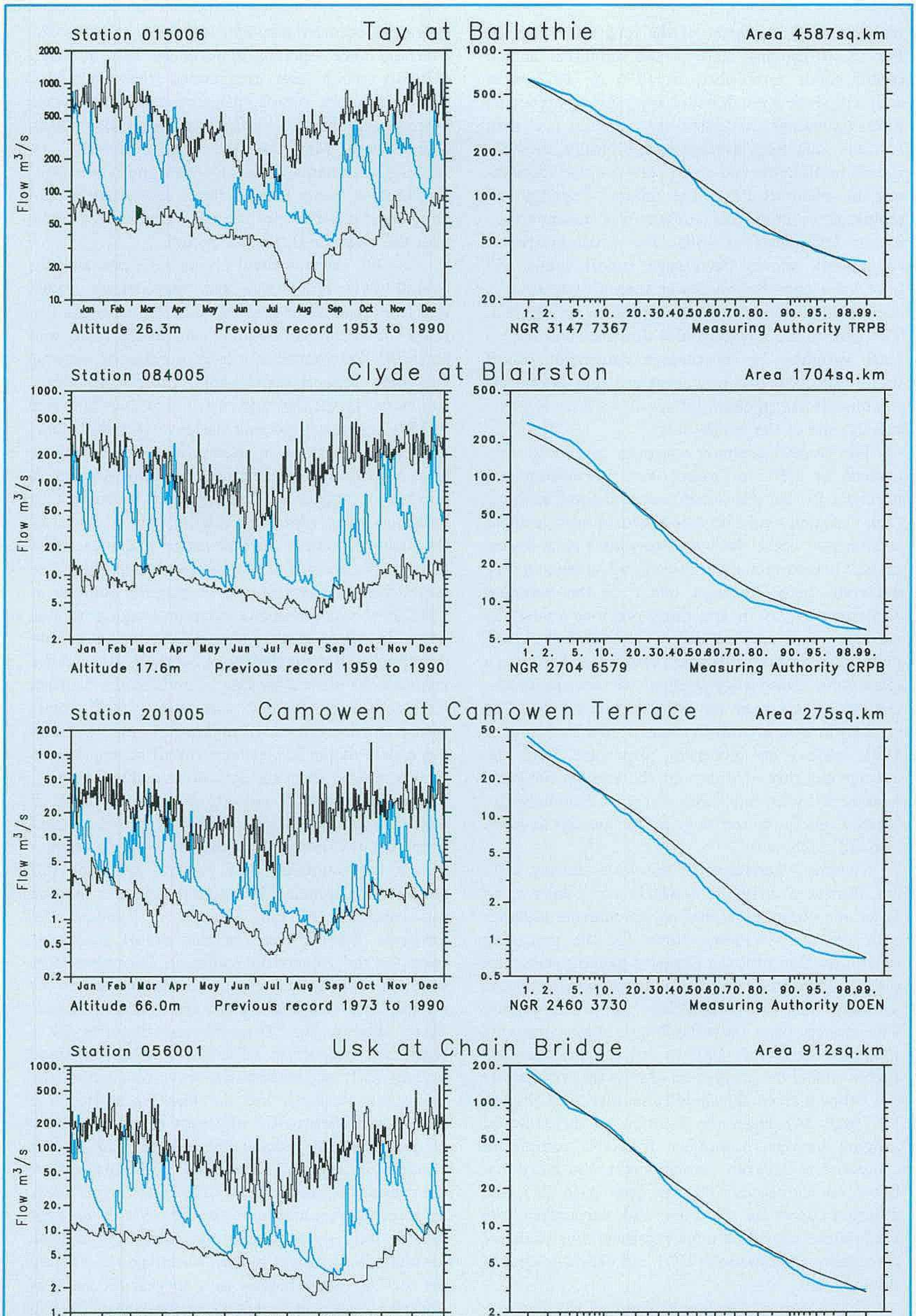


Figure 8. 1991 river flow patterns. The 1991 daily flow hydrographs and flow duration curves are shown in blue, the period-of-record max. and min. daily flows and the pre-1991 flow duration curves are shown in black.

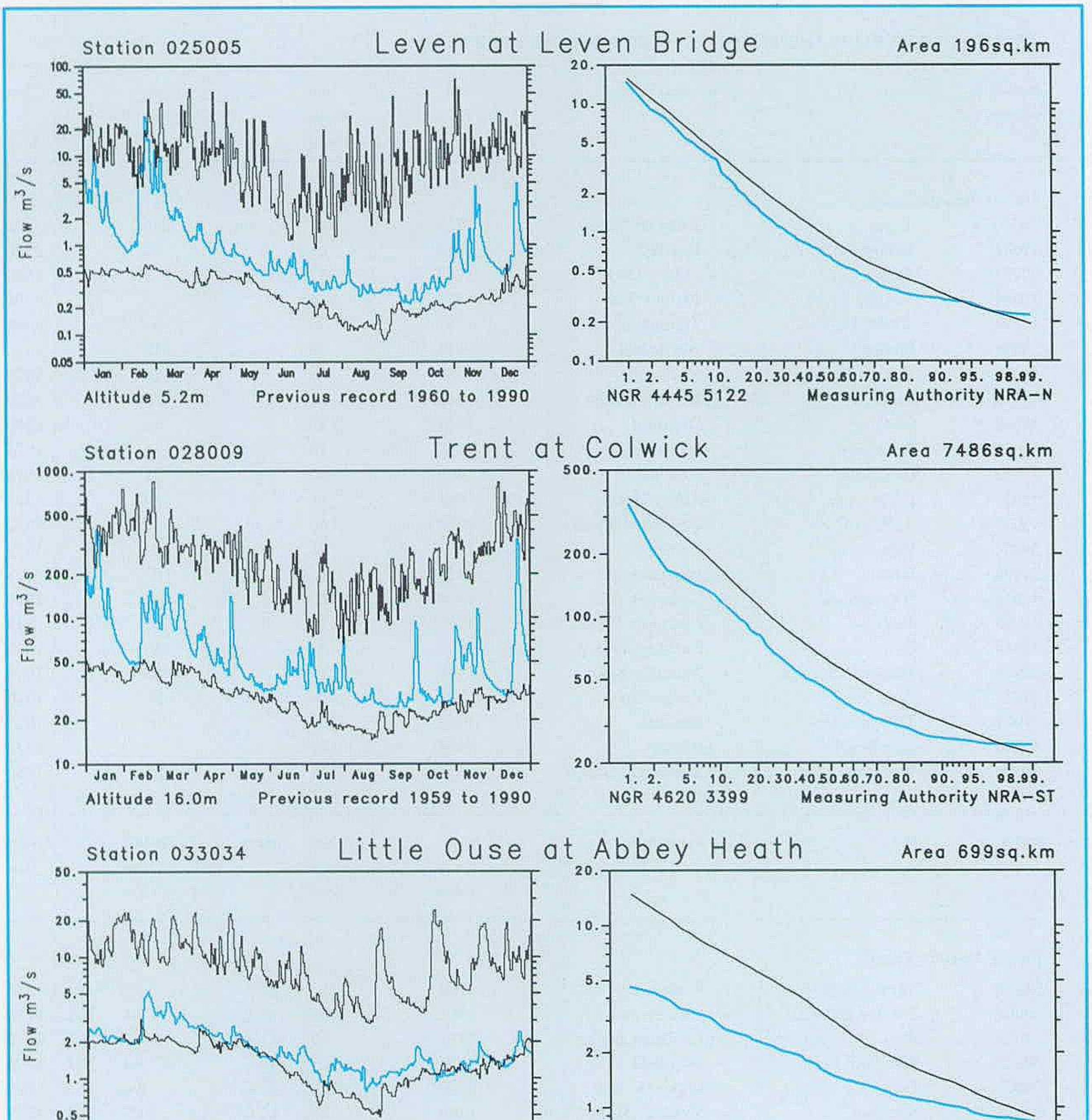


Figure 8—(continued)

TABLE 5 RIVER FLOW AND RUNOFF RECORDS ESTABLISHED IN 1991

Station Number	River	Station Name	First Year of Record	New Record (mm)	Pre-1991 Record (mm)	Year
Lowest Annual Runoff						
28040	Trent	Stoke on Trent	1968	242	276	1989
29001	Waithe Beck	Brigsley	1960	23	30	1976
30003	Bain	Fulsby Lock	1962	61	76	1990
30004	Partney Lymn	Partney Mill	1962	114	128	1990
31004	Welland	Tallington	1967	28	47	1990
33006	Wissey	Northwold	1956	78	115	1990
33007	Nar	Marham	1953	96	116	1990
33013	Sapiston	Rectory Bridge	1949	21	33	1973
33024	Cam	Dernford	1949	53	66	1973
33029	Stringside	White Bridge	1965	36	59	1973
33032	Heacham	Heacham	1965	30	33	1973
33034	Little Ouse	Abbey Heath	1968	78	80	1973
33037	Bedford Ouse	Newport Pagnell	1969	65	80	1976
34001	Yare	Colney	1959	93	104	1973
34003	Bure	Ingworth	1959	144	152	1973
34004	Wensum	Costessey Mill	1960	112	135	1990
34005	Tud	Costessey Park	1961	76	85	1973
34012	Burn	Burnham Overy	1966	37	43	1990
38016	Stanstead Springs	Mountfitchet	1969	34	52	1973
39027	Pang	Pangbourne	1970	48	50	1976
39029	Tillingbourne	Shelford	1968	194	208	1973
39036	Law Brook	Albury	1968	162	169	1973
68004	Wistaston Brook	Marshfield Bridge	1957	176	222	1985

Station Number	River	Station Name	First Year of Record	New Record (mm)	Month	Pre-1991 Record (mm)	Month/ Year
Lowest Monthly Runoff							
54012	Tern	Walcot	1960	2.9	JUL	3.7	AUG 1976
30004	Partney Lymn	Partney Mill	1962	3.6	AUG	3.8	JUL 1976
30011	Bain	Goulceby Bridge	1971	1.7	AUG	1.7	JUL 1976
30012	Stainfield Beck	Stainfield	1970	0.3	AUG	0.4	JUL 1976
34003	Bure	Ingworth	1959	7.7	AUG	8.0	JUN 1976
34014	Wensum	Swanton Morley Total	1969	3.9	AUG	4.5	JUL 1976
34004	Wensum	Costessey Mill	1960	2.6	AUG	4.0	AUG 1990
68004	Wistaston Brook	Marshfield Bridge	1957	5.6	AUG	6.2	SEP 1989
21032	Glen	Kirknewton	1966	2.6	SEP	3.1	AUG 1990
24004	Bedburn Beck	Bedburn	1959	3.8	SEP	4.3	AUG 1976
29001	Waithe Beck	Brigsley	1960	0.4	SEP	0.6	JUL 1976
33006	Wissey	Northwold	1956	2.2	SEP	2.2	SEP 1990
33007	Nar	Marham	1953	3.6	SEP	4.0	SEP 1990
33014	Lark	Temple	1960	2.4	SEP	3.4	AUG 1990
33050	Snail	Fordham	1960	3.4	SEP	3.5	AUG 1976
34011	Wensum	Fakenham	1967	3.0	SEP	3.6	JUL 1976
34012	Burn	Burnham Overy	1966	2.0	SEP	2.3	SEP 1990
39029	Tillingbourne	Shalford	1968	12.3	SEP	14.8	AUG 1976
40013	Darent	Otford	1969	2.2	SEP	2.5	AUG 1990
42009	Candover Stream	Borough Bridge	1970	9.1	SEP	9.4	NOV 1973
33013	Sapiston	Rectory Bridge	1949	0.1	OCT	0.2	JUL 1949
38017	Mimram	Whitwell	1970	0.9	OCT	1.0	OCT 1973
55028	Frome	Bishops Frome	1971	1.8	OCT	2.0	SEP 1990
33032	Heacham	Heacham	1965	0.8	DEC	1.4	DEC 1990
38016	Stanstead Springs	Mountfitchet	1969	0.5	DEC	2.5	SEP 1976
39036	Law Brook	Albury	1968	10.2	DEC	12.2	APR 1974

Note: A number of entries may be revised following reviews of the stage-discharge relations.

Station Number	River	Station Name	First Year of Record	New Record (m^3s^{-1})	Day/ Month	Pre-1990 Record (m^3s^{-1})	Day/Month/ Year
Highest Instantaneous Flow							
18005	Allan Water	Bridge of Allan	1971	137	01 JAN	113	31 DEC 83
74001	Duddon	Duddon Hall	1968	181	01 JAN	167	23 AUG 85
55025	Llynfi	Three Cocks	1970	183	09 JAN	167	27 JAN 90
27034	Ure	Kilgram	1968	383	23 FEB	368	03 JAN 82
27007	Ure	Westwick Lock	1958	625	24 FEB	538	03 JAN 82
58007	Llynfi	Coytrahen	1970	62.2	18 MAR	59.4	01 NOV 70
47007	Yealm	Puslinch	1963	28.8	23 JUN	28.3	31 AUG 88
40006	Bourne	Hadlow	1959	14.7	01 AUG	12.8	03 FEB 90
52004	Isle	Ashford Mill	1962	44.2	28 SEP	28.9	20 DEC 81
23004	South Tyne	Haydon Bridge	1962	718	21 DEC	599	28 JUL 88
25018	Tees	Middleton in Teesdale	1971	300	21 DEC	267	28 JUL 88
28031	Manifold	Ilam	1968	161	21 DEC	137	10 AUG 71
28046	Dove	Izaal Walton	1969	28.5	21 DEC	20.7	21 NOV 71
81002	Cree	Newton Stewart	1963	322	21 DEC	318	02 OCT 82
28018	Dove	Marston on Dove	1961	223	22 DEC	203	31 DEC 81
203010	Blackwater	Maydown Bridge	1970	174	23 DEC	164	FEB 90
Highest Daily Mean Flows							
18002	Devon	Glenochil	1959	71.1	02 JAN	66.6	23 SEP 85
54022	Severn	Plynlimon Flume	1953	8.63	22 FEB	7.31	28 OCT 89
23003	North Tyne	Reaverhill	1959	328	23 FEB	314	09 OCT 67
23004	South Tyne	Haydon Bridge	1962	405	23 FEB	309	23 MAR 68
25001	Tees	Broken Scar	1956	427	23 FEB	392	03 JAN 82
27002	Wharfe	Flint Mill Weir	1936	292	23 FEB	288	03 JAN 82
27032	Hebden Beck	Hebden	1965	3.14	23 FEB	3.09	03 JAN 82
27034	Ure	Westwick Lock	1958	470	24 FEB	404	03 JAN 82
27034	Ure	Kilgram Bridge	1968	350	23 FEB	295	23 MAR 68
39004	Wandle	Beddington Park	1936	1.85	29 OCT	1.21	05 OCT 84
28008	Dove	Rocester Weir	1953	93.8	21 DEC	88.4	04 DEC 60
28031	Manifold	Ilam	1968	83.6	21 DEC	37.1	28 JAN 78
28046	Dove	Izaak Walton	1969	19.5	21 DEC	13.3	02 FEB 84
203010	Blackwater	Maydown Bridge	1970	172	22 DEC	156	07 FEB 90
55026	Wye	Ddol Farm	1937	291	21 DEC	199	28 OCT 89
71004	Calder	Whalley Weir	1963	156	21 DEC	153	27 OCT 80
81002	Cree	Newton Stewart	1963	248	21 DEC	206	02 OCT 81
27035	Aire	Kildwick Bridge	1968	67.6	22 DEC	64.6	05 DEC 72
83003	Ayr	Catrine	1970	92.1	22 DEC	89.3	02 JAN 81
84015	Kelvin	Dryfield	1965	66.1	22 DEC	60.1	22 SEP 85
85002	Endrick Water	Gaidrew	1963	101	22 DEC	84.9	26 SEP 81
Lowest Daily Mean Flows							
54012	Tern	Walcot	1960	0.260	16 JUL	0.941	26 AUG 76
33014	Lark	Temple	1960	0.164	26 JUL	0.282	14 AUG 90
34004	Wensum	Costessey Mill	1960	0.298	07 AUG	0.482	10 SEP 90
34010	Waveney	Billingford Bridge	1968	0.013	27 AUG	0.017	12 JUL 76
28039	Rea	Calthorpe Park	1967	0.172	05 SEP	0.178	20 SEP 76
39029	Tillingbourne	Shalford	1968	0.255	12 SEP	0.281	23 JUN 74
42009	Candover Stream	Borough Bridge	1970	0.227	12 SEP	0.233	07 AUG 89
76005	Eden	Temple Sowerby	1964	0.880	13 SEP	0.956	08 AUG 89
34011	Wensum	Fakenham	1967	0.118	16 SEP	0.130	25 AUG 76
34001	Yare	Colney	1959	0.099	18 SEP	0.118	12 JUL 76
33006	Wissey	Northwold	1956	0.149	19 SEP	0.197	27 AUG 76
40013	Darent	Otford	1969	0.051	20 SEP	0.062	06 SEP 76
29001	Waithe Beck	Brigsley	1960	0.009	24 SEP	0.015	23 JUL 76
33013	Sapiston	Rectory Bridge	1949	0.001	05 OCT	0.017	02 SEP 65
33032	Heacham	Heacham	1965	0.015	12 DEC	0.026	23 DEC 90
38017	Mimram	Whitwell	1970	0.010	15 DEC	0.012	09 OCT 73
39036	Law Brook	Albury	1968	0.056	23 DEC	0.067	06 AUG 90
33024	Cam	Dernford	1949	0.177	28 DEC	0.182	24 AUG 74
38016	Stanstead Springs	Mountfitchett	1969	0.003	31 DEC	0.016	14 JUL 74

Note: Only stations with 20 or more years of data on the River Flow Archive are featured. Some flows are estimated.

TABLE 6 CATCHMENT RUNOFF FOR SELECTED PERIODS 1988-91

River/ Station Name	Apr 1991		Dec 1991		6/91 to 12/91		5/90 to 12/91		5/89 to 12/91		8/88 to 12/91	
	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs
Tay at	34	11	118	19	613	26	1763	19	3217	28	4628	36
Ballathie	66	/39	84	/40	105	/39	99	/38	111	/37	120	/36
South Tyne at	17	9	128	21	403	13	1178	14	1856	8	24	485
Haydon Bridge	43	/28	131	/30	98	/28	97	/26	93	/24	91	/22
Derwent at	6	3	14	2	68	3	350	3	520	1	709	1
Buttercrambe*	42	/30	35	/31	47	/30	70	/29	62	/28	63	/27
Dove at	10	3	56	12	144	3	519	2	911	1	1298	1
Marston on Dove	44	/30	87	/31	61	/29	68	/27	71	/25	75	/23
Lud at	7	3	7	2	53	1	173	1	317	1	451	1
Louth	51	/24	36	/24	53	/23	45	/22	50	/21	53	/21
Little Ouse at	4	2	6	1	33	2	119	1	230	1	362	1
Abbey Heath	52	/24	36	/24	46	/24	46	/23	54	/22	64	/21
Lee at	7	13	4	1	37	13	123	6	267	12	385	13
Feildes Weir (natr.)	46	/107	22	/107	51	/106	49	/104	65	/102	71	/100
Thames at	7	43	10	9	64	19	211	7	455	12	608	10
Kingston (natr.)	80	/109	33	/109	61	/109	58	/108	74	/107	74	/106
Coln at	14	9	27	9	122	9	402	3	815	6	1016	2
Bibury	83	/28	70	/29	79	/28	69	/27	83	/26	78	/25
Great Stour at	11	7	16	3	104	5	304	3	503	1	657	1
Horton	82	/27	47	/27	76	/26	67	/24	67	/22	66	/20
Itchen at	23	5	26	3	176	4	552	1	969	1	1231	1
Highbridge + Allbrook	82	/33	63	/34	79	/33	76	/32	81	/31	80	/30
Stour at	9	11	25	5	114	5	389	1	831	4	1062	1
Throop Mill	88	/19	46	/19	75	/19	68	/18	86	/17	81	/16
Tone at	8	6	32	5	156	10	487	2	990	5	1314	2
Bishops Hull	65	/31	48	/31	80	/31	70	/30	84	/29	82	/28
Severn at	12	26	38	13	150	10	541	7	976	11	1346	13
Bewdley	70	/71	61	/71	69	/71	78	/70	85	/69	87	/68
Teme at	6	9	16	2	75	3	351	1	733	3	966	1
Knightsford Bridge	71	/22	29	/22	53	/22	66	/21	81	/20	78	/19
Cynon at	24	11	63	1	508	8	1757	8	3200	15	4277	15
Abercynon	48	/33	33	/34	77	/32	89	/30	99	/28	99	/26
Dee at	54	10	189	7	822	5	2459	3	4135	3	5807	4
New Inn	59	/23	76	/23	78	/22	84	/21	87	/20	91	/20
Lune at	39	12	153	15	616	12	1658	7	2694	7	3842	8
Caton	57	/29	100	/29	95	/29	90	/27	91	/25	97	/23
Clyde at	20	7	140	25	453	15	1372	20	2274	22	3082	22
Daldowie	49	/28	143	/29	106	/28	111	/27	114	/26	116	/25

Notes: (i) Values are ranked so that lowest runoff is rank 1

(ii) %LT is the percentage of the long term average (preceding the featured period)

*Includes the Stanford Bridge record (1961–73)

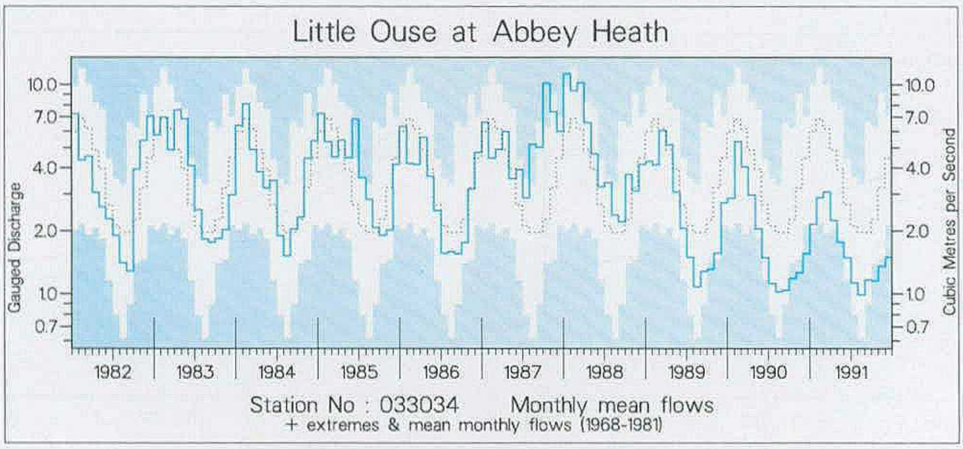


Figure 9. Monthly flow hydrograph for the River Little Ouse

Most UK river flow records extend back less than 40 years. A fuller historical context is provided by the Kingston (River Thames) and Feildes Weir (River Lee) flow records - continuous daily flow series extend back to 1883 and 1879 respectively. Direct comparisons between the current drought and its precursors are hampered by changes in flow measurement techniques, land-use and, especially, patterns of water utilisation. Nonetheless, such extended time series are of immense value for the detection of runoff trends, changes in flow regime and in indexing drought severity. On the Lee, the naturalised mean flow (see page 58) for December 1991 was the lowest in the 112-year record. In the post-1950 timeframe, the accumulated runoff over the 18 months ending in December exceeded only the estimated runoff totals registered at the end of 1976; appreciably lower accumulations were however recorded during the 1900–1903 and 1934–35 droughts and the protracted rainfall deficiencies in the 1940s. A similar picture emerges on the Thames where, over the 18-month timespan, the 1921–22 drought also ranks as more severe than the 1990–91 runoff deficiency. However, the latter event was intensifying at the end of 1991 and, as at Feildes Weir, the significance of historical low flow sequences may well be exaggerated by the tendency for drought flows to be underestimated - leakage through the original weir structures being a significant problem.

For the majority of lowland rivers the seasonal variation in monthly flows over the four years beginning in 1987 disguises, if only partially, a distinct downward trend in runoff. On the Little Ouse at Abbey Heath (near Thetford, Norfolk) runoff over the notably wet 1987/88 water-year (October-September), was the highest on record – see Figure 9. For the water-year 1990/91 runoff had declined by 70 per cent to establish a new period-of-record minimum. Rivers draining the Chalk of southern England display a broadly similar runoff trend over recent years but the hydrological drought is divided into two distinct phases by the very wet winter of 1989/90; February 1990 produced the highest monthly runoff on record in, for example, the Itchen.

In the context of the last 15 years, 1988 may be considered as something of a hydrological watershed in much of England. It marks the end of a relatively wet period, which followed the 1976 drought, and the beginning of a period over which the low flow – for many lowland rivers have been largely redefined. For a number of catchments close to the eastern seaboard, runoff in 1991 was less than half of the long term average for the third successive year and the persistence of low flows has been without recorded parallel. Table 7 provides a broader geo-

TABLE 7 A COMPARISON BETWEEN PRE- AND POST-1988 FLOW REGIMES

Stat. No.	River/Station	First Year of Record	Mean Flow (m^3s^{-1})		95% Exceedance Flow (m^3s^{-1})		10% Exceedance Flow (m^3s^{-1})	
			Pre-88	Post-88	Pre-88	Post-88	Pre-88	Post-88
015007	Tay at Pitnacree	1958	54.0	68.3	12.94	11.36	106.7	155.4
085001	Leven at Linnbrane	1964	41.2	47.6	8.18	8.64	80.0	100.4
084013	Clyde at Daldowie	1964	44.7	54.1	9.52	9.09	103.8	136.4
025005	Leven at Leven Bridge	1960	1.95	1.08	0.28	0.22	4.27	2.05
029003	Lud at Louth	1969	0.48	0.24	0.14	0.12	0.89	0.38
028009	Trent at Colwick	1958	85.7	65.4	28.8	23.1	170.7	133.1
033034	L. Ouse at Abbey Heath	1969	3.90	2.24	1.32	0.99	7.25	4.27
039016	Kennet at Theale	1962	9.72	7.21	4.03	3.33	16.53	12.6
040011	Great Stour at Horton	1965	3.32	2.14	1.26	0.85	6.11	3.91

The National Grid Reference of each station is given in the Concise Register of Gauging Stations

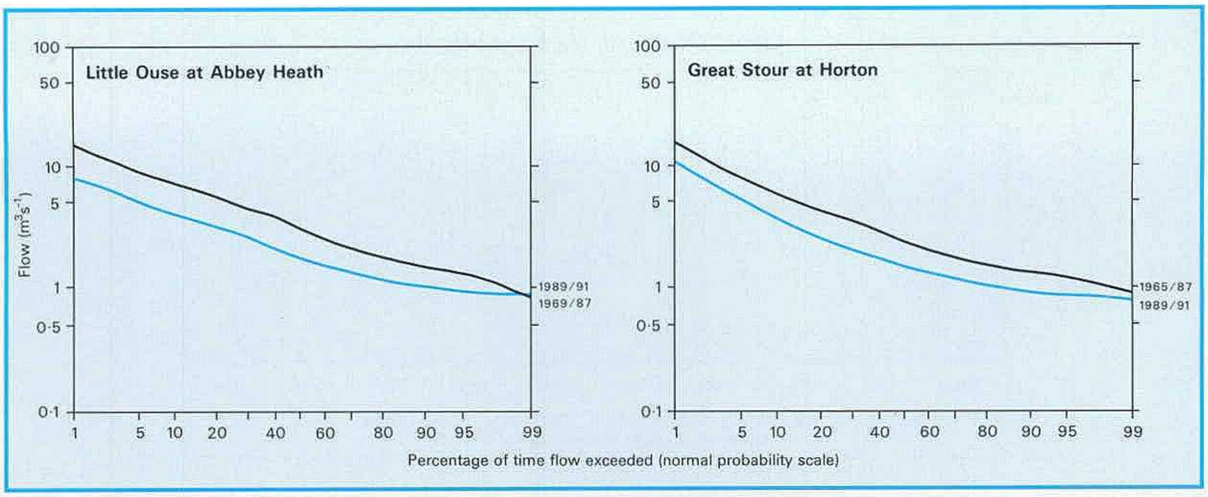


Figure 10. A comparison of pre- and post-1988 flow duration curves for the Rivers Little Ouse and Great Stour (The 1989–1991 duration curve is shown in blue).

graphical perspective and demonstrates that pre- and post-1988 regime differences are not confined to the low flow range. A comparison is presented between, mean, low and high flows for the 1989–91 period and the pre-1988 record for nine representative catchments. Considerable variation between time periods is to be expected but the abundant recent runoff in rivers draining from the Scottish Highlands and the very low 95 per cent exceedance flows recorded for many English lowland rivers over the post-1988 period are especially notable. The impact on the flow duration curves is illustrated in Figure 10. For both featured rivers the post-1988 runoff may be seen to be significantly below that for the preceding record throughout almost the entire flow range.

Although in many lowland rivers absolute daily minimum flows have been unremarkable in recent years, the protracted nature of low flow spells has been exceptional. This is particularly true of durations in excess of about 60 days. Table 8 confirms the degree to which a redefinition of annual n-day minimum flows has occurred in the post-1988 period. The pre-eminence of the 1989–91 low flows, is clearly evident in both the responsive Leven (a tributary of the Tees in Cleveland) and the spring-fed Itchen (where low flows have been augmented from groundwater over the 1989–91 period). The River Wissey (Norfolk) drains a catchment where drought conditions have remained severe throughout most of 1989, 1990 and 1991. A new minimum daily mean flow was registered in September 1991 but the drought's severity is better indexed by the 120- and 240-day annual minima rankings; 1989, 1990 and 1991 occupy the lowest ranking positions for each duration.

Depressed runoff rates over a very extended period have been associated with a substantial shrinkage in the lowland stream network. The downstream migration of headwaters has been exacerbated in those catchments where groundwater pumping, often over many years, has reduced groundwater levels and steadily reduced stream flows. Since its creation in 1989, the National Rivers Authority has examined various strategies for combating the effect of groundwater abstraction on low river flows and rehabilitation programmes are well

TABLE 8 RANKED ANNUAL MINIMUM N-DAY FLOWS

River/Gauging station	Durations: 30-day Year	30-day Mean flow (m^3s^{-1})	60-day Year	60-day Mean flow (m^3s^{-1})	120-day Year	120-day Mean flow (m^3s^{-1}	240-day Year	240-day Mean flow (m^3s^{-1})
River Leven	1976	0.121	1976	0.146	1964	0.239	1964	0.326
at Leven Br.	**1990**	**0.186**	**1990**	**0.194**	**1990**	**0.272**	**1990**	**0.419**
Period of	1964	0.188	1964	0.202	**1991**	**0.324**	**1989**	**0.459**
record	1960	0.228E	**1991**	**0.280**	**1989**	**0.343**	**1991**	**0.524**
1960–90	**1989**	**0.240**	**1989**	**0.280**	1975	0.331	1962	0.590
	1972	0.254	1975	0.284	1961	0.370	1970	0.613
	1965	0.256	1970	0.292	1977	0.384	1976	0.665
	1991	**0.264**	1961	0.296	1972	0.392	1975	0.693
	1975	0.267	1972	0.298	1962	0.399	1961	0.745
River Wissey	**1991**	**0.200**	**1991**	**0.232**	**1990**	**0.282**	**1991**	**0.448**
at Northwold*	**1990**	**0.226**	**1990**	**0.247**	**1991**	**0.286**	**1990**	**0.493**
Period of	1976	0.281	1976	0.301	**1989**	**0.390**	**1989**	**0.697**
record	**1989**	**0.341**	**1989**	**0.355**	1976	0.409	1976	0.741
1956–90	1964	0.426	1964	0.472	1964	0.540	1959	0.818
	1957	0.431	1957	0.478	1959	0.565	1964	0.860
	1959	0.444	1959	0.479	1957	0.608	1956	0.920E
	1986	0.503	1974	0.567	1974	0.674	1957	0.941
	1960	0.534	1986	0.569	1960	0.678	1960	1.050
River Itchen	1976	2.303	1976	2.389	1976	2.520	1976	3.002
at	**1989**	**2.575**	**1989**	**2.688**	**1989**	**2.796**	1973	3.313
Highbridge/	1959	2.637	1973	2.738	1973	2.804	**1989**	**3.112**
Allbrook	1973	2.650	1959	2.757	**1990**	**2.873**	**1990**	**3.341**
Period of	**1990**	**2.736**	**1991**	**2.777**	1959	3.026	**1991**	**3.522**
record	**1991**	**2.834**	**1990**	**2.964**	**1991**	**3.091**	1965	3.826
1959–90	1961	2.956	1961	3.102	1978	3.267	1988	3.940
	1978	3.057	1972	3.120	1961	3.301	1959	3.965
	1987	3.064	1978	3.134	1978	3.303	1962	3.971

E = estimated

*Changes to the arrangement of the gauging facilities imply that there is not full equivalence between the pre- and post-1980 flow data. The featured rankings are, however, largely unaffected.

advanced on, for example, the River Ver (Hertfordshire – see cover) where the planned cessation of pumping from a major water supply borehole in the headwaters is expected to allow the water-table to rise and produce a healthy aquatic environment in reaches which have been dry for many years.

Groundwater

After a relatively quiescent period from the early 1980s when groundwater levels in most major aquifers remained close to, but normally above, the average, patterns of groundwater recharge entered an erratic phase in late 1987. Heavy and sustained recharge over the 1987/88 winter raised water-tables in most areas to their highest level for the decade prior to the 1988 recession; for some boreholes the 1988 spring levels were the highest on record. The groundwater hydrographs illustrated in Figure 14 (pages 152 – 155) provide clear evidence of the very widespread and marked departures from average conditions which have characterised water-table variability since 1987. The regular seasonal cycle of groundwater level decline and recovery, well demonstrated throughout most of the 1980s, became noticeably irregular from the spring of 1988 and barely identifiable in some eastern aquifer units.

Exceptionally prolonged declines in water-tables, interrupted by the very modest infiltration over the 1988/89 winter, produced notably low groundwater levels by late-1989. Recharge over the 1989/90 winter was also very modest in parts of eastern England, particularly over the Chalk outcrop from Humberside to Kent. To the west, recharge was generally above average, and in some districts substantially so, but – as in the east – the water-table recovery needed to be generated from an exceptionally low base. A further feature of the 1989/90 recharge was its very late start, generally between late-December 1989 and mid-January 1990 (in a normal year, the recovery commences between late-September and late-October) and exceptionally early termination. Thus, although some extremely rapid recoveries were registered in the late winter (see, for example the hydrograph trace for the Compton borehole – page 153), steep recessions were often well established by early March and groundwater levels again fell well below the seasonal average through the spring.

The summer and autumn of 1990 saw the recession continue, apart from some modest and short-lived recoveries following heavy August rainfall in a few parts of southern England. Over most of Britain, water-tables, although very depressed, remained above the equivalent 1976 level into December. In eastern England, however, levels in some wells in the Chalk had reached an all-time low, the direct result of the 1990 recession starting from an unusually depressed state. As in the previous winter,

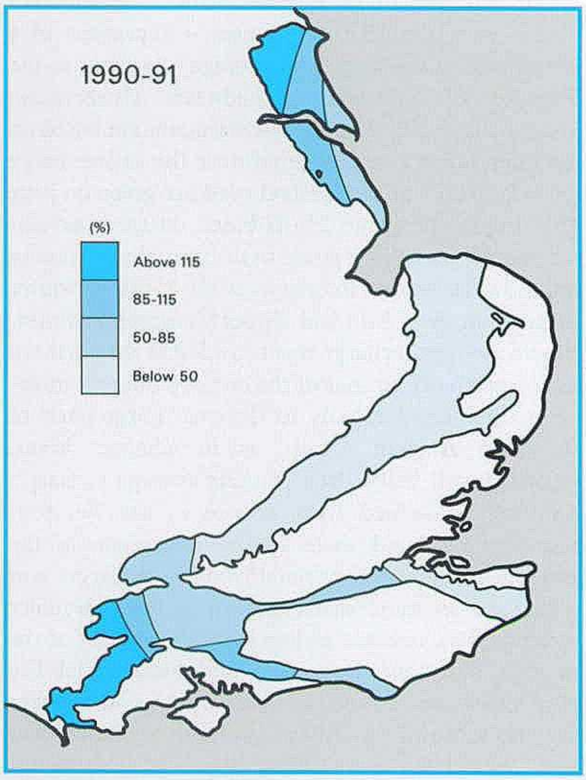


Figure 11. Generalised percentage of the mean annual replenishment to the main outcrops of the Chalk and Upper Greensand aquifer for 1990–91

the 1990/91 recovery started late. Only modest upturns in groundwater levels were apparent before December 1990 in much of Britain and, over the Chalk outcrop in eastern England, water-tables did not start to rise until early or even mid-January 1991.

The 1991 recovery began with groundwater levels over wide areas close to, or below, the lowest on record (for the winter) over much of eastern England. Brisk increases in level had been registered in the early winter in most aquifers to the north and west of a line from Dorset to Humberside but for the third successive year recoveries were greatly delayed in the lowlands. Above average rainfall from January to April generated increases in groundwater levels but the magnitude showed large variations even within the same aquifer.

The 1990/91 recharge to aquifers in eastern Kent, the Thames Valley, East Anglia and much of the Permo-Triassic sandstone aquifer in the Midlands and north Wales was generally of the order of 60 per cent or less of the mean replenishment. In these areas, the consequent recovery was meagre and water-tables failed to approach the seasonal average level. Elsewhere in Britain, recoveries in groundwater level started from somewhat less depressed conditions, and near-average to above-average levels were reached by the late spring. A substantial recovery was also recorded in the Yorkshire Chalk, a marked contrast to the previous two winters, but levels scarcely attained the seasonal norm.

A comprehensive tabulation of estimated recharge over the 1990/91 winter - expressed as a percentage of the long term average - is given in the Register of Selected Groundwater Observation Wells (pages 156 to 158). The estimates are based on the cumulative rise registered over the full recharge period. Details of the method used are given on page 151. Figure 11 (page 23) is based on these assessments and provides a guide to the spatial variation in groundwater replenishment over the 1990/91 winter throughout the Chalk and Upper Greensand aquifer. Above average recharge was recorded at the northern and western extremities of the outcrop but replenishment diminished rapidly to the east. Large parts of the East Anglian Chalk, as in adjacent areas, recorded well below half of their average recharge. As may be judged from entries in the Register, recharge exhibited little spatial coherence in the eastern lowlands but notably low recharge was registered in most districts. For a few boreholes recharge was assessed as less than 10 per cent of the average. Substantial regional and local variability also characterised winter recharge in the other important aquifers. Above average recharge was recorded for the North-West region as a whole but this disguises a significant north-south gradient; recharge totals were especially low in parts of the Cheshire Plain. Table 9 presents estimates of the 1990/91 groundwater replenishment for each of the major administrative divisions in the water industry (for England and Wales).

The groundwater resource situation in much of the Chalk of eastern England remained extremely fragile throughout 1991 - the hydrograph traces on Figure 14 provide clear evidence of the very depressed condition of water-tables, particularly over the latter half of the year. For the Chalk and Upper Greensand wells in particular, the length of time water-tables remained below pre-1988 minima is notable as is the decline in levels from the 1988 spring peaks.

Depressed groundwater levels throughout 1991 reflect not only the limited 1990/91 recharge but the modest percolation over the two preceding winters also. Estimates of the overall recharge, in percentage terms, for the three winters are presented in Table 10 for a series of observation wells in the Chalk of the Yorkshire, Anglian, Thames and Southern regions; details of well locations are given in the Register. There have been instances in the past where infiltration over a single winter period has been very modest, and a number where there have been two

TABLE 9 ANNUAL REPLENISHMENT TO THE MORE IMPORTANT AQUIFERS IN ENGLAND AND WALES FOR THE YEAR 1990/91

NRA Region	Mean annual replenishment ($m^3 \times 10^6$)	1990–91 replenishment ($m^3 \times 10^6$)
Chalk and Upper Greensand aquifer		
Anglian	953	569 (60)
Southern	1231	934 (76)
South West	202	79 (39)
Thames	976	525 (54)
Wessex	947	1111 (117)
Yorkshire	322	398 (124)
Total	4631	3616 (78)
Lincolnshire Limestone aquifer		
Anglian	86	84 (97)
Permo-Triassic sandstone aquifers		
Northumbria	11	7 (67)
North West	331	392 (118)
Severn-Trent	528	263 (50)
South West	205	150 (73)
Welsh	27	20 (72)
Wessex	39	45 (116)
Yorkshire	301	131 (44)
Total	1442	1008 (70)
Magnesian Limestone aquifers		
Northumbria	80	105 (131)
Severn-Trent	40	28 (69)
Yorkshire	127	125 (98)
Total	247	258 (104)

(Percentages of the annual mean in parentheses.)

TABLE 10 ESTIMATES OF PERCENTAGE RECHARGE FOR THREE WINTER PERIODS

Well Site†	Measuring Authority*	% Recharge 1988/89	% Recharge 1989/90	% Recharge 1990/91	% Recharge 1988/91
Dalton Holme Estate	NRA-Y	40	59	138	79
Hunmanby Hall	NRA-Y	<10	33	171	71
Little Brocklesby	NRA-A	35	59	101	65
Off Farm	NRA-A	17	85	49	50
Washpit Farm	NRA-A	<10	76	25	37
The Spinney, Costessey	NRA-A	20	75	69	55
Fairfields	NRA-A	26	17	26	23
Dial Farm	NRA-A	59	30	84	58
Grange Farm	NRA-A	65	17	12	31
The Holt	NRA-T	29	117	16	54
Stonor Park	NRA-T	32	148	27	69
Little Bucket Farm	NRA-S	39	88	78	68
Alland Grange	NRA-S	31	93	104	76
Little Petts Farm	NRA-S	<10	17	40	22
Old Rectory, Pyecombe	NRA-S	12	187*	87	95

*see pages 172 and 173. †For locational details see pages 156 to 158 successive such winters. However, the situation in eastern England at the end of 1991 was unique, for this century at least, with estimates of three-year recharge generally less than 60 per cent, and in some districts less than 30 per cent of the long term mean. Close to the zone of maximum drought severity, the estimated recharge at the Washpit Farm borehole (Norfolk) was less than half that for any pre-1988 three-year sequence in a record from 1950.

By April to early May 1991, the summer recession had generally commenced everywhere. Groundwater levels continued to fall throughout the summer and autumn and, in eastern and south-eastern England, were mostly still falling at the end of December. The scope and general severity of the drought, at year-end, may be judged by reference to Table 11 which gives the year-end groundwater levels in 1989, 1990 and 1991 for a representative set of wells and boreholes; the December average levels are also given together with the ranking of the late-1991 (or early 1992) levels. By the end of 1991 levels at many of the eastern Chalk sites had reached the lowest for any December in the period of record, and a few had reached their lowest value for any month.

Evidence of the unprecedented magnitude of the drought in groundwater terms is provided by the levels at a number of long term index wells and boreholes. By late-1991, levels at Dalton Holme (in the Yorkshire Wolds) had declined to below any registered before 1990 (in a 103-year record). At Little Brocklesby (Lincolnshire), levels were closely comparable with the minimum in a series from 1926 and at Therfield - a deep well south of Royston (Hertfordshire) - groundwater levels, entering 1992, had declined by over 20 metres since the spring of 1988 and stood at their lowest level since the borehole was last dry in 1923. Late-December levels at Washpit Farm and Redlands Hall (Essex) - see Figure 14 - were unprecedented in records of 42 and 28 years respectively. The singular intensity of the drought is confirmed by the annual minimum levels presented in Table 12. Comparisons with early records need to be undertaken with caution - measurement precision may have changed considerably through time and differences between annual minima are commonly small. Nonetheless, taking into consideration the inordinate nature of the long term rainfall deficiencies, the elevated evaporation

TABLE 11 A COMPARISON OF END-OF-YEAR GROUNDWATER LEVELS : 1991, 1990 AND 1989

Site	Aquifer	Records commence	Average December Level	December 1989		December 1990		December and January* 1991-92		No. of years December levels <1991	Lowest pre-1991 level (any month)
				Day	Level	Day	Level	Day	Level		
Dalton Holme	C & UGS	1889	15.79	28/12	10.89	6/12	10.34	3/01	10.62	1	10.34
Little Brocklesby	C & UGS	1926	11.85	29/12	6.31	27/12	4.86	27/12	4.60	0	4.56
Washpit Farm	C & UGS	1950	43.40	4/12	42.13	4/12	41.31	6/01	40.51	0	41.24
The Holt	C & UGS	1964	86.79	21/12	86.04	6/12	85.81	5/01	84.74	2	83.90
Fairfields	C & UGS	1974	23.01	18/12	22.77	6/12	22.16	10/12	22.05	0	22.15
Redlands Farm	C & UGS	1964	39.36	27/12	35.68	21/12	34.04	24/12	32.46	0	34.04
Rockley	C & UGS	1933	133.82	31/12	130.10	31/12	dry	5/01	130.11	>10	dry
Little Bucket Farm	C & UGS	1971	64.05	6/12	57.81	31/12	57.63	27/12	61.97	7	56.77
Compton House	C & UGS	1894	39.77	29/12	31.02	28/12	27.96	2/01	30.87	>10	27.64
West Dean	C & UGS	1940	1.97	29/12	1.68	28/12	1.39	24/12	1.72	>10	1.01
Lime Kiln Way	C & UGS	1969	124.92	9/12	124.27	5/12	124.69	2/01	124.18	0	124.09
Ashton Farm	C & UGS	1974	67.15	15/12	63.80	5/12	63.20	30/12	68.60	9	63.10
West Woodyates	C & UGS	1942	86.19	27/12	83.10	3/12	68.90	2/01	83.80	>10	67.62
New Red Lion	LLst	1964	12.70	18/12	7.20	31/12	5.49	17/12	5.68	1	3.29
Ampney Crucis	Mid Jur	1958	101.97	10/12	101.54	10/12	97.38	9/12	101.94	>10	97.38
Dunmurry (NI)	PTS	1985	28.24	30/12	27.79	31/12	28.53	19/12	28.02	2	27.47
Llanfair DC	PTS	1972	79.92	26/12	79.74	1/12	79.16	10/12	79.25	1	78.85
Morris Dancers	PTS	1969	32.61	11/12	32.20	28/12	32.11	19/12	32.11	3	30.87
Weeford Flats	PTS	1966	89.92	19/12	89.15	17/12	89.05	06/12	dry	-	dry
Bussels 7A	PTS	1972	23.79	17/12	23.60	19/12	23.46	31/12	23.63	>10	22.90
Rushyford NE	MgLst	1967	75.84	15/12	74.99	17/12	74.37	6/12	74.80	>10	64.77
Peggy Ellerton	MgLst	1968	34.14	11/12	33.15	6/12	32.40	10/12	32.71	2	31.10
Alstonfield	CLst	1974	192.33	12/12	175.96	18/11	186.64	10/12	178.23	2	174.22

Groundwater levels are in metres above Ordnance Datum

*January 1992 levels are featured where no late-December 1991 levels are available

C & UGS	Chalk and Upper Greensand	Mid Jur	Middle Jurassic limestones
LLst	Lincolnshire Limestone	MgLst	Magnesian Limestone
PTS	Permo-Triassic sandstones	CLst	Carboniferous Limestone

TABLE 12 ANNUAL MINIMUM LEVELS IN THE CHALK AND UPPER GREENSAND AQUIFER

	Dalton Holme (1989–1991)		Washpit Farm (1950–1991)		Redlands (1964–1991)	
Rank	Year	Min	Year	Min	Year	Min
1	1990	10.34	**1991**	**40.61**	**1991**	**32.46**
2	**1991**	**10.59**	1978	41.24	1990	34.04
3	1989	10.73	1973	41.25	1965	34.53
4	1988	11.51	1990	41.31	1976	35.30
5	1905	11.58	1976	41.50	1974	35.61
6	1921	11.81	1950	41.66	1989	35.68
7	1976	11.87	1960	41.80	1973	35.70
8	1984	11.88	1974	41.90	1986	36.59
9	1942	11.89	1989	42.13	1964	37.16
10	1949	12.09	1972	42.25	1963	37.25

losses and the substantial impact of increasing abstraction rates in some areas, it appears probable that the scale of the groundwater depletion in the Chalk of eastern England is without parallel this century.

Away from the English lowlands, drought conditions were generally less intense but late-1991 groundwater levels remained well below average throughout much of the southern Chalk, in Kent especially. Levels in the Lincolnshire Limestone were depressed also – at the New Red Lion borehole the minimum December level, established only in 1990, was closely approached in December 1991. In the Middle Jurassic of the Cotswolds, levels in the Ampney Crucis borehole were close to the seasonal average, a picture repeated in the Chalk and the Permo-Triassic sandstones of the West Country. A similar situation obtained in the Permo-Triassic aquifers of north-west England but the situation in the Midlands and north Wales was more difficult to interpret. The Weeford Flats well (Staffordshire) remained dry from the late summer (it was also dry in 1976) and at Llanfair DC (Clwyd) the dry December halted the recovery in levels and by mid-month the pre-1990 monthly minimum had been eclipsed. The hydrographs for these latter sites (see page 155) confirm the existence of a second zone of especially depressed groundwater levels extending across much of the Midlands and the Cheshire Plain.

The great majority of wells and boreholes in the national groundwater level network were selected, so far as is practicable, to avoid the worst effects of groundwater pumping on natural rest-water levels. Where, as in large parts of the English lowlands, heavy groundwater abstraction has produced local or regional depressions in the water-table, the depletion in groundwater resources has been even greater than the figures presented in Tables 10–12 suggest. Very large volumes of water are held in storage below the normal range of seasonal groundwater level fluctuation but evidence of decreasing borehole yields, as water-tables fell to unprecedented levels in 1991, emphasised the fragile nature of the water resources outlook.

In London – and to a lesser degree in some other conurbations – groundwater abstractions have declined over many years and, in response, water-tables have maintained a steady increase. At the Trafalgar Square borehole, which penetrates the confined Chalk and Upper Greensand aquifer, levels have risen by an average of a little more than a metre a year since the late 1960s and now stand at their highest since the early years of the century. This provides a somewhat incongruous comparison with the record low levels registered during 1991 in the Chalk outcrop to the west and north of London.

With no real recovery appearing to have started by the end of December 1991 over large tracts of England, the 1992 outlook for some groundwater resources was a matter of concern. Many dwellings and smallholdings located upon the Chalk outcrop of eastern and southern England obtain their water supplies from shallow shafts which have only a modest depth of water in the bottom at the best of times. Falling water-tables caused a number of such sources to fail as they dried out during 1991. The effect on surface waters was also readily apparent with lessening baseflows reducing river and streamflows.

Conclusion

The United Kingdom is blessed with considerable climatic diversity, annual rainfall amounts commonly varying by almost an order of magnitude between the mountain peaks of the Scottish Highlands, the Lake District and north Wales and the driest parts of the English lowlands. In the former regions an annual rainfall total of around 200 mm below average would be of little hydrological significance. But in much of eastern and southern England such a shortfall constitutes a severe drought. When, as over the 1988–91 period, accumulated rainfall dificiences greatly exceed this figure and elevated evaporation losses and parched summer and autumn soils account for the greater part of the available rainfall, the effect on river flows and groundwater levels may be expected to be severe. In terms of impact on the community the increasing integration, at the regional and local levels, of water supply systems – together with water conservation measures – allows the water industry to withstand even severe droughts without recourse to standpipes and water rationing. However, the decreasing margin between resources and growing demand, in south-eastern Britain especially, the threat posed by protracted shortages of rainfall to the aquatic environment and the possibility that drought conditions may be experienced with a somewhat greater frequency in the future, together emphasise the need for ever more effective and imaginative water management practices.

1991 Hydrological Diary

January

The year began in a very unsettled vein as a series of vigorous depressions brought widespread rainfall and, in Scotland, snowfalls. Subsequently anticyclonic conditions prevailed and, for the month as a whole, sunshine amounts were above average.

1st–2nd: Following a wet end to 1990, widespread heavy rainfall on already saturated catchments led to spate conditions over wide areas. Many upland areas in central and southern Scotland recorded more than 50 mm on the 1st and at Balquhidder (Central Region) the accumulated total from the 21st December exceeded 300 mm. Some notably high runoff rates resulted: on the 1st, the Allan Water at Bridge of Allan (Central Region) recorded a peak of 136.8 m^3s^{-1}, an event with an estimated return period of 100 years, and the River Teviot at Hawick (Borders) recorded its second highest peak since records began in 1963. For the River Devon (Central Region) a 50-year return period was ascribed to the peak flow of 89.4 m^3s^{-1} on the 2nd. In England, flows reached flood alert levels in the Severn, Avon (Warwickshire) and Soar valleys.

February

The coldest month in the UK since January 1987. The weather was dominated by a Scandinavian anticyclone, cold easterly winds predominated and snowfall in mid-month was considerable. Thereafter, westerly airstreams brought heavy rain and some moderately severe flooding to catchments draining the Pennines.

22nd–24th: Heavy rainfall occurred in north Wales and northern England on the 22nd; in Gwynedd, raingauges at Llanymawddy and Tryweryn Dam recorded daily falls of 133.5 and 126.7 mm respectively – the associated return periods exceed 100 years. The rain, augmented by a snowfall contribution, produced significant flooding on many eastward-flowing Pennine rivers. On the 23rd, record high daily flows were recorded on the Tees and in the headwaters of the Tyne, Wear and Wharfe. On the River Ure, a peak flow of 625.4 m^3s^{-1} occurred at the Westwick Lock gauging station on the 24th, the highest in a 31-year record; upstream flooding was severe at Boroughbridge (Yorkshire).

March

Generally very mild. A succession of fronts on a westerly airstream brought widespread rainfall to all areas early in the month, anticyclonic conditions prevailed towards month-end.

April

Again a wet month in western Britain. Both the Tay (at Ballathie) and Clyde (at Daldowie) recorded new maximum April runoff totals, in records of 40 and 29 years respectively. By contrast, the River Lymn (Lincolnshire) recorded its lowest April mean flow in a 30-year series.

29th: A slow moving depression brought sustained rainfall to almost all areas except for northern Scotland; daily totals of 25–35 mm were widely recorded and nearly 80 mm fell in the headwaters of the River Tamar (Devon-Cornwall borders). The 29th was the wettest April day for 20 years over most of the South-East.

May

May was exceptionally dry in most areas. For Great Britain as a whole, it was the driest May since 1896; Glasgow experienced its driest May for 123 years. Large areas of Somerset and Dorset recorded no rain for 24 consecutive days. Low runoff totals were common in permeable eastern catchments; May runoff on the Little Ouse (Norfolk), for example, was the lowest in a 24-year record.

June

In stark contrast to May, a continuous sequence of frontal systems made for a notably wet June; the wettest this century in Dover and third ranked for Great Britain as a whole. Some districts in the South-East and the Midlands experienced rainfall on all but two or three days.

23rd. A vigorous depression produced heavy rain over much of southern England. Nearly 50 mm was measured at Denbury (Devon) and Dorchester (Dorset) registered its wettest June day – 45.9 mm – in 20 years. New maximum peak flows were recorded on a number of rivers draining southern Dartmoor; peak discharge rates on the Yealm and Erme were unprecedented in records of 28 and 17 years respectively.

July

A warm and mainly dry month, with rainfall mostly attributable to two or three wet interludes. The River Thames at Kingston recorded an above average monthly flow for the first time since March 1990. Runoff in many eastern spring-fed rivers, however, continued to decline.

1st. A precipitation total of 37.8 mm was recorded during a localised heavy downpour, of only 27-minutes duration, at Cumbernauld (Strathclyde Region). Surface flooding was severe and a local sewage treatment works was inundated.

5th. The Isles of Scilly recorded 107 mm of rain during a prolonged convectional storm. At Loughborough (Leicestershire), 31 mm of rain fell in 40 minutes, producing some localised flooding.

August

A very dry month over most of the UK; it was the sixth driest August this century in England and Wales, with less than 10 per cent of average rainfall experienced in parts of lowland England. There were, however, thundery outbreaks during the month in many localities.

1st. A notable thunderstorm produced 45 mm of rain in 90 minutes at Sheringham (Norfolk).

September

A month of contrasts. The first fortnight was dry, the culmination of a predominantly rainless six weeks in the English lowlands. Subsequently, unsettled cyclonic conditions produced some notable rainfall events. Nonetheless, new record low September runoff totals were registered on a number of eastern rivers, examples include the Wissey and Wensum in East Anglia which have records of 35 and 25 years respectively.

26th. A two-hour storm produced over 50 mm of rain at Doncaster (South Yorkshire).

28th. Localised flooding was reported across much of southern England and South Wales as a result of heavy and sustained frontal rainfall, with some thundery activity. Spatial variability was considerable, Portland (Dorset) recorded only 5 mm but 110 mm fell at nearby Poole, an event with an estimated return period of almost 400 years; a 106 mm rainfall total for Currymore (Somerset) is marginally rarer. The River Isle (Somerset) recorded its highest peak flow in a 30-year record at the Ashford Mill gauging station.

October

A mainly dull and cool month with persistent anticyclonic conditions bracketed between vigorous frontal activity early and, especially, late in the month. Some areas in East Anglia recorded rainfall totals of less than 5 mm up to the 28th. New monthly minimum runoff totals were established on the River Sapiston (Suffolk) and the Frome (Hereford and Worcester). Groundwater levels, already very depressed, continued to fall except in the West Country.

16th. Severe westerly gales accompanied by heavy frontal rain affected northern Britain; 87.8 mm was measured at Achanalt (Highland Region).

31st. An exceptionally wet day for Great Britain as a whole. Heavy rain and gales crossed western and northern regions. Spate conditions prevailed in Scotland, the River Dee at Park (Grampian Region) recorded a peak flow of 748.2 m^3s^{-1}, the second highest in a 20-year record.

November

A distinct north-west/south-east rainfall gradient persisted during November; rainfall totals in western Scotland were considerably above average, but the South-East remained relatively dry and runoff recessions continued; the River Mimram (Hertfordshire) recorded its second lowest November runoff total in a 40-year record.

December

A cool and generally dry month although heavy rain in the third week brought considerable flooding to some areas. Apart from this wet interlude, anticyclonic conditions were dominant and the mean barometric pressure for December in south-eastern England was the highest for over 100 years.

20th–22nd. Heavy and persistent orographic rain occurred throughout the southern Pennines. Hollinsclough (Staffordshire) recorded 110 mm in 39 hours with an estimated return period of 80 years, and at Gorpley Reservoir (West Yorkshire) a similar total was measured for the 21st–22nd. A total of 149 mm was recorded at Walshaw Dean (West Yorkshire) over the three days. Notable discharge rates were recorded in rivers draining the southern Pennines, examples include the Etherow, Goyt and Irwell. Localised flooding occurred in the Calder Valley in West Yorkshire where the peak flow had an estimated return period of 20 years. The Rivers Dove and Manifold (Derbyshire) recorded new highest peak flows in records of 22 and 23 years respectively; return period estimates exceeding 100 years were ascribed to these events. Very brisk flow increases also occurred in the Northumbria region and Wales, where the Wye at Ddol Farm (Powys) exceeded its previous highest daily flow in a 54-year record by nearly 50 per cent. Flooding also occurred in the neighbouring Severn catchment, whilst in the Strathclyde Region, the River Clyde at Daldowie recorded its second highest peak flow.

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 digitally, on a solid state logger, less commonly on punched tape, or continuously by pen and chart. At well over half the gauging stations in the United Kingdom provision is made for the routine transmission of river levels directly to the processing centre, by telephone line or, less generally, 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 flow data is enabling hydrometric data acquisition to proceed on a near real-time basis in most areas. Typically, levels are recorded at 15-minute intervals and stored on-site for overnight transmission to allow the initial processing to be completed on the following day. Normally, 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 series of fixed depths.

Flow data from electromagnetic gauging stations may also be computed on-site. The technique requires the measurement of the 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 National 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.

Scope of the Flow Data Tabulations

River flow data are presented in two parts. In the first, daily mean gauged flows are tabulated for 54 gauging stations; daily naturalised flows are also tabulated for the River Lee (page 58) and River Thames (page 61). Monthly flow data for a further 176 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 12) is provided on page 34 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 are provided to assist in the interpretation of particular items. The notes relating to the daily flow tables are given overleaf; those relating to the monthly data are given on page 92.

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 River Flow Archive. The first digit is a regional identifier being 0 for mainland Britain, 1 for the islands around Britain and 2 for 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 provision of flow data to the River Flow Archive. A list of measuring authority codes together with the corresponding names and addresses for organisations currently contributing data to the River Flow Archive appears on pages 172 and 173.

Grid Reference

The initial two-letter and two-figure codes each designate the relevant 100 kilometre National Grid square or Irish Grid square; the standard six-figure map reference follows.
Note: Irish Grid references - which are italicised - have 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, or as a result of water transfers - for instance, the use of catchwaters to increase reservoir yields - the actual contributing area may differ appreciably from that defined by the topographical boundary. In consequence, the river flows whether augmented or diminished, may cause the runoff (as a depth in millimetres) 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 River Flow 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.

Table of daily mean gauged (or naturalised) discharges

The mean flow in cubic metres per second (abbreviated to m^3s^{-1} and sometimes also referred to as 'cumecs') in a water-day, normally 09.00 to 09.00. 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.

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 daily and monthly rainfall data available from 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 catchment boundary. Where, as for instance in some small mountainous catchments, raingauages are few and their siting and exposure are not ideal, great precision in the areal rainfall estimates cannot be expected.

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. Some slight variations from the statistics held by the measuring authorities may occur; these may be due to the different methods of computation or the need for uniformity in presentation.

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 average of all available daily mean flows during the term indicated.

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.

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 per cent exceedance flows (see opposite) as representative measures of low flow must, therefore, 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.

† For the IH research catchments, the monthly totals are subsequently updated using areal figures derived from a dense local raingauge network.
* As a consequence of leap years the runoff and mean flow percentage may not be identical.

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 River Flow Archive*. As a result of particular flow measurement difficulties in the flood range, this peak flow series is often incomplete. Reference to Volume IV of the Flood Studies Report[1] should be made to check for historical flood events which may exceed the peak falling within the gauged flow record.

10% exceedance: 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 per cent exceedance value is computed using daily flow data only for those years with ten days, or less, missing on the River Flow Archive.

50% exceedance: 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 per cent exceedance flow.

95% exceedance: 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 per cent exceedance flow.

Factors affecting runoff

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

* Additional data are held on the flood peak archive (page 137).
[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 per cent of the natural flow at, or in excess of, the 95 per cent exceedance flow.	Natural within 10 per cent at the 95 per cent exceedance 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 minewater 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.

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 175 for an explanatory listing of the abbreviations and acronyms used. The principal 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.

A comprehensive set of gauging station and catchment descriptions is provided in the 'Hydrometric Register and Statistics 1986–90' (see page 174). Further details of the net impact of abstractions and discharges on river flow patterns are given in: Gustard, A., Bullock, A. and Dixon, J.M. 1992. Estimating Low River Flows in the United Kingdom. Institute of Hydrology Report number 108.

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 page 35

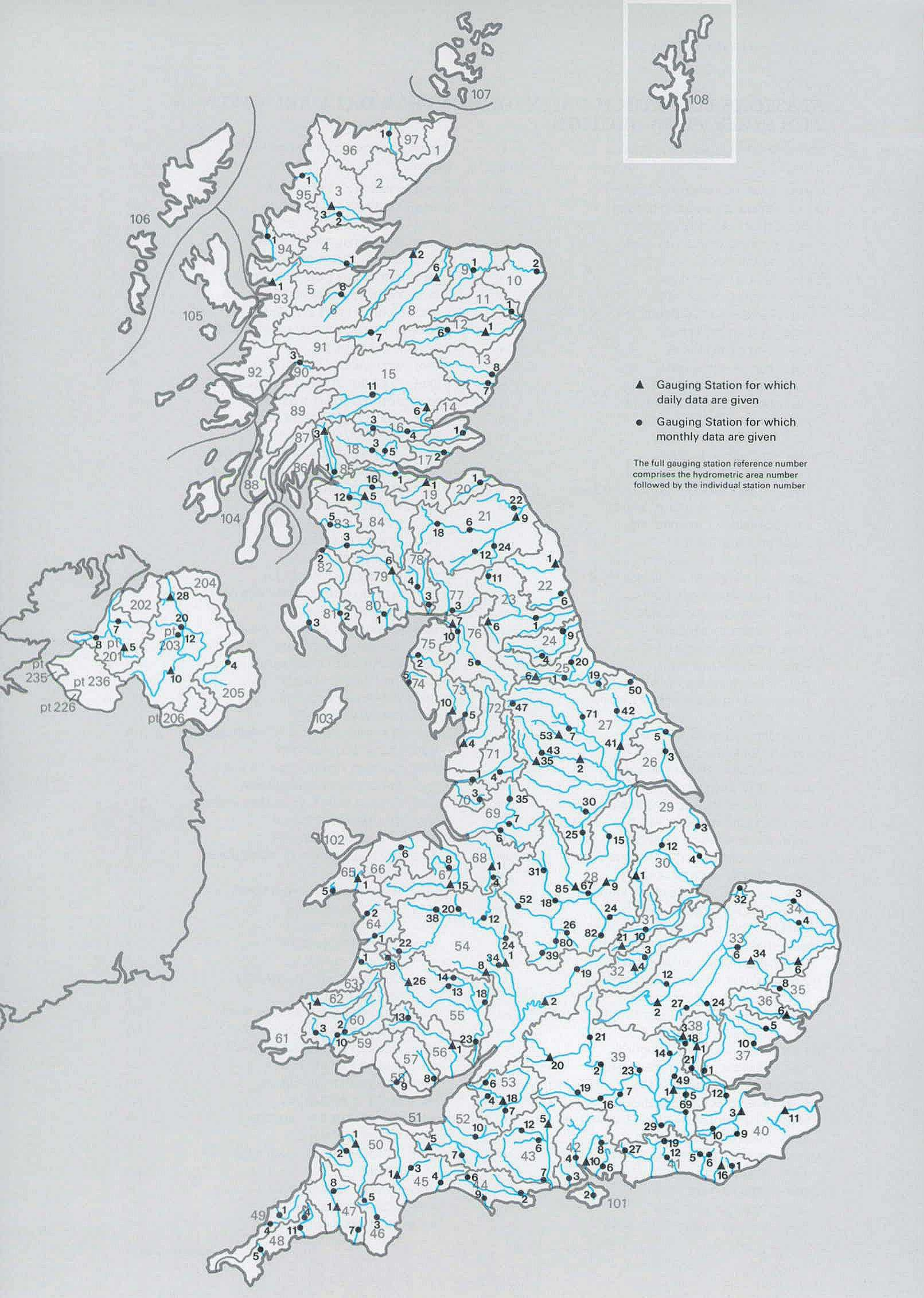


Figure 12. Gauging station location map.

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

003003 Oykel at Easter Turnaig *1991*

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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	86.400	2.858	6.709	39.550	1.210	1.179	9.120	1.838	1.201	106.800	5.005	5.547
2	55.520	4.310	4.696	24.260	1.224	1.403	4.378	1.574	1.131	22.540	14.210	4.111
3	14.980	3.232	3.643	23.930	2.632	1.292	3.046	1.915	1.070	21.700	22.570	4.731
4	83.510	1.769	5.275	9.509	2.992	1.322	2.340	2.233	1.016	22.910	32.770	3.641
5	29.910	1.562	8.230	15.760	1.964	1.164	1.842	1.957	1.042	23.810	14.200	3.104
6	41.380	1.606	5.721	10.090	1.767	1.025	1.500	1.463	0.990	19.450	129.500	2.261
7	13.890	1.473	4.529	29.980	1.786	0.966	1.316	1.257	0.952	11.410	76.050	2.579
8	6.547	1.528	6.333	18.490	1.516	1.010	2.700	1.233	0.963	11.930	58.120	2.534
9	5.270	1.436	7.480	8.593	1.709	2.413	13.660	7.931	0.955	6.994	24.500	2.223
10	6.832	1.720	7.409	17.870	1.483	4.563	5.223	4.937	1.419	5.093	75.340	1.952
11	5.353	1.725	5.796	13.840	1.995	3.940	3.139	24.700	1.384	4.089	49.700	1.859
12	4.014	1.688	6.494	7.535	3.157	15.550	3.641	12.840	1.185	3.427	45.030	3.711
13	4.783	1.726	5.730	5.423	3.864	10.450	57.890	5.683	1.121	3.002	20.770	6.935
14	6.598	1.766	6.027	3.653	22.460	18.110	30.840	3.945	1.541	2.759	34.680	20.120
15	8.250	2.924	8.116	2.924	35.790	6.993	14.920	5.100	1.879	7.637	20.540	7.922
16	8.022	3.080	8.002	2.447	25.110	6.916	18.890	11.780	11.600	139.100	10.270	4.809
17	6.664	2.495	56.580	2.288	11.380	20.890	13.480	14.480	20.150	112.800	5.767	29.820
18	16.360	2.888	32.150	10.540	6.704	21.640	42.090	7.637	15.460	29.460	38.960	51.600
19	47.810	48.790	43.080	8.901	5.767	8.171	37.550	7.525	36.200	16.560	11.930	29.730
20	60.110	15.560	31.610	10.330	23.690	4.492	13.750	4.237	12.650	32.960	40.640	9.700
21	16.500	8.470	19.050	18.560	12.660	3.208	6.021	2.833	27.940	20.580	175.800	16.790
22	11.490	11.410	34.290	9.153	5.370	2.885	4.073	6.060	46.640	9.680	23.890	88.950
23	11.850	41.880	15.810	6.043	3.382	2.736	4.950	25.140	52.590	6.193	12.830	35.840
24	7.636	15.810	8.635	4.957	3.827	1.990	5.114	10.950	76.590	4.857	8.287	21.060
25	5.039	8.293	5.703	3.507	3.303	18.160	3.239	4.974	26.090	3.896	6.175	20.890
26	4.584	6.531	4.238	2.692	3.679	76.820	2.434	3.261	13.950	3.303	6.003	15.820
27	4.058	5.292	3.307	2.168	3.877	21.060	10.900	2.416	7.348	2.851	5.080	10.350
28	2.977	5.916	2.742	1.836	2.652	7.066	9.768	1.959	4.812	2.497	10.570	9.701
29	4.119		3.089	1.565	1.997	4.114	4.210	1.640	3.938	2.326	6.224	8.987
30	5.603		9.114	1.339	1.581	16.890	2.762	1.474	5.687	2.269	6.194	6.337
31	3.906		41.520		1.344		2.131	1.332		4.246		39.650
Average	19.030	7.419	13.260	10.590	6.512	9.614	10.870	6.010	12.650	21.520	33.050	15.270
Lowest	2.977	1.436	2.742	1.339	1.210	0.966	1.316	1.233	0.952	2.269	5.005	1.859
Highest	86.400	48.790	56.580	39.550	35.790	76.820	57.890	25.140	76.590	139.100	175.800	88.950
Peak flow	215.20	97.22	158.50	74.67	71.26	155.50	144.60	73.10	110.80	352.30	404.00	208.20
Day of peak	1	19	17	7	15	26	18	23	24	16	21	22
Monthly total (million cu m)	50.97	17.95	35.52	27.45	17.44	24.92	29.11	16.10	32.79	57.64	85.67	40.89
Runoff (mm)	154	54	107	83	53	75	88	49	99	174	259	124
Rainfall (mm)	156	64	140	116	94	136	121	87	176	203	330	161

Statistics of monthly data for previous record (Nov 1977 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	25.340	18.530	23.280	9.383	6.059	6.401	7.868	11.010	20.730	24.120	25.130	23.680
	Low	13.550	2.376	6.649	5.445	1.067	0.752	2.854	2.332	7.292	7.329	10.050	8.246
	(year)	1985	1986	1980	1980	1980	1982	1978	1984	1989	1979	1989	1977
	High	43.980	39.930	48.340	17.710	14.380	14.140	15.690	22.590	31.870	41.100	49.380	38.210
	(year)	1983	1989	1990	1979	1982	1980	1979	1985	1981	1980	1981	1980
Runoff:	Avg.	205	137	189	74	49	50	64	89	162	195	197	192
	Low	110	17	54	43	9	6	23	19	57	59	79	67
	High	356	292	391	139	116	111	127	183	250	333	387	309
Rainfall:	Avg.	236	144	215	88	80	100	109	144	214	238	237	224
	Low	113	21	76	50	29	44	60	52	86	96	85	82
	High	408	423	436	151	167	176	169	249	326	401	458	361

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	13.840		16.800		82
Lowest yearly mean			12.970	1987	
Highest yearly mean			20.250	1981	
Lowest monthly mean	6.010	Aug	0.752	Jun 1982	
Highest monthly mean	33.050	Nov	49.380	Nov 1981	
Lowest daily mean	0.952	7 Sep	0.353	26 Jun 1982	
Highest daily mean	175.800	21 Nov	404.800	29 Jan 1982	
Peak	404.000	21 Nov	847.500	6 Oct 1978	
10% exceedance	35.840		40.330		89
50% exceedance	5.955		8.702		68
95% exceedance	1.227		1.081		114
Annual total (million cu m)	436.50		530.10		82
Annual runoff (mm)	1320		1603		82
Annual rainfall (mm)	1784		2029		88
[1941-70 rainfall average (mm)			1966]		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Station and catchment description

40m wide river section. Flows fully contained except in exceptional circumstances (e.g. October 1978). Construction of gabion groynes immediately downstream, in February 1986, has rendered the low flow rating less stable. 100% natural flow regime with little loch storage. Catchment is typical Highland mix of rough grazing and moorland with some afforestation in the middle reaches.

007002 Findhorn at Forres 1991

Measuring authority: HRPB | Grid reference: 38 (NJ) 018 583 | Catchment area (sq km): 781.9
First year: 1958 | Level stn. (m OD): 6.80 | Max alt. (m OD): 941

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	43.510	8.644	17.430	43.790	6.711	4.421	24.990	3.671	2.951	57.950	23.270	15.110
2	120.400	7.147	14.470	25.970	7.274	5.648	17.010	3.569	2.920	26.140	24.440	11.510
3	41.010	6.675	11.860	13.820	40.760	8.873	12.530	3.463	2.903	30.730	13.590	9.871
4	45.870	6.785	10.950	11.790	33.850	13.090	10.070	3.421	2.850	65.310	73.190	8.763
5	45.560	6.330	33.700	15.020	14.870	9.181	8.127	3.814	2.877	22.180	29.680	8.155
6	41.280	7.065	24.830	16.210	15.250	6.462	7.056	4.391	2.891	12.970	64.110	6.801
7	27.760	6.212	16.050	39.820	26.770	5.335	9.493	3.554	2.870	30.770	50.300	6.360
8	19.410	6.182	24.630	21.510	14.940	4.884	12.670	3.554	2.834	13.860	24.980	7.177
9	16.140	6.205	38.190	30.030	11.340	7.502	11.250	4.094	2.817	11.130	16.660	6.657
10	15.520	6.342	37.390	32.580	9.892	27.600	8.549	4.892	2.816	8.984	31.340	5.911
11	13.890	6.301	30.800	47.560	9.176	16.500	6.969	3.735	2.798	7.919	40.620	5.766
12	11.650	6.268	46.170	23.280	8.824	18.260	7.348	3.726	2.658	6.853	57.460	5.785
13	9.417	5.868	50.920	21.990	11.710	37.270	7.274	3.571	2.661	6.291	34.200	7.210
14	8.195	6.224	33.700	13.770	11.940	48.980	7.327	3.475	4.794	8.435	41.600	8.230
15	11.430	7.423	22.070	11.220	11.620	47.550	6.499	3.523	4.774	7.280	37.120	7.465
16	9.605	7.371	43.100	11.420	31.250	21.850	8.960	4.564	3.268	42.200	25.660	6.054
17	10.660	6.652	103.500	7.699	31.300	29.650	9.840	9.126	4.702	135.900	17.110	8.348
18	13.060	6.332	50.020	8.329	15.350	82.470	9.451	8.084	6.778	46.560	19.920	12.700
19	21.420	7.595	90.960	12.820	11.640	35.080	11.520	5.030	7.157	25.480	29.100	48.770
20	110.000	11.360	34.010	12.150	10.320	19.300	8.262	4.209	6.590	22.430	19.780	20.680
21	53.470	10.390	26.040	25.410	9.628	13.150	7.144	3.676	23.240	32.550	75.510	13.680
22	40.320	8.502	22.530	19.170	7.842	22.000	5.768	3.567	15.840	18.710	52.240	102.200
23	47.760	60.810	27.930	18.480	6.296	28.790	5.678	3.924	26.330	13.260	32.970	39.880
24	29.790	53.130	27.210	19.550	6.044	21.690	7.210	5.718	52.120	11.020	24.340	24.840
25	19.030	23.290	22.440	13.740	6.172	34.340	5.917	4.189	18.800	9.775	24.290	31.860
26	14.920	39.000	17.840	10.800	5.661	52.600	4.944	3.695	9.288	8.928	28.270	39.300
27	13.940	32.920	13.960	9.277	5.562	30.860	4.460	3.456	7.742	8.642	15.070	20.310
28	12.410	20.730	11.760	8.188	5.244	16.750	4.316	3.284	7.852	7.693	16.430	21.780
29	11.140		12.550	7.276	4.832	11.840	4.825	3.164	13.400	7.145	12.970	18.490
30	10.480		22.950	7.009	4.829	27.230	4.074	3.031	10.390	10.730	12.470	10.990
31	8.285		29.810		4.585		3.797	2.938		18.540		15.410
Average	28.950	13.850	31.280	18.660	12.950	23.640	8.494	4.133	8.664	23.750	32.290	17.940
Lowest	8.195	5.868	10.950	7.009	4.585	4.421	3.797	2.938	2.658	6.291	12.470	5.766
Highest	120.400	60.810	103.500	47.560	40.760	82.470	24.990	9.126	52.120	135.900	75.510	102.200
Peak flow	194.20	112.30	219.60	75.07	131.40	104.70	38.35	14.00	113.20	267.40	131.80	208.30
Day of peak	2	23	17	7	3	18	1	17	23	17	6	22
Monthly total (million cu m)	77.53	33.50	83.79	48.36	34.69	61.27	22.75	11.07	22.46	63.62	83.69	48.04
Runoff (mm)	99	43	107	62	44	78	29	14	29	81	107	61
Rainfall (mm)	112	57	72	72	58	142	55	40	77	140	143	94

Statistics of monthly data for previous record (Oct 1958 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	24.240	21.510	24.660	21.380	15.670	10.390	9.915	13.930	15.260	21.070	23.040	24.830
	Low	9.429	5.259	8.615	5.561	3.836	3.320	2.743	2.478	2.864	3.548	9.300	8.333
	(year)	1963	1963	1964	1974	1960	1961	1984	1976	1972	1972	1983	1976
	High	51.190	53.760	58.360	54.170	41.990	41.900	24.650	58.840	37.870	49.540	39.710	61.550
	(year)	1983	1990	1990	1979	1968	1966	1965	1970	1965	1981	1977	1966
Runoff:	Avg.	83	67	84	71	54	34	34	48	51	72	76	85
	Low	32	16	30	18	13	11	9	8	9	12	31	29
	High	175	166	200	180	144	139	84	202	126	170	132	211
Rainfall:	Avg.	105	72	91	63	72	78	84	105	100	111	114	106
	Low	34	19	29	13	22	22	26	18	18	26	30	37
	High	201	197	228	136	169	239	167	247	216	223	225	210

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	18.730		18.820		100
Lowest yearly mean			11.990	1972	
Highest yearly mean			25.650	1990	
Lowest monthly mean	4.133	Aug	2.478	Aug 1976	
Highest monthly mean	32.290	Nov	61.550	Dec 1966	
Lowest daily mean	2.658	12 Sep	1.752	23 Aug 1976	
Highest daily mean	135.900	17 Oct	612.000	17 Aug 1970	
Peak	267.400	17 Oct	2410.000	17 Aug 1970	
10% exceedance	41.450		41.460		100
50% exceedance	11.710		11.440		102
95% exceedance	3.414		3.300		103
Annual total (million cu m)	590.70		593.90		99
Annual runoff (mm)	755		760		99
Annual rainfall (mm)	1062		1101		96
[1941-70 rainfall average (mm)			1208]		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Station and catchment description

50m wide river section in a mobile gravel reach which necessitates frequent recalibration of low flow rating.Flows contained under cableway up to 3.8m. Adequately gauged to bankfull. 100% natural catchment with minimal surface storage. Other than a narrow agricultural coastal plain the catchment drains the Monadhliath Mountains with an extensive blanket peat cover.

008006 Spey at Boat o Brig 1991

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	99.670	38.490	77.090	82.930	33.390	28.680	93.260	23.130	16.310	58.860	118.900	53.410
2	261.100	35.920	62.540	100.700	33.190	32.660	82.640	22.470	15.980	90.260	129.700	49.100
3	180.600	33.770	53.240	76.540	52.090	37.450	67.460	21.700	15.860	76.270	95.770	43.740
4	154.100	32.620	51.330	62.890	86.580	49.520	55.230	21.260	15.530	86.090	203.800	40.250
5	160.700	30.750	101.100	65.050	56.710	39.690	47.740	20.990	15.410	93.630	118.700	37.670
6	150.600	30.610	96.500	67.720	50.400	32.480	43.260	21.290	15.340	61.830	122.500	34.600
7	116.600	29.320	71.890	79.990	71.160	29.370	40.910	20.970	15.210	74.590	135.100	32.700
8	90.190	28.890	76.540	88.920	53.960	28.060	45.570	20.700	15.130	66.170	90.410	32.560
9	73.600	28.630	105.400	77.600	45.260	30.570	42.700	21.840	14.950	54.510	68.320	31.390
10	65.620	28.340	120.400	80.500	41.930	63.080	40.320	21.940	14.940	44.990	73.830	29.850
11	58.980	27.730	102.000	115.000	39.990	60.060	38.290	21.130	14.690	39.380	134.300	28.180
12	53.530	27.300	103.600	138.800	40.860	60.660	38.630	20.140	14.500	35.370	122.200	28.770
13	45.950	26.150	127.200	129.100	45.700	91.030	39.400	19.490	14.570	32.840	140.000	29.760
14	41.260	25.690	109.500	86.330	48.040	113.000	39.860	19.420	14.840	35.590	134.000	30.080
15	38.560	28.900	91.380	65.720	62.990	114.100	39.970	19.390	16.610	32.430	124.300	30.160
16	40.780	29.650	102.700	57.060	107.300	81.360	48.000	19.810	16.960	38.490	87.720	28.860
17	42.740	28.470	177.600	49.830	96.900	73.570	41.360	27.300	17.360	145.000	65.430	30.320
18	43.460	27.310	176.300	50.000	64.820	144.100	44.640	32.690	18.890	148.600	118.600	51.010
19	63.910	34.690	196.500	55.630	54.830	115.600	47.070	25.780	20.270	94.380	107.100	100.400
20	175.500	42.640	176.000	53.400	50.990	77.750	54.790	23.060	19.920	73.610	71.740	82.620
21	163.000	42.330	137.400	72.230	51.690	61.940	50.300	21.180	20.580	85.240	129.300	57.700
22	121.200	38.340	117.700	67.970	46.890	65.030	40.500	20.430	40.430	64.850	125.100	180.400
23	108.500	122.000	114.800	58.240	40.540	69.600	41.940	20.420	42.960	50.060	99.610	159.700
24	94.780	145.600	98.690	56.260	37.810	65.620	43.400	21.100	93.360	43.330	84.960	111.800
25	73.930	95.150	82.440	52.350	36.830	75.220	38.820	20.110	91.440	39.160	77.000	86.010
26	61.390	97.550	69.980	46.720	35.390	150.700	34.020	19.140	63.140	36.270	84.170	98.470
27	54.980	131.500	59.180	41.950	34.450	113.700	32.000	18.460	47.520	34.850	69.940	72.190
28	49.500	99.200	52.970	38.730	33.240	71.400	29.580	18.080	48.090	32.750	58.210	60.390
29	46.020		50.300	36.410	31.380	56.690	26.820	17.770	42.890	31.530	52.790	53.600
30	44.080		53.330	34.740	30.710	72.100	25.060	17.150	38.270	45.820	51.230	46.690
31	38.930		63.470		29.630		23.760	16.700		130.000		46.210
Average	90.770	49.550	99.320	69.640	49.860	70.160	44.430	21.130	28.400	63.770	103.200	58.020
Lowest	38.560	25.690	50.300	34.740	29.630	28.060	23.760	16.700	14.500	31.530	51.230	28.180
Highest	261.100	145.600	196.500	138.800	107.300	150.700	93.260	32.690	93.360	148.600	203.800	180.400
Peak flow	297.50	188.30	260.20	164.90	127.60	186.30	117.30	39.82	107.50	233.80	237.90	251.70
Day of peak	2	23	17	12	16	26	1	18	24	17	4	22
Monthly total (million cu m)	243.10	119.90	266.00	180.50	133.50	181.90	119.00	56.60	73.61	170.80	267.40	155.40
Runoff (mm)	85	42	93	63	47	64	42	20	26	60	93	54
Rainfall (mm)	105	63	85	85	52	147	62	41	95	145	159	95

Statistics of monthly data for previous record (Oct 1952 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	84.420	74.740	79.050	69.500	58.480	42.070	39.710	48.540	49.480	68.310	74.960	85.250
	Low	41.080	26.470	35.760	33.580	26.910	17.900	17.910	11.310	14.090	13.350	30.130	31.230
	(year)	1979	1963	1964	1974	1960	1961	1984	1955	1972	1972	1958	1989
	High	145.900	200.500	186.200	135.200	103.400	103.000	79.860	119.600	105.500	153.900	147.000	198.600
	(year)	1983	1990	1990	1979	1968	1966	1980	1956	1965	1981	1984	1954
Runoff:	Avg.	79	64	74	63	55	38	37	45	45	64	68	80
	Low	38	22	33	30	25	16	17	11	13	12	27	29
	High	137	170	174	122	97	93	75	112	96	144	133	186
Rainfall:	Avg.	110	77	87	63	76	74	86	99	95	116	111	117
	Low	38	26	29	19	24	23	20	21	21	30	30	46
	High	185	212	179	128	146	181	158	188	178	205	213	211

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	62.390		64.530		97
Lowest yearly mean			44.200	1972	
Highest yearly mean			82.810	1954	
Lowest monthly mean	21.130	Aug	11.310	Aug 1955	
Highest monthly mean	103.200	Nov	200.500	Feb 1990	
Lowest daily mean	14.500	12 Sep	9.311	16 Aug 1955	
Highest daily mean	261.100	2 Jan	1088.000	17 Aug 1970	
Peak	297.500	2 Jan	1675.000	17 Aug 1970	
10% exceedance	121.200		120.700		100
50% exceedance	50.230		49.940		101
95% exceedance	17.290		19.300		90
Annual total (million cu m)	1968.00		2036.00		97
Annual runoff (mm)	688		712		97
Annual rainfall (mm)	1134		1111		102
[1941-70 rainfall average (mm)			1184]		

Factors affecting runoff

- Regulation for HEP.

Station and catchment description

Lowest station currently operating on the Spey. Cableway rated 65m wide section with natural control, (limited stability) extreme floods bypass station on left bank. 380 sq. km. developed for hydro-power with diversions and storage; limited net impact on annual runoff (small loss). 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 1991

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	104.600	19.670	51.960	75.450	21.460	14.760	45.530	14.060	7.198	30.610	121.000	33.470
2	198.700	18.060	43.140	77.600	21.660	18.080	34.720	13.320	7.039	39.560	98.660	29.750
3	75.570	17.270	41.290	43.400	27.040	18.400	27.710	12.480	6.926	41.470	64.690	27.110
4	74.550	16.040	68.020	55.740	44.200	20.040	24.560	12.300	6.744	48.130	103.300	24.970
5	77.320	15.750	173.700	62.190	29.050	17.080	21.710	12.250	6.647	38.890	61.680	23.430
6	61.210	15.340	91.450	53.920	29.940	14.330	19.940	12.160	6.657	24.970	72.360	21.650
7	46.310	14.530	77.730	81.320	38.870	15.330	18.650	11.930	6.456	90.540	73.260	20.070
8	38.130	15.130	102.700	53.640	27.640	19.250	19.870	11.190	6.294	52.520	47.070	19.430
9	33.610	15.100	143.700	44.170	25.100	47.090	20.290	12.700	6.363	35.890	37.000	18.450
10	31.670	15.780	116.500	62.870	24.040	63.480	18.440	12.160	6.341	28.310	54.740	16.560
11	28.780	15.970	85.170	112.700	23.800	39.630	17.400	10.440	6.316	24.420	66.120	15.650
12	25.050	15.510	99.110	123.000	25.290	40.990	21.020	9.839	6.148	21.230	102.000	16.870
13	21.800	13.830	136.300	82.470	30.520	50.370	24.090	9.560	6.145	19.080	68.210	17.900
14	21.270	13.790	94.220	53.720	28.690	50.710	20.660	9.447	6.399	18.910	59.950	17.380
15	20.560	15.430	73.930	44.650	34.800	44.500	19.020	9.309	7.558	16.890	53.970	17.000
16	20.560	14.200	115.100	40.380	48.300	35.040	21.750	9.876	6.975	24.410	38.110	15.470
17	23.200	13.510	151.500	34.180	43.840	31.420	18.500	18.340	7.225	50.590	32.150	15.980
18	26.940	13.050	107.200	34.100	34.580	42.930	19.100	15.240	6.729	58.230	132.100	21.140
19	33.920	19.100	162.600	34.250	30.920	42.070	30.180	12.180	6.953	35.890	86.510	44.000
20	132.500	27.510	92.830	32.880	32.060	32.720	53.420	10.940	6.772	31.620	51.070	26.610
21	70.760	27.020	69.200	43.340	35.430	27.710	33.900	9.970	10.360	44.070	109.800	21.690
22	41.780	22.900	56.810	37.380	28.500	37.590	24.050	9.788	20.600	33.930	98.540	102.900
23	47.030	117.600	52.130	33.360	22.840	43.430	31.240	9.628	18.000	26.930	75.180	52.680
24	43.040	108.800	48.550	38.120	21.790	34.160	33.890	9.471	45.100	24.440	63.600	32.000
25	33.770	55.170	42.060	35.520	22.060	38.650	24.850	9.165	24.300	21.970	68.280	28.650
26	28.660	130.700	38.290	30.720	20.550	49.200	20.400	8.765	18.430	21.210	64.430	44.250
27	26.110	110.100	33.090	27.510	20.450	49.680	18.290	8.479	15.060	22.120	47.780	29.180
28	23.690	76.730	30.680	25.280	19.250	32.940	17.410	8.212	36.020	19.560	41.630	27.020
29	22.090		30.260	23.730	17.350	27.230	16.400	8.008	19.490	23.540	37.780	24.530
30	21.190		34.920	22.710	16.690	32.440	15.310	7.673	15.730	92.020	36.350	21.310
31	17.640		47.610		15.870		14.590	7.416		266.800		22.990
Average	47.480	34.770	81.020	50.680	27.830	34.370	24.090	10.850	11.900	42.860	68.910	27.420
Lowest	17.640	13.050	30.260	22.710	15.870	14.330	14.590	7.416	6.145	16.890	32.150	15.470
Highest	198.700	130.700	173.700	123.000	48.300	63.480	53.420	18.340	45.100	266.800	132.100	102.900
Peak flow	305.40	245.30	218.90	172.70	67.79	107.70	71.01	26.15	79.04	549.70	234.80	188.60
Day of peak	2	26	5	12	3	9	20	17	24	31	18	22
Monthly total (million cu m)	127.20	84.12	217.00	131.40	74.53	89.10	64.53	29.06	30.84	114.80	178.60	73.45
Runoff (mm)	93	61	158	96	54	65	47	21	23	84	130	54
Rainfall (mm)	101	93	102	99	40	132	66	35	68	174	154	61

Statistics of monthly data for previous record (Oct 1929 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	47.370	41.040	43.370	44.790	35.910	22.290	18.470	22.290	25.790	39.500	46.200	48.530
	Low	15.450	13.420	15.160	11.380	12.130	7.340	6.851	5.141	6.491	6.798	12.230	22.020
	(year)	1940	1947	1973	1938	1946	1940	1989	1984	1972	1972	1983	1976
	High	127.800	104.200	88.680	113.300	85.950	56.080	36.710	63.850	71.830	138.200	127.500	108.400
	(year)	1937	1990	1977	1947	1986	1948	1958	1948	1930	1982	1984	1954
Runoff:	Avg.	93	73	85	85	70	42	36	44	49	77	87	95
	Low	30	24	30	22	24	14	13	10	12	13	23	43
	High	250	184	173	214	168	106	72	125	136	270	241	212
Rainfall:	Avg.	120	79	78	69	80	67	88	94	93	119	113	118
	Low	36	10	16	12	21	16	22	13	13	8	22	43
	High	374	216	175	196	179	160	206	185	227	310	320	282

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	38.510		36.280		106
Lowest yearly mean			24.190	1973	
Highest yearly mean			49.050	1982	
Lowest monthly mean	10.850	Aug	5.141	Aug 1984	
Highest monthly mean	81.020	Mar	138.200	Oct 1982	
Lowest daily mean	6.145	13 Sep	3.536	27 Aug 1976	
Highest daily mean	266.800	31 Oct	648.500	24 Jan 1937	
Peak	549.700	31 Oct	1133.000	24 Jan 1937	
10% exceedance	81.390		72.500		112
50% exceedance	27.710		25.680		108
95% exceedance	7.277		8.357		87
Annual total (million cu m)	1214.00		1145.00		106
Annual runoff (mm)	886		836		106
Annual rainfall (mm)	1125		1118		101
[1941-70 rainfall average (mm)			1194]		

Factors affecting runoff

- 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 1991

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	483.800	113.500	263.300	194.800	85.800	50.220	79.800	65.410	42.380	200.800	405.700	234.300
2	877.700	103.400	227.200	227.700	90.300	52.640	97.680	63.700	41.960	202.100	379.900	201.200
3	556.300	95.040	226.000	226.600	73.760	51.300	92.430	61.560	40.760	280.800	298.300	179.700
4	622.100	96.800	323.900	283.600	87.700	49.920	92.610	59.510	39.400	425.300	260.700	172.700
5	673.000	88.760	515.500	307.700	77.420	50.170	86.940	62.990	40.700	343.600	247.300	150.900
6	581.300	78.810	363.000	327.700	79.460	49.480	78.880	64.570	38.720	291.900	232.900	147.300
7	458.600	76.580	317.700	439.200	86.570	50.530	73.860	63.140	36.720	423.800	263.700	138.500
8	360.200	73.430	343.700	429.500	75.800	52.950	75.440	58.230	36.800	338.600	241.600	116.100
9	323.400	70.990	411.300	362.100	76.170	117.500	86.590	64.690	37.620	271.500	232.600	112.500
10	292.400	62.020	341.100	453.700	74.050	123.300	71.840	67.870	37.340	217.800	349.900	109.300
11	283.200	62.210	263.800	619.000	73.760	79.230	71.720	57.880	38.250	196.000	362.300	108.900
12	252.800	59.370	252.500	612.100	62.050	112.300	96.260	54.120	37.450	193.800	544.700	105.400
13	186.700	57.250	293.000	495.000	62.910	140.100	122.600	53.320	36.080	172.700	524.600	103.400
14	173.000	57.770	272.300	366.300	63.020	124.900	104.000	53.220	38.630	166.700	395.600	88.800
15	163.900	60.130	265.800	311.000	60.330	102.000	95.790	53.210	42.490	151.700	333.300	94.800
16	155.800	58.480	369.500	259.100	61.110	96.880	93.180	53.580	40.350	214.900	290.700	97.850
17	152.200	56.630	532.700	233.000	59.250	79.240	90.060	70.170	45.740	266.400	258.900	110.100
18	181.100	55.900	465.600	208.300	58.370	79.830	88.180	64.280	49.740	238.000	321.500	135.600
19	246.600	61.530	713.200	198.600	57.890	85.920	103.000	58.710	55.170	197.100	299.100	312.200
20	587.900	81.440	512.000	189.300	57.380	72.640	168.100	61.090	65.910	153.500	235.000	214.300
21	442.900	89.990	403.500	181.000	57.450	71.110	121.900	58.730	104.200	146.900	288.200	235.500
22	341.200	91.670	320.100	164.900	55.150	108.400	88.210	57.050	150.400	131.700	261.700	577.000
23	331.800	287.400	276.400	146.600	56.760	117.200	142.300	55.960	194.200	121.400	268.600	460.000
24	289.300	348.100	220.000	146.100	55.560	88.800	138.200	52.220	346.100	116.200	253.900	336.200
25	261.500	249.600	209.000	136.200	54.090	105.600	98.980	50.310	246.700	101.200	325.000	281.900
26	228.600	346.800	192.000	133.300	52.310	108.300	104.700	46.880	205.500	90.260	320.200	295.700
27	217.700	379.000	185.500	118.600	52.040	105.100	95.850	45.230	190.400	84.820	258.300	256.800
28	210.300	366.600	171.300	109.900	51.410	92.040	87.860	43.240	230.900	82.350	281.900	227.600
29	158.700		162.500	105.000	51.000	80.430	84.850	46.800	154.700	78.330	256.300	204.300
30	147.500		135.800	96.900	50.620	73.170	85.190	43.060	150.300	223.900	261.200	207.000
31	121.000		124.300		50.220		66.340	42.550		426.800		205.700
Average	334.300	129.600	312.000	269.400	64.830	85.710	96.240	56.560	93.850	211.300	308.500	200.700
Lowest	121.000	55.900	124.300	96.900	50.220	49.480	66.340	42.550	36.080	78.330	232.600	88.800
Highest	877.700	379.000	713.200	619.000	90.300	140.100	168.100	70.170	346.100	426.800	544.700	577.000
Peak flow	1043.00	547.80	814.30	727.70	96.12	187.70	184.90	77.77	387.10	687.50	823.90	857.10
Day of peak	2	26	19	11	2	9	20	17	24	31	12	22
Monthly total (million cu m)	895.30	313.60	835.80	698.30	173.60	222.20	257.80	151.50	243.30	566.00	799.50	537.50
Runoff (mm)	195	68	182	152	38	48	56	33	53	123	174	117
Rainfall (mm)	193	94	134	144	24	130	95	47	146	190	200	133

Statistics of monthly data for previous record (Oct 1952 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	244.100	217.900	216.400	147.300	119.200	79.620	68.140	88.270	124.000	191.300	211.000	240.700
	Low	92.900	52.560	69.380	75.210	45.500	42.080	31.390	14.700	40.660	39.690	89.160	110.500
	(year)	1963	1963	1953	1974	1980	1957	1984	1955	1955	1972	1972	1989
	High	515.800	661.000	551.600	231.200	321.100	190.400	129.600	286.100	283.900	390.500	407.700	491.400
	(year)	1974	1990	1990	1960	1986	1966	1988	1985	1985	1982	1984	1954
Runoff:	Avg.	143	116	126	83	70	45	40	52	70	112	119	141
	Low	54	28	41	43	27	24	18	9	23	23	50	65
	High	301	349	322	131	188	108	76	167	160	228	230	287
Rainfall:	Avg.	160	110	125	71	95	83	93	109	131	153	142	168
	Low	33	29	39	10	26	23	21	14	11	63	38	64
	High	393	353	251	150	214	181	219	250	266	269	311	304

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	180.600		162.100		111
Lowest yearly mean			107.300	1955	
Highest yearly mean			215.100	1990	
Lowest monthly mean	56.560	Aug	14.700	Aug 1955	
Highest monthly mean	334.300	Jan	661.000	Feb 1990	
Lowest daily mean	36.080	13 Sep	11.460	6 Aug 1955	
Highest daily mean	877.700	2 Jan	1647.000	5 Feb 1990	
Peak	1043.000	2 Jan	1745.000	5 Feb 1990	
10% exceedance	364.300		317.100		115
50% exceedance	125.300		129.100		97
95% exceedance	44.050		43.320		102
Annual total (million cu m)	5695.00		5116.00		111
Annual runoff (mm)	1242		1115		111
Annual rainfall (mm)	1530		1440		106
[1941-70 rainfall average (mm)			1443]		

Factors affecting runoff

- 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 granite, but lower 20% (Isla valley) is Old Red Sandstone.

019001 Almond at Craigiehall 1991

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	63.470	2.530	8.175	5.528	1.613	1.324	4.514	1.858	0.938	2.932	18.920	3.004
2	49.600	2.316	6.982	16.200	1.541	3.927	2.984	1.541	1.019	2.799	11.730	2.771
3	19.640	2.270	6.241	7.765	1.605	1.997	1.926	1.432	1.015	4.233	12.910	2.460
4	53.400	2.103	5.852	6.026	1.581	1.581	1.677	1.408	1.000	5.905	6.869	2.284
5	47.440	2.081	6.333	4.797	1.477	1.408	1.478	1.511	0.960	6.738	4.509	2.131
6	22.590	1.983	5.570	4.235	1.904	1.336	1.316	1.760	0.922	3.715	3.993	2.057
7	14.080	2.101	5.878	5.491	2.001	1.281	1.354	1.571	0.912	6.884	16.090	1.970
8	11.200	2.331	11.120	6.035	1.604	1.199	3.741	1.628	1.033	7.241	10.630	1.899
9	8.893	2.215	10.190	5.160	1.341	1.451	3.797	3.651	0.958	4.613	5.401	1.870
10	14.810	2.121	7.779	7.445	1.416	1.542	2.586	2.003	0.919	4.219	18.590	1.744
11	25.400	2.032	6.381	5.491	1.327	1.594	2.070	1.488	0.892	3.497	20.820	1.650
12	15.110	2.041	5.848	45.860	1.349	2.192	2.930	1.338	0.852	3.011	24.630	1.785
13	8.915	1.856	9.558	18.800	1.946	2.370	3.291	1.217	0.860	3.007	28.430	1.859
14	6.583	3.040	8.147	9.631	1.539	1.867	2.787	1.215	1.125	2.482	13.880	1.819
15	5.251	12.360	8.017	6.701	1.399	1.668	6.481	1.133	1.078	2.513	10.350	2.118
16	4.456	7.955	8.936	5.454	1.441	1.634	9.272	1.105	1.861	12.970	6.466	2.395
17	4.246	5.273	11.730	4.679	1.417	3.665	4.125	1.535	1.425	9.211	4.989	7.875
18	13.240	4.732	37.850	4.287	1.319	5.476	3.413	1.190	1.110	5.064	5.490	18.820
19	10.740	7.891	37.110	3.035	1.299	5.135	3.817	1.244	1.085	3.210	10.950	36.310
20	11.760	14.420	18.190	2.490	1.321	2.885	4.622	1.138	1.068	2.521	6.824	12.170
21	7.858	14.040	18.460	2.368	1.307	2.193	3.203	1.109	4.318	2.186	7.654	36.280
22	5.863	52.090	11.360	2.161	1.295	2.437	2.655	0.981	6.524	1.876	7.545	81.610
23	5.101	53.640	8.429	1.421	1.279	4.305	3.440	0.983	7.954	1.714	5.699	36.260
24	4.436	29.800	6.514	1.433	1.301	3.312	2.866	0.882	22.650	1.553	4.635	13.340
25	3.960	12.770	5.483	1.296	1.210	2.590	2.198	0.832	8.315	1.587	4.081	9.787
26	3.503	10.220	4.781	1.193	1.224	2.128	1.825	0.877	4.041	1.611	3.367	9.968
27	3.307	8.809	4.334	1.100	1.282	1.830	1.574	0.905	2.806	1.545	3.253	6.940
28	3.166	8.575	3.924	1.047	1.148	1.709	1.479	0.925	3.694	1.433	3.875	5.892
29	2.970		3.638	1.585	1.233	1.540	1.474	0.919	2.818	1.418	4.341	4.999
30	3.048		3.399	1.683	1.304	1.581	1.456	0.870	2.322	2.451	3.668	4.410
31	2.808		3.264		1.291		1.530	0.818		10.060		5.535
Average	14.740	9.771	9.660	6.347	1.429	2.305	2.964	1.325	2.882	4.006	9.686	10.450
Lowest	2.808	1.856	3.264	1.047	1.148	1.199	1.316	0.818	0.852	1.418	3.253	1.650
Highest	63.470	53.640	37.850	45.860	2.001	5.476	9.272	3.651	22.650	12.970	28.430	81.610
Peak flow	113.70	108.20	87.93	87.79	3.38	8.56	12.43	4.83	31.30	19.82	40.89	108.80
Day of peak	1	22	18	12	6	18	16	9	24	31	13	22
Monthly total (million cu m)	39.47	23.64	25.87	16.45	3.83	5.97	7.94	3.55	7.47	10.73	25.11	27.99
Runoff (mm)	107	64	70	45	10	16	22	10	20	29	68	76
Rainfall (mm)	106	79	75	65	17	84	87	32	90	79	87	100

Statistics of monthly data for previous record (Jan 1957 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	9.615	7.899	6.664	4.282	3.095	2.420	2.366	3.174	4.488	6.475	8.924	9.284
	Low	3.574	1.782	1.918	1.410	1.091	0.817	0.950	0.869	0.668	0.668	1.862	3.016
	(year)	1963	1963	1973	1974	1961	1961	1960	1983	1959	1972	1972	1975
	High	18.970	22.010	14.300	9.840	11.170	8.572	9.223	8.568	20.360	15.120	21.660	19.860
	(year)	1990	1990	1979	1986	1968	1966	1958	1985	1985	1981	1963	1986
Runoff:	Avg.	70	52	48	30	22	17	17	23	32	47	63	67
	Low	26	12	14	10	8	6	7	6	5	5	13	22
	High	138	144	104	69	81	60	67	62	143	110	152	144
Rainfall:	Avg.	83	59	69	51	60	61	72	85	87	91	88	87
	Low	28	17	22	8	16	15	17	19	14	23	19	21
	High	178	167	127	89	123	136	173	142	195	177	190	179

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	6.279		5.715		110
Lowest yearly mean			2.890	1973	
Highest yearly mean			8.199	1986	
Lowest monthly mean	1.325	Aug	0.668	Oct 1972	
Highest monthly mean	14.740	Jan	22.010	Feb 1990	
Lowest daily mean	0.818	31 Aug	0.241	9 Oct 1959	
Highest daily mean	81.610	22 Dec	147.200	6 Oct 1990	
Peak	113.700	1 Jan	220.000	6 Oct 1990	
10% exceedance	13.270		13.060		102
50% exceedance	2.971		2.877		103
95% exceedance	0.987		0.887		111
Annual total (million cu m)	198.00		180.30		110
Annual runoff (mm)	537		489		110
Annual rainfall (mm)	901		893		101
[1941-70 rainfall average (mm)			909]		

Factors affecting runoff

- 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. Weed growth in summer - some adjustment to stage is required. Low flows substantially affected by sewage effluent especially from Mid Calder. Abstraction at Almondell to feed a canal. A number of storage reservoirs are situated in the catchment. Geology - predominantly Carboniferous rocks. Land use - mainly rural. Livingston new town and several small mining towns in catchment.

021009 Tweed at Norham — 1991

Measuring authority: TWRP	Grid reference: 36 (NT) 898 477	Catchment area (sq km): 4390.0
First year: 1962	Level stn. (m OD): 4.30	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	354.000	51.870	165.100	55.710	27.320	15.870	25.530	21.100	13.090	15.600	292.600	67.440
2	560.000	48.230	131.500	103.900	25.900	17.080	32.640	21.640	13.020	24.840	253.800	61.890
3	257.400	45.710	121.200	86.070	25.660	23.830	28.820	19.310	12.330	37.680	231.300	56.110
4	276.700	43.050	168.500	102.600	28.630	20.020	25.220	18.820	12.240	36.790	210.700	51.640
5	492.000	40.650	313.000	124.100	29.130	17.850	23.050	18.610	12.640	30.710	160.100	48.500
6	474.200	39.260	178.300	97.710	27.230	16.640	20.750	21.190	13.950	32.910	114.300	45.380
7	264.600	38.840	149.500	156.200	26.900	16.220	19.800	28.090	12.100	64.880	124.100	42.350
8	192.700	38.540	163.100	107.800	25.860	15.750	21.360	20.390	11.870	98.250	150.200	39.850
9	161.400	38.410	153.900	84.750	25.420	15.610	23.730	19.790	11.470	64.660	103.100	37.190
10	159.800	38.010	137.800	99.130	23.860	20.310	28.610	26.130	11.630	47.310	150.700	36.000
11	216.200	35.050	114.600	90.490	21.900	21.950	23.170	19.290	11.360	40.930	260.300	36.000
12	196.400	34.540	99.360	138.300	21.140	21.600	21.540	17.380	11.250	35.270	236.000	36.000
13	131.300	32.880	91.790	145.800	21.780	27.450	26.860	16.440	13.690	30.690	216.400	34.180
14	105.100	32.470	92.960	100.800	22.920	29.580	26.130	16.000	11.650	28.520	148.100	32.190
15	93.120	74.070	85.500	81.800	21.890	28.210	23.370	16.440	11.640	28.570	132.000	30.620
16	82.720	94.190	106.000	70.160	23.140	33.320	25.110	17.400	12.400	44.730	105.600	30.780
17	80.980	69.340	156.900	62.100	23.530	31.430	29.720	15.880	12.180	58.130	90.630	31.500
18	158.100	59.160	128.700	57.180	21.660	30.250	25.700	17.210	12.460	47.770	104.600	85.370
19	221.500	70.720	387.200	53.180	20.480	32.660	26.440	16.700	11.660	36.100	167.600	164.300
20	243.500	230.900	248.500	48.900	19.510	31.600	29.460	15.950	12.990	29.940	114.500	112.600
21	175.400	233.400	393.900	47.120	18.880	25.840	33.750	15.790	11.640	27.130	113.900	194.900
22	123.400	305.000	219.700	47.500	18.320	24.380	28.280	15.520	23.680	24.960	121.600	414.400
23	107.300	663.500	160.600	42.230	19.060	24.690	25.800	15.410	21.930	22.920	96.430	597.700
24	99.850	581.600	129.000	39.540	19.670	23.440	28.300	15.740	33.510	21.480	84.170	280.300
25	89.660	272.100	107.300	37.570	18.140	22.590	27.900	16.820	31.040	20.370	78.300	181.800
26	78.230	191.600	92.930	34.680	17.740	25.210	25.860	14.720	22.100	19.890	102.400	152.300
27	70.150	167.200	82.050	32.520	17.520	23.560	23.490	14.680	19.170	19.780	93.930	119.700
28	64.730	211.000	72.760	30.820	17.320	21.560	22.110	14.170	18.570	18.730	92.950	102.000
29	60.260		65.780	29.310	16.690	20.400	21.390	14.160	18.940	17.730	84.140	87.810
30	56.480		60.280	28.700	17.090	21.190	20.710	16.090	17.000	42.140	77.120	77.620
31	54.630		56.230		18.310		20.250	13.890		148.700		74.270
Average	183.900	135.000	149.500	74.560	22.020	23.340	25.320	17.770	15.440	39.290	143.700	108.500
Lowest	54.630	32.470	56.230	28.700	16.690	15.610	19.800	13.890	11.250	15.600	77.120	30.620
Highest	560.000	663.500	393.900	156.200	29.130	33.320	33.750	28.090	33.510	148.700	292.600	597.700
Peak flow	888.60	775.40	507.90	184.20	30.00	37.19	35.90	31.36	51.15	369.10	476.40	826.20
Day of peak	2	24	21	12	4	19	21	10	24	31	11	23
Monthly total (million cu m)	492.60	326.70	400.40	193.20	58.98	60.49	67.81	47.58	40.02	105.20	372.50	290.50
Runoff (mm)	112	74	91	44	13	14	15	11	9	24	85	66
Rainfall (mm)	109	100	95	66	20	86	64	35	60	105	121	94

Statistics of monthly data for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	125.300	107.100	103.500	68.410	54.530	36.410	33.010	44.130	53.650	80.320	106.700	115.700
	Low	50.320	37.180	26.290	25.190	17.950	15.550	11.650	9.881	10.990	10.170	24.710	40.690
	(year)	1973	1963	1973	1974	1980	1974	1984	1976	1972	1972	1973	1975
	High	249.700	274.200	236.400	142.200	153.300	66.200	85.330	146.300	179.900	176.300	271.700	197.900
	(year)	1982	1990	1963	1979	1967	1981	1985	1985	1985	1967	1963	1979
Runoff:	Avg.	76	60	63	40	33	21	20	27	32	49	63	71
	Low	31	20	16	15	11	9	7	6	6	6	15	25
	High	152	151	144	84	94	39	52	89	106	108	160	121
Rainfall:	Avg.	97	68	83	59	74	68	75	91	91	94	96	94
	Low	45	15	21	12	22	20	23	21	19	25	16	23
	High	165	176	138	98	181	129	186	188	164	163	224	175

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	77.880		77.300		101
Lowest yearly mean			33.920	1973	
Highest yearly mean			102.400	1963	
Lowest monthly mean	15.440	Sep	9.881	Aug 1976	
Highest monthly mean	183.900	Jan	274.200	Feb 1990	
Lowest daily mean	11.250	12 Sep	7.427	28 Aug 1976	
Highest daily mean	663.500	23 Feb	1138.000	4 Jan 1982	
Peak	888.600	2 Jan	1518.000	4 Jan 1982	
10% exceedance	184.700		165.500		112
50% exceedance	34.660		51.780		67
95% exceedance	13.390		14.360		93
Annual total (million cu m)	2456.00		2439.00		101
Annual runoff (mm)	559		556		101
Annual rainfall (mm)	955		990		96
[1941-70 rainfall average (mm)			1009]		

Factors affecting runoff

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

Comment

The naturalised runoff total for 1991 is 575 mm

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* 1991

Measuring authority: NRA-N
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	49.730	5.541	19.580	5.183	2.399	1.660	2.024	1.388	1.051	1.155	14.350	4.127
2	60.870	6.319	14.500	5.287	2.301	1.918	1.975	1.319	1.089	1.125	14.490	4.048
3	22.650	6.034	13.030	4.919	2.375	2.527	1.862	1.237	1.084	1.068	12.140	3.732
4	19.160	5.342	36.180	5.329	2.933	2.354	1.770	1.137	1.068	1.169	24.550	3.427
5	32.830	4.798	43.020	6.747	3.722	2.023	1.661	1.085	1.075	1.205	13.950	3.262
6	34.030	4.624	19.850	5.584	3.213	1.791	1.534	1.157	1.058	1.582	7.985	3.097
7	17.370	4.481	17.880	6.956	3.000	1.672	1.445	1.551	1.004	1.565	7.788	2.920
8	17.460	4.453	20.950	6.215	2.901	1.585	1.515	1.686	0.988	4.882	8.777	2.722
9	20.550	4.486	16.430	4.905	2.563	1.736	1.644	1.699	1.053	3.490	5.975	2.458
10	24.520	4.617	14.960	4.396	2.376	2.291	1.563	1.510	1.052	2.366	5.332	2.285
11	29.780	4.463	11.240	4.104	2.242	2.372	1.442	1.418	1.029	2.181	12.460	1.828
12	19.890	4.580	9.680	3.805	2.161	2.192	1.367	1.276	0.999	1.947	6.906	2.824
13	11.730	4.615	9.214	3.637	2.161	2.733	1.291	1.196	1.025	1.770	7.657	3.066
14	9.088	4.628	11.410	3.447	2.162	2.246	1.248	1.139	1.047	1.689	6.612	2.639
15	7.911	18.310	9.322	3.237	2.116	2.172	1.266	1.095	1.248	1.950	7.147	2.443
16	6.971	18.330	10.060	3.109	3.105	2.083	1.470	1.062	1.348	1.741	5.535	2.391
17	6.660	13.500	22.290	3.020	2.624	2.400	1.639	1.083	1.274	1.611	4.651	2.393
18	10.790	11.260	15.860	3.128	2.564	2.649	1.618	1.108	1.190	1.547	15.750	3.212
19	19.780	18.630	20.740	3.580	2.329	2.463	1.498	1.105	1.117	1.442	30.680	5.747
20	31.790	43.670	22.550	4.046	2.172	2.290	3.523	1.088	1.047	1.363	12.120	6.355
21	15.080	46.680	44.490	4.194	1.997	2.098	3.208	1.057	1.047	1.358	13.030	16.820
22	10.060	53.180	19.430	4.549	1.838	1.981	2.270	1.035	1.105	1.326	11.670	46.230
23	9.008	111.400	13.200	3.584	1.241	2.038	1.977	1.062	1.289	1.297	8.284	64.160
24	9.666	58.570	10.460	3.234	1.623	1.909	1.916	1.049	1.231	1.285	6.829	21.470
25	8.321	24.530	8.826	3.062	1.826	1.798	1.861	1.055	1.231	1.326	6.123	12.420
26	7.058	16.920	7.817	2.852	1.814	2.320	1.870	1.043	1.165	1.343	5.565	9.839
27	6.440	19.330	7.067	2.699	1.724	2.380	1.749	1.012	1.175	1.387	6.354	7.919
28	6.003	40.610	6.400	2.570	1.707	2.042	1.522	1.020	1.144	1.436	5.552	6.936
29	5.625		5.901	2.513	1.714	1.842	1.353	0.994	1.187	1.413	4.934	6.063
30	5.234		5.514	2.479	1.678	1.835	1.272	0.946	1.224	3.667	4.509	5.463
31	5.433		5.252		1.653		1.248	0.903		5.906		5.193
Average	17.470	20.140	15.910	4.079	2.266	2.113	1.729	1.178	1.121	1.890	9.923	8.629
Lowest	5.234	4.453	5.252	2.479	1.241	1.585	1.248	0.903	0.988	1.068	4.509	1.828
Highest	60.870	111.400	44.490	6.956	3.722	2.733	3.523	1.699	1.348	5.906	30.680	64.160
Peak flow	128.90	140.30	96.72	8.35	6.35	2.93	4.39	1.75	1.53	20.45	67.67	105.50
Day of peak	2	23	5	7	16	13	20	9	23	31	19	23
Monthly total (million cu m)	46.78	48.72	42.60	10.57	6.07	5.48	4.63	3.16	2.91	5.06	25.72	23.11
Runoff (mm)	82	86	75	19	11	10	8	6	5	9	45	41
Rainfall (mm)	76	116	81	35	25	72	57	29	28	66	102	60

Statistics of monthly data for previous record (Nov 1963 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	14.670	13.130	12.450	8.637	5.499	3.628	3.366	4.314	4.495	7.631	11.800	12.920
	Low	5.269	2.672	1.729	2.153	2.039	1.140	1.135	1.119	1.250	1.084	1.926	4.563
	(year)	1989	1973	1973	1990	1984	1970	1989	1990	1990	1972	1973	1971
	High	32.310	26.350	31.390	20.980	15.410	6.441	8.138	12.950	14.240	26.860	31.370	33.340
	(year)	1982	1978	1979	1987	1983	1987	1988	1986	1965	1976	1965	1978
Runoff:	Avg.	69	56	59	39	26	17	16	20	20	36	54	61
	Low	25	11	8	10	10	5	5	5	6	5	9	21
	High	152	112	148	95	72	29	38	61	65	126	143	157
Rainfall:	Avg.	89	62	77	55	65	57	66	75	75	78	84	84
(1966-	Low	29	15	18	8	18	8	13	18	15	19	19	31
1990)	High	140	126	144	118	127	129	169	161	215	176	214	251

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	7.129		8.525		
Lowest yearly mean			3.716	1973	
Highest yearly mean			11.380	1969	
Lowest monthly mean	1.121	Sep	1.084	Oct 1972	
Highest monthly mean	20.140	Feb	33.340	Dec 1978	
Lowest daily mean	0.988	8 Sep	0.721	20 Jun 1970	
Highest daily mean	111.400	23 Feb	203.200	3 Jan 1982	
Peak	140.300	23 Feb	289.700	4 Jan 1982	
10% exceedance	18.350		18.480		99
50% exceedance	2.750		4.863		57
95% exceedance	1.060		1.296		82
Annual total (million cu m)	225.00		269.00		84
Annual runoff (mm)	395		472		84
Annual rainfall (mm)	747		867		86
[1941-70 rainfall average (mm)			884]		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Comment

The daily mean flows for the 29th–31st August 1991 are estimates.

Station and catchment description

Velocity-area station with 34m wide concrete Flat V weir (informal design, approx. 1:20 cross-slope) made with pre-cast segments (installed 1973). Cableway. Fairly straight section with high banks. Replaced earlier station at Guyzance.Responsive natural regime. A predominantly upland catchment draining from the Cheviots. Largely Carboniferous Limestone and Devonian Igneous series. Some afforestation.

023006 South Tyne at Featherstone 1991

Measuring authority: NRA-N
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	100.400	3.503	9.488	14.630	2.263	1.526	3.135	4.739	1.560	6.171	74.950	4.523
2	28.280	3.360	7.371	31.020	2.102	1.956	2.703	2.373	1.497	5.716	74.340	4.458
3	13.530	3.120	10.330	10.500	2.168	2.086	2.712	1.966	1.451	11.690	48.370	3.998
4	13.750	2.864	56.850	41.920	3.420	1.751	2.555	1.746	1.413	8.958	39.940	3.624
5	58.230	2.693	28.010	33.880	4.590	1.607	2.115	1.725	1.394	20.630	12.420	3.559
6	40.040	2.595	13.510	27.170	3.366	1.547	1.974	13.530	1.361	6.023	34.830	3.314
7	12.190	2.333	12.840	21.800	4.664	1.515	2.029	5.877	1.328	40.100	56.560	2.998
8	8.711	2.622	15.710	9.391	3.126	1.521	2.254	3.295	1.310	19.920	21.730	2.746
9	9.682	2.839	18.530	6.794	2.461	11.260	5.244	14.110	1.303	8.843	11.020	2.653
10	14.030	2.679	14.740	5.554	2.180	10.650	2.970	16.060	1.282	7.835	81.680	2.285
11	18.970	2.555	8.440	4.847	2.181	8.633	2.230	7.678	1.252	5.385	22.280	1.842
12	12.330	2.773	7.546	4.466	2.361	16.370	2.218	4.147	1.241	4.503	36.110	3.039
13	7.449	2.563	7.630	4.088	6.336	29.810	2.336	3.169	1.235	8.299	17.620	2.996
14	6.252	3.264	8.987	3.708	3.758	13.730	2.036	2.697	3.992	7.148	17.410	2.853
15	5.245	11.140	6.122	3.374	2.703	7.218	3.261	2.514	2.949	9.136	15.840	2.597
16	4.965	6.383	10.900	3.115	2.779	6.309	9.605	2.515	3.027	34.510	8.644	2.476
17	25.710	4.543	12.250	2.962	2.951	6.812	4.132	5.397	2.307	25.190	6.972	5.026
18	52.820	3.803	18.050	2.967	2.716	8.886	3.276	4.216	1.845	9.775	29.120	51.110
19	24.420	4.326	45.390	3.153	2.468	8.303	6.042	4.933	1.656	5.908	25.480	46.280
20	50.120	23.310	61.220	3.014	2.213	4.945	3.408	3.824	1.512	4.854	9.546	12.360
21	13.620	37.900	36.430	4.363	2.134	3.924	2.361	2.531	8.589	4.297	27.710	162.800
22	8.075	99.300	13.140	4.436	1.982	7.868	2.072	2.284	12.980	3.793	12.720	67.390
23	6.828	163.000	8.969	3.482	1.890	4.706	2.136	5.248	17.950	3.431	7.764	76.910
24	7.692	47.360	6.871	3.066	1.886	3.462	12.540	4.461	11.800	3.203	6.063	14.240
25	5.752	14.640	5.573	2.694	1.809	5.145	8.096	2.750	5.316	3.143	5.552	14.890
26	5.022	16.770	4.970	2.437	1.761	6.741	4.317	2.241	3.851	3.173	5.639	12.430
27	4.687	14.250	4.563	2.278	1.706	3.820	2.877	2.218	3.553	2.933	5.598	7.883
28	4.322	17.260	4.184	2.175	1.651	3.180	2.359	2.279	4.799	2.715	6.012	6.800
29	3.988		3.828	2.208	1.620	2.748	2.058	2.070	5.905	10.070	5.536	5.982
30	3.851		3.633	2.630	1.613	2.839	1.878	1.870	3.694	18.090	4.843	5.626
31	3.760		4.007		1.595		3.217	1.683		58.200		5.256
Average	18.540	17.990	15.160	8.937	2.595	6.362	3.553	4.392	3.778	11.730	24.410	17.580
Lowest	3.760	2.333	3.633	2.175	1.595	1.515	1.878	1.683	1.235	2.715	4.843	1.842
Highest	100.400	163.000	61.220	41.920	6.336	29.810	12.540	16.060	17.950	58.200	81.680	162.800
Peak flow	236.90	225.10	173.80	71.78	8.33	49.50	28.09	41.16	53.97	148.80	254.60	276.00
Day of peak	1	22	20	6	13	13	24	6	23	31	10	21
Monthly total (million cu m)	49.66	43.52	40.61	23.17	6.95	16.49	9.52	11.76	9.79	31.42	63.27	47.08
Runoff (mm)	154	135	126	72	22	51	30	37	30	98	197	146
Rainfall (mm)	141	151	134	100	34	121	85	73	85	148	237	173

Statistics of monthly data for previous record (Oct 1966 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	16.110	12.760	13.740	8.710	5.987	5.002	5.232	6.728	9.270	12.800	15.040	15.560
	Low	7.738	3.380	5.861	1.851	1.312	1.465	1.123	0.960	1.467	1.182	6.616	5.110
	(year)	1985	1986	1975	1974	1980	1978	1989	1976	1972	1972	1983	1971
	High	25.610	33.950	30.210	16.210	13.850	12.740	17.170	19.240	23.670	30.330	24.670	28.810
	(year)	1975	1990	1979	1979	1983	1980	1988	1985	1985	1967	1984	1974
Runoff:	Avg.	134	97	114	70	50	40	44	56	75	107	121	129
	Low	64	25	49	15	11	12	9	8	12	10	53	43
	High	212	255	251	131	115	103	143	160	191	252	199	240
Rainfall:	Avg.	139	96	122	74	84	89	100	114	125	142	138	138
	Low	74	28	44	11	40	39	29	25	31	27	63	42
	High	247	313	200	133	178	215	253	248	239	331	245	253

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	11.200		10.570		106
Lowest yearly mean			7.629	1971	
Highest yearly mean			12.920	1979	
Lowest monthly mean	2.595	May	0.960	Aug 1976	
Highest monthly mean	24.410	Nov	33.950	Feb 1990	
Lowest daily mean	1.235	13 Sep	0.713	26 Aug 1976	
Highest daily mean	163.000	23 Feb	177.200	21 Sep 1985	
Peak	276.000	21 Dec	309.900	3 Nov 1984	
10% exceedance	27.650		25.240		110
50% exceedance	4.555		5.396		84
95% exceedance	1.585		1.364		116
Annual total (million cu m)	353.20		333.60		106
Annual runoff (mm)	1097		1036		106
Annual rainfall (mm)	1482		1361		109
(1941-70 rainfall average (mm)			1464)		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Station and catchment description
Compound Crump profile weir. Lower crest 15.2m, upper crest 29.5m. Theoretical rating. Structure contains all flows. Extreme peaks may be underestimated. Natural flow regime. Linear, northerly trending catchment in the north Pennines. Geology is mainly Carboniferous Limestone.

025006 Greta at Rutherford Bridge 1991

Measuring authority: NRA-N
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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	23.950	0.562	1.999	0.506	0.356	0.124	0.226	0.126	0.106	0.397	12.260	0.713
2	4.564	0.521	1.660	5.194	0.278	0.137	0.210	0.113	0.104	0.474	14.030	0.708
3	1.531	0.425	3.744	2.517	0.254	0.138	0.405	0.105	0.104	1.785	8.063	0.646
4	2.051	0.364	18.720	5.880	0.351	0.128	0.386	0.100	0.104	0.505	10.550	0.570
5	22.610	0.472	5.593	4.086	0.391	0.126	0.264	0.107	0.104	1.950	2.698	0.564
6	13.990	0.409	3.050	6.760	0.316	0.126	0.217	0.350	0.100	0.671	2.997	0.570
7	3.633	0.263	3.538	5.039	0.331	0.127	0.199	0.276	0.095	2.559	16.900	0.431
8	2.123	0.303	5.790	2.278	0.296	0.142	0.204	0.247	0.094	3.277	5.602	0.370
9	2.301	0.445	4.562	1.382	0.239	3.651	0.383	0.184	0.093	0.975	2.524	0.348
10	4.819	0.518	3.847	0.935	0.211	2.575	0.271	0.161	0.092	0.842	16.370	0.270
11	5.751	0.598	2.066	0.733	0.199	1.591	0.201	0.146	0.095	0.605	5.932	0.259
12	3.847	0.593	1.583	0.634	0.196	1.382	0.167	0.129	0.094	0.490	6.376	0.369
13	2.323	0.513	1.304	0.556	0.205	1.857	0.157	0.118	0.095	2.344	4.165	0.476
14	1.448	0.615	1.030	0.492	0.196	2.980	0.148	0.110	0.105	1.448	5.571	0.455
15	1.138	1.391	0.864	0.435	0.186	1.286	0.143	0.106	0.142	0.769	4.853	0.389
16	5.662	2.301	2.265	0.386	0.209	0.970	0.142	0.108	0.164	1.598	2.188	0.360
17	16.220	1.824	2.772	0.353	0.230	0.748	0.129	0.117	0.174	3.939	1.646	3.110
18	9.019	1.139	7.194	0.352	0.233	0.792	0.127	0.114	0.121	1.544	15.250	3.103
19	8.489	1.297	16.120	0.354	0.201	2.551	0.134	0.109	0.120	0.684	8.527	8.996
20	2.948	10.830	9.399	0.334	0.182	1.524	0.172	0.106	0.102	0.488	2.818	2.555
21	1.645	19.640	6.036	0.371	0.172	0.964	0.137	0.101	0.108	0.415	4.259	34.460
22	1.467	41.210	2.389	0.476	0.157	1.412	0.127	0.100	0.222	0.365	2.727	11.130
23	2.782	51.040	1.676	0.368	0.151	1.668	0.137	0.135	0.290	0.325	1.737	20.360
24	1.559	12.580	1.280	0.326	0.142	0.708	0.219	0.252	0.981	0.303	1.392	3.407
25	1.140	3.606	0.967	0.290	0.136	0.738	0.402	0.170	0.446	0.327	1.382	2.174
26	0.951	2.674	0.816	0.260	0.134	0.618	0.243	0.135	0.263	0.394	1.133	1.727
27	0.828	2.990	0.714	0.241	0.136	0.451	0.172	0.137	0.199	0.373	0.925	1.354
28	0.737	5.056	0.626	0.228	0.133	0.400	0.145	0.141	0.958	0.342	1.217	1.117
29	0.651		0.571	0.275	0.130	0.312	0.129	0.131	1.179	4.157	1.029	0.931
30	0.620		0.523	0.484	0.130	0.257	0.118	0.120	0.447	5.612	0.787	0.849
31	0.575		0.498		0.131		0.122	0.111		16.210		0.774
Average	4.883	5.864	3.651	1.417	0.213	1.016	0.201	0.144	0.243	1.812	5.530	3.340
Lowest	0.575	0.263	0.498	0.228	0.130	0.124	0.118	0.100	0.092	0.303	0.787	0.259
Highest	23.950	51.040	18.720	6.760	0.391	3.651	0.405	0.350	1.179	16.210	16.900	34.460
Peak flow	62.25	93.06	54.65	13.98	0.43	7.30	0.58	0.62	3.52	38.49	52.21	85.67
Day of peak	1	22	4	6	1	9	9	6	28	31	18	21
Monthly total (million cu m)	13.08	14.19	9.78	3.67	0.57	2.63	0.54	0.39	0.63	4.85	14.33	8.95
Runoff (mm)	152	165	114	43	7	31	6	4	7	56	166	104
Rainfall (mm)	153	159	98	71	18	95	38	41	51	116	174	118

Statistics of monthly data for previous record (Oct 1960 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	3.779	2.880	3.222	2.138	1.266	0.828	0.703	1.288	1.430	2.544	3.303	3.708
	Low	0.290	0.280	0.842	0.375	0.148	0.130	0.092	0.098	0.110	0.195	0.951	0.944
	(year)	1963	1963	1973	1982	1980	1970	1984	1976	1989	1972	1973	1971
	High	7.155	8.185	8.926	4.682	3.951	2.502	2.783	4.107	4.067	6.665	6.878	6.607
	(year)	1975	1990	1979	1969	1967	1980	1988	1971	1965	1967	1963	1990
Runoff:	Avg.	118	82	100	64	39	25	22	40	43	79	99	115
	Low	9	8	26	11	5	4	3	3	3	6	29	29
	High	223	230	278	141	123	75	87	128	122	207	207	206
Rainfall:	Avg.	121	89	99	75	75	71	71	96	91	106	112	122
	Low	38	13	31	10	16	18	20	35	18	21	43	43
	High	206	248	220	136	164	188	194	200	206	269	219	296

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	2.334		2.256		103
Lowest yearly mean			1.447	1973	
Highest yearly mean			2.926	1979	
Lowest monthly mean	0.144	Aug	0.092	Jul 1984	
Highest monthly mean	5.864	Feb	8.926	Mar 1979	
Lowest daily mean	0.092	10 Sep	0.040	25 Aug 1976	
Highest daily mean	51.040	23 Feb	54.090	6 Mar 1963	
Peak	93.060	22 Feb	210.400	25 Aug 1986	
10% exceedance	5.663		5.776		98
50% exceedance	0.517		0.811		64
95% exceedance	0.105		0.123		86
Annual total (million cu m)	73.60		71.20		103
Annual runoff (mm)	855		827		103
Annual rainfall (mm)	1132		1128		100
[1941-70 rainfall average (mm)			1259]		

Factors affecting runoff

- Natural to within 10% at the 95 percentile flow.

Station and catchment description

Compound Crump profile weir total width 19.2m, low flow crest 3m broad. Theoretical rating with check gaugings.Responsive, natural regime. An eastward-draining Pennine catchment developed largely on Millstone Grit.

027002 Wharfe at Flint Mill Weir 1991

Measuring authority: NRA-Y. Grid reference: 44 (SE) 422 473 Catchment area (sq km): 758.9
First year: 1936 Level stn. (m OD): 13.70 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	58.020	5.705	24.890	39.110	6.168	2.847	4.778	2.736	2.522	4.899	40.160	7.347
2	94.220	4.925	17.960	112.700	4.819	2.989	4.808	2.528	2.468	9.947	55.790	6.550
3	37.040	4.563	17.800	42.230	4.519	3.116	4.235	2.626	2.426	9.722	72.620	6.027
4	28.350	4.754	45.500	25.650	4.719	2.928	3.804	2.617	2.336	7.934	40.180	5.366
5	36.170	4.600	62.000	35.350	4.609	2.875	3.765	2.715	2.276	7.188	26.110	4.923
6	107.000	4.422	26.980	29.660	4.508	2.864	3.553	2.696	2.226	9.226	17.810	4.712
7	39.080	4.489	21.730	32.940	4.458	2.841	3.412	9.368	2.181	6.151	98.880	4.232
8	32.960	4.342	25.580	17.990	4.217	2.858	3.267	4.342	2.186	45.850	62.350	3.809
9	35.310	4.244	21.520	13.210	4.218	3.302	7.212	3.450	2.189	15.640	23.300	3.554
10	48.430	4.083	24.550	10.720	3.950	15.700	8.078	12.060	2.116	8.282	30.500	3.509
11	36.220	3.773	17.600	9.262	3.790	8.318	4.661	13.410	2.108	5.913	86.220	3.321
12	36.810	4.095	14.250	7.796	3.746	9.336	3.830	6.283	2.219	5.554	28.430	3.510
13	20.890	4.058	12.110	7.131	3.712	9.667	4.549	4.531	2.098	4.812	36.350	3.158
14	15.570	4.058	10.970	6.377	3.697	15.120	6.513	3.993	2.126	4.908	33.210	3.058
15	12.910	8.889	9.393	6.375	4.215	9.326	5.424	3.541	2.381	4.442	30.580	3.040
16	11.050	13.830	10.770	6.239	3.914	8.083	10.580	3.351	2.392	13.580	22.050	2.935
17	10.170	10.530	26.950	5.851	3.638	6.681	7.837	3.262	5.099	16.430	15.520	3.194
18	23.300	8.904	22.890	6.022	3.708	6.968	4.718	3.488	3.295	21.130	36.780	21.050
19	36.210	7.914	113.900	6.191	3.652	6.948	9.920	3.241	2.745	8.509	90.090	142.600
20	34.350	9.746	57.240	5.692	3.477	10.900	7.657	3.036	2.628	5.392	31.090	44.650
21	27.120	57.900	48.640	5.456	3.322	7.159	4.985	2.963	2.501	4.171	24.710	148.700
22	15.790	70.270	26.690	5.215	3.156	13.710	4.269	2.837	4.256	3.789	33.060	142.300
23	11.880	292.100	17.850	5.199	3.086	23.880	4.124	2.782	4.966	3.241	17.950	72.820
24	10.760	163.400	13.700	4.989	3.064	11.770	4.229	6.095	19.650	2.856	12.990	37.760
25	9.865	49.390	11.700	4.660	3.002	8.163	4.183	5.055	9.893	2.884	10.900	23.160
26	7.942	28.690	10.150	4.283	3.012	7.876	4.947	3.531	8.162	2.622	10.750	24.190
27	7.126	25.080	8.900	4.464	3.150	7.437	3.852	3.243	10.010	2.645	8.914	17.660
28	7.077	39.170	7.983	4.309	2.967	13.460	3.513	3.026	6.737	2.563	8.759	13.260
29	6.686		7.386	4.917	2.909	7.153	3.477	2.888	7.125	2.593	11.040	11.180
30	6.197		7.585	6.951	2.899	4.783	2.976	2.775	6.415	17.940	8.744	10.240
31	5.823		7.004		2.892		2.955	2.633		53.650		9.173
Average	28.070	30.280	24.260	15.900	3.780	7.969	5.036	4.229	4.324	10.140	34.190	25.520
Lowest	5.823	3.773	7.004	4.283	2.892	2.841	2.955	2.528	2.098	2.563	8.744	2.935
Highest	107.000	292.100	113.900	112.700	6.168	23.880	10.580	13.410	19.650	53.650	98.880	148.700
Peak flow	197.20	337.20	136.30	156.90	7.01	36.11	18.89	17.77	47.00	124.90	191.20	240.60
Day of peak	2	23	4	2	1	23	9	11	24	31	11	21
Monthly total (million cu m)	75.20	73.26	64.99	41.21	10.13	20.65	13.49	11.33	11.21	27.17	88.63	68.34
Runoff (mm)	99	97	86	54	13	27	18	15	15	36	117	90
Rainfall (mm)	115	131	99	78	17	118	51	42	62	97	174	125

Statistics of monthly data for previous record (Oct 1955 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	27.920	23.640	21.490	15.840	10.790	7.274	7.634	11.480	13.140	18.230	23.000	27.490
	Low	4.472	2.974	6.741	4.496	2.312	1.545	1.674	0.991	1.419	3.026	6.876	10.230
	(year)	1963	1963	1961	1974	1980	1957	1976	1976	1959	1972	1958	1963
	High	44.000	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.	99	76	76	54	38	25	27	41	45	64	79	97
	Low	16	9	24	15	8	5	6	4	5	11	23	36
	High	155	174	190	120	94	63	58	146	115	191	174	219
Rainfall:	Avg.	116	85	92	75	75	76	84	100	100	111	110	125
	Low	41	14	28	8	13	18	20	18	8	32	33	41
	High	217	201	222	147	181	183	185	226	241	225	211	233

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	16.030		17.310		93
Lowest yearly mean			11.420	1975	
Highest yearly mean			23.300	1966	
Lowest monthly mean	3.780	May	0.991	Aug 1976	
Highest monthly mean	34.190	Nov	62.090	Dec 1965	
Lowest daily mean	2.098	13 Sep	0.425	23 Jun 1957	
Highest daily mean	292.100	23 Feb	288.400	3 Jan 1982	
Peak	337.200	23 Feb	362.800	3 Jan 1982	
10% exceedance	37.150		41.150		90
50% exceedance	6.569		9.606		68
95% exceedance	2.549		2.342		109
Annual total (million cu m)	505.50		546.30		93
Annual runoff (mm)	666		720		93
Annual rainfall (mm)	1109		1149		97
(1941-70 rainfall average (mm)			1168)		

Factors affecting runoff

- 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

Broad-crested masonry weir 47m wide with a current meter cableway 1.5km u/s (moved to new US station at Tadcaster in 1990). Insensitive at low flows. Level data only from 1936 to 1955. Recalibration(from 1965) completed but flows reprocessed from 1982 only. Pre-1965 data less reliable. Regulation effect of headwater reservoirs evident at low flows. Small net export of water (inc. Bradford supply). Mixed geology - mainly Carboniferous Limestone, grits and Coal Measures. Predominantly rural catchment with moorland headwaters.

027035 Aire at Kildwick Bridge 1991

Measuring authority: NRA-Y
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): 593

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	30.770	2.628	11.360	13.420	1.307	0.550	2.060	0.605	0.497	0.948	11.750	4.003
2	38.350	2.540	8.394	36.290	1.159	0.812	1.627	0.539	0.481	0.970	16.540	3.623
3	21.710	2.411	8.390	15.710	1.185	0.724	1.406	0.515	0.433	1.246	35.990	3.267
4	14.110	2.271	15.540	10.920	1.154	0.597	1.212	0.508	0.413	1.113	28.930	3.015
5	21.890	2.104	15.030	13.550	1.055	0.559	1.067	0.517	0.405	1.070	12.920	2.766
6	32.340	1.999	10.040	9.812	1.035	0.615	1.074	1.040	0.389	1.006	16.520	2.564
7	17.190	1.936	8.607	8.612	1.016	0.587	1.020	1.234	0.379	1.027	44.210	2.367
8	18.450	2.089	8.732	6.099	0.877	0.667	1.037	0.769	0.380	7.352	27.170	2.203
9	23.410	2.040	8.911	4.923	0.832	0.865	1.158	2.177	0.383	3.174	13.830	2.081
10	24.860	1.994	8.161	4.243	0.807	1.334	0.975	3.527	0.386	2.016	28.680	1.961
11	15.460	1.799	6.243	3.727	0.785	1.051	1.018	3.112	0.360	1.538	35.160	1.797
12	12.200	1.861	5.320	3.289	0.788	1.132	1.118	1.716	0.360	1.286	20.520	1.749
13	8.454	1.721	4.846	2.903	0.814	1.864	1.347	1.261	0.339	1.202	25.880	1.762
14	6.580	1.814	4.595	2.587	0.830	2.032	1.270	1.029	0.559	1.104	26.690	1.757
15	5.689	7.628	4.314	2.355	0.863	2.124	1.198	0.890	0.525	1.005	17.530	1.656
16	4.783	6.397	6.069	2.093	0.870	2.036	1.872	0.850	0.668	1.877	11.070	1.656
17	5.190	5.086	8.185	1.963	0.882	1.836	1.352	0.876	0.648	2.815	10.080	3.131
18	7.033	4.509	14.770	1.842	0.838	1.670	1.147	0.765	0.447	2.971	33.530	11.170
19	8.030	3.812	35.360	1.777	0.800	2.649	1.447	0.704	0.398	1.763	26.950	44.460
20	9.553	7.022	24.010	1.632	0.733	1.894	1.190	0.679	0.370	1.381	13.820	27.890
21	7.757	26.240	17.840	1.589	0.702	3.255	1.000	0.640	0.527	1.228	12.780	60.050
22	5.614	36.410	10.820	1.415	0.665	7.529	0.917	0.611	0.687	1.147	12.720	67.640
23	4.682	61.510	8.036	1.299	0.676	6.084	0.996	0.715	0.702	1.058	9.056	52.810
24	4.703	61.530	6.321	1.244	0.684	3.368	1.024	1.147	2.660	0.975	7.125	30.690
25	4.185	30.820	5.238	1.275	0.666	2.973	0.990	0.871	1.336	0.769	7.662	18.010
26	3.672	20.560	4.521	1.158	0.645	2.394	0.810	0.746	2.748	0.756	6.061	13.420
27	3.334	16.630	3.872	1.120	0.625	9.255	0.740	0.661	3.623	0.720	5.342	9.657
28	3.136	20.860	3.418	1.096	0.675	5.481	0.699	0.610	1.650	0.676	5.786	8.018
29	3.022		3.065	1.706	0.615	2.935	0.667	0.573	1.195	0.787	5.473	6.648
30	2.723		2.801	1.829	0.593	2.136	0.651	0.540	0.945	3.668	4.587	5.664
31	2.537		2.671		0.585		0.643	0.515		8.371		4.962
Average	11.980	12.080	9.209	5.383	0.831	2.367	1.120	0.998	0.830	1.839	17.750	12.980
Lowest	2.537	1.721	2.671	1.096	0.585	0.550	0.643	0.508	0.339	0.676	4.587	1.656
Highest	38.350	61.530	35.360	36.290	1.307	9.255	2.060	3.527	3.623	8.371	44.210	67.640
Peak flow	56.08	70.78	42.79	50.44	1.50	16.49	2.53	4.19	7.04	18.71	54.54	75.22
Day of peak	1	24	19	2	1	27	1	10	26	31	10	22
Monthly total (million cu m)	32.09	29.22	24.67	13.95	2.23	6.13	3.00	2.67	2.15	4.93	46.00	34.77
Runoff (mm)	114	104	87	49	8	22	11	9	8	17	163	123
Rainfall (mm)	97	112	90	78	15	121	53	47	67	76	195	133

Statistics of monthly data for previous record (Dec 1968 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	11.250	8.676	7.716	4.886	2.781	2.230	1.859	3.195	3.688	7.178	9.936	10.830
	Low	4.463	3.529	2.391	0.923	0.611	0.604	0.298	0.289	0.497	0.789	3.583	3.175
	(year)	1973	1986	1985	1974	1974	1970	1984	1976	1989	1972	1975	1971
	High	19.130	19.810	22.520	11.400	8.174	6.416	5.927	11.410	10.360	17.570	16.540	20.820
	(year)	1990	1990	1981	1986	1983	1982	1973	1985	1974	1981	1984	1979
Runoff:	Avg.	107	75	73	45	26	20	18	30	34	68	91	103
	Low	42	30	23	8	6	6	3	3	5	7	33	30
	High	181	170	214	105	78	59	56	108	95	167	152	198
Rainfall:	Avg.	124	80	103	68	71	77	76	94	104	117	122	123
	Low	45	13	44	3	10	23	17	17	22	37	55	42
	High	222	191	233	135	142	155	179	171	250	213	187	238

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	6.399		6.178		104
Lowest yearly mean			3.655	1971	
Highest yearly mean			8.161	1988	
Lowest monthly mean	0.830	Sep	0.289	Aug 1976	
Highest monthly mean	17.750	Nov	22.520	Mar 1981	
Lowest daily mean	0.339	13 Sep	0.180	23 Aug 1976	
Highest daily mean	67.640	22 Dec	79.900	27 Oct 1980	
Peak	75.220	22 Dec	94.50	27 Oct 1980	
10% exceedance	17.730		15.690		113
50% exceedance	1.985		3.116		64
95% exceedance	0.513		0.497		103
Annual total (million cu m)	201.80		195.00		103
Annual runoff (mm)	715		691		103
Annual rainfall (mm)	1084		1159		94
[1941-70 rainfall average (mm)			1134]		

Factors affecting runoff

- Reservoir(s) in catchment.

Station and catchment description

Velocity-area station rated by current meter cableway 150m downstream. Low flow control is the sills of the bridge. Flows below one cumec are underestimated - recalibration scheduled. Washland storage, minor reservoirs and the Leeds-Liverpool Canal influence the flow pattern. Small overall impact; minor net export. Geology is mainly Carboniferous Limestone with some Millstone Grit series. Rural catchment draining part of the eastern Pennines.

027041 Derwent at Buttercrambe 1991

Measuring authority: NRA-Y
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	24.860	12.330	62.160	15.450	9.561	5.915	5.809	4.060	3.158	3.828	9.992	7.110
2	36.480	12.110	50.240	15.700	9.477	6.116	7.437	3.936	3.047	3.501	8.782	6.879
3	31.020	11.830	43.350	15.540	9.335	7.348	6.768	3.771	3.026	3.260	7.936	6.706
4	27.490	11.450	38.880	14.920	9.996	7.754	6.636	3.714	3.007	3.210	7.647	6.534
5	24.320	11.040	51.760	15.870	10.070	6.852	5.990	3.672	3.018	3.274	15.450	6.327
6	25.000	10.940	48.070	14.610	9.427	6.437	5.493	3.834	2.994	3.334	12.090	6.122
7	23.230	10.930	39.880	15.010	9.116	6.300	5.302	3.897	2.935	3.387	8.953	5.872
8	27.020	10.910	37.550	14.130	8.861	6.194	5.183	3.878	2.925	3.345	7.733	5.708
9	43.270	11.000	34.280	13.180	8.721	6.696	5.001	3.731	2.948	3.433	6.779	5.495
10	49.910	11.200	29.740	12.890	8.463	7.493	4.563	3.673	2.952	3.467	5.878	5.453
11	45.220	11.060	26.770	12.560	8.358	6.971	4.810	3.577	2.915	3.403	5.703	5.250
12	35.160	10.870	24.910	12.220	8.158	6.690	4.886	3.532	2.919	3.395	5.825	4.715
13	29.250	10.720	23.580	11.730	8.125	6.624	4.824	3.496	2.885	3.498	6.524	5.537
14	24.080	10.460	22.670	11.440	7.934	6.483	4.729	3.453	2.935	3.660	8.490	5.481
15	21.680	14.440	22.050	11.230	7.688	6.266	4.534	3.439	2.931	3.757	8.627	5.320
16	19.820	24.460	21.610	10.900	7.681	6.263	4.360	3.431	3.095	3.835	8.111	5.290
17	18.660	29.390	27.500	10.900	7.768	6.592	4.331	3.364	3.331	3.799	6.939	5.405
18	19.090	29.760	28.150	11.080	7.911	6.956	4.304	3.388	3.311	3.705	7.872	6.328
19	27.480	25.740	33.170	11.630	7.558	7.419	4.483	3.475	3.090	4.095	25.010	7.077
20	23.320	30.890	26.990	11.920	7.328	7.454	4.435	3.404	3.043	5.707	22.060	7.325
21	20.710	47.480	26.900	12.630	7.004	6.965	4.393	3.319	3.088	4.838	14.140	12.680
22	18.280	60.100	24.760	12.490	6.777	7.517	4.301	3.269	3.128	4.354	17.110	24.750
23	16.990	73.010	22.360	11.670	6.619	10.080	4.229	3.261	3.252	4.012	13.160	17.090
24	16.400	93.420	20.630	10.980	6.569	9.110	4.451	3.272	3.263	3.809	10.830	16.720
25	15.780	82.360	19.150	10.680	6.546	7.810	4.674	3.405	3.174	3.772	9.765	12.010
26	14.810	53.220	18.230	10.240	6.470	7.269	4.598	3.334	3.313	3.809	9.500	10.720
27	14.100	44.520	17.380	9.914	6.365	6.650	4.371	3.260	3.366	3.868	8.677	9.633
28	13.760	63.440	16.450	9.705	6.275	6.399	4.221	3.265	3.483	3.881	8.248	8.898
29	13.510		15.890	9.612	6.117	6.177	4.100	3.278	3.470	3.929	7.809	8.398
30	13.060		15.460	9.735	6.096	5.992	4.025	3.246	3.509	4.812	7.453	7.979
31	12.580		15.250		6.082		4.167	3.176		7.830		7.730
Average	24.080	29.610	29.220	12.350	7.821	6.960	4.884	3.510	3.117	3.929	10.100	8.276
Lowest	12.580	10.460	15.250	9.612	6.082	5.915	4.025	3.176	2.885	3.210	5.703	4.715
Highest	49.910	93.420	62.160	15.870	10.070	10.080	7.437	4.060	3.509	7.830	25.010	24.750
Peak flow	51.40	97.15	65.56	16.28	10.46	10.73	8.25	4.23	3.84	8.61	31.60	26.74
Day of peak	10	24	1	5	4	23	2	1	26	31	19	22
Monthly total (million cu m)	64.48	71.63	78.26	32.02	20.95	18.04	13.08	9.40	8.08	10.52	26.19	22.17
Runoff (mm)	41	45	49	20	13	11	8	6	5	7	17	14
Rainfall (mm)	54	90	52	32	16	72	33	17	33	69	82	37

Statistics of monthly data for previous record (Jan 1973 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	27.010	25.590	24.860	19.340	14.200	10.100	8.256	8.070	7.951	13.120	14.930	24.500
	Low	9.640	8.606	6.254	6.640	5.282	5.342	3.882	3.126	3.077	4.172	5.472	10.390
	(year)	1989	1973	1973	1990	1990	1974	1976	1990	1990	1989	1989	1989
	High	48.190	49.280	56.110	37.540	29.840	21.260	17.120	15.430	14.710	36.820	25.220	42.740
	(year)	1977	1978	1979	1986	1979	1979	1973	1980	1976	1976	1980	1978
Runoff:	Avg.	46	39	42	32	24	17	14	14	13	22	24	41
	Low	16	13	11	11	9	9	7	5	5	7	9	18
	High	81	75	95	61	50	35	29	26	24	62	41	72
Rainfall:	Avg.	75	50	70	50	58	58	60	66	67	78	65	82
	Low	20	5	7	11	17	11	18	10	18	21	28	24
	High	132	101	143	113	142	149	138	126	192	158	111	180

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	11.890		16.460		72
Lowest yearly mean			7.900	1989	
Highest yearly mean			25.320	1979	
Lowest monthly mean	3.117	Sep	3.077	Sep 1990	
Highest monthly mean	29.610	Feb	56.110	Mar 1979	
Lowest daily mean	2.885	13 Sep	2.697	23 Aug 1976	
Highest daily mean	93.420	24 Feb	121.400	29 Dec 1978	
Peak	97.150	24 Feb	124.800	5 Jan 1982	
10% exceedance	26.680		33.700		79
50% exceedance	7.399		12.270		60
95% exceedance	3.131		4.262		73
Annual total (million cu m)	375.00		519.40		72
Annual runoff (mm)	236		327		72
Annual rainfall (mm)	587		779		75
[1941-70 rainfall average (mm)			784]		

Factors affecting runoff

- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Crump weir, 20m wide; high flow rating derived from limited number of gaugings. Pre-October 1973 data (monthly only) of poorer quality; derives from Stamford Br.(27015) - slightly smaller catchment area (1586.0 sq km). Peak flows from the headwaters upstream of Forge Valley (8% catchment) are diverted down the Sea Cut (27033). Minor net impact of artificial influences (spray irrigation is appreciable). Mixed geology of clays, shales and limestone. Rural catchment draining the North York Moors.

027053 Nidd at Birstwith 1991

Measuring authority: NRA-Y
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	34.240	2.553	12.050	5.676	1.427	0.927	0.906	0.756	0.481	0.615	2.416	2.408
2	30.540	2.475	8.258	17.000	1.292	0.966	0.894	0.756	0.476	0.618	3.332	2.415
3	15.590	2.457	5.421	10.740	1.289	0.941	0.919	0.738	0.477	0.570	8.604	2.343
4	13.230	2.262	14.170	7.962	1.379	0.920	0.888	0.723	0.483	0.532	6.382	2.274
5	29.410	1.991	13.730	10.400	1.311	0.898	0.854	0.742	0.485	0.668	4.858	2.205
6	45.230	1.976	12.530	8.622	1.238	0.911	0.844	0.801	0.474	0.592	5.927	2.146
7	15.380	1.991	13.070	11.070	1.246	0.905	0.828	0.752	0.477	0.700	11.010	2.102
8	14.330	2.014	14.490	6.864	1.179	0.967	0.820	0.780	0.467	1.227	10.310	1.493
9	18.600	1.961	12.500	5.604	1.131	1.034	0.844	0.713	0.469	0.694	5.158	1.190
10	19.660	1.932	7.750	5.450	1.098	1.095	0.805	0.770	0.462	0.617	9.413	1.168
11	15.730	1.901	5.090	2.823	1.077	0.991	0.822	0.763	0.458	0.574	10.970	1.131
12	13.510	1.699	3.491	2.329	1.068	0.966	0.864	0.740	0.455	0.569	10.980	1.124
13	11.580	1.386	2.897	1.849	1.069	1.053	0.895	0.718	0.458	0.594	13.170	1.150
14	6.697	1.475	2.619	1.721	1.049	1.017	0.867	0.722	0.474	0.594	10.360	1.127
15	6.090	3.267	2.488	1.633	1.040	1.049	0.832	0.717	0.486	0.574	7.325	1.110
16	3.840	2.753	5.425	1.551	1.030	1.129	0.893	0.715	0.543	0.654	5.894	1.119
17	3.166	2.525	4.533	1.491	1.033	2.002	0.831	0.711	0.507	0.759	5.639	1.583
18	4.532	2.285	19.790	1.503	1.014	1.615	0.838	0.701	0.478	0.747	14.700	8.963
19	4.014	2.098	47.240	1.502	0.986	1.244	0.858	0.664	0.472	0.596	10.620	17.030
20	10.540	4.059	21.440	1.490	0.971	1.070	0.813	0.510	0.468	0.561	11.010	8.123
21	10.630	9.578	13.820	1.469	0.948	1.675	0.798	0.503	0.503	0.556	12.110	26.530
22	7.154	24.070	8.900	1.393	0.937	2.501	0.790	0.507	0.538	0.549	10.740	16.440
23	4.226	179.700	7.000	1.332	0.935	1.729	0.816	0.532	0.531	0.542	7.288	21.030
24	3.288	46.190	6.425	1.310	0.942	1.265	0.842	0.522	0.739	0.541	5.412	12.580
25	3.057	15.770	3.412	1.290	0.934	1.219	0.842	0.501	0.574	0.549	5.183	11.250
26	2.895	12.540	3.240	1.261	0.932	1.104	0.805	0.492	0.600	0.549	3.606	7.950
27	2.786	15.450	3.062	1.226	0.926	1.012	0.776	0.493	0.647	0.536	2.739	5.768
28	2.739	15.220	2.918	1.194	0.914	0.975	0.770	0.496	0.618	0.528	2.689	5.429
29	2.689		2.801	1.633	0.900	0.942	0.750	0.486	0.789	0.672	2.601	5.136
30	2.613		2.705	1.913	0.886	0.901	0.729	0.481	0.592	1.565	2.495	3.494
31	2.552		2.284		0.886		0.748	0.481		3.395		2.641
Average	11.630	12.980	9.211	4.043	1.067	1.167	0.832	0.645	0.523	0.743	7.431	5.821
Lowest	2.552	1.386	2.284	1.194	0.886	0.898	0.729	0.481	0.455	0.528	2.416	1.110
Highest	45.230	179.700	47.240	17.000	1.427	2.501	0.919	0.801	0.789	3.395	14.700	26.530
Peak flow	100.40	282.80	65.27	25.79	1.53	3.34	0.98	1.15	0.99	8.64	31.33	54.84
Day of peak	6	23	19	2	1	22	16	8	24	31	18	21
Monthly total (million cu m)	31.15	31.41	24.67	10.48	2.86	3.03	2.23	1.73	1.35	1.99	19.26	15.59
Runoff (mm)	143	144	113	48	13	14	10	8	6	9	89	72
Rainfall (mm)	133	150	118	78	18	99	46	32	61	98	174	110

Statistics of monthly data for previous record (Apr 1975 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	9.906	8.436	7.976	4.355	2.712	1.739	1.246	1.877	2.106	4.778	6.570	9.640
	Low	3.072	3.068	1.915	1.363	0.837	0.771	0.808	0.531	0.546	1.311	1.893	3.612
	(year)	1989	1986	1985	1990	1990	1990	1990	1990	1990	1989	1975	1975
	High	16.110	18.220	21.140	12.770	7.061	3.131	2.164	5.690	3.955	15.120	12.830	20.280
	(year)	1988	1990	1979	1986	1983	1982	1988	1985	1985	1976	1984	1979
Runoff:	Avg.	122	95	98	52	33	21	15	23	25	59	78	119
	Low	38	34	24	16	10	9	10	7	7	16	23	44
	High	198	203	260	152	87	37	27	70	47	186	153	250
Rainfall: (1976-1990)	Avg.	145	100	128	74	77	80	63	103	107	138	125	157
	Low	52	16	53	11	16	16	18	22	22	36	62	80
	High	250	213	243	165	149	185	191	192	253	223	208	258

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	4.622		5.102		91
Lowest yearly mean			3.642	1989	
Highest yearly mean			7.148	1979	
Lowest monthly mean	0.523	Sep	0.531	Aug 1990	
Highest monthly mean	12.980	Feb	21.140	Mar 1979	
Lowest daily mean	0.455	12 Sep	0.392	21 Aug 1984	
Highest daily mean	179.700	23 Feb	109.400	28 Dec 1978	
Peak	282.800	23 Feb	204.400	13 Jan 1984	
10% exceedance	12.510		12.480		100
50% exceedance	1.269		2.513		50
95% exceedance	0.485		0.857		57
Annual total (million cu m)	145.80		161.00		91
Annual runoff (mm)	670		740		91
Annual rainfall (mm)	1117		1297		86
[1941-70 rainfall average (mm)			1209]		

Factors affecting runoff

- 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, rated by current metering (to 30 cumecs only) from bridge at the section. Riffle control, may be subject to erosion. Heavily reservoired catchment with substantial effect on flows. Geology is mostly Millstone Grit. Rural catchment.

028009 Trent at Colwick 1991

Measuring authority: NRA-ST
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	144.700	55.700	112.700	52.000	123.400	31.100	31.160	71.000	24.430	48.310	84.080	33.740
2	189.400	53.160	89.010	58.480	79.660	30.650	31.740	44.680	24.010	33.730	79.290	33.060
3	165.800	51.240	81.570	73.870	61.860	31.960	46.120	35.480	24.060	29.490	69.540	32.320
4	139.100	50.090	80.530	67.940	56.960	31.850	65.290	31.820	23.530	31.310	66.990	31.730
5	132.800	48.780	100.100	74.870	51.280	31.140	44.730	30.290	23.610	28.790	61.590	31.380
6	162.200	47.040	103.400	68.290	46.180	33.100	54.380	35.160	24.070	30.020	45.220	30.520
7	142.800	47.340	117.200	79.940	44.630	39.520	58.900	37.040	23.880	27.980	42.790	30.520
8	180.600	48.970	156.400	84.520	43.820	37.260	42.680	34.650	23.850	26.060	53.370	29.690
9	307.300	48.430	156.300	71.580	41.980	37.510	37.690	29.470	23.670	28.950	49.020	29.650
10	388.800	46.310	134.200	64.410	40.180	36.480	34.350	28.430	24.070	27.950	48.680	30.630
11	376.900	47.630	122.000	61.140	38.340	34.870	29.430	27.100	23.600	26.620	58.840	28.350
12	333.000	46.880	107.000	57.160	37.430	33.750	34.260	26.960	23.960	26.870	63.530	29.070
13	221.400	48.490	94.930	53.510	37.190	35.740	34.540	26.270	23.740	25.900	64.690	28.170
14	155.100	47.620	84.680	49.740	36.410	34.000	34.810	25.840	23.550	24.980	54.580	29.490
15	126.100	64.830	79.280	47.590	36.770	40.890	31.460	25.430	25.090	25.550	45.340	29.150
16	108.700	132.200	80.110	45.810	39.510	52.240	30.100	25.230	29.660	26.480	40.620	29.170
17	99.200	119.800	93.220	45.670	39.880	49.780	29.910	26.280	26.100	28.180	39.740	34.900
18	94.580	105.400	99.570	47.930	37.960	38.950	32.980	27.700	25.340	28.170	44.380	47.370
19	154.900	96.740	140.200	59.430	35.800	38.930	36.840	25.740	24.180	32.340	110.000	62.150
20	138.500	90.420	129.900	53.740	33.190	44.370	33.370	26.040	23.630	27.760	101.200	80.490
21	111.000	104.900	138.000	47.160	34.280	41.890	30.250	26.510	23.700	25.330	68.410	164.300
22	95.620	136.500	110.700	51.610	32.850	41.260	28.780	26.520	25.150	25.740	57.330	331.900
23	86.380	148.700	93.060	47.320	33.810	43.090	29.080	28.940	27.430	25.060	49.190	307.700
24	81.430	126.100	81.050	43.950	32.040	39.390	35.270	31.610	26.240	25.180	43.970	161.100
25	74.940	109.700	73.580	42.010	34.360	55.560	46.330	29.620	26.630	25.740	40.380	106.800
26	69.810	93.900	68.960	41.920	31.060	60.760	44.010	26.050	26.100	25.950	38.550	84.410
27	66.720	89.650	64.810	43.230	30.110	56.240	34.930	25.130	31.270	26.060	36.770	73.430
28	64.170	125.400	60.200	38.970	31.640	51.290	31.520	25.040	49.800	25.210	37.060	64.020
29	62.140		57.240	49.860	31.520	41.880	31.970	24.640	90.540	27.000	35.340	56.930
30	60.340		54.920	134.200	30.700	35.090	33.090	24.890	81.440	39.880	35.430	52.060
31	57.420		53.370		31.000		54.280	25.270		49.080		49.060
Average	148.100	79.710	97.360	58.590	42.450	40.350	37.880	30.160	29.880	29.220	55.530	69.780
Lowest	57.420	46.310	53.370	38.970	30.110	30.650	28.780	24.640	23.530	24.980	35.340	28.170
Highest	388.800	148.700	156.400	134.200	123.400	60.760	65.290	71.000	90.540	49.080	110.000	331.900
Peak flow	401.90	156.50	170.20	159.80	159.40	72.25	82.24	80.22	100.60	68.99	139.80	351.90
Day of peak	10	23	8	30	1	25	7	1	29	1	19	22
Monthly total (million cu m)	396.70	192.80	260.80	151.90	113.70	104.60	101.50	80.77	77.44	78.25	143.90	186.90
Runoff (mm)	53	26	35	20	15	14	14	11	10	10	19	25
Rainfall (mm)	67	40	49	64	11	74	74	23	54	51	65	54

Statistics of monthly data for previous record (Oct 1958 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	140.100	133.600	112.500	93.710	70.370	54.770	44.610	46.370	48.470	65.580	87.760	123.700
	Low	52.910	49.990	47.190	35.220	32.090	24.690	19.460	18.440	23.070	25.260	34.170	46.240
	(year)	1963	1976	1976	1976	1990	1976	1976	1976	1959	1959	1975	1975
	High	216.400	384.000	227.600	179.500	175.100	103.100	104.100	76.480	121.100	187.000	231.700	351.600
	(year)	1988	1977	1981	1966	1969	1987	1968	1966	1965	1960	1960	1965
Runoff:	Avg.	50	44	40	32	25	19	16	17	17	23	30	44
	Low	19	17	17	12	11	9	7	7	8	9	12	17
	High	77	124	81	62	63	36	37	27	42	67	80	126
Rainfall:	Avg.	73	54	61	58	59	62	56	70	64	67	72	78
	Low	23	8	13	9	18	14	18	21	3	12	38	15
	High	138	175	116	116	144	148	125	120	149	141	145	173

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	59.910		84.930		71
Lowest yearly mean			47.030	1976	
Highest yearly mean			124.000	1966	
Lowest monthly mean	29.220	Oct	18.440	Aug 1976	
Highest monthly mean	148.100	Jan	384.000	Feb 1977	
Lowest daily mean	23.530	4 Sep	14.700	23 Aug 1976	
Highest daily mean	388.800	10 Jan	854.900	26 Feb 1977	
Peak	401.900	10 Jan	956.700	25 Feb 1977	
10% exceedance	118.200		170.800		69
50% exceedance	43.030		60.050		72
95% exceedance	24.840		27.600		90
Annual total (million cu m)	1889.00		2680.00		70
Annual runoff (mm)	252		358		70
Annual rainfall (mm)	626		774		81
(1941-70 rainfall average (mm)			771)		

Factors affecting runoff

- 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 clay and Triassic Marl, but some sandstone and limestone. Extensive terrace gravels and alluvium maintain baseflow.

028085 Derwent at St. Marys Bridge 1991

Measuring authority: NRA-ST
First year: 1936
Grid reference: 43 (SK) 355 368
Level stn. (m OD): 44.00
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	41.860	10.890	19.530	11.870	11.170	5.435	5.551	4.250	3.985	3.672	10.180	7.549
2	56.200	9.917	18.020	14.490	9.680	5.386	5.348	3.645	4.006	3.622	7.241	7.318
3	41.980	9.765	17.160	15.840	8.938	4.992	5.367	4.328	3.940	4.719	8.116	7.164
4	35.300	9.803	18.170	15.490	8.835	5.266	5.163	4.429	4.200	4.366	10.490	6.803
5	37.860	9.457	20.070	16.350	8.216	5.312	5.109	4.379	4.103	3.809	10.780	6.627
6	52.700	9.229	21.390	16.640	8.120	5.788	7.306	4.522	4.408	3.863	8.150	6.465
7	43.850	9.287	21.660	18.350	8.044	6.905	6.253	4.227	4.485	3.874	12.750	6.305
8	57.950	9.486	24.770	15.830	7.806	6.087	6.038	4.008	4.643	4.049	12.880	6.180
9	75.740	8.634	22.850	14.480	7.400	6.455	5.425	4.212	4.290	4.028	10.810	6.060
10	84.730	8.611	21.550	13.670	7.118	5.948	5.025	4.067	4.183	3.885	10.040	5.555
11	53.500	8.878	20.260	12.880	7.002	5.972	5.318	4.144	4.187	4.005	15.650	5.401
12	39.650	8.558	18.740	11.970	6.588	5.226	5.563	4.200	4.190	3.935	13.580	5.208
13	33.160	8.805	17.340	11.830	6.767	5.656	5.311	3.994	4.233	3.850	13.630	5.832
14	29.810	8.723	16.220	10.650	6.562	5.458	4.898	4.325	4.102	3.747	10.810	5.574
15	27.170	13.070	15.580	10.410	6.332	5.914	4.710	4.090	4.224	3.802	9.687	5.022
16	24.880	15.290	16.060	9.871	6.366	5.934	4.704	3.900	4.290	4.091	8.748	5.431
17	21.890	14.000	18.610	9.743	6.436	5.626	4.806	3.881	4.080	4.376	9.599	6.155
18	20.060	13.700	23.280	10.360	6.370	5.689	5.228	4.036	3.987	4.966	12.490	8.747
19	23.210	13.480	28.720	11.720	5.974	5.532	5.065	4.064	3.976	4.945	21.470	18.620
20	18.760	15.280	32.150	8.913	6.145	5.994	4.633	4.097	3.989	4.679	15.340	22.780
21	17.300	24.320	28.750	9.250	5.734	5.716	4.136	4.071	4.197	4.499	12.920	121.000
22	16.370	32.760	23.180	8.898	5.932	6.641	4.355	4.088	4.336	4.321	12.040	125.800
23	16.280	38.600	20.830	8.651	5.819	5.714	4.655	4.118	6.464	4.267	10.430	59.940
24	15.020	29.310	18.530	8.544	5.871	5.114	6.663	3.904	4.759	4.222	9.409	41.700
25	13.930	25.180	16.940	8.113	5.635	6.941	7.882	3.858	4.010	4.244	8.519	32.360
26	13.100	21.820	15.790	7.857	5.685	5.354	5.459	3.970	3.944	3.511	7.935	26.590
27	12.970	21.430	14.370	7.541	5.551	7.687	4.821	4.006	4.214	4.025	8.398	20.990
28	12.720	24.310	13.420	7.533	5.518	9.320	4.482	4.041	5.033	4.203	8.188	18.750
29	12.260		12.670	10.740	5.434	6.684	4.391	3.918	6.609	4.776	7.801	16.460
30	11.580		12.070	17.460	5.421	5.884	4.392	3.919	5.316	6.474	7.685	15.090
31	11.060		11.850		5.375		4.503	3.927		8.138		14.150
Average	31.380	15.450	19.370	11.860	6.834	5.988	5.244	4.084	4.413	4.354	10.860	20.890
Lowest	11.060	8.558	11.850	7.533	5.375	4.992	4.136	3.645	3.940	3.511	7.241	5.022
Highest	84.730	38.600	32.150	18.350	11.170	9.320	7.882	4.522	6.609	8.138	21.470	125.800
Peak flow	105.40	44.93	34.28	22.44	13.22	11.28	10.41	5.86	14.55	12.49	24.30	173.60
Day of peak	10	23	20	30	1	28	25	8	23	31	19	21
Monthly total (million cu m)	84.05	37.38	51.89	30.75	18.30	15.52	14.05	10.94	11.44	11.66	28.15	55.95
Runoff (mm)	80	35	49	29	17	15	13	10	11	11	27	53
Rainfall (mm)	83	60	66	71	13	90	68	26	45	78	104	117

Statistics of monthly data for previous record (Jan 1936 to Dec 1990—incomplete or missing months total 0.9 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	29.870	28.670	23.030	18.100	12.660	10.140	8.680	9.021	10.280	13.610	21.220	26.100
	Low	9.749	8.084	9.110	7.252	4.709	4.646	4.211	3.647	3.955	4.155	4.304	8.480
	(year)	1963	1963	1976	1990	1990	1990	1976	1976	1959	1959	1975	1975
	High	67.000	76.780	69.530	39.590	26.410	20.220	28.660	33.840	32.940	35.130	54.320	88.690
	(year)	1939	1977	1947	1966	1967	1987	1958	1956	1946	1960	1940	1965
Runoff:	Avg.	76	66	59	45	32	25	22	23	25	35	52	66
	Low	25	19	23	18	12	11	11	9	10	11	11	22
	High	170	176	177	97	67	50	73	86	81	89	134	225
Rainfall:	Avg.	105	79	77	66	68	71	76	83	81	90	103	102
	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 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	11.740		17.560		67
Lowest yearly mean			9.625	1976	
Highest yearly mean			25.200	1966	
Lowest monthly mean	4.084	Aug	3.647	Aug 1976	
Highest monthly mean	31.380	Jan	88.690	Dec 1965	
Lowest daily mean	3.511	26 Oct	1.663	28 Aug 1984	
Highest daily mean	125.800	22 Dec	334.200	10 Dec 1965	
Peak	173.600	21 Dec			
10% exceedance	22.490		36.330		62
50% exceedance	7.030		11.980		59
95% exceedance	3.938		4.805		82
Annual total (million cu m)	370.20		554.20		67
Annual runoff (mm)	351		526		67
Annual rainfall (mm)	821		1001		82
[1941-70 rainfall average (mm)			1016]		

Factors affecting runoff

- 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

Ten-channel, interleaved cross path US gauge in the centre of Derby, 1.75km ds of Longbridge Weir (28010). Record continuous with 28010. Peaks from 1976 only. Derby may flood but bypassing small. Substantial flow modification owing to Derwent reservoirs, milling and PWS abstractions. 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 1991

Measuring authority: NRA-A
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	1.052	1.453	4.708	1.429	1.696	0.704	0.730	0.404	0.313	0.962	1.211	0.591
2	1.199	1.438	3.330	1.600	1.336	0.735	0.677	0.421	0.284	0.702	0.804	0.626
3	1.181	1.355	2.820	1.526	1.288	0.773	0.644	0.441	0.302	0.689	0.957	0.511
4	1.057	1.320	2.725	1.594	1.481	0.733	0.639	0.506	0.299	0.602	0.988	0.567
5	1.274	1.351	2.563	1.430	1.231	0.701	0.559	0.474	0.303	0.595	0.789	0.534
6	1.264	1.372	2.803	1.408	1.151	0.693	0.420	0.480	0.305	0.604	0.777	0.551
7	1.293	1.257	3.010	1.504	1.194	0.769	0.508	0.530	0.317	0.546	0.691	0.556
8	2.193	1.360	3.006	1.346	1.139	0.790	0.590	0.486	0.351	0.546	0.646	0.552
9	4.301	1.329	2.916	1.283	1.158	0.724	0.552	0.499	0.317	0.572	0.614	0.550
10	5.694	1.441	2.609	1.327	1.083	0.611	0.483	0.450	0.295	0.561	0.598	0.533
11	3.780	1.387	2.499	1.296	1.087	0.565	0.465	0.427	0.303	0.563	0.609	0.505
12	3.623	1.388	2.394	1.263	1.062	0.575	0.519	0.367	0.324	0.554	0.602	0.536
13	2.321	1.378	2.292	1.212	1.036	0.615	0.516	0.338	0.361	0.537	0.632	0.565
14	2.002	1.297	2.287	1.185	1.017	0.598	0.651	0.363	0.375	0.531	0.582	0.548
15	1.796	2.352	2.198	1.170	1.039	0.730	0.553	0.360	0.377	0.513	0.562	0.538
16	1.716	3.878	2.230	1.116	0.953	0.887	0.525	0.348	0.404	0.512	0.555	0.541
17	1.646	3.514	2.220	1.147	0.958	0.840	0.505	0.359	0.405	0.524	0.566	0.633
18	1.942	2.898	2.248	1.206	0.886	0.713	0.603	0.429	0.358	0.449	0.718	0.752
19	2.991	2.564	2.261	1.370	0.908	0.720	0.662	0.437	0.287	0.435	1.237	0.649
20	2.473	2.548	2.233	1.221	0.855	0.840	0.539	0.334	0.283	0.422	1.109	0.711
21	2.089	2.686	2.142	1.110	0.746	0.696	0.498	0.282	0.298	0.428	0.967	1.280
22	1.872	2.328	2.015	1.017	0.702	0.682	0.487	0.317	0.413	0.444	0.734	1.694
23	1.731	2.194	1.924	0.996	0.692	0.658	0.532	0.474	0.371	0.430	0.663	1.267
24	1.638	2.079	1.852	1.030	0.701	0.666	0.466	0.395	0.333	0.429	0.665	0.987
25	1.597	1.928	1.831	1.005	0.700	0.867	0.602	0.417	0.385	0.458	0.651	0.877
26	1.598	1.838	1.879	1.088	0.764	0.843	0.538	0.385	0.567	0.486	0.700	0.807
27	1.530	4.818	1.707	1.033	0.721	1.202	0.463	0.378	1.068	0.484	0.644	0.772
28	1.567	9.032	1.748	0.958	0.797	1.528	0.449	0.363	0.973	0.489	0.632	0.755
29	1.559		1.711	1.308	0.745	1.052	0.420	0.318	4.318	0.487	0.630	0.727
30	1.512		1.563	1.996	0.741	0.807	0.417	0.277	1.456	1.043	0.590	0.723
31	1.498		1.467		0.686		0.408	0.310		0.683		0.724
Average	2.032	2.278	2.361	1.272	0.986	0.777	0.536	0.399	0.558	0.557	0.737	0.715
Lowest	1.052	1.257	1.467	0.958	0.686	0.565	0.408	0.277	0.283	0.422	0.555	0.505
Highest	5.694	9.032	4.708	1.996	1.696	1.528	0.730	0.530	4.318	1.043	1.237	1.694
Peak flow	6.91	11.63	6.04	2.60	2.00	2.64	0.87	0.58	6.81	1.88	1.71	1.92
Day of peak	10	27	1	30	1	27	18	4	29	30	1	22
Monthly total (million cu m)	5.44	5.51	6.32	3.30	2.64	2.01	1.44	1.07	1.45	1.49	1.91	1.91
Runoff (mm)	18	19	21	11	9	7	5	4	5	5	6	6
Rainfall (mm)	54	47	27	49	14	70	29	16	86	29	39	24

Statistics of monthly data for previous record (May 1959 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	2.837	3.260	2.913	2.415	1.757	1.126	0.785	0.774	0.710	0.944	1.367	2.072
	Low	0.673	0.492	0.453	0.365	0.311	0.184	0.063	0.136	0.232	0.218	0.278	0.312
	(year)	1965	1976	1976	1976	1976	1976	1976	1976	1959	1959	1959	1964
	High	5.857	10.690	6.995	5.748	4.695	3.141	2.118	2.376	2.885	3.906	6.525	7.879
	(year)	1988	1977	1979	1979	1983	1985	1968	1980	1968	1960	1960	1965
Runoff:	Avg.	26	27	26	21	16	10	7	7	6	8	12	19
	Low	6	4	4	3	3	2	1	1	2	2	2	3
	High	53	87	63	50	42	27	19	21	25	35	57	71
Rainfall:	Avg.	54	40	48	50	50	53	51	61	48	50	55	56
	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 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	1.094		1.739		63
Lowest yearly mean			0.594	1976	
Highest yearly mean			2.807	1979	
Lowest monthly mean	0.399	Aug	0.063	Jul 1976	
Highest monthly mean	2.361	Mar	10.690	Feb 1977	
Lowest daily mean	0.277	30 Aug	0.021	24 Jul 1976	
Highest daily mean	9.032	28 Feb	31.600	11 Feb 1977	
Peak	11.630	27 Feb	37.540	11 Feb 1977	
10% exceedance	2.211		3.779		59
50% exceedance	0.737		1.043		71
95% exceedance	0.325		0.348		93
Annual total (million cu m)	34.50		54.88		63
Annual runoff (mm)	116		184		63
Annual rainfall (mm)	484		616		79
[1941-70 rainfall average (mm)			631]		

Factors affecting runoff

- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

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 (since 1985) and abstractions for public supply at Saltersford. The catchment is clay (50%) with limestone (40%) and gravel, and is largely rural.

032004 Ise Brook at Harrowden Old Mill 1991

Measuring authority: NRA-A
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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.723	0.559	2.940	0.844	1.473	0.269	0.423	0.338	0.141	0.795	0.510	0.426
2	0.792	0.535	2.104	0.868	0.776	0.269	0.489	0.233	0.116	0.948	0.422	0.423
3	0.979	0.516	1.748	0.693	0.729	0.273	0.603	0.191	0.079	0.300	0.591	0.399
4	0.930	0.499	1.658	0.753	0.699	0.260	0.439	0.196	0.097	0.240	0.759	0.384
5	1.067	0.486	1.690	0.632	0.570	0.272	0.408	0.196	0.108	0.228	0.541	0.371
6	0.994	0.468	1.546	0.639	0.535	0.284	0.475	0.268	0.105	0.193	0.512	0.358
7	0.974	0.265	2.650	0.646	0.507	0.274	0.544	0.207	0.105	0.181	0.491	0.353
8	0.928	0.265	2.689	0.598	0.480	0.300	0.437	0.250	0.131	0.184	0.466	0.433
9	2.249	0.265	2.600	0.649	0.441	0.317	0.340	0.201	0.123	0.190	0.352	0.379
10	4.735	0.265	1.997	0.527	0.419	0.298	0.268	0.224	0.094	0.188	0.322	0.373
11	3.297	0.265	1.719	0.566	0.396	0.279	0.253	0.200	0.103	0.179	0.351	0.420
12	2.036	0.265	1.214	0.647	0.396	0.300	0.248	0.180	0.114	0.168	0.408	0.353
13	1.473	0.494	1.163	0.323	0.406	0.293	0.255	0.167	0.109	0.164	0.359	0.344
14	0.854	0.510	1.479	0.471	0.362	0.255	0.238	0.146	0.109	0.166	0.326	0.357
15	1.186	1.122	1.285	0.452	0.378	0.712	0.233	0.133	0.130	0.170	0.335	0.365
16	0.692	1.930	1.386	0.452	0.365	0.458	0.232	0.130	0.114	0.262	0.322	0.362
17	0.965	1.822	1.301	0.383	0.406	0.366	0.223	0.139	0.119	0.176	0.308	0.511
18	0.794	1.666	1.300	0.589	0.395	0.406	0.399	0.163	0.111	0.165	0.659	0.531
19	1.351	1.613	1.243	0.542	0.376	0.431	0.246	0.129	0.112	0.151	4.346	0.689
20	1.322	1.499	1.359	0.481	0.340	0.323	0.224	0.099	0.109	0.152	3.673	0.786
21	1.195	1.500	1.331	0.525	0.320	0.313	0.208	0.115	0.116	0.152	1.673	0.786
22	0.843	1.460	1.454	0.458	0.299	0.343	0.206	0.211	0.174	0.156	1.127	0.912
23	0.733	1.658	1.218	0.449	0.297	0.625	0.194	0.232	0.134	0.152	0.905	0.958
24	0.729	1.516	1.065	0.445	0.304	0.487	0.255	0.168	0.153	0.162	0.746	0.706
25	0.701	1.271	0.715	0.416	0.273	0.700	0.275	0.138	0.123	0.175	0.655	0.618
26	0.665	1.163	0.976	0.379	0.273	0.728	0.210	0.165	0.326	0.175	0.591	0.582
27	0.630	3.615	0.877	0.382	0.284	0.867	0.201	0.112	1.104	0.170	0.524	0.545
28	0.611	5.539	0.860	0.360	0.284	0.606	0.209	0.128	0.795	0.173	0.495	0.517
29	0.592		0.793	1.177	0.284	0.534	0.206	0.123	0.710	0.246	0.464	0.491
30	0.605		0.653	1.878	0.284	0.472	0.289	0.124	0.388	0.434	0.443	0.471
31	0.574		0.686		0.267		0.502	0.104		0.437		0.460
Average	1.168	1.180	1.474	0.607	0.439	0.410	0.314	0.174	0.208	0.246	0.789	0.505
Lowest	0.574	0.265	0.653	0.323	0.267	0.255	0.194	0.099	0.079	0.151	0.308	0.344
Highest	4.735	5.539	2.940	1.878	1.473	0.867	0.603	0.338	1.104	0.948	4.346	0.958
Peak flow	5.47	6.72	3.93	2.88	2.48	1.28	0.93	0.57	1.93	1.76	5.75	1.27
Day of peak	10	27	1	30	1	26	31	1	27	2	19	23
Monthly total (million cu m)	3.13	2.85	3.95	1.57	1.18	1.06	0.84	0.47	0.54	0.66	2.05	1.35
Runoff (mm)	16	15	20	8	6	5	4	2	3	3	11	7
Rainfall (mm)	56	44	32	59	10	80	56	18	68	33	62	21

Statistics of monthly data for previous record (Dec 1943 to Dec 1990—incomplete or missing months total 0.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	2.481	2.626	2.245	1.563	1.107	0.743	0.557	0.530	0.500	0.735	1.356	1.920
	Low	0.459	0.324	0.219	0.330	0.143	0.128	0.166	0.110	0.128	0.185	0.176	0.218
	(year)	1944	1944	1944	1948	1944	1944	1945	1944	1949	1947	1947	1947
	High	6.441	6.948	7.984	3.835	3.606	2.421	3.018	2.656	2.315	4.384	5.330	5.827
	(year)	1959	1977	1947	1979	1967	1981	1958	1980	1968	1960	1960	1965
Runoff:	Avg.	34	33	31	21	15	10	8	7	7	10	18	27
	Low	6	4	3	4	2	2	2	2	2	3	2	3
	High	89	87	110	51	50	32	42	37	31	61	71	80
Rainfall:	Avg.	54	43	49	46	53	55	51	64	52	53	59	59
	Low	15	3	5	8	6	5	5	3	3	5	10	13
	High	112	115	127	109	130	141	109	139	127	137	132	123

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	0.623		1.358		46
Lowest yearly mean			0.422	1944	
Highest yearly mean			2.337	1960	
Lowest monthly mean	0.174	Aug	0.110	Aug 1944	
Highest monthly mean	1.474	Mar	7.984	Mar 1947	
Lowest daily mean	0.079	3 Sep	0.048	18 Aug 1944	
Highest daily mean	5.539	28 Feb	21.360	15 Aug 1980	
Peak	6.725	27 Feb	28.390	17 Mar 1947	
10% exceedance	1.340		3.006		45
50% exceedance	0.420		0.736		57
95% exceedance	0.117		0.198		59
Annual total (million cu m)	19.65		42.86		46
Annual runoff (mm)	101		221		46
Annual rainfall (mm)	539		638		84
[1941-70 rainfall average (mm)			631]		

Factors affecting runoff

- Reservoir(s) in catchment.
- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Flume with low flow notch and side weir to 1965, compound Crump profile weir to April 1976, and theoretically-rated Flat V weir with 5.94m crest since. Crump weir modular to 15.6 cumecs, but bypassed at 14.2m. Flat V also bypassed. Two small storage reservoirs with minor influence on low flows. Underlain by clay (59%) and sandstone (24%), mostly rural but includes Kettering.

033002 Bedford Ouse at Bedford 1991

Measuring authority: NRA-A
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	5.400	4.800	28.700	5.700	26.600	3.000	4.200	10.600	1.700	11.400	5.400	5.400
2	6.300	4.600	16.600	6.200	12.900	2.900	4.000	10.200	1.700	7.700	5.800	5.000
3	7.400	4.400	12.800	6.300	9.200	2.900	6.800	6.700	1.700	4.800	9.500	4.600
4	7.700	4.300	10.800	6.200	8.200	2.900	16.300	5.000	1.700	3.900	10.700	4.500
5	6.900	4.200	10.500	6.200	6.700	3.100	13.500	3.700	1.700	3.600	10.700	4.400
6	8.900	4.000	13.000	6.200	5.300	3.300	7.600	3.500	1.700	3.100	8.300	4.300
7	11.900	3.800	20.100	6.800	5.100	4.200	5.700	3.400	1.700	3.200	6.300	4.200
8	11.100	3.700	28.000	6.400	4.900	3.900	5.100	3.000	1.700	3.000	5.100	4.000
9	16.100	3.900	29.400	5.700	4.600	3.900	4.500	2.800	1.700	2.900	4.900	3.900
10	25.600	4.100	20.100	5.200	4.400	5.400	3.900	2.700	1.700	2.700	4.300	4.000
11	30.900	4.000	16.300	5.000	4.300	5.000	3.700	2.400	1.700	2.600	4.100	3.800
12	19.900	4.000	16.300	4.900	4.300	3.900	3.300	2.300	1.700	2.500	4.400	3.600
13	13.300	4.000	14.300	4.800	4.200	3.500	3.100	2.200	1.700	2.500	5.000	3.500
14	10.600	4.400	12.100	4.500	4.000	3.000	3.100	2.200	1.600	2.400	6.400	3.400
15	8.900	5.200	11.000	4.300	3.900	3.500	3.200	2.200	1.700	2.400	6.900	3.500
16	8.200	10.100	10.500	4.100	4.100	6.400	3.200	2.200	1.700	2.300	6.200	4.000
17	7.400	13.800	11.100	3.900	3.900	5.700	3.600	2.100	2.000	2.700	5.200	4.400
18	6.300	12.000	11.500	4.000	4.200	4.800	4.100	2.000	2.400	2.800	5.000	5.900
19	9.800	10.500	11.400	4.900	4.200	3.900	5.200	1.900	2.200	2.700	9.600	9.600
20	15.000	9.400	11.400	5.200	4.000	3.700	4.900	2.000	2.300	2.500	35.300	15.000
21	11.500	8.400	11.700	4.800	3.800	3.400	4.000	2.100	2.400	2.300	41.000	11.200
22	9.000	7.800	11.700	4.900	3.500	3.200	3.500	1.900	2.300	2.300	21.200	9.400
23	7.800	9.300	10.100	4.300	3.400	3.500	3.000	2.100	2.200	2.500	13.200	8.500
24	6.100	10.900	8.700	3.900	3.400	6.000	2.200	2.800	2.400	2.600	11.700	7.600
25	5.800	10.100	7.900	3.800	3.500	8.400	2.300	2.900	2.100	2.600	9.500	5.600
26	5.600	8.700	6.400	3.700	3.400	8.400	4.900	2.300	2.800	2.500	9.000	5.300
27	5.300	12.400	6.200	3.700	3.300	7.300	4.400	2.200	6.100	2.500	7.800	5.000
28	5.000	29.600	6.000	3.600	3.300	7.100	3.800	2.100	13.800	2.600	5.900	4.900
29	4.800		5.900	4.600	3.300	8.000	3.300	2.000	12.600	2.700	6.000	4.600
30	4.800		5.400	15.400	3.200	6.400	4.000	1.800	15.600	3.100	5.900	4.500
31	4.600		5.600		3.100		4.800	1.700		4.500		4.400
Average	9.932	7.729	12.950	5.307	5.361	4.687	4.813	3.129	3.277	3.287	9.677	5.548
Lowest	4.600	3.700	5.400	3.600	3.100	2.900	2.200	1.700	1.600	2.300	4.100	3.400
Highest	30.900	29.600	29.400	15.400	26.600	8.400	16.300	10.600	15.600	11.400	41.000	15.000
Peak flow	32.70	35.70	35.70	29.70	30.70	9.90	17.20	12.00	16.50	13.40	44.90	16.40
Day of peak	11	28	1	30	1	26	4	2	30	1	21	20
Monthly total (million cu m)	26.60	18.70	34.69	13.75	14.36	12.15	12.89	8.38	8.49	8.80	25.08	14.86
Runoff (mm)	18	13	24	9	10	8	9	6	6	6	17	10
Rainfall (mm)	60	38	36	63	10	95	89	14	72	36	61	17

Statistics of monthly data for previous record (Jan 1933 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	19.650	20.370	17.170	11.390	7.159	4.615	3.240	2.798	2.808	5.452	11.020	15.300
	Low	2.608	2.232	2.410	1.996	1.411	0.483	0.100	0.040	0.268	0.454	1.152	1.531
	(year)	1934	1965	1944	1976	1934	1934	1934	1934	1934	1934	1934	1964
	High	55.190	53.300	62.020	31.470	28.280	14.280	19.080	14.400	18.000	30.420	43.800	40.400
	(year)	1939	1977	1947	1951	1983	1985	1968	1980	1968	1987	1960	1960
Runoff:	Avg.	36	34	31	20	13	8	6	5	5	10	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	56	78	74
Rainfall:	Avg.	58	43	49	45	54	53	52	60	53	60	63	61
(1934-	Low	14	3	5	3	6	8	5	3	3	4	10	13
1990)	High	124	111	140	96	113	119	120	138	110	147	178	134

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	6.303		10.030		63
Lowest yearly mean			2.401	1934	
Highest yearly mean			18.890	1937	
Lowest monthly mean	3.129	Aug	0.040	Aug 1934	
Highest monthly mean	12.950	Mar	62.020	Mar 1947	
Lowest daily mean	1.600	14 Sep	0.008	31 Aug 1934	
Highest daily mean	41.000	21 Nov	278.100	15 Mar 1947	
Peak	44.900	21 Nov			
10% exceedance	11.710		26.270		45
50% exceedance	4.534		4.631		98
95% exceedance	1.877		0.916		205
Annual total (million cu m)	198.80		316.50		63
Annual runoff (mm)	136		217		63
Annual rainfall (mm)	591		651		91
[1941-70 rainfall average (mm)			648]		

Factors affecting runoff

- 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. (Improved flow record, from 1972, d/s at 33039). Significant surface and groundwater abstractions in catchment for PWS, Milton Keynes' effluent now significant. Geology - predominantly clay. Land use - agricultural with substantial urban development over last 15 years.

033034 Little Ouse at Abbey Heath 1991

Measuring authority: NRA-A
First year: 1968

Grid reference: 52 (TL) 851 844
Level stn. (m OD): 7.20

Catchment area (sq km): 699.3
Max alt. (m OD): 98

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.085	1.968	3.300	2.500	2.571	1.313	1.415	1.231	0.997	1.651	1.130	1.319
2	2.367	1.951	3.426	2.601	2.279	1.348	1.353	1.110	0.990	1.479	1.154	1.320
3	2.450	1.924	3.198	2.586	2.141	1.358	1.375	1.146	0.973	1.406	1.104	1.309
4	2.350	1.881	2.988	2.592	2.162	1.377	1.297	1.129	1.022	1.368	1.272	1.307
5	2.296	1.866	3.173	2.648	2.223	1.368	1.223	1.174	1.058	1.346	1.301	1.304
6	2.263	1.888	3.432	2.519	2.214	1.502	1.115	1.118	1.080	1.333	1.318	1.275
7	2.252	1.828	4.021	2.482	2.128	1.449	1.057	1.116	1.069	1.339	1.255	1.184
8	2.359	1.839	4.011	2.450	2.019	1.736	1.099	1.085	1.070	1.270	1.070	1.195
9	2.450	1.869	4.003	2.395	1.947	1.729	1.062	1.094	1.065	1.399	1.082	1.361
10	2.499	1.899	3.698	2.399	1.921	1.578	1.025	1.107	1.063	1.366	1.215	1.176
11	2.409	2.013	3.357	2.234	1.885	1.534	0.935	1.105	1.058	1.259	1.211	1.208
12	2.249	1.937	3.227	2.265	1.912	1.445	0.891	1.087	1.077	1.134	1.316	1.189
13	2.159	1.978	3.088	2.216	1.701	1.414	0.883	1.050	1.047	1.052	1.291	1.212
14	2.079	1.994	2.673	2.144	1.744	1.402	0.873	0.908	0.998	1.032	1.304	1.247
15	2.114	2.472	2.803	2.166	1.743	1.574	0.851	1.194	1.048	0.905	1.317	1.261
16	1.955	3.478	2.961	2.114	1.737	1.536	0.854	1.150	1.136	0.981	1.306	1.280
17	1.915	4.381	2.984	2.103	1.665	1.478	0.834	0.778	1.113	1.003	1.267	1.472
18	1.975	4.556	3.336	2.158	1.659	1.395	0.999	0.744	1.124	0.968	1.372	1.535
19	2.070	4.716	3.140	2.255	1.723	1.353	1.086	0.811	1.100	0.980	1.909	1.744
20	2.162	4.897	3.110	2.246	1.707	1.327	1.229	0.814	1.123	1.111	1.725	1.748
21	2.171	4.500	2.966	2.226	1.470	1.323	1.256	0.853	1.167	1.052	1.638	1.880
22	2.123	4.349	2.927	2.030	1.480	1.261	1.199	0.868	1.218	0.998	1.574	2.293
23	2.090	4.007	2.842	1.958	1.411	1.522	1.103	0.958	1.220	0.992	1.511	2.294
24	2.033	3.682	2.774	1.939	1.441	1.506	1.380	0.875	1.253	1.001	1.469	1.947
25	2.067	3.359	2.526	1.907	1.448	1.687	1.276	0.861	1.212	1.008	1.473	1.743
26	1.999	3.172	2.537	1.885	1.435	1.695	1.300	0.828	1.261	1.026	1.427	1.694
27	1.959	3.156	2.578	1.838	1.436	1.756	1.300	0.860	1.308	1.015	1.421	1.668
28	1.975	3.341	2.568	1.816	1.435	1.761	1.238	0.866	1.679	1.011	1.403	1.628
29	1.953		2.508	2.108	1.399	1.575	1.181	0.892	1.737	1.058	1.366	1.604
30	1.944		2.475	2.530	1.387	1.487	1.161	0.973	1.710	1.116	1.373	1.576
31	1.926		2.479		1.366		1.097	0.986		1.113		1.541
Average	2.152	2.889	3.068	2.244	1.767	1.493	1.127	0.993	1.166	1.154	1.352	1.500
Lowest	1.915	1.828	2.475	1.816	1.366	1.261	0.834	0.744	0.973	0.905	1.070	1.176
Highest	2.499	4.897	4.021	2.648	2.571	1.761	1.415	1.231	1.737	1.651	1.909	2.294
Peak flow	2.76	6.18	4.49	2.96	3.04	2.41	2.06	2.13	2.29	1.78	2.33	2.62
Day of peak	10	18	7	2	1	23	24	1	28	1	18	19
Monthly total (million cu m)	5.76	6.99	8.22	5.82	4.73	3.87	3.02	2.66	3.02	3.09	3.51	4.02
Runoff (mm)	8	10	12	8	7	6	4	4	4	4	5	6
Rainfall (mm)	33	43	28	47	14	81	27	23	51	22	55	33

Statistics of monthly data for previous record (Apr 1968 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	6.181	6.439	5.841	4.982	3.901	2.929	2.177	2.019	1.993	2.608	3.284	4.412
	Low	2.046	2.173	1.931	2.063	1.852	1.165	0.798	0.620	0.902	1.189	1.263	1.555
	(year)	1973	1973	1973	1973	1974	1976	1976	1976	1976	1990	1990	1990
	High	11.270	12.010	10.240	8.286	7.677	6.851	3.603	5.210	6.635	10.200	9.033	7.093
	(year)	1988	1979	1988	1979	1969	1985	1985	1987	1968	1987	1974	1982
Runoff:	Avg.	24	22	22	18	15	11	8	8	7	10	12	17
	Low	8	8	7	8	7	4	3	2	3	5	5	6
	High	43	42	39	31	29	25	14	20	25	39	33	27
Rainfall:	Avg.	56	39	48	43	47	55	49	49	50	54	62	55
	Low	16	9	12	10	6	10	9	8	2	4	24	27
	High	114	78	100	84	97	137	99	116	138	123	147	98

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	1.735		3.885		45
Lowest yearly mean			1.780	1973	
Highest yearly mean			5.670	1969	
Lowest monthly mean	0.993	Aug	0.620	Aug 1976	
Highest monthly mean	3.068	Mar	12.010	Feb 1979	
Lowest daily mean	0.744	18 Aug	0.482	28 Aug 1976	
Highest daily mean	4.897	20 Feb	24.320	13 Oct 1987	
Peak	6.182	18 Feb	25.290	13 Oct 1987	
10% exceedance	2.717		7.199		38
50% exceedance	1.469		2.995		49
95% exceedance	0.914		1.194		77
Annual total (million cu m)	54.71		122.60		45
Annual runoff (mm)	78		175		45
Annual rainfall (mm)	457		607		75
[1941-70 rainfall average (mm)			618]		

Factors affecting runoff

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

Station and catchment description
Rectangular section Crump profile weir with crest tapping. Replaced 33008 in 1968. Weir subject to drowning and spills on rare occasions. Flows augmented from groundwater in some years (e.g. 1990) Geology - Chalk with approx. 85% Boulder Clay cover. Land use - predominately agricultural with large areas of forest and heathland.

034006 Waveney at Needham Mill 1991

Measuring authority: NRA-A
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	1.726	0.664	2.812	0.561	1.170	0.755	0.863	0.347	0.282	0.576	0.359	0.327
2	2.481	0.629	2.281	0.579	0.839	0.714	0.858	0.322	0.267	0.452	0.311	0.331
3	2.233	0.581	1.841	0.597	0.675	0.759	0.598	0.325	0.262	0.413	0.378	0.356
4	1.787	0.572	1.456	0.598	0.708	0.759	0.385	0.296	0.289	0.394	0.368	0.434
5	1.716	0.562	1.697	0.630	2.220	0.759	0.346	0.280	0.304	0.384	0.432	0.283
6	1.735	0.540	1.984	0.579	1.645	0.774	0.343	0.304	0.289	0.364	0.462	0.310
7	1.776	0.536	2.408	0.541	1.136	0.842	0.328	0.328	0.302	0.354	0.424	0.329
8	1.711	0.535	2.825	0.541	0.887	0.956	0.316	0.368	0.319	0.372	0.383	0.317
9	1.901	0.532	2.981	0.529	0.757	0.833	0.311	0.351	0.343	0.371	0.352	0.314
10	2.126	0.541	2.223	0.511	0.634	0.778	0.309	0.322	0.373	0.370	0.340	0.328
11	1.879	0.570	1.816	0.501	0.582	0.761	0.308	0.306	0.298	0.366	0.414	0.324
12	1.598	0.577	1.609	0.498	0.539	0.774	0.292	0.298	0.270	0.363	0.462	0.320
13	1.285	0.570	1.446	0.480	0.510	0.760	0.283	0.286	0.260	0.346	0.485	0.322
14	1.083	0.570	1.262	0.448	0.503	0.748	0.268	0.295	0.277	0.345	0.478	0.320
15	0.990	1.158	1.108	0.415	0.480	0.834	0.264	0.292	0.263	0.363	0.437	0.310
16	0.927	4.322	1.059	0.450	0.466	0.914	0.255	0.277	0.243	0.400	0.415	0.325
17	0.887	5.724	1.152	0.453	0.451	0.863	0.254	0.271	0.276	0.373	0.388	0.410
18	0.891	5.311	0.982	0.462	0.426	0.800	0.280	0.254	0.318	0.348	0.404	0.528
19	1.313	5.746	1.152	0.505	0.408	0.807	0.297	0.246	0.343	0.362	0.615	0.650
20	1.666	4.858	1.117	0.528	0.402	0.801	0.297	0.259	0.327	0.355	0.940	0.728
21	1.513	5.298	1.091	0.504	0.392	0.784	0.277	0.266	0.277	0.358	0.761	1.223
22	1.314	4.860	0.941	0.485	0.377	0.736	0.247	0.277	0.323	0.351	0.594	1.713
23	1.159	3.751	0.869	0.474	0.386	0.790	0.247	0.295	0.325	0.327	0.539	1.123
24	1.026	2.838	0.784	0.464	0.698	0.996	0.317	0.308	0.335	0.346	0.489	0.820
25	0.933	2.203	0.671	0.436	0.720	1.079	0.421	0.280	0.342	0.353	0.460	0.599
26	0.880	1.854	0.659	0.430	0.714	1.036	0.445	0.279	0.383	0.346	0.484	0.540
27	0.830	1.636	0.628	0.419	0.702	1.024	0.409	0.270	0.406	0.341	0.468	0.525
28	0.796	2.480	0.589	0.397	0.737	0.985	0.348	0.270	0.450	0.337	0.479	0.510
29	0.793		0.558	0.427	0.755	0.851	0.330	0.284	0.847	0.344	0.413	0.469
30	0.780		0.535	1.050	0.755	0.799	0.336	0.290	0.781	0.351	0.391	0.465
31	0.724		0.539		0.755		0.341	0.287		0.364		0.470
Average	1.370	2.143	1.390	0.516	0.723	0.836	0.360	0.295	0.346	0.371	0.464	0.517
Lowest	0.724	0.532	0.535	0.397	0.377	0.714	0.247	0.246	0.243	0.327	0.311	0.283
Highest	2.481	5.746	2.981	1.050	2.220	1.079	0.863	0.368	0.847	0.576	0.940	1.713
Peak flow	2.66	7.00	3.20	1.48	2.64	1.12	0.87	0.37	0.93	0.68	0.98	1.92
Day of peak	2	17	8	30	5	25	1	8	29	1	20	22
Monthly total (million cu m)	3.67	5.19	3.72	1.34	1.94	2.17	0.97	0.79	0.90	0.99	1.20	1.38
Runoff (mm)	10	14	10	4	5	6	3	2	2	3	3	4
Rainfall (mm)	34	41	25	44	21	77	29	17	59	23	54	31

Statistics of monthly data for previous record (Dec 1963 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	4.092	3.370	2.699	2.020	1.125	0.772	0.531	0.725	0.842	1.172	1.778	2.737
	Low	0.609	0.722	0.591	0.487	0.369	0.285	0.242	0.281	0.261	0.330	0.386	0.492
	(year)	1973	1965	1973	1974	1974	1974	1990	1973	1964	1989	1989	1964
	High	14.260	10.670	7.665	5.646	3.254	4.302	1.197	6.958	9.753	10.260	8.852	8.379
	(year)	1988	1979	1981	1983	1969	1985	1987	1987	1968	1987	1974	1965
Runoff:	Avg.	30	22	20	14	8	5	4	5	6	8	12	20
	Low	4	5	4	3	3	2	2	2	2	2	3	4
	High	103	70	55	40	24	30	9	50	68	74	62	61
Rainfall:	Avg.	53	38	44	45	45	51	47	50	50	54	62	55
	Low	16	10	10	9	5	10	11	7	2	4	25	18
	High	122	76	96	86	97	132	93	110	161	118	150	100

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	0.769		1.815		42
Lowest yearly mean			0.537	1973	
Highest yearly mean			3.366	1987	
Lowest monthly mean	0.295	Aug	0.242	Jul 1990	
Highest monthly mean	2.143	Feb	14.260	Jan 1988	
Lowest daily mean	0.243	16 Sep	0.165	30 Jul 1990	
Highest daily mean	5.746	19 Feb	89.760	16 Sep 1968	
Peak	7.005	17 Feb	113.300	16 Sep 1968	
10% exceedance	1.653		4.117		40
50% exceedance	0.483		0.784		62
95% exceedance	0.272		0.316		86
Annual total (million cu m)	24.25		57.28		42
Annual runoff (mm)	66		155		42
Annual rainfall (mm)	455		594		77
[1941-70 rainfall average (mm)			603]		

Factors affecting runoff

- 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. Was affected by the Waveney Groundwater Scheme between 1975 and 1979. Predominantly a Boulder Clay catchment with largely rural land use.

036006 Stour at Langham 1991

Measuring authority: NRA-A
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	4.042	3.087	2.823	2.831	3.816	1.241	2.495	0.932	1.004	1.612	0.925	2.108
2	4.379	3.088	2.662	2.856	2.197	2.021	2.588	1.047	0.967	1.049	0.995	2.113
3	3.877	3.023	2.540	2.857	2.379	1.669	2.661	0.976	0.931	0.943	0.907	1.736
4	3.228	3.019	2.460	2.821	2.613	1.636	2.536	1.141	0.895	0.918	0.960	1.298
5	3.303	3.011	2.483	2.825	3.035	1.355	2.393	1.197	0.961	1.031	1.214	1.268
6	3.295	3.125	2.786	2.706	2.841	1.883	2.083	1.179	0.994	1.143	1.128	1.210
7	3.313	3.056	3.170	2.644	2.650	1.668	1.773	1.399	0.810	1.155	1.003	1.122
8	3.340	3.484	3.655	2.633	2.452	2.467	1.716	1.621	0.702	1.189	0.961	1.096
9	3.637	2.726	3.588	2.481	2.307	1.916	1.625	1.421	0.647	1.169	0.953	1.162
10	3.998	1.588	3.166	2.393	2.220	1.745	1.549	1.247	0.662	1.140	1.087	1.164
11	3.710	1.854	2.412	2.465	2.214	1.672	1.518	1.118	0.671	1.101	1.297	1.164
12	3.358	1.889	2.504	2.622	2.199	1.484	1.520	1.015	0.665	1.203	1.455	1.177
13	3.089	1.928	2.446	2.476	2.191	1.765	1.295	0.990	0.650	1.163	1.687	1.271
14	2.675	2.112	2.675	2.320	2.118	1.837	1.163	1.020	0.661	1.189	1.486	1.301
15	2.901	3.903	2.666	2.407	2.163	2.589	1.163	0.929	1.307	1.188	1.235	1.289
16	2.861	5.209	2.948	2.515	2.152	2.398	1.149	0.912	1.461	1.218	1.223	1.389
17	2.756	5.973	3.414	2.829	2.131	2.288	1.116	1.006	1.437	0.906	1.242	1.441
18	2.960	5.378	3.504	2.938	2.153	2.206	1.100	0.909	1.178	0.744	1.321	1.706
19	3.322	4.523	3.211	3.105	2.161	2.451	1.049	0.806	0.855	0.687	2.745	1.987
20	3.382	3.678	3.139	3.054	2.120	2.957	0.873	0.827	0.821	0.692	3.351	2.029
21	3.403	3.781	3.038	3.050	2.071	2.591	0.715	0.872	0.848	0.733	2.327	1.878
22	3.285	3.877	2.991	2.958	2.522	2.317	0.841	0.798	0.926	0.745	1.745	1.638
23	3.244	3.168	2.838	2.860	2.045	2.536	0.887	0.798	0.978	0.770	2.064	1.625
24	3.222	2.438	2.663	2.858	1.683	2.852	0.812	0.832	1.090	0.743	2.085	1.513
25	3.165	2.087	2.490	2.819	2.074	2.820	1.012	0.914	0.900	0.731	1.989	1.453
26	2.589	1.924	2.633	2.743	2.156	2.850	1.192	0.930	0.863	0.834	1.960	1.427
27	1.487	2.093	2.651	2.677	2.398	2.786	1.031	0.858	0.851	0.851	1.920	1.398
28	1.382	2.908	2.694	2.659	1.743	2.859	0.853	0.875	0.919	0.760	1.908	1.415
29	2.148		2.738	3.200	1.536	3.023	0.805	0.900	1.503	0.676	1.846	1.400
30	3.081		2.839	4.304	1.547	2.817	0.833	0.941	1.640	0.921	1.921	1.327
31	3.010		2.832		1.454		0.871	0.865		0.859		1.307
Average	3.143	3.140	2.860	2.797	2.237	2.223	1.394	1.009	0.960	0.970	1.565	1.465
Lowest	1.382	1.588	2.412	2.320	1.454	1.241	0.715	0.798	0.647	0.676	0.907	1.096
Highest	4.379	5.973	3.655	4.304	3.816	3.023	2.661	1.621	1.640	1.612	3.351	2.113
Peak flow	5.06	6.50	4.19	5.09	5.25	3.30	2.81	1.92	1.88	1.80	3.79	2.14
Day of peak	2	17	8	30	22	20	3	7	29	1	20	1
Monthly total (million cu m)	8.42	7.60	7.66	7.25	5.99	5.76	3.73	2.70	2.49	2.60	4.06	3.92
Runoff (mm)	15	13	13	13	10	10	6	5	4	4	7	7
Rainfall (mm)	37	40	27	47	18	93	42	28	48	17	61	18

Statistics of monthly data for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.529	5.079	4.720	3.656	2.381	1.657	1.121	1.157	1.151	1.933	2.862	4.021
	Low	1.398	0.883	1.597	1.217	0.758	0.454	0.191	0.210	0.395	0.510	0.578	0.692
	(year)	1965	1965	1976	1974	1974	1965	1976	1976	1964	1970	1964	1964
	High	16.080	12.980	9.775	9.334	7.253	5.999	2.957	6.236	4.945	13.170	11.340	10.550
	(year)	1988	1979	1981	1983	1983	1987	1987	1987	1968	1987	1974	1965
Runoff:	Avg.	26	21	22	16	11	7	5	5	5	9	13	19
	Low	6	4	7	5	4	2	1	1	2	2	3	3
	High	75	54	45	42	34	27	14	29	22	61	51	49
Rainfall:	Avg.	50	35	47	45	46	52	46	50	49	51	58	53
	Low	14	13	12	11	7	10	8	11	1	3	20	13
	High	125	70	93	99	100	132	93	105	118	128	155	107

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	1.972		2.929		67
Lowest yearly mean			1.428	1973	
Highest yearly mean			5.119	1987	
Lowest monthly mean	0.960	Sep	0.191	Jul 1976	
Highest monthly mean	3.143	Jan	16.080	Jan 1988	
Lowest daily mean	0.647	9 Sep	0.094	9 Jul 1976	
Highest daily mean	5.973	17 Feb	50.280	12 Oct 1987	
Peak	6.501	17 Feb	91.000	17 Sep 1968	
10% exceedance	3.191		6.276		51
50% exceedance	1.876		1.726		109
95% exceedance	0.787		0.531		148
Annual total (million cu m)	62.19		92.43		67
Annual runoff (mm)	108		160		67
Annual rainfall (mm)	476		582		82
[1941-70 rainfall average (mm)			598]		

Factors affecting runoff

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

Station and catchment description

Twin-trapezoidal flume, throat tapping. Spillway channel with weir constructed in 12/85 takes some flow above 1.45m. Bypassing also occurs over opposite bank above 1.85m. More bypassing possible from 0.5km u/s during extreme events. Naturalised flows to 9/76. Occasional high peaks due to gate action. Flow augmented by intermittent pumping from Ely/Ouse Transfer Scheme and occasional SAGS borehole pumping. Mainly rural catchment. Chalk outcrops in N, London Clay in S, all covered by semi-pervious Boulder Clay.

038001 Lee at Feildes Weir 1991

Measuring authority: NRA-T
First year: 1951
Grid reference: 52 (TL) 390 092
Level stn. (m OD): 27.70
Catchment area (sq km): 1036.0
Max alt. (m OD): 229

Daily mean naturalised discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4.510	2.760	4.450	2.580	7.910	1.980	3.400	3.510	1.450	1.810	1.930	1.630
2	5.190	2.620	3.610	2.710	6.610	1.920	3.630	3.060	1.260	1.580	1.870	1.650
3	4.450	2.470	3.160	2.640	3.760	1.860	4.120	2.670	1.260	1.600	2.080	1.620
4	4.020	2.410	3.230	3.520	5.950	1.800	3.710	2.390	1.310	1.610	2.040	1.520
5	4.480	2.350	3.580	3.390	5.520	1.950	3.010	2.080	1.310	1.660	2.130	1.530
6	4.620	2.320	5.510	3.100	4.820	2.390	2.750	2.050	1.280	1.550	1.900	1.510
7	4.300	2.430	5.060	3.120	3.160	2.370	2.670	2.550	1.310	1.470	1.770	1.510
8	5.490	2.460	4.890	2.930	2.900	2.530	2.650	3.820	1.300	1.520	1.750	1.500
9	8.780	2.390	4.210	2.810	2.750	2.130	2.580	2.430	1.280	1.430	1.500	1.500
10	9.700	2.390	3.750	2.640	2.650	2.140	2.550	2.150	1.220	1.380	1.630	1.580
11	6.110	2.450	3.390	2.590	2.550	1.890	2.360	2.020	1.160	1.290	1.920	1.580
12	5.090	2.380	3.400	2.450	2.430	2.010	2.220	1.980	1.220	1.340	2.110	1.500
13	4.110	2.490	3.070	2.410	2.290	2.060	2.180	2.000	1.160	1.280	2.270	1.280
14	3.630	2.160	2.990	2.370	2.460	2.140	2.200	1.920	1.140	1.310	1.980	1.300
15	3.380	6.260	2.820	2.370	2.230	4.620	2.050	1.880	1.460	1.300	1.820	1.360
16	3.200	8.390	5.120	2.400	2.250	3.770	2.190	1.850	1.490	1.360	1.680	1.350
17	3.110	7.630	8.160	2.400	2.690	3.070	2.340	1.830	1.380	1.310	1.610	1.630
18	3.720	8.230	4.460	2.880	2.490	2.780	4.340	1.820	1.360	1.340	1.700	2.010
19	5.350	7.160	4.030	2.950	2.240	2.750	3.780	1.840	1.330	1.340	7.590	2.220
20	4.100	4.810	3.520	2.880	2.200	2.690	2.650	1.790	1.360	1.360	5.080	1.970
21	3.480	7.080	3.420	2.820	2.080	2.540	2.290	1.630	1.330	1.310	2.520	1.860
22	3.380	5.910	3.170	2.630	2.000	2.320	2.180	1.440	1.590	1.300	2.150	1.740
23	3.050	4.790	3.100	2.320	2.010	3.330	2.180	1.900	1.430	1.170	1.930	1.570
24	3.020	3.960	2.880	2.330	2.080	5.490	2.680	2.040	1.470	1.290	1.830	1.530
25	2.830	3.540	2.590	2.360	2.020	5.050	3.340	1.850	1.380	1.230	1.790	1.490
26	2.640	3.440	2.940	2.330	2.000	4.580	2.660	1.610	1.780	1.280	1.720	1.420
27	2.540	4.770	2.810	2.330	1.940	5.530	2.260	1.570	5.290	1.220	1.680	1.360
28	2.520	6.730	2.770	2.200	1.950	5.600	2.120	1.490	3.650	1.200	1.670	1.450
29	2.450		2.640	4.050	2.060	4.220	2.070	1.450	3.540	1.220	1.650	1.520
30	2.500		2.570	9.920	2.000	3.470	2.570	1.460	2.460	1.500	1.700	1.500
31	2.500		2.600		1.990		4.500	1.390		1.370		1.470
Average	4.137	4.171	3.674	2.948	2.967	3.033	2.782	2.047	1.665	1.385	2.167	1.570
Lowest	2.450	2.160	2.570	2.200	1.940	1.800	2.050	1.390	1.140	1.170	1.500	1.280
Highest	9.700	8.390	8.160	9.920	7.910	5.600	4.500	3.820	5.290	1.810	7.590	2.220
Monthly total (million cu m)	11.08	10.09	9.84	7.64	7.95	7.86	7.45	5.48	4.32		5.62	4.20
Nat'ised runoff (mm)	11	10	10	7	8	8	7	5	4	4	5	4
Rainfall (mm)	63	42	28	62	18	95	62	27	55	22	-	-

Statistics of monthly data for previous record (Oct 1883 to Dec 1990—incomplete or missing months total 2.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean	Avg.	8.427	8.454	7.624	6.023	4.998	3.779	3.129	2.928	2.892	3.840	5.422	7.014
nat'ised	Low	2.019	1.817	1.607	1.640	1.408	1.072	1.019	0.801	0.840	1.074	1.369	1.702
flows:	(year)	1934	1934	1944	1944	1944	1949	1949	1949	1949	1934	1934	1933
	High	22.830	25.730	30.700	19.270	13.810	9.592	7.420	8.707	8.218	17.320	16.730	19.130
	(year)	1928	1919	1947	1919	1919	1903	1889	1917	1968	1903	1916	1929
nat'ised	Avg.	22	20	20	15	13	9	8	8	7	10	14	18
runoff:	Low	5	4	4	4	4	3	3	2	2	3	3	4
	High	59	60	79	48	36	24	19	23	21	45	42	49
Rainfall:	Avg.	58	42	47	44	50	50	55	57	54	61	64	59
(1936-	Low	10	3	3	5	7	5	8	3	3	4	8	15
1990)	High	132	117	135	104	112	137	104	124	129	157	173	129

Summary statistics
(naturalised flows)

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	2.703		5.364		50
Lowest yearly mean			1.617	1934	
Highest yearly mean			11.510	1919	
Lowest monthly mean	1.385	Oct	0.801	Aug 1949	
Highest monthly mean	4.171	Feb	30.700	Mar 1947	
Lowest daily mean	1.140	14 Sep	0.579	4 Sep 1949	
Highest daily mean	9.920	30 Apr	119.000	17 Mar 1947	
10% exceedance	4.670		9.358		50
50% exceedance	2.324		3.722		62
95% exceedance	1.291		1.576		82
Annual total (million cu m)	85.24		169.30		50
Annual runoff (mm)	82		163		50
Annual rainfall (mm)	550		641		86
[1941-70 rainfall average (mm)			636]		

Factors affecting runoff

- 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

Thin-plate weir (insensitive - 29m wide) and 3 vertical-lift sluices; built 1978 to improve range and precision of flow measurement. Model rated. All flows (bar lockages) now contained. Pre-1978: barrage of gates/sluices; no peak flows, low flows probably under-estimated. Gauging instigated by Beardsmore in 1850s. Significant g/w abstraction; net export from catchment. Naturalised flows (New Gauge abstraction only) from 1883. A mainly pervious (Chalk) catchment. Predominately rural headwaters; significant urban growth in lower valleys.

038003 Mimram at Panshanger Park 1991

Measuring authority: NRA-T
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): 195

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.491	0.311	0.327	0.311	0.335	0.260	0.267	0.306	0.186	0.244	0.289	0.212
2	0.346	0.298	0.316	0.327	0.315	0.260	0.375	0.235	0.188	0.230	0.223	0.211
3	0.366	0.293	0.308	0.300	0.378	0.264	0.299	0.231	0.190	0.230	0.253	0.211
4	0.297	0.294	0.326	0.420	0.341	0.271	0.272	0.219	0.187	0.223	0.238	0.210
5	0.405	0.294	0.394	0.331	0.298	0.275	0.259	0.213	0.191	0.224	0.218	0.211
6	0.376	0.289	0.384	0.356	0.290	0.296	0.249	0.216	0.187	0.218	0.201	0.210
7	0.301	0.282	0.362	0.309	0.290	0.340	0.239	0.461	0.185	0.218	0.192	0.211
8	0.440	0.289	0.347	0.308	0.281	0.298	0.242	0.281	0.187	0.216	0.205	0.206
9	0.565	0.282	0.327	0.310	0.276	0.293	0.238	0.233	0.190	0.214	0.196	0.208
10	0.417	0.289	0.326	0.305	0.274	0.294	0.227	0.226	0.192	0.210	0.217	0.210
11	0.376	0.295	0.324	0.305	0.272	0.276	0.233	0.224	0.194	0.207	0.230	0.208
12	0.333	0.301	0.324	0.303	0.262	0.286	0.230	0.216	0.192	0.206	0.251	0.206
13	0.321	0.309	0.322	0.297	0.257	0.252	0.236	0.216	0.192	0.212	0.230	0.208
14	0.316	0.294	0.314	0.295	0.253	0.406	0.241	0.221	0.197	0.210	0.215	0.206
15	0.312	0.417	0.313	0.296	0.253	0.460	0.245	0.220	0.240	0.209	0.214	0.207
16	0.309	0.327	0.448	0.286	0.271	0.280	0.270	0.212	0.227	0.221	0.208	0.214
17	0.309	0.308	0.326	0.276	0.277	0.264	0.271	0.201	0.201	0.192	0.203	0.295
18	0.419	0.307	0.326	0.370	0.252	0.279	0.479	0.204	0.202	0.194	0.260	0.291
19	0.341	0.301	0.306	0.309	0.247	0.264	0.253	0.204	0.201	0.188	0.644	0.248
20	0.320	0.301	0.327	0.290	0.248	0.256	0.242	0.195	0.200	0.188	0.244	0.227
21	0.307	0.309	0.304	0.311	0.246	0.254	0.240	0.196	0.230	0.187	0.225	0.227
22	0.305	0.363	0.330	0.284	0.242	0.249	0.244	0.198	0.253	0.189	0.223	0.224
23	0.304	0.304	0.303	0.273	0.237	0.483	0.233	0.322	0.210	0.190	0.215	0.219
24	0.304	0.312	0.299	0.277	0.239	0.514	0.444	0.210	0.221	0.189	0.213	0.213
25	0.303	0.295	0.297	0.276	0.237	0.376	0.293	0.199	0.210	0.189	0.217	0.213
26	0.301	0.300	0.298	0.268	0.241	0.298	0.245	0.197	0.494	0.190	0.215	0.215
27	0.300	0.536	0.297	0.261	0.246	0.424	0.231	0.195	0.431	0.190	0.213	0.213
28	0.300	0.359	0.293	0.255	0.255	0.362	0.222	0.194	0.430	0.189	0.214	0.215
29	0.300		0.292	0.675	0.261	0.281	0.210	0.185	0.300	0.218	0.214	0.214
30	0.299		0.293	0.513	0.276	0.271	0.437	0.180	0.248	0.228	0.213	0.215
31	0.317		0.293		0.266		0.310	0.186		0.208		0.216
Average	0.345	0.316	0.324	0.323	0.271	0.313	0.273	0.226	0.232	0.207	0.236	0.219
Lowest	0.297	0.282	0.292	0.255	0.237	0.249	0.210	0.180	0.185	0.187	0.192	0.206
Highest	0.565	0.536	0.448	0.675	0.378	0.514	0.479	0.461	0.494	0.244	0.644	0.295
Peak flow	0.90	0.95	0.81	1.20	0.71	0.95	1.09	0.87	0.79	0.31	1.47	0.41
Day of peak	1	27	16	29	3	14	18	7	26	31	19	17
Monthly total (million cu m)	0.92	0.77	0.87	0.84	0.73	0.81	0.73	0.60	0.60	0.55	0.61	0.59
Runoff (mm)	7	6	6	6	5	6	5	5	4	4	5	4
Rainfall (mm)	67	44	26	71	16	95	70	34	66	25	61	16

Statistics of monthly data for previous record (Dec 1952 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	0.581	0.647	0.670	0.659	0.617	0.559	0.485	0.445	0.416	0.412	0.447	0.502
	Low	0.244	0.289	0.259	0.261	0.216	0.187	0.163	0.145	0.195	0.175	0.176	0.189
	(year)	1974	1973	1973	1973	1976	1976	1976	1976	1973	1973	1973	1973
	High	1.102	1.167	1.119	1.050	1.084	0.971	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.	56	42	49	46	50	58	53	57	54	61	60	63
	Low	11	3	3	5	4	5	5	7	5	5	20	13
	High	121	99	116	105	115	122	123	127	121	171	151	141

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	0.273		0.536		51
Lowest yearly mean			0.231	1973	
Highest yearly mean			0.767	1961	
Lowest monthly mean	0.207	Oct	0.145	Aug 1976	
Highest monthly mean	0.345	Jan	1.167	Feb 1961	
Lowest daily mean	0.180	30 Aug	0.135	21 Aug 1976	
Highest daily mean	0.675	29 Apr	2.050	29 Jan 1988	
Peak	1.470	19 Nov	3.541	30 May 1979	
10% exceedance	0.362		0.797		45
50% exceedance	0.260		0.507		51
95% exceedance	0.190		0.243		78
Annual total (million cu m)	8.62		16.92		51
Annual runoff (mm)	64		126		51
Annual rainfall (mm)	591		649		91
(1941-70 rainfall average (mm)			641)		

Factors affecting runoff

- 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. Appreciable net export of water (considerable groundwater abstraction in headwaters). 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 1991

Measuring authority: NRA-T | Grid reference: 51 (TQ) 177 698 | Catchment area (sq km): 9948.0
First year: 1883 | Level stn. (m OD): 4.70 | 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	20.600	27.600	60.100	25.900	64.000	8.930	10.700	27.600	8.270	8.910	6.510	5.410
2	53.200	28.600	52.300	32.900	51.400	8.860	16.500	10.700	9.240	7.310	17.300	10.200
3	57.100	31.200	40.600	34.400	33.600	10.000	49.100	10.000	8.820	7.560	10.600	7.710
4	37.700	23.900	41.700	42.700	41.700	8.440	40.100	9.310	9.480	5.650	10.300	5.790
5	23.800	26.800	39.400	55.700	32.500	10.900	26.300	7.620	9.030	9.980	4.640	8.130
6	38.300	19.200	53.600	44.200	28.500	11.700	26.800	9.380	8.680	10.700	6.110	7.800
7	51.800	16.500	106.000	51.500	26.000	10.200	19.100	9.670	8.820	6.120	5.030	5.100
8	57.900	21.700	171.000	53.300	22.600	9.310	9.350	8.870	8.470	5.050	9.070	6.070
9	123.000	20.300	149.000	51.800	21.500	9.740	8.380	7.900	9.570	5.030	9.910	10.100
10	165.000	22.200	120.000	35.100	20.800	8.370	9.370	9.000	9.470	8.550	4.480	8.340
11	177.000	21.500	105.000	29.700	17.200	7.550	8.560	8.740	7.740	10.400	7.110	7.120
12	120.000	21.500	89.600	29.400	15.800	7.940	8.050	8.760	6.510	10.300	5.610	11.100
13	93.900	19.800	81.000	27.800	17.700	9.750	8.170	10.400	7.060	10.900	14.800	11.700
14	62.100	20.500	68.400	25.400	16.500	9.500	15.500	9.410	6.340	7.400	18.600	6.980
15	50.400	33.700	63.000	21.400	11.700	10.700	10.800	8.200	7.090	6.750	8.850	6.930
16	36.900	67.400	60.300	21.000	8.410	12.900	8.960	8.800	7.590	4.850	4.890	12.800
17	31.300	61.700	74.200	20.000	11.900	12.200	9.260	8.980	6.690	3.840	6.520	21.700
18	29.500	48.400	74.300	21.400	18.200	12.100	15.200	9.680	6.930	6.170	10.000	22.600
19	53.100	37.700	68.600	31.500	17.600	10.700	18.200	9.190	7.070	7.930	78.200	22.800
20	56.300	34.200	75.200	22.600	17.000	8.680	9.420	9.260	6.410	7.210	90.200	20.200
21	51.600	28.600	73.100	20.600	12.400	9.730	8.810	8.850	7.070	6.680	69.300	16.800
22	55.500	34.900	69.200	15.800	11.000	8.680	9.710	8.520	9.780	4.850	47.200	16.400
23	40.000	77.400	61.800	13.700	7.230	20.400	8.110	10.800	6.630	3.080	34.500	11.800
24	38.600	67.600	46.500	12.900	8.520	44.000	12.200	11.200	7.010	3.860	28.600	8.590
25	34.700	53.500	46.900	15.000	8.010	46.400	9.140	6.830	5.960	4.110	17.500	10.700
26	28.400	32.800	45.000	13.400	10.500	45.800	10.500	10.400	7.640	3.720	15.500	8.750
27	28.700	55.900	37.800	11.300	11.500	46.400	9.490	8.990	10.200	3.630	15.600	10.300
28	28.700	87.100	34.400	10.900	9.500	38.500	10.400	8.870	10.300	4.060	12.600	9.980
29	25.300		35.100	26.300	9.190	24.300	8.410	9.030	39.900	4.350	10.700	12.300
30	25.900		33.100	87.800	9.290	13.800	14.900	8.900	15.900	8.120	6.690	10.600
31	28.300		32.100		9.090		24.500	9.200		5.220		9.540
Average	55.630	37.220	68.010	30.180	19.380	16.550	14.640	9.776	9.322	6.525	19.560	11.110
Lowest	20.600	16.500	32.100	10.900	7.230	7.550	8.050	6.830	5.960	3.080	4.480	5.100
Highest	177.000	87.100	171.000	87.800	64.000	46.400	49.100	27.600	39.900	10.900	90.200	22.800
Peak flow	212.00	104.00	185.00	135.00	87.90	60.50	73.50	49.90	55.30	30.70	127.00	37.60
Day of peak	11	28	8	30	1	27	3	1	29	10	20	23
Monthly total (million cu m)	149.00	90.05	182.20	78.23	51.91	42.90	39.22	26.18	24.16	17.48	50.71	29.75
Runoff (mm)	15	9	18	8	5	4	4	3	2	2	5	3
Rainfall (mm)	84	37	51	63	12	96	84	17	52	41	69	16

Statistics of monthly data for previous record (Jan 1883 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	126.600	124.600	104.600	75.290	53.390	36.980	23.430	21.780	23.200	38.370	71.590	100.600
	Low	18.570	12.290	9.426	8.975	4.391	3.302	2.079	1.912	0.688	3.144	4.248	8.350
	(year)	1976	1976	1976	1976	1976	1976	1921	1976	1976	1934	1990	1990
	High	325.300	342.000	359.500	188.800	171.700	171.600	72.290	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	31	28	20	14	10	6	6	6	10	19	27
	Low	5	3	3	2	1	1	1	1	0	1	1	2
	High	88	86	97	49	46	45	19	21	32	48	87	90
Rainfall:	Avg.	65	50	53	48	54	52	58	64	57	73	72	73
	Low	14	3	3	3	7	3	8	3	3	5	8	13
	High	137	127	142	104	137	137	130	147	157	188	188	185

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	24.790		66.430		37
Lowest yearly mean			20.410	1934	
Highest yearly mean			120.000	1951	
Lowest monthly mean	6.525	Oct	0.688	Sep 1976	
Highest monthly mean	68.010	Mar	359.500	Mar 1947	
Lowest daily mean	3.080	23 Oct	0.010	11 Oct 1976	
Highest daily mean	177.000	11 Jan	1059.000	18 Nov 1894	
Peak	212.000	11 Jan			
10% exceedance	56.620		160.900		35
50% exceedance	12.070		41.850		29
95% exceedance	5.362		8.795		61
Annual total (million cu m)	781.80		2096.00		37
Annual runoff (mm)	79		211		37
Annual rainfall (mm)	622		719		87
[1941-70 rainfall average (mm)			724]		

Factors affecting runoff

- 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

Ultrasonic station commissioned in 1974; multi-path operation from 1986. Full range. No peak flows pre-1974 when dmfs derived from Teddington weir complex (70m wide); significant structural improvements since 1883. Some underestimation of pre-1951 low flows. Baseflow sustained mainly from the Chalk and the Oolites. Runoff decreased by major PWS abstractions - naturalised flows available. Diverse topography, geology and land use which - together with the pattern of water utilisation - has undergone important historical changes.

039001 Thames at Kingston 1991

Measuring authority: NRA-T
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	59.400	53.800	82.600	48.500	91.100	30.200	46.100	56.400	20.800	27.200	29.700	44.000
2	96.700	54.100	74.900	54.700	75.300	31.100	44.200	38.400	19.800	27.300	50.300	42.400
3	108.000	53.400	63.200	56.800	56.100	31.500	62.300	36.800	20.300	26.600	40.300	40.300
4	88.100	48.400	63.600	65.000	61.400	30.100	57.100	35.400	20.600	21.600	44.100	34.800
5	74.800	50.600	61.300	78.800	56.200	30.400	48.900	32.000	20.000	21.500	34.200	38.300
6	88.800	46.700	75.900	68.300	54.300	36.500	47.900	27.400	20.000	25.500	35.500	39.700
7	100.000	39.600	128.000	75.600	50.100	36.300	51.500	31.500	19.000	23.000	22.600	36.100
8	105.000	44.900	193.000	73.700	46.000	34.900	44.100	33.200	18.700	22.300	25.500	30.500
9	169.000	43.700	169.000	67.500	46.400	35.000	39.100	27.900	19.400	21.400	25.000	34.600
10	210.000	45.500	138.000	54.900	40.200	39.800	37.800	27.700	19.300	25.300	23.700	37.100
11	220.000	45.000	123.000	53.100	44.200	29.800	29.800	25.900	18.600	23.300	29.600	32.000
12	162.000	45.000	110.000	53.000	41.700	35.000	29.600	25.700	18.600	23.200	30.500	33.100
13	134.000	45.800	103.000	52.200	41.300	35.100	29.200	21.000	18.400	23.700	38.500	35.700
14	104.000	47.100	89.500	50.500	39.500	35.800	33.500	23.900	17.800	23.700	43.000	29.800
15	93.000	57.100	83.800	45.900	35.400	40.900	28.800	25.300	18.500	29.900	38.100	31.400
16	80.800	91.200	82.600	46.000	32.900	38.400	30.200	23.300	19.900	24.100	35.500	35.500
17	76.200	85.700	97.200	44.800	38.200	40.400	30.400	23.000	21.000	23.700	31.400	43.800
18	74.600	72.000	96.000	46.300	38.400	40.600	43.400	22.100	20.800	19.700	38.400	48.400
19	97.700	61.200	89.400	54.300	38.900	38.600	48.400	22.000	19.900	20.900	111.000	51.500
20	100.000	57.900	98.400	49.500	39.400	37.200	37.300	21.900	19.300	20.400	127.000	49.200
21	96.800	52.100	96.000	47.500	38.300	31.700	32.700	22.400	19.500	20.300	104.000	48.800
22	85.200	58.800	91.400	44.400	36.700	29.700	35.600	21.600	21.700	17.900	81.400	48.200
23	67.400	101.000	83.900	43.200	32.800	42.000	31.100	23.300	20.900	21.500	74.300	39.200
24	67.200	91.600	68.800	41.600	32.700	66.000	26.500	26.400	21.100	19.500	70.400	32.800
25	62.800	77.600	68.600	44.200	29.100	69.400	33.800	28.300	21.500	20.200	58.100	36.900
26	60.100	57.000	67.200	42.700	31.500	68.600	35.500	23.300	22.800	20.900	54.700	35.400
27	58.300	81.900	60.200	42.000	27.600	66.800	29.800	24.500	28.100	21.100	49.700	31.100
28	58.800	110.000	57.400	37.700	33.600	56.100	29.800	22.900	29.500	20.900	47.000	31.200
29	55.400		58.100	52.300	30.300	51.700	30.200	22.300	61.400	22.400	48.000	32.000
30	56.000		55.200	114.000	32.100	48.200	34.600	22.300	39.500	29.100	43.700	34.600
31	54.200		54.200		32.400		53.900	21.800		33.000		32.900
Average	95.620	61.380	89.790	54.970	42.710	41.260	38.490	27.090	22.560	23.260	49.510	37.780
Lowest	54.200	39.600	54.200	37.700	27.600	29.700	26.500	21.000	17.800	17.900	22.600	29.800
Highest	220.000	110.000	193.000	114.000	91.100	69.400	62.300	56.400	61.400	33.000	127.000	51.500
Monthly total (million cu m)	256.10	148.50	240.50	142.50	114.40	106.90	103.10	72.57	58.47	62.30	128.30	101.20
Nat'ised runoff (mm)	26	15	24	14	12	11	10	7	6	6	13	10
Rainfall (mm)	84	37	51	63	12	96	84		52	**	69	16

Statistics of monthly data for previous record (Jan 1883 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean nat'ised flows:	Avg.	137.600	135.700	115.900	86.400	64.890	48.670	35.140	32.520	34.200	49.660	82.730	111.700
	Low	32.210	25.100	27.320	26.510	18.200	13.470	10.760	11.040	11.230	15.120	17.750	22.480
	(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	88.780	139.400	185.300	339.600	343.900
	(year)	1915	1904	1947	1951	1932	1903	1968	1931	1968	1903	1894	1929
nat'ised runoff:	Avg.	37	33	31	23	17	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.	65	50	53	48	54	52	58	64	57	73	72	73
	Low	14	3	3	3	7	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 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	48.670		77.650		63
Lowest yearly mean			30.940	1934	
Highest yearly mean			131.800	1951	
Lowest monthly mean	22.560	Sep	10.760	Jul 1921	
Highest monthly mean	95.620	Jan	370.900	Mar 1947	
Lowest daily mean	17.800	14 Sep	7.370	9 Jul 1934	
Highest daily mean	220.000	11 Jan	1065.000	18 Nov 1894	
10% exceedance	89.570		172.300		52
50% exceedance	39.620		53.250		74
95% exceedance	20.140		18.350		110
Annual total (million cu m)	1535.00		2450.00		63
Annual runoff (mm)	154		246		63
Annual rainfall (mm)	622		719		87
[1941-70 rainfall average (mm)			724]		

Factors affecting runoff

- 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
Ultrasonic station commissioned in 1974; multi-path operation from 1986. Full range. No peak flows pre-1974 when dmfs derived from Teddington weir complex (70m wide); significant structural improvements since 1883. Some underestimation of pre-1951 low flows. Baseflow sustained mainly from the Chalk and the Oolites. Runoff decreased by major PWS abstractions - naturalised flows available. Diverse topography, geology and land use which - together with the pattern of water utilisation - has undergone important historical changes

039020 Coln at Bibury 1991

Measuring authority: NRA-T
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	0.705	1.430	1.380	1.960	1.230	0.779	0.744	0.674	0.481	0.438	0.462	1.400
2	0.808	1.400	1.400	1.930	1.200	0.782	0.729	0.627	0.486	0.434	0.483	1.370
3	0.850	1.380	1.410	1.890	1.170	0.765	0.723	0.612	0.480	0.434	0.521	1.340
4	0.889	1.340	1.460	1.930	1.160	0.755	0.706	0.601	0.479	0.428	0.524	1.290
5	0.984	1.330	1.490	1.860	1.150	0.761	0.705	0.588	0.480	0.444	0.531	1.260
6	1.080	1.280	1.550	1.850	1.130	0.773	0.707	0.581	0.458	0.433	0.565	1.240
7	1.140	1.200	1.770	1.840	1.120	0.775	0.714	0.594	0.490	0.439	0.592	1.200
8	1.260	1.230	1.910	1.760	1.100	0.777	0.722	0.584	0.467	0.446	0.622	1.170
9	1.420	1.220	1.950	1.730	1.080	0.814	0.706	0.574	0.462	0.433	0.654	1.160
10	1.550	1.190	2.100	1.670	1.070	0.781	0.700	0.571	0.459	0.422	0.691	1.130
11	1.670	1.190	2.160	1.660	1.060	0.750	0.694	0.572	0.475	0.429	0.709	1.080
12	1.720	1.190	2.220	1.630	1.050	0.746	0.692	0.568	0.456	0.426	0.723	1.020
13	1.770	1.180	2.270	1.580	1.040	0.738	0.694	0.544	0.461	0.420	0.774	1.020
14	1.810	1.160	2.310	1.500	0.993	0.748	0.685	0.546	0.452	0.420	0.767	1.030
15	1.810	1.270	2.330	1.490	0.993	0.775	0.675	0.533	0.456	0.417	0.774	1.040
16	1.810	1.300	2.370	1.480	0.997	0.733	0.648	0.537	0.458	0.411	0.797	1.060
17	1.800	1.230	2.330	1.460	0.984	0.740	0.665	0.532	0.447	0.400	0.829	1.060
18	1.820	1.190	2.330	1.370	0.972	0.733	0.708	0.528	0.445	0.403	0.928	1.070
19	1.810	1.180	2.290	1.320	0.957	0.731	0.692	0.535	0.444	0.399	1.020	1.050
20	1.740	1.170	2.280	1.300	0.950	0.721	0.649	0.523	0.446	0.409	1.110	1.010
21	1.690	1.190	2.200	1.290	0.939	0.722	0.633	0.524	0.446	0.413	1.260	1.030
22	1.650	1.240	2.190	1.250	0.913	0.717	0.629	0.516	0.439	0.406	1.420	0.984
23	1.630	1.260	2.150	1.230	0.900	0.791	0.629	0.521	0.437	0.409	1.530	0.965
24	1.600	1.250	2.120	1.230	0.893	0.836	0.633	0.523	0.437	0.413	1.560	0.946
25	1.590	1.280	2.100	1.210	0.880	0.823	0.636	0.521	0.436	0.408	1.570	0.943
26	1.560	1.290	2.100	1.190	0.862	0.807	0.636	0.515	0.464	0.413	1.560	0.936
27	1.550	1.320	2.090	1.150	0.853	0.816	0.613	0.514	0.443	0.411	1.520	0.928
28	1.530	1.360	2.070	1.140	0.820	0.816	0.608	0.505	0.470	0.406	1.520	0.917
29	1.500		2.030	1.270	0.812	0.799	0.597	0.504	0.468	0.422	1.470	0.912
30	1.470		2.000	1.350	0.814	0.757	0.616	0.504	0.456	0.422	1.430	0.918
31	1.480		1.980		0.803		0.670	0.500		0.428		0.907
Average	1.474	1.259	2.011	1.517	0.997	0.769	0.673	0.551	0.459	0.420	0.964	1.077
Lowest	0.705	1.160	1.380	1.140	0.803	0.717	0.597	0.500	0.436	0.399	0.462	0.907
Highest	1.820	1.430	2.370	1.960	1.230	0.836	0.744	0.674	0.490	0.446	1.570	1.400
Peak flow	1.92	1.45	2.53	2.08	1.31	1.01	0.78	0.72	0.58	0.56	1.74	1.43
Day of peak	15	1	16	7	1	15	1	1	26	22	23	1
Monthly total (million cu m)	3.95	3.05	5.39	3.93	2.67	1.99	1.80	1.47	1.19	1.13	2.50	2.88
Runoff (mm)	37	29	50	37	25	19	17	14	11	11	23	27
Rainfall (mm)	93	42	78	73	14	114	85	13	70	63	96	20

Statistics of monthly data for previous record (Oct 1963 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	2.039	2.389	2.165	1.782	1.319	1.097	0.835	0.669	0.583	0.639	0.985	1.540
	Low	0.374	0.380	0.383	0.371	0.334	0.290	0.242	0.207	0.202	0.259	0.332	0.375
	(year)	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1990	1975
	High	3.196	4.414	3.385	3.415	2.599	2.290	1.397	1.085	0.908	1.299	2.714	3.015
	(year)	1982	1990	1977	1979	1983	1979	1985	1985	1968	1968	1967	1965
Runoff:	Avg.	51	55	54	43	33	27	21	17	14	16	24	39
	Low	9	9	10	9	8	7	6	5	5	7	8	9
	High	80	100	85	83	65	56	35	27	22	33	66	76
Rainfall:	Avg.	75	61	67	51	67	60	56	67	66	67	73	87
	Low	13	8	15	5	5	9	15	23	17	8	30	24
	High	142	159	143	109	161	158	120	149	149	171	163	159

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	1.013		1.331		76
Lowest yearly mean			0.399	1976	
Highest yearly mean			1.771	1966	
Lowest monthly mean	0.420	Oct	0.202	Sep 1976	
Highest monthly mean	2.011	Mar	4.414	Feb 1990	
Lowest daily mean	0.399	19 Oct	0.190	23 Aug 1976	
Highest daily mean	2.370	16 Mar	5.310	11 Feb 1990	
Peak	2.530	16 Mar	5.480	11 Feb 1990	
10% exceedance	1.795		2.606		69
50% exceedance	0.899		1.059		85
95% exceedance	0.422		0.387		109
Annual total (million cu m)	31.95		42.00		76
Annual runoff (mm)	299		394		76
Annual rainfall (mm)	761		797		95
[1941-70 rainfall average (mm)			819]		

Factors affecting runoff

- Flow influenced by groundwater abstraction and/or recharge.
- Augmentation from effluent returns.

Station and catchment description

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

040003 Medway at Teston 1991

Measuring authority: NRA-S
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	10.970	6.367	5.300	4.260	14.030	1.964	6.768	12.570	2.102	2.517	3.866	3.957
2	24.670	5.458	5.512	4.877	9.576	2.421	11.020	6.298	2.155	1.941	6.957	3.822
3	22.530	4.816	5.148	4.707	6.857	2.316	50.290	3.514	2.281	2.534	8.068	3.463
4	12.060	4.253	5.461	9.022	7.762	2.363	28.340	2.994	1.858	2.749	7.628	3.142
5	17.140	4.089	5.515	9.385	13.160	2.609	8.862	2.496	1.962	3.235	4.950	3.099
6	15.440	4.135	7.277	6.901	15.130	3.353	6.249	2.383	1.842	2.443	4.977	1.872
7	12.920	3.513	6.785	8.629	9.339	3.260	3.999	3.200	2.002	3.053	3.224	2.713
8	60.330	4.208	9.817	7.113	6.351	2.974	3.953	4.229	2.044	2.801	2.766	2.753
9	107.900	3.762	8.845	5.593	5.300	3.323	4.062	2.980	1.929	2.400	3.200	2.800
10	97.930	3.327	7.153	4.736	4.828	3.388	3.397	2.662	2.074	2.127	2.826	2.724
11	61.940	3.511	10.010	4.186	4.621	2.822	3.145	2.484	2.019	2.182	7.492	2.611
12	37.900	3.531	6.183	4.198	3.917	2.613	2.826	2.481	2.033	2.303	9.261	2.646
13	18.590	3.847	6.502	3.869	4.329	2.718	4.458	2.250	2.038	2.811	11.900	2.661
14	13.640	4.222	5.660	3.679	3.394	2.317	4.100	2.099	2.019	2.370	10.670	2.572
15	10.480	32.950	5.232	3.623	3.530	3.099	3.153	1.840	2.088	2.048	7.457	2.584
16	7.998	52.720	12.370	3.386	3.463	5.848	2.883	1.686	2.250	2.287	5.001	3.817
17	6.750	31.500	21.970	3.340	3.632	6.306	2.093	1.746	2.444	2.536	4.284	6.582
18	9.566	16.250	13.920	3.594	3.036	3.388	4.393	1.593	2.238	2.217	4.501	10.950
19	23.870	11.430	15.040	5.070	2.971	3.061	3.411	1.557	2.102	2.186	35.980	10.650
20	15.280	7.303	12.180	4.602	3.094	3.483	2.301	1.373	2.535	2.240	43.500	9.228
21	10.330	8.114	11.170	4.183	2.932	3.174	1.976	1.508	2.108	2.251	14.700	6.595
22	7.555	9.997	7.412	4.101	2.716	3.091	2.209	1.480	2.574	2.201	7.363	5.607
23	6.482	18.730	8.096	3.544	2.460	13.980	2.614	1.742	2.671	2.240	6.103	4.277
24	5.863	11.140	7.353	3.569	2.518	27.820	4.535	2.265	2.701	2.267	5.423	4.069
25	5.366	9.291	6.104	3.560	2.742	11.760	5.972	2.224	3.238	2.339	5.457	3.658
26	5.228	6.730	5.323	3.593	2.751	15.160	4.429	2.141	2.787	2.528	5.028	3.589
27	4.911	6.548	4.789	3.614	2.462	47.470	3.541	2.072	2.219	2.190	4.911	3.612
28	5.521	8.141	3.952	3.504	2.397	36.550	2.798	2.135	3.301	2.273	4.371	3.508
29	3.680		4.976	7.423	2.528	15.670	2.381	2.054	9.633	2.860	2.447	3.295
30	4.577		3.961	33.100	2.714	8.496	4.193	2.064	4.872	5.363	4.141	3.349
31	4.838		3.796		2.993		13.810	2.160		3.401		3.456
Average	21.040	10.350	7.833	5.832	5.082	8.227	6.715	2.719	2.604	2.545	8.282	4.183
Lowest	3.680	3.327	3.796	3.340	2.397	1.964	1.976	1.373	1.842	1.941	2.447	1.872
Highest	107.900	52.720	21.970	33.100	15.130	47.470	50.290	12.570	9.633	5.363	43.500	10.950
Peak flow												
Day of peak												
Monthly total (million cu m)	56.35	25.05	20.98	15.12	13.61	21.32	17.99	7.28	6.75	6.82	21.47	11.20
Runoff (mm)	45	20	17	12	11	17	14	6	5	5	17	9
Rainfall (mm)	91	37	38	64	22	123	85	18	49	36	78	21

Statistics of monthly data for previous record (Oct 1956 to Dec 1990—incomplete or missing months total 1.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	22.740	20.090	14.610	10.830	6.758	4.648	2.951	3.279	4.688	8.351	14.870	18.400
	Low	3.334	5.290	3.385	2.328	1.751	1.141	1.118	0.578	1.068	1.401	2.339	3.670
	(year)	1989	1981	1976	1976	1976	1976	1976	1976	1959	1972	1978	1988
	High	48.240	59.480	31.600	23.550	20.820	21.690	7.553	9.968	30.090	53.220	66.830	37.330
	(year)	1988	1990	1975	1983	1978	1964	1980	1985	1968	1987	1960	1965
Runoff:	Avg.	48	39	31	22	14	10	6	7	10	18	31	39
	Low	7	10	7	5	4	2	2	1	2	3	5	8
	High	103	115	67	49	44	45	16	21	62	113	138	80
Rainfall:	Avg.	75	51	57	50	51	53	52	57	67	78	80	81
	Low	13	3	3	7	3	8	9	10	5	5	14	15
	High	187	130	113	108	112	127	103	122	183	198	169	168

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	7.101		10.970		65
Lowest yearly mean			6.079	1989	
Highest yearly mean			19.330	1960	
Lowest monthly mean	2.545	Oct	0.578	Aug 1976	
Highest monthly mean	21.040	Jan	66.830	Nov 1960	
Lowest daily mean	1.373	20 Aug	0.383	22 Aug 1976	
Highest daily mean	107.900	9 Jan	269.300	4 Nov 1960	
Peak			294.500	4 Nov 1960	
10% exceedance	13.370		24.730		54
50% exceedance	3.840		4.891		79
95% exceedance	2.012		1.434		140
Annual total (million cu m)	223.90		346.20		65
Annual runoff (mm)	178		276		65
Annual rainfall (mm)	662		752		88
[1941-70 rainfall average (mm)			755]		

Factors affecting runoff

- Reservoir(s) in catchment.
- 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 profile weir plus sharp-crested weir superseded insensitive broad-crested weir. Flows greater than 27 cumecs measured at well calibrated river section 2km d/s (East Farleigh), updating of primary record incomplete. Responsive regime. Complex water utilisation. Significant artificial disturbance; low flow augmentation from Bewl Water (via River Teise); > 20 yrs of naturalised flows available. Mixed geology; impervious formations constitute up to 50% of the catchment. Diverse land use with significant areas of woodland and orchard.

040011 Great Stour at Horton 1991

Measuring authority: NRA-S
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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	3.095	2.137	2.460	1.803	3.643	1.315	2.727	2.935	1.025	1.313	1.775	1.912
2	5.998	2.064	2.335	1.912	2.565	1.252	4.018	2.111	1.051	1.151	1.520	1.797
3	5.560	1.985	2.206	1.862	2.117	1.228	7.274	1.519	1.056	1.121	1.650	1.715
4	4.216	1.934	2.185	2.160	2.036	1.145	5.137	1.595	1.062	1.139	2.604	1.666
5	4.584	1.858	2.316	2.143	2.813	1.350	3.184	1.559	1.022	1.180	2.187	1.640
6	4.477	1.898	2.561	1.989	4.125	1.456	2.577	1.550	1.077	1.227	1.735	1.567
7	3.901	1.874	2.531	2.143	2.921	1.465	2.049	1.522	1.092	1.179	1.467	1.524
8	5.670	2.008	2.991	1.915	2.397	1.789	1.887	1.625	0.906	1.139	1.497	1.509
9	11.800	1.960	2.771	1.879	2.026	1.544	1.938	1.611	0.974	1.249	1.392	1.487
10	12.240	1.911	2.574	1.822	1.843	1.545	1.838	1.545	1.049	1.173	1.285	1.468
11	12.640	1.944	2.541	1.770	1.821	1.416	1.697	1.379	0.991	1.154	2.847	1.435
12	9.946	1.949	2.459	1.704	1.727	1.345	1.673	1.340	1.137	1.137	3.916	1.405
13	7.272	2.015	2.358	1.640	1.713	1.299	1.733	1.374	1.095	1.127	3.684	1.423
14	6.092	1.935	2.217	1.684	1.716	1.262	2.055	1.399	0.973	1.193	4.939	1.408
15	5.125	4.593	2.245	1.765	1.624	1.347	1.926	1.352	0.949	1.239	3.552	1.395
16	3.928	7.746	2.578	1.816	1.587	1.395	1.754	1.237	1.117	1.137	2.411	1.845
17	3.358	6.106	3.512	1.731	1.541	1.479	1.446	1.147	1.076	1.129	2.018	3.418
18	3.489	4.508	2.957	1.745	1.474	1.469	1.663	1.153	1.047	1.122	2.212	4.020
19	6.413	3.531	3.044	1.796	1.496	1.581	1.960	1.131	1.009	1.071	8.319	5.624
20	5.303	3.061	2.930	1.853	1.576	1.722	1.792	1.135	0.980	1.057	11.840	3.926
21	4.288	2.981	2.838	1.805	1.495	1.853	1.474	1.125	0.985	1.198	7.673	2.922
22	3.653	2.881	2.658	1.896	1.408	1.924	1.420	1.113	1.066	1.012	5.623	2.459
23	3.273	2.906	2.504	1.753	1.423	2.027	1.380	1.121	1.061	0.968	4.143	2.170
24	3.011	2.682	2.462	1.840	1.402	4.956	1.779	1.081	1.149	0.942	3.268	1.915
25	2.848	2.573	2.265	1.753	1.292	4.499	4.055	1.017	1.304	0.912	2.956	1.822
26	2.662	2.523	2.262	1.762	1.382	3.842	4.412	0.986	1.370	0.917	2.735	1.770
27	2.616	2.499	1.973	1.792	1.314	5.470	2.803	1.072	1.426	0.958	2.485	1.736
28	2.522	2.622	1.806	1.732	1.363	6.219	2.142	1.352	1.388	1.035	2.289	1.652
29	2.517		1.732	1.797	1.427	4.392	1.733	1.082	1.591	1.035	2.114	1.608
30	2.265		1.725	4.015	1.349	3.068	1.601	1.080	1.507	1.908	2.028	1.570
31	2.152		1.687		1.345		2.637	1.062		1.589		1.580
Average	5.062	2.810	2.441	1.909	1.870	2.222	2.444	1.365	1.118	1.152	3.272	2.045
Lowest	2.152	1.858	1.687	1.640	1.292	1.145	1.380	0.986	0.906	0.912	1.285	1.395
Highest	12.640	7.746	3.512	4.015	4.125	6.219	7.274	2.935	1.591	1.908	11.840	5.624
Peak flow	13.35	9.08	4.43	4.58	4.85	7.65	8.29	3.47	2.01	2.42	13.01	6.38
Day of peak	11	15	19	30	6	27	3	1	10	30	20	19
Monthly total (million cu m)	13.56	6.80	6.54	4.95	5.01	5.76	6.55	3.66	2.90	3.08	8.48	5.48
Runoff (mm)	39	20	19	14	15	17	19	11	8	9	25	16
Rainfall (mm)	80	34	31	61	25	120	86	12	48	33	104	26

Statistics of monthly data for previous record (Oct 1964 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.210	4.839	4.381	3.516	2.761	2.054	1.809	1.736	1.834	2.643	3.542	4.393
	Low	1.777	2.026	1.812	1.655	1.314	1.080	0.965	0.877	0.842	1.057	1.329	1.687
	(year)	1989	1989	1973	1976	1990	1976	1976	1976	1990	1989	1978	1971
	High	10.940	8.189	9.086	7.143	5.810	3.221	3.231	3.092	3.626	8.686	8.195	9.088
	(year)	1988	1988	1975	1975	1983	1971	1980	1987	1968	1987	1974	1966
Runoff:	Avg.	40	34	34	26	21	15	14	13	14	21	27	34
	Low	14	14	14	12	10	8	7	7	6	8	10	13
	High	85	59	71	54	45	24	25	24	27	67	62	71
Rainfall:	Avg.	75	51	59	51	50	51	57	55	67	80	83	75
	Low	22	17	4	11	2	10	14	16	13	6	18	15
	High	192	104	141	117	105	115	132	106	169	224	175	146

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	2.307		3.220		72
Lowest yearly mean			1.808	1973	
Highest yearly mean			4.717	1966	
Lowest monthly mean	1.118	Sep	0.842	Sep 1990	
Highest monthly mean	5.062	Jan	10.940	Jan 1988	
Lowest daily mean	0.906	8 Sep	0.658	19 Sep 1990	
Highest daily mean	12.640	11 Jan	28.850	5 Nov 1967	
Peak	13.350	11 Jan	38.290	9 Apr 1979	
10% exceedance	4.090		6.036		68
50% exceedance	1.792		2.360		76
95% exceedance	1.032		1.122		92
Annual total (million cu m)	72.75		101.60		72
Annual runoff (mm)	211		295		72
Annual rainfall (mm)	660		754		88
[1941-70 rainfall average (mm)			761]		

Factors affecting runoff

- Flow influenced by groundwater abstraction and/or recharge.
- Augmentation from effluent returns.

Station and catchment description

Broad-crested weir (width: 10.7m) in trapezoidal section plus a VA section for flows > 20 cumecs. Minor impact of artificial influences on runoff (import of 0.03 cumecs in 1988), modest PWS and irrigation abstractions in lower valley. Flood storage reservoirs above Ashford. U/s mill regulation evident on the water level trace. Very limited amount of naturalised data available (1960s). The E. and W. branches of the Stour flow over Weald Clay; below the confluence (at Ashford) Chalk dominates. A rural catchment with mixed land use.

041016 Cuckmere at Cowbeech 1991

Measuring authority: NRA-S
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	0.579	0.125	0.180	0.130	0.147	0.051	0.403	0.105	0.032	0.034	0.056	0.113
2	0.969	0.116	0.159	0.132	0.109	0.049	2.780	0.082	0.031	0.027	0.083	0.104
3	0.474	0.113	0.140	0.128	0.099	0.048	1.021	0.077	0.031	0.027	0.104	0.102
4	0.276	0.109	0.137	0.167	0.110	0.048	0.373	0.071	0.030	0.027	0.093	0.095
5	0.301	0.097	0.194	0.157	0.116	0.048	0.244	0.067	0.027	0.033	0.057	0.091
6	0.217	0.093	0.345	0.148	0.116	0.056	0.190	0.066	0.027	0.041	0.045	0.089
7	0.212	0.089	0.293	0.153	0.104	0.057	0.160	0.070	0.027	0.034	0.041	0.084
8	1.202	0.091	0.385	0.127	0.096	0.057	0.160	0.080	0.028	0.033	0.047	0.084
9	2.027	0.089	0.231	0.117	0.091	0.062	0.137	0.059	0.027	0.033	0.052	0.080
10	1.950	0.084	0.264	0.115	0.085	0.062	0.120	0.055	0.027	0.032	0.061	0.079
11	1.560	0.084	0.309	0.112	0.084	0.062	0.112	0.055	0.027	0.030	0.805	0.075
12	0.805	0.085	0.264	0.108	0.080	0.062	0.107	0.054	0.027	0.034	0.536	0.075
13	0.436	0.089	0.214	0.098	0.076	0.059	0.156	0.050	0.026	0.031	0.682	0.075
14	0.337	0.089	0.183	0.089	0.074	0.052	0.120	0.047	0.026	0.029	0.422	0.075
15	0.275	0.565	0.170	0.075	0.071	0.053	0.107	0.045	0.044	0.027	0.194	0.075
16	0.232	0.568	0.491	0.076	0.070	0.062	0.102	0.045	0.034	0.034	0.137	0.154
17	0.219	0.349	0.412	0.075	0.070	0.072	0.090	0.042	0.029	0.031	0.133	0.364
18	0.563	0.244	0.383	0.077	0.070	0.065	0.275	0.041	0.027	0.027	0.566	0.332
19	0.632	0.192	0.569	0.083	0.070	0.061	0.133	0.041	0.027	0.027	1.375	0.341
20	0.342	0.171	0.445	0.079	0.069	0.071	0.102	0.041	0.027	0.027	0.464	0.227
21	0.266	0.179	0.450	0.076	0.064	0.078	0.091	0.041	0.026	0.027	0.243	0.176
22	0.223	0.244	0.383	0.074	0.061	0.083	0.079	0.040	0.041	0.026	0.203	0.146
23	0.200	0.314	0.269	0.070	0.059	2.140	0.076	0.040	0.031	0.025	0.174	0.126
24	0.183	0.217	0.218	0.070	0.057	0.759	0.396	0.036	0.030	0.024	0.159	0.104
25	0.169	0.202	0.194	0.070	0.057	0.899	0.223	0.035	0.047	0.024	0.174	0.097
26	0.158	0.181	0.178	0.066	0.057	0.962	0.120	0.035	0.037	0.025	0.210	0.099
27	0.151	0.185	0.160	0.065	0.054	2.804	0.098	0.035	0.033	0.025	0.164	0.097
28	0.144	0.231	0.145	0.061	0.053	0.927	0.084	0.033	0.055	0.021	0.146	0.090
29	0.138		0.137	0.198	0.053	0.428	0.071	0.033	0.086	0.026	0.135	0.089
30	0.128		0.133	0.344	0.053	0.453	0.226	0.033	0.041	0.130	0.126	0.089
31	0.126		0.131		0.053		0.196	0.033		0.050		0.089
Average	0.500	0.185	0.263	0.111	0.078	0.356	0.276	0.051	0.034	0.033	0.256	0.126
Lowest	0.126	0.084	0.131	0.061	0.053	0.048	0.071	0.033	0.026	0.021	0.041	0.075
Highest	2.027	0.568	0.569	0.344	0.147	2.804	2.780	0.105	0.086	0.130	1.375	0.364
Peak flow	3.93	0.85	0.99	0.55	0.18	10.38	10.33	0.13	0.13	0.21	2.45	0.51
Day of peak	9	15	16	29	1	27	2	1	29	30	19	17
Monthly total (million cu m)	1.34	0.45	0.71	0.29	0.21	0.92	0.74	0.14	0.09	0.09	0.66	0.34
Runoff (mm)	72	24	38	15	11	49	40	7	5	5	36	18
Rainfall (mm)	107	41	60	53	22	187	108	9	53	50	126	27

Statistics of monthly data for previous record (Jan 1968 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	0.469	0.355	0.279	0.176	0.103	0.069	0.046	0.041	0.059	0.175	0.265	0.320
	Low	0.088	0.068	0.053	0.027	0.018	0.009	0.012	0.009	0.013	0.014	0.013	0.031
	(year)	1973	1981	1973	1976	1976	1976	1982	1976	1978	1978	1973	1971
	High	1.139	0.761	0.574	0.363	0.286	0.393	0.322	0.230	0.394	1.110	0.854	0.695
	(year)	1988	1990	1981	1983	1983	1971	1980	1985	1974	1987	1974	1984
Runoff:	Avg.	67	46	40	24	15	10	7	6	8	25	37	46
	Low	13	9	8	4	3	1	2	1	2	2	2	4
	High	163	98	82	50	41	54	46	33	55	159	118	100
Rainfall:	Avg.	95	61	69	51	53	61	54	62	77	95	97	90
	Low	25	23	6	3	5	12	15	7	9	5	19	21
	High	208	155	137	109	114	155	119	144	222	244	199	184

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	0.189		0.196		97
Lowest yearly mean			0.050	1973	
Highest yearly mean			0.282	1987	
Lowest monthly mean	0.033	Oct	0.009	Jun 1976	
Highest monthly mean	0.500	Jan	1.139	Jan 1988	
Lowest daily mean	0.021	28 Oct	0.003	21 Jun 1976	
Highest daily mean	2.804	27 Jun	6.658	14 Jan 1968	
Peak	10.380	27 Jun	18.790	7 Oct 1987	
10% exceedance	0.398		0.446		89
50% exceedance	0.090		0.080		113
95% exceedance	0.027		0.012		220
Annual total (million cu m)	5.97		6.18		97
Annual runoff (mm)	319		331		97
Annual rainfall (mm)	843		865		97
[1941-70 rainfall average (mm)			836]		

Factors affecting runoff

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

Station and catchment description

Asymmetrical compound Crump profile weir (crests: 2.13m and 2.97m broad) with crest tapping - not currently used. Very limited head during droughts. Structure capacity exceeded in large floods. Early data (1939-67) is of poorer quality and relates to low flows only. Responsive to rainfall on impervious fraction of catchment. Flows diminished by surface and groundwater abstractions. A rural catchment developed on mixed geology (Hastings Beds predominate).

042010 Itchen at Highbridge+Allbrook 1991

Measuring authority: NRA-S
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	4.160	4.517	4.698	5.606	5.300	3.882	3.927	3.102	2.932	3.230	3.613	3.453
2	4.627	4.450	4.666	5.652	5.123	3.874	4.024	2.884	3.020	3.048	3.567	3.377
3	4.304	4.419	4.709	5.654	4.972	3.884	4.041	2.847	2.873	3.047	3.465	3.358
4	4.002	4.443	4.769	5.970	4.945	3.922	3.677	2.789	2.828	3.045	3.525	3.372
5	4.384	4.525	4.857	5.905	4.901	4.169	4.090	2.712	2.724	3.059	3.267	3.412
6	4.218	4.451	5.315	6.003	4.888	4.277	4.282	2.725	2.722	3.084	3.088	3.424
7	4.162	4.410	6.314	6.109	4.852	4.106	3.994	2.881	2.741	3.060	2.818	3.432
8	4.789	4.430	5.783	5.786	4.817	4.155	4.087	3.544	2.744	3.067	3.047	3.449
9	5.279	4.404	5.418	5.659	4.704	4.236	4.044	3.519	2.774	3.040	3.366	3.410
10	5.957	4.347	5.587	5.577	4.583	4.100	3.841	3.427	2.729	3.046	3.302	3.523
11	5.435	4.262	5.375	5.450	4.574	4.125	3.793	3.467	2.793	3.117	3.429	3.482
12	5.080	4.240	5.300	5.419	4.458	4.192	3.907	3.489	2.732	3.134	3.597	3.431
13	4.898	4.231	5.099	5.326	4.460	4.043	4.342	3.437	2.695	3.087	3.766	3.424
14	4.893	4.224	5.108	5.304	4.424	4.069	4.113	3.329	2.753	3.001	3.436	3.432
15	4.811	4.545	5.161	5.246	4.365	4.415	3.896	3.232	2.786	3.051	3.434	3.496
16	4.762	4.477	5.903	5.214	4.440	4.611	4.072	3.205	2.828	3.054	3.221	3.626
17	4.900	4.357	5.773	5.247	4.454	4.223	3.938	3.155	2.877	3.047	3.552	3.786
18	5.047	4.361	5.862	5.333	4.421	4.062	4.965	3.149	2.790	2.927	3.518	3.791
19	5.158	4.278	5.890	5.393	4.400	4.045	3.520	3.150	2.823	2.953	4.143	3.686
20	4.851	4.333	5.777	5.307	4.252	3.897	2.991	3.085	2.805	2.936	4.043	3.634
21	4.721	4.542	5.685	5.277	4.158	3.648	3.210	3.129	2.830	2.964	3.676	3.600
22	4.720	5.023	5.621	5.185	4.052	3.772	3.372	3.155	2.848	3.129	3.712	3.573
23	4.603	5.121	5.555	5.104	4.146	4.970	3.155	3.407	2.818	3.048	3.660	3.628
24	4.584	4.770	5.582	5.104	4.126	5.307	3.372	3.439	2.909	3.040	3.500	3.583
25	4.521	4.636	5.550	5.095	4.127	4.668	3.394	3.298	2.941	2.974	3.453	3.616
26	4.484	4.557	5.516	5.135	4.096	4.338	3.156	3.211	2.968	2.958	3.474	3.626
27	4.500	4.697	5.512	5.123	4.048	4.239	3.086	3.059	2.919	2.967	3.441	3.614
28	4.346	4.793	5.488	5.019	3.995	4.085	2.872	2.960	3.472	2.975	3.323	3.594
29	4.354		5.459	5.302	3.991	3.880	2.714	2.994	3.870	3.117	3.340	3.598
30	4.415		5.506	5.675	3.942	3.944	3.044	2.937	3.378	3.365	3.479	3.674
31	4.536		5.548		3.900		3.311	2.900		3.190		3.633
Average	4.694	4.494	5.432	5.439	4.449	4.171	3.685	3.149	2.897	3.057	3.475	3.540
Lowest	4.002	4.040	4.666	5.019	3.900	3.648	2.714	2.712	2.695	2.927	2.818	3.358
Highest	5.957	5.121	6.314	6.109	5.300	5.307	4.965	3.544	3.870	3.365	4.143	3.791
Peak flow												
Day of peak												
Monthly total (million cu m)	12.57	10.84	14.55	14.10	11.92	10.81	9.87	8.43	7.51	8.19	9.01	9.48
Runoff (mm)	35	30	40	39	33	30	27	23	21	23	25	26
Rainfall (mm)	114	49	85	57	8	121	94	17	58	59	64	22

Statistics of monthly data for previous record (Oct 1958 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	6.488	7.271	7.015	6.517	5.705	4.820	4.091	3.786	3.647	4.060	4.736	5.574
	Low	3.527	3.838	3.644	3.203	3.093	2.581	2.474	2.331	2.670	2.702	2.840	3.136
	(year)	1989	1989	1976	1976	1976	1976	1976	1976	1973	1959	1973	1973
	High	10.520	11.060	9.923	8.521	7.311	6.549	5.219	5.244	5.127	7.867	9.858	10.860
	(year)	1969	1990	1977	1969	1966	1979	1979	1979	1968	1960	1960	1960
Runoff:	Avg.	48	49	52	47	42	35	30	28	26	30	34	41
	Low	26	26	27	23	23	19	18	17	19	20	20	23
	High	78	74	74	61	54	47	39	39	37	59	71	81
Rainfall:	Avg.	90	59	71	54	58	56	54	63	73	85	87	96
(1959-	Low	12	5	3	2	10	10	14	13	5	6	27	19
1990)	High	159	173	172	113	145	128	109	120	201	234	218	229

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	4.036		5.298		76
Lowest yearly mean			3.708	1973	
Highest yearly mean			6.594	1960	
Lowest monthly mean	2.897	Sep	2.331	Aug 1976	
Highest monthly mean	5.439	Apr	11.060	Feb 1990	
Lowest daily mean	2.695	13 Sep	2.167	24 Aug 1976	
Highest daily mean	6.314	7 Mar	12.800	29 Jan 1969	
Peak					
10% exceedance	5.362		7.725		69
50% exceedance	3.967		4.874		81
95% exceedance	2.816		2.958		95
Annual total (million cu m)	127.30		167.20		76
Annual runoff (mm)	354		464		76
Annual rainfall (mm)	748		846		88
[1941-70 rainfall average (mm)			873]		

Factors affecting runoff

- 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 7.75m broad (which can drown), superseded, in 1971, a rated section with weedgrowth problems. Plus thin-plate weir (Allbrook). All flows contained (rare bypassing resulted from wrong sluice settings). Flow augmentation from GW during droughts. GW catchment exceeds topographical catchment. Artificial influences have minor, but increasing, impact on baseflow dominated regime; small net export of water. Very permeable catchment (90% Chalk). Land use is mainly arable with scattered urban settlements.

043005 Avon at Amesbury 1991

Measuring authority: NRA-W
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	1.955	2.843	3.278	3.993	3.813	2.277	2.363	1.849	1.309	1.436	1.414	1.738
2	2.299	2.843	3.169	4.146	3.544	2.286	2.329	1.870	1.367	1.358	1.466	1.645
3	2.636	2.827	3.172	4.123	3.358	2.275	2.297	1.784	1.326	1.306	1.620	1.622
4	2.489	2.779	3.185	4.348	3.368	2.274	2.179	1.756	1.311	1.284	1.625	1.613
5	2.503	2.781	3.231	4.540	3.274	2.184	2.087	1.692	1.306	1.293	1.618	1.613
6	2.772	2.708	3.467	4.410	3.211	2.236	2.226	1.699	1.305	1.284	1.590	1.613
7	3.105	2.720	4.589	4.636	3.236	2.210	2.101	1.685	1.291	1.284	1.564	1.613
8	3.112	2.749	5.074	4.354	3.179	2.203	2.088	1.691	1.269	1.295	1.532	1.613
9	3.824	2.746	4.769	4.241	3.157	2.200	2.054	1.611	1.159	1.350	1.548	1.608
10	5.236	2.730	4.646	4.127	3.040	2.221	1.962	1.590	1.142	1.344	1.560	1.602
11	4.688	2.720	4.456	4.070	3.048	2.197	1.954	1.587	1.139	1.363	1.591	1.600
12	3.726	2.720	4.168	3.987	2.999	2.191	1.927	1.588	1.123	1.378	1.617	1.600
13	3.389	2.720	4.102	3.914	2.944	2.149	1.950	1.587	1.129	1.351	1.670	1.602
14	3.213	2.726	3.992	3.863	2.858	2.089	1.927	1.583	1.130	1.358	1.713	1.600
15	3.121	2.916	3.933	3.832	2.744	2.103	1.920	1.572	1.133	1.322	1.695	1.602
16	2.968	3.119	4.023	3.724	2.829	2.085	1.909	1.562	1.163	1.325	1.670	1.633
17	2.898	3.041	4.167	3.694	2.829	2.112	1.897	1.557	1.139	1.287	1.674	1.703
18	2.994	2.986	4.207	3.699	2.807	2.055	2.063	1.550	1.122	1.284	1.710	1.762
19	3.592	2.928	4.402	3.733	2.759	2.146	2.065	1.509	1.113	1.272	2.237	1.819
20	3.458	2.880	4.402	3.661	2.679	2.134	1.981	1.488	1.113	1.272	3.156	1.817
21	3.205	2.966	4.349	3.634	2.621	2.070	1.918	1.478	1.113	1.272	2.579	1.804
22	3.029	3.438	4.298	3.619	2.548	1.927	1.872	1.482	1.114	1.243	2.116	1.775
23	2.999	4.082	4.222	3.530	2.485	2.325	1.860	1.538	1.107	1.237	2.009	1.739
24	2.989	3.653	4.152	3.515	2.468	2.587	1.920	1.528	1.129	1.237	1.943	1.702
25	2.896	3.358	4.132	3.477	2.459	2.416	1.937	1.495	1.114	1.237	1.895	1.666
26	2.882	3.378	4.127	3.457	2.380	2.400	1.917	1.478	1.146	1.237	1.853	1.661
27	2.874	3.326	4.136	3.422	2.362	2.668	1.868	1.423	1.207	1.235	1.817	1.676
28	2.860	3.300	3.972	3.390	2.340	3.290	1.859	1.393	1.482	1.242	1.747	1.667
29	2.845		3.986	3.659	2.329	3.035	1.771	1.366	1.616	1.264	1.742	1.649
30	2.843		3.991	4.256	2.321	2.599	1.758	1.363	1.540	1.338	1.741	1.649
31	2.843		3.986		2.295		1.837	1.349		1.358		1.677
Average	3.105	2.999	4.058	3.902	2.848	2.298	1.993	1.571	1.222	1.301	1.790	1.667
Lowest	1.955	2.708	3.169	3.390	2.295	1.927	1.758	1.349	1.107	1.235	1.414	1.600
Highest	5.236	4.082	5.074	4.636	3.813	3.290	2.363	1.870	1.616	1.436	3.156	1.819
Peak flow	5.67	4.25	5.20	4.73	4.11	3.34	2.46	2.09	1.69	1.44	3.71	1.86
Day of peak	10	23	8	7	1	28	2	1	29	1	20	19
Monthly total (million cu m)	8.31	7.26	10.87	10.11	7.63	5.96	5.34	4.21	3.17	3.49	4.64	4.46
Runoff (mm)	26	22	34	31	24	18	16	13	10	11	14	14
Rainfall (mm)	101	35	64	66	11	124	81	16	56	52	61	18

Statistics of monthly data for previous record (Feb 1965 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.228	6.324	5.551	4.593	3.502	2.663	1.966	1.652	1.544	1.843	2.490	3.797
	Low	1.199	1.188	1.158	1.038	0.834	0.626	0.474	0.372	0.645	0.972	1.090	1.366
	(year)	1976	1976	1976	1976	1976	1976	1976	1976	1976	1989	1973	1990
	High	8.556	16.000	8.352	7.586	5.146	4.259	3.022	2.362	2.528	3.521	6.440	7.259
	(year)	1982	1990	1972	1979	1979	1979	1971	1979	1974	1966	1974	1982
Runoff:	Avg.	43	48	46	37	29	21	16	14	12	15	20	31
	Low	10	9	10	8	7	5	4	3	5	8	9	11
	High	71	120	69	61	43	34	25	20	20	29	52	60
Rainfall:	Avg.	79	57	66	45	58	56	49	61	65	71	72	87
	Low	14	6	14	1	8	3	15	22	11	4	31	17
	High	134	147	150	100	121	143	113	152	179	161	185	160

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	2.392		3.414		70
Lowest yearly mean			1.430	1976	
Highest yearly mean			4.476	1977	
Lowest monthly mean	1.222	Sep	0.372	Aug 1976	
Highest monthly mean	4.058	Mar	16.000	Feb 1990	
Lowest daily mean	1.107	23 Sep	0.175	22 Aug 1976	
Highest daily mean	5.236	10 Jan	26.000	4 Feb 1990	
Peak	5.674	10 Jan	28.540	4 Feb 1990	
10% exceedance	4.008		6.539		61
50% exceedance	2.123		2.785		76
95% exceedance	1.206		1.097		110
Annual total (million cu m)	75.43		107.70		70
Annual runoff (mm)	233		333		70
Annual rainfall (mm)	685		766		89
[1941-70 rainfall average (mm)			768]		

Factors affecting runoff

- Flow influenced by groundwater abstraction and/or recharge.

Station and catchment description

Crump profile weir (crest 9.14m broad) flanked by broad-crested weirs. Small bypass channel approx. 2m u/s of weir - included in rating. Full range station. Bankfull is 1.37m. During summer flows are naturally augmented from groundwater draining from northern half of River Bourne catchment. Some groundwater pumping also takes place within the catchment. Predominantly permeable (Chalk) catchment with a small inlier of Upper Greensand and Gault. Land use - rural. Topographical and groundwater catchments do not coincide.

045001 Exe at Thorverton 1991

Measuring authority: NRA-SW | Grid reference: 21 (SS) 936 016 | Catchment area (sq km): 600.9
First year: 1956 | Level stn. (m OD): 25.90 | 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	73.800	8.335	17.670	8.552	8.712	3.055	7.994	5.480	2.188	7.343	31.020	7.925
2	108.100	7.731	15.910	13.750	7.508	3.038	7.560	4.844	2.210	6.101	29.630	7.342
3	77.210	7.158	14.280	11.870	7.176	2.975	7.733	4.596	2.196	6.306	46.060	6.887
4	59.550	6.889	23.570	17.070	7.543	2.861	6.484	4.343	2.078	5.765	47.150	6.580
5	60.450	6.481	23.630	21.130	6.698	3.462	6.127	4.173	2.060	5.568	37.980	6.190
6	60.630	6.022	22.330	26.350	6.344	3.504	5.606	4.723	2.026	5.097	31.200	5.849
7	54.060	5.355	22.320	25.990	6.610	3.177	6.498	4.237	1.998	6.216	35.870	5.598
8	58.650	5.939	34.320	23.400	6.267	3.138	7.680	3.792	1.945	13.910	49.230	5.390
9	61.840	5.384	30.980	20.720	5.751	3.534	6.170	3.768	1.897	27.640	38.370	5.186
10	56.770	5.607	37.350	18.250	5.420	3.430	5.155	3.708	1.916	20.510	32.030	4.961
11	53.190	5.332	33.730	16.080	5.230	3.226	5.060	3.808	1.899	21.160	31.580	4.763
12	41.180	5.551	31.110	14.710	5.082	3.556	5.301	3.842	1.872	21.900	29.270	4.435
13	34.040	5.561	26.230	12.560	4.872	3.271	6.587	3.477	1.868	17.660	37.460	4.409
14	28.420	5.549	22.410	10.900	4.632	3.168	5.742	3.493	1.849	15.490	52.170	4.321
15	23.710	28.230	20.250	9.893	4.396	6.010	5.409	3.321	1.882	13.350	41.360	4.604
16	20.990	25.420	28.710	8.984	4.286	4.758	5.045	3.274	2.026	13.350	33.440	5.456
17	19.790	21.140	23.090	8.247	4.244	3.602	5.135	3.109	2.240	12.510	30.320	7.703
18	26.770	18.440	36.700	7.800	4.121	3.079	19.970	2.935	2.108	13.140	34.450	8.561
19	25.740	16.160	39.280	7.230	4.030	2.920	11.490	2.817	2.040	11.380	35.700	21.840
20	22.320	15.090	37.860	6.717	3.936	3.007	9.614	2.784	1.903	11.020	31.560	27.500
21	20.370	22.850	33.090	6.321	3.727	2.855	8.632	2.754	1.860	12.820	27.340	97.090
22	18.270	54.980	28.450	6.022	3.522	3.599	7.831	3.043	2.032	11.000	22.960	66.500
23	16.580	54.350	24.180	5.701	3.398	13.300	7.590	3.444	2.238	10.190	19.220	44.770
24	15.020	44.050	20.130	5.486	3.588	9.994	12.360	3.002	2.486	9.647	16.470	33.460
25	13.520	34.660	17.190	6.034	3.718	10.430	9.639	2.778	2.523	9.110	15.320	27.110
26	12.280	28.970	15.260	5.496	3.308	12.600	7.815	2.742	2.145	8.814	12.750	22.870
27	11.270	25.050	13.330	5.060	2.982	13.920	7.375	2.634	2.165	8.273	11.270	18.870
28	10.430	20.880	11.600	4.703	2.975	10.810	6.754	2.470	19.740	8.104	10.240	16.070
29	9.677		10.430	13.530	3.269	9.371	6.147	2.330	14.130	11.150	9.377	13.910
30	9.213		9.532	14.240	3.158	8.950	5.784	2.242	8.537	12.460	8.675	12.380
31	8.904		8.830		3.137		5.719	2.153		29.260		11.210
Average	35.890	17.760	23.670	12.090	4.827	5.487	7.484	3.423	3.269	12.460	29.650	16.770
Lowest	8.904	5.332	8.830	4.703	2.975	2.855	5.045	2.153	1.849	5.097	8.675	4.321
Highest	108.100	54.980	39.280	26.350	8.712	13.920	19.970	5.480	19.740	29.260	52.170	97.090
Peak flow	161.50	109.00	56.72	37.61	9.68	27.83	34.85	6.14	34.25	59.87	64.06	182.70
Day of peak	2	23	19	6	1	24	18	1	28	1	8	21
Monthly total (million cu m)	96.14	42.95	63.40	31.35	12.93	14.22	20.05	9.17	8.47	33.37	76.85	44.91
Runoff (mm)	160	71	106	52	22	24	33	15	14	56	128	75
Rainfall (mm)	163	85	110	102	10	130	95	28	106	140	138	88

Statistics of monthly data for previous record (May 1956 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	29.160	26.230	18.980	13.040	8.468	5.491	4.640	6.304	8.921	16.760	22.140	29.770
	Low	5.438	6.450	6.376	4.341	2.595	1.988	1.154	0.695	1.699	1.560	5.297	12.460
	(year)	1963	1965	1962	1974	1976	1975	1976	1976	1972	1978	1978	1963
	High	57.190	51.730	49.630	28.800	29.380	15.870	19.770	20.550	35.830	59.830	46.170	68.440
	(year)	1984	1990	1981	1966	1983	1958	1968	1985	1974	1960	1986	1965
Runoff:	Avg.	130	106	85	56	38	24	21	28	38	75	95	133
	Low	24	26	28	19	12	9	5	3	7	7	23	56
	High	255	208	221	124	131	68	88	92	155	267	199	305
Rainfall:	Avg.	145	106	103	73	76	73	80	96	109	128	128	153
	Low	30	7	18	7	12	9	19	31	13	13	48	51
	High	297	239	222	163	175	160	174	181	254	300	239	321

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	14.390		15.790		91
Lowest yearly mean			9.698	1964	
Highest yearly mean			22.600	1960	
Lowest monthly mean	3.269	Sep	0.695	Aug 1976	
Highest monthly mean	35.890	Jan	68.440	Dec 1965	
Lowest daily mean	1.849	14 Sep	0.440	28 Aug 1976	
Highest daily mean	108.100	2 Jan	282.200	4 Dec 1960	
Peak	182.700	21 Dec	492.600	4 Dec 1960	
10% exceedance	33.830		38.010		89
50% exceedance	8.045		9.336		86
95% exceedance	2.133		1.875		114
Annual total (million cu m)	453.80		498.30		91
Annual runoff (mm)	755		829		91
Annual rainfall (mm)	1195		1270		94
[1941-70 rainfall average (mm)			1303]		

Factors affecting runoff

- 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 cableway. Flat V Crump profile weir constructed in 1973 due to unstable bed condition. Minor culvert flow through mill u/s of station included in rating. Wimbleball Reservoir has significant effect upon low flows. 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 1991

Measuring authority: NRA-SW
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	128.500	13.610	24.200	12.200	16.260	3.689	6.471	5.206	3.090	4.014	52.390	11.420
2	146.700	11.900	22.570	23.240	12.480	3.541	16.010	4.912	3.168	3.654	36.220	10.630
3	86.280	10.840	21.060	20.690	11.060	3.479	12.390	4.912	3.097	3.611	72.550	10.090
4	71.850	10.650	67.220	49.170	11.020	3.547	7.738	4.910	2.974	3.803	67.640	9.454
5	85.850	10.830	53.100	33.710	9.610	4.354	6.625	4.857	2.849	3.945	51.710	8.935
6	66.840	9.922	41.750	44.730	8.851	4.541	6.108	5.230	2.785	3.844	37.480	8.419
7	61.600	8.408	35.420	35.770	8.964	4.189	7.300	5.018	2.780	5.944	37.790	8.057
8	99.350	8.580	60.030	28.920	8.360	4.167	10.060	4.453	2.753	12.760	58.810	7.799
9	111.300	7.733	54.280	24.690	7.644	5.153	7.993	4.202	2.749	9.302	38.680	7.530
10	88.360	7.902	59.740	21.830	7.201	4.695	6.795	4.167	2.726	7.183	29.990	7.239
11	80.220	7.461	47.480	20.130	6.948	4.318	6.738	4.255	2.732	7.046	33.870	6.931
12	53.910	17.460	42.350	27.510	6.735	5.201	6.548	4.772	2.692	6.898	44.980	6.624
13	41.580	18.260	35.520	20.850	6.469	4.331	8.248	4.231	2.658	6.058	57.030	6.548
14	34.760	15.960	30.670	18.140	6.264	3.950	9.277	4.401	2.704	5.607	58.680	6.470
15	29.450	83.450	28.960	16.790	5.881	4.898	7.238	5.498	2.858	5.697	39.650	6.784
16	28.610	46.490	59.170	15.540	5.705	4.748	6.785	5.142	2.790	6.144	45.260	11.360
17	33.620	28.240	47.790	14.110	5.571	4.156	6.536	4.549	2.751	5.180	39.570	21.800
18	57.910	22.870	61.280	13.320	5.394	3.883	33.750	4.381	2.674	6.274	53.140	14.970
19	49.560	19.270	59.140	12.470	5.313	3.953	20.230	4.273	2.610	7.578	51.270	27.940
20	37.250	18.110	50.450	11.310	5.272	4.057	11.730	4.280	2.540	6.325	34.980	32.230
21	31.550	54.190	46.440	10.670	5.009	4.116	9.797	4.295	2.503	6.918	28.840	34.150
22	27.140	126.400	37.430	9.926	4.793	4.592	8.660	4.344	2.675	6.293	25.330	27.640
23	23.690	85.610	33.450	9.273	4.589	14.640	8.184	4.793	2.850	5.917	22.480	21.950
24	20.970	60.990	27.690	9.200	4.415	11.610	8.587	4.328	3.024	5.614	20.870	18.200
25	18.700	45.530	23.990	10.250	4.259	9.844	8.743	4.091	3.156	5.480	20.790	16.060
26	16.800	38.390	21.410	8.797	4.113	10.050	7.333	3.923	2.979	5.484	17.050	15.240
27	15.340	33.830	18.830	8.069	4.005	11.560	6.688	3.776	3.442	5.460	15.460	14.360
28	14.300	28.860	16.730	7.507	3.888	8.269	6.321	3.635	7.204	5.390	14.380	12.890
29	13.280		14.900	25.090	3.794	6.963	5.838	3.531	7.276	13.440	13.430	11.930
30	13.970		13.650	43.710	4.007	6.706	5.625	3.358	4.701	17.720	12.520	10.940
31	15.530		12.700		4.006		5.596	3.001		60.170		10.480
Average	51.770	30.420	37.720	20.250	6.706	5.773	9.224	4.410	3.193	8.347	37.760	13.710
Lowest	13.280	7.461	12.700	7.507	3.794	3.479	5.596	3.001	2.503	3.611	12.520	6.470
Highest	146.700	126.400	67.220	49.170	16.260	14.640	33.750	5.498	7.276	60.170	72.550	34.150
Peak flow	258.80	182.90	108.20	75.80	20.31	22.96	61.26	5.62	10.42	100.30	86.17	47.27
Day of peak	2	23	4	4	1	24	18	15	29	31	8	19
Monthly total (million cu m)	138.70	73.59	101.00	52.50	17.96	14.96	24.71	11.81	8.28	22.36	97.88	36.73
Runoff (mm)	151	80	110	57	20	16	27	13	9	24	107	40
Rainfall (mm)	161	94	118	109	10	115	94	30	67	126	128	50

Statistics of monthly data for previous record (Jul 1956 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	45.470	37.560	25.890	16.410	11.150	6.676	6.008	8.376	11.640	22.570	34.560	44.580
	Low	8.475	9.162	11.250	5.682	3.112	1.994	1.182	0.758	1.117	1.540	4.212	18.340
	(year)	1964	1965	1961	1990	1990	1976	1976	1976	1959	1978	1978	1963
	High	89.410	86.960	65.520	35.200	32.370	20.630	28.720	42.100	59.840	65.080	78.760	91.690
	(year)	1974	1990	1981	1985	1983	1972	1968	1958	1974	1981	1959	1959
Runoff:	Avg.	133	100	76	46	33	19	18	24	33	66	98	130
	Low	25	24	33	16	9	6	3	2	3	5	12	54
	High	261	229	191	100	95	58	84	123	169	190	223	268
Rainfall:	Avg.	145	102	99	67	72	72	81	94	103	126	135	145
	Low	23	3	14	7	18	11	13	18	10	12	57	41
	High	301	251	219	151	149	167	160	179	251	258	274	266

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	19.040		22.520		85
Lowest yearly mean			12.520	1964	
Highest yearly mean			34.890	1974	
Lowest monthly mean	3.193	Sep	0.758	Aug 1976	
Highest monthly mean	51.770	Jan	91.690	Dec 1959	
Lowest daily mean	2.503	21 Sep	0.580	23 Aug 1976	
Highest daily mean	146.700	2 Jan	482.300	27 Dec 1979	
Peak	258.800	2 Jan	714.600	28 Dec 1979	
10% exceedance	50.650		55.380		91
50% exceedance	9.245		12.000		77
95% exceedance	2.917		1.859		157
Annual total (million cu m)	600.40		710.70		84
Annual runoff (mm)	655		775		84
Annual rainfall (mm)	1102		1241		89
[1941-70 rainfall average (mm)			1240]		

Factors affecting runoff

- Reservoir(s) in catchment.
- 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 gauging difficult owing to standing waves. Roadford Reservoir from 1989 may have significant affect at low flows. Informal concrete control installed 1991. 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 1991

Measuring authority: NRA-SW
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	101.600	8.685	19.030	8.183	14.630	2.155	6.332	5.109	1.470	3.854	38.680	7.984
2	132.400	7.894	16.950	14.050	12.180	2.059	6.076	4.398	1.526	3.110	38.590	7.230
3	85.100	7.180	15.300	12.730	10.960	2.103	6.407	4.070	1.503	3.219	72.460	6.770
4	74.330	6.928	35.810	21.810	10.820	1.977	4.933	3.790	1.449	3.003	66.970	6.309
5	85.650	6.578	29.930	29.530	9.178	2.216	4.353	3.645	1.457	2.791	49.570	5.866
6	79.660	6.127	26.910	32.650	8.200	2.531	4.043	4.074	1.412	2.591	37.130	5.463
7	68.860	5.566	26.160	29.180	8.369	2.276	4.234	3.546	1.413	3.791	43.940	5.200
8	77.100	6.154	67.170	24.070	7.502	2.225	6.713	3.083	1.438	12.200	67.330	5.019
9	84.340	5.632	46.060	20.620	6.525	2.314	4.733	2.861	1.443	23.760	50.800	4.775
10	81.180	6.320	49.980	18.070	5.966	2.818	3.690	2.828	1.427	13.650	40.160	4.519
11	70.480	5.881	41.230	15.760	5.620	2.241	3.634	3.127	1.411	12.750	43.130	4.297
12	50.090	6.103	34.260	14.570	5.326	2.564	3.688	2.973	1.408	13.940	43.710	3.999
13	38.250	6.720	27.720	12.410	5.049	2.314	4.365	2.683	1.378	10.530	64.260	3.953
14	29.800	7.247	22.950	10.800	4.706	2.190	4.184	2.570	1.362	8.958	77.790	3.927
15	24.150	72.260	20.780	9.690	4.288	3.794	3.663	2.537	1.445	7.729	53.200	4.202
16	20.990	42.570	34.970	8.516	4.116	3.041	3.475	2.580	1.492	7.531	42.570	6.341
17	23.070	28.600	27.100	7.629	4.014	2.400	3.391	2.335	1.395	7.548	36.190	10.440
18	31.840	22.070	37.570	7.075	3.816	2.055	22.040	2.192	1.216	10.130	55.650	9.976
19	31.330	17.970	42.030	6.528	3.730	1.915	13.260	2.104	1.157	8.816	59.530	22.130
20	25.170	16.130	38.110	5.891	3.616	1.781	10.930	2.081	1.090	8.173	45.260	40.790
21	22.810	29.590	33.550	5.464	3.362	2.113	9.314	2.027	1.122	12.980	34.280	85.680
22	19.860	75.050	27.100	5.291	3.138	2.449	7.999	2.062	1.377	10.560	27.060	64.400
23	17.550	69.220	23.070	5.135	2.930	11.220	7.291	2.262	1.313	9.706	22.210	43.450
24	15.550	55.190	19.020	5.051	2.775	8.811	13.020	2.344	1.561	9.005	18.510	30.500
25	13.820	41.450	16.250	5.618	2.624	8.581	10.520	1.951	1.609	8.276	16.780	23.840
26	12.260	33.410	14.440	5.495	2.535	10.300	8.676	1.778	1.415	7.931	13.780	20.520
27	11.090	28.240	12.570	4.831	2.535	13.730	7.981	1.620	1.610	7.383	11.950	16.960
28	10.250	23.340	10.970	4.359	2.414	9.644	7.202	1.598	15.750	7.524	10.690	14.480
29	9.396		9.853	24.390	2.284	8.076	6.405	1.534	10.860	13.200	9.719	12.550
30	9.263		9.008	26.690	2.307	7.237	5.835	1.479	5.024	15.730	8.882	11.120
31	9.236		8.361		2.256		5.498	1.457		34.820		10.160
Average	44.080	23.150	27.230	13.400	5.412	4.304	6.900	2.668	2.318	9.845	40.030	16.220
Lowest	9.236	5.566	8.361	4.359	2.256	1.781	3.391	1.457	1.090	2.591	8.882	3.927
Highest	132.400	75.050	67.170	32.650	14.630	13.730	22.040	5.109	15.750	34.820	77.790	85.680
Peak flow	195.00	133.10	82.40	54.28	16.73	22.49	42.80	5.51	29.50	71.76	94.25	144.40
Day of peak	2	23	8	30	1	23	18	1	28	31	14	22
Monthly total (million cu m)	118.10	56.00	72.94	34.74	14.50	11.16	18.48	7.14	6.01	26.37	103.70	43.45
Runoff (mm)	143	68	88	42	18	14	22	9	7	32	126	53
Rainfall (mm)	147	82	93	98	12	113	90	26	88	121	138	68

Statistics of monthly data for previous record (Oct 1958 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	35.790	29.580	20.960	14.020	9.050	5.044	4.678	5.725	7.637	19.300	28.570	36.280
	Low	6.657	3.245	7.449	3.888	1.982	1.329	0.793	0.423	0.859	1.043	3.654	13.200
	(year)	1963	1959	1984	1974	1990	1984	1984	1976	1959	1978	1978	1963
	High	62.100	68.000	52.140	32.800	37.000	16.630	23.390	19.130	47.670	77.360	58.500	73.670
	(year)	1984	1990	1981	1966	1983	1972	1968	1985	1974	1960	1963	1965
Runoff:	Avg.	116	87	68	44	29	16	15	19	24	63	90	118
	Low	22	10	24	12	6	4	3	1	3	3	11	43
	High	201	199	169	103	120	52	76	62	150	251	184	239
Rainfall:	Avg.	132	91	92	69	69	68	72	87	92	119	126	138
	Low	28	3	18	8	17	10	23	24	14	14	53	41
	High	242	225	183	145	146	164	156	160	247	278	239	271

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	16.250		18.010		90
Lowest yearly mean			11.310	1964	
Highest yearly mean			27.590	1960	
Lowest monthly mean	2.318	Sep	0.423	Aug 1976	
Highest monthly mean	44.080	Jan	77.360	Oct 1960	
Lowest daily mean	1.090	20 Sep	0.200	28 Aug 1976	
Highest daily mean	132.400	2 Jan	363.800	4 Dec 1960	
Peak	195.000	2 Jan	644.900	4 Dec 1960	
10% exceedance	42.580		47.230		90
50% exceedance	8.030		9.078		88
95% exceedance	1.450		1.171		124
Annual total (million cu m)	512.50		568.30		90
Annual runoff (mm)	620		688		90
Annual rainfall (mm)	1076		1155		93
[1941-70 rainfall average (mm)			1193]		

Factors affecting runoff

- Abstraction for public water supplies.

Station and catchment description

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

052005 Tone at Bishops Hull 1991

Measuring authority: NRA-W
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	12.070	2.159	2.999	2.261	2.468	0.933	0.952	0.785	0.557	1.023	5.246	1.927
2	11.810	2.040	2.906	2.754	2.094	0.933	0.925	0.718	0.578	0.864	3.824	1.834
3	8.660	1.907	2.693	2.520	1.996	0.906	0.978	0.756	0.550	0.826	7.704	1.767
4	7.633	1.854	6.034	5.036	2.051	0.910	0.865	0.705	0.552	0.783	6.721	1.714
5	10.860	1.783	5.275	4.117	1.869	1.072	0.884	0.734	0.555	0.784	4.689	1.647
6	9.555	1.723	4.923	5.632	1.810	0.996	0.898	0.739	0.545	0.739	3.870	1.590
7	7.924	1.669	5.028	4.571	1.891	0.980	1.038	0.708	0.539	0.939	3.438	1.557
8	9.273	1.692	8.780	3.718	1.742	0.924	1.134	0.651	0.539	2.446	4.617	1.533
9	16.020	1.605	5.678	3.389	1.709	1.039	0.908	0.626	0.541	5.984	3.735	1.478
10	12.950	1.568	7.187	3.227	1.655	1.029	0.819	0.633	0.528	2.260	3.516	1.448
11	8.959	1.451	6.031	3.080	1.595	0.924	0.862	0.669	0.533	3.677	4.391	1.410
12	6.682	1.895	5.373	2.975	1.475	0.999	0.855	0.647	0.529	4.249	5.190	1.356
13	5.552	1.930	4.759	2.730	1.408	0.867	0.951	0.622	0.542	2.490	7.474	1.377
14	4.738	1.804	4.245	2.524	1.347	0.926	0.871	0.630	0.555	2.182	8.165	1.367
15	4.250	3.244	3.986	2.384	1.289	1.087	0.819	0.611	0.555	1.814	5.528	1.659
16	4.031	2.623	5.753	2.255	1.259	0.853	0.769	0.606	0.556	1.835	4.708	1.833
17	4.483	2.227	4.809	2.156	1.276	0.783	0.821	0.591	0.539	1.677	4.450	2.067
18	6.116	2.115	5.858	2.119	1.275	0.764	1.896	0.577	0.519	1.552	4.731	2.068
19	5.448	2.025	6.389	2.065	1.255	0.725	1.020	0.598	0.516	1.361	4.633	2.839
20	4.332	2.042	5.582	1.960	1.239	0.724	0.870	0.582	0.503	1.344	3.893	3.442
21	3.879	4.446	5.097	1.921	1.167	0.716	0.823	0.582	0.531	1.422	3.610	7.498
22	3.530	13.420	4.589	1.853	1.157	0.797	0.783	0.666	0.552	1.249	3.357	5.531
23	3.285	6.725	4.238	1.774	1.086	2.099	0.830	0.820	0.549	1.193	3.082	4.309
24	3.079	5.078	3.726	1.813	1.074	1.459	0.936	0.641	0.606	1.155	2.874	3.563
25	2.852	4.348	3.382	2.586	1.034	1.247	0.877	0.615	0.855	1.136	2.858	3.208
26	2.664	3.862	3.153	1.945	1.000	1.365	0.813	0.588	0.643	1.146	2.494	2.942
27	2.522	3.635	2.797	1.806	0.997	1.594	0.774	0.553	0.605	1.118	2.334	2.668
28	2.401	3.323	2.590	1.700	0.993	1.000	0.746	0.553	6.514	1.097	2.200	2.474
29	2.321		2.432	3.397	0.991	0.901	0.716	0.528	2.921	2.164	2.146	2.302
30	2.232		2.345	4.406	0.939	0.881	0.679	0.524	1.289	2.223	2.059	2.184
31	2.216		2.251		0.933		0.843	0.524		5.529		2.103
Average	6.204	3.007	4.545	2.822	1.422	1.014	0.902	0.638	0.863	1.879	4.251	2.410
Lowest	2.216	1.451	2.251	1.700	0.933	0.716	0.679	0.524	0.503	0.739	2.059	1.356
Highest	16.020	13.420	8.780	5.632	2.468	2.099	1.896	0.820	6.514	5.984	8.165	7.498
Peak flow	40.71	30.16	10.60	9.44	2.85	3.48	2.62	0.95	10.26	12.75	10.52	12.85
Day of peak	9	22	7	6	1	23	18	23	28	31	14	21
Monthly total (million cu m)	16.62	7.27	12.17	7.32	3.81	2.63	2.41	1.71	2.24	5.03	11.02	6.45
Runoff (mm)	82	36	60	36	19	13	12	8	11	25	55	32
Rainfall (mm)	129	55	83	89	9	97	65	19	94	127	97	49

Statistics of monthly data for previous record (Feb 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	6.024	6.257	4.358	3.009	2.070	1.367	1.161	0.933	1.188	2.000	3.230	5.025
	Low	1.246	1.746	1.552	1.176	0.734	0.456	0.326	0.266	0.501	0.580	0.651	1.821
	(year)	1976	1965	1962	1976	1976	1976	1976	1976	1964	1978	1978	1975
	High	14.560	14.160	9.259	6.655	6.562	2.770	5.628	1.685	4.892	9.873	7.611	11.280
	(year)	1984	1990	1981	1966	1983	1972	1968	1965	1974	1976	1982	1965
Runoff:	Avg.	80	75	58	39	27	18	15	12	15	27	41	67
	Low	17	21	21	15	10	6	4	4	6	8	8	24
	High	193	170	123	85	87	36	75	22	63	131	98	150
Rainfall:	Avg.	113	85	84	61	65	59	58	69	79	93	96	113
	Low	25	6	5	6	14	8	16	19	8	8	31	34
	High	250	194	170	150	137	147	144	126	202	249	192	205

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	2.495		3.037		82
Lowest yearly mean			1.600	1964	
Highest yearly mean			4.084	1974	
Lowest monthly mean	0.638	Aug	0.266	Aug 1976	
Highest monthly mean	6.204	Jan	14.560	Jan 1984	
Lowest daily mean	0.503	20 Sep	0.179	22 Aug 1976	
Highest daily mean	16.020	9 Jan	84.200	23 Feb 1978	
Peak	40.710	9 Jan	112.700	11 Jul 1968	
10% exceedance	5.427		6.569		83
50% exceedance	1.787		1.759		102
95% exceedance	0.552		0.607		91
Annual total (million cu m)	78.68		95.84		82
Annual runoff (mm)	390		474		82
Annual rainfall (mm)	913		975		94
[1941-70 rainfall average (mm)			995]		

Factors affecting runoff

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

Station and catchment description

Crump profile weir (breadth 12.2m) with crest tapping (not operational). 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 abstractions for PWS. Catchment geology - predominantly sandstones and marls. Land use - rural.

053018 Avon at Bathford 1991

Measuring authority: NRA-W
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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	33.420	12.050	16.060	13.050	12.470	4.202	7.039	4.673	2.134	4.520	14.200	10.550
2	63.990	11.450	15.030	16.090	10.100	4.230	6.592	3.959	2.306	3.737	11.780	9.967
3	48.820	11.140	14.650	15.150	9.185	4.097	6.947	3.300	2.383	3.362	14.410	9.697
4	38.720	10.770	14.860	21.870	9.117	4.190	5.737	2.777	2.273	3.248	16.270	9.419
5	45.700	10.200	16.930	24.630	8.497	4.522	5.224	2.915	2.230	3.564	13.530	8.809
6	49.740	9.834	24.510	22.600	7.921	4.742	6.469	2.868	2.065	3.612	10.730	8.475
7	53.730	9.568	52.330	26.930	8.039	4.529	5.111	3.302	1.885	3.469	10.520	8.354
8	53.700	9.612	66.450	21.220	8.272	4.587	4.851	3.121	1.734	5.861	14.190	8.153
9	71.530	9.289	48.410	18.020	7.772	4.914	4.675	2.744	1.888	11.610	12.850	7.943
10	96.730	9.029	39.940	16.120	7.472	5.939	4.240	2.754	1.977	9.960	11.170	7.553
11	62.930	8.898	37.980	14.360	6.929	4.985	3.868	2.710	2.028	7.098	11.380	7.452
12	44.840	8.694	30.150	13.530	6.526	5.542	3.958	2.677	2.246	6.494	12.840	7.135
13	34.190	8.911	25.390	12.500	6.847	4.984	3.893	2.496	2.028	5.819	18.560	6.763
14	29.020	8.810	22.770	11.610	6.354	4.669	3.675	2.552	1.675	5.624	23.690	6.953
15	25.940	13.310	20.690	11.400	5.986	5.972	3.512	2.630	1.839	5.343	18.880	7.265
16	22.690	15.400	23.580	11.110	5.693	5.922	3.248	2.387	2.414	5.295	15.850	8.192
17	22.270	13.270	28.680	10.690	5.941	6.225	3.357	2.289	2.580	5.040	14.810	9.267
18	28.290	11.950	39.440	10.630	5.821	5.591	9.296	2.244	2.421	4.632	16.240	13.590
19	41.110	10.930	50.400	10.410	5.659	5.143	6.770	2.092	2.232	4.481	44.050	17.920
20	28.730	11.130	35.950	9.955	5.419	4.876	5.086	2.147	2.146	4.144	37.800	16.860
21	23.940	17.710	32.750	9.809	5.143	4.437	3.957	2.194	2.249	4.224	24.720	18.300
22	21.160	31.180	28.180	10.130	5.109	3.791	3.509	2.492	2.557	4.058	20.770	15.730
23	19.170	42.240	24.350	9.436	4.991	8.210	3.250	4.457	2.510	4.066	18.320	13.820
24	17.720	27.560	21.200	9.274	4.955	11.840	3.764	3.259	2.437	3.962	16.620	11.870
25	16.660	23.230	19.120	9.298	4.804	10.900	5.408	2.468	2.626	3.865	15.280	11.040
26	15.540	20.610	17.780	8.977	4.427	12.140	4.433	2.289	3.119	3.723	13.930	10.820
27	14.620	18.840	16.820	8.670	4.336	13.410	3.770	2.196	3.367	3.653	12.890	10.220
28	13.540	18.120	15.600	8.584	4.396	11.740	3.124	2.174	6.640	3.753	12.360	9.731
29	13.020		14.410	11.990	4.335	8.955	3.003	2.252	9.415	4.180	11.480	9.216
30	12.450		13.770	17.620	4.223	7.658	3.019	2.137	5.914	5.844	11.050	9.036
31	12.410		13.310		4.191		5.310	2.066		7.092		8.938
Average	34.720	14.780	27.140	13.860	6.482	6.431	4.713	2.730	2.777	5.011	16.710	10.290
Lowest	12.410	8.694	13.310	8.584	4.191	3.791	3.003	2.066	1.675	3.248	10.520	6.763
Highest	96.730	42.240	66.450	26.930	12.470	13.410	9.296	4.673	9.415	11.610	44.050	18.300
Peak flow	116.10	49.12	72.25	28.66	14.52	14.26	12.08	5.43	12.47	17.40	58.69	22.31
Day of peak	10	23	8	7	1	27	18	1	29	9	19	19
Monthly total (million cu m)	92.99	35.75	72.70	35.91	17.36	16.67	12.62	7.31	7.20	13.42	43.30	27.56
Runoff (mm)	60	23	47	23	11	11	8	5	5	9	28	18
Rainfall (mm)	105	38	74	68	9	108	73	17	56	72	80	27

Statistics of monthly data for previous record (Dec 1969 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	32.170	32.860	25.540	16.800	11.890	9.209	5.664	5.543	6.358	10.780	18.440	28.310
	Low	9.227	11.370	10.080	7.719	5.048	3.897	2.410	1.715	2.699	3.115	4.406	10.640
	(year)	1976	1976	1973	1976	1976	1976	1976	1976	1990	1978	1978	1990
	High	51.270	67.120	54.230	26.520	31.020	30.110	9.956	13.830	25.450	28.180	39.810	48.270
	(year)	1984	1990	1981	1987	1983	1971	1973	1985	1974	1976	1986	1976
Runoff:	Avg.	56	52	44	28	21	15	10	10	11	19	31	49
	Low	16	18	17	13	9	7	4	3	5	5	7	18
	High	88	105	94	44	54	50	17	24	43	49	66	83
Rainfall:	Avg.	87	63	75	49	58	65	54	65	73	76	78	91
(1970-	Low	18	7	17	2	7	5	25	18	15	6	35	20
1990)	High	148	143	163	110	142	151	115	140	178	149	178	155

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	12.140		16.890		72
Lowest yearly mean			10.360	1973	
Highest yearly mean			22.160	1977	
Lowest monthly mean	2.730	Aug	1.715	Aug 1976	
Highest monthly mean	34.720	Jan	67.120	Feb 1990	
Lowest daily mean	1.675	14 Sep	1.093	29 Aug 1976	
Highest daily mean	96.730	10 Jan	253.600	28 Dec 1979	
Peak	116.100	10 Jan	300.500	28 Dec 1979	
10% exceedance	25.650		36.210		71
50% exceedance	8.643		10.750		80
95% exceedance	2.211		3.087		72
Annual total (million cu m)	382.80		533.00		72
Annual runoff (mm)	247		343		72
Annual rainfall (mm)	727		834		87
[1941-70 rainfall average (mm)			840]		

Factors affecting runoff

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

Station and catchment description

Velocity-area station with cableway. (Replacement station for Bath St James). Upstream of the city of Bath. Situated immediately downstream of confluence with Bybrook. Section by railway bridge; area widely inundated in flood conditions, but all flows contained through bridge. Flows below 5 cumecs are inaccurate. Flows augmented by groundwater scheme in catchment. Mixed geology - predominantly clays and limestone with eastern tributaries rising from Chalk. Land use - mainly rural, some urbanisation.

054001 Severn at Bewdley 1991

Measuring authority: NRA-ST
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	229.500	34.400	86.750	34.210	114.600	9.481	18.630	39.610	11.170	35.410	46.700	35.040
2	249.200	31.710	66.220	49.510	63.630	10.550	16.640	46.190	12.050	23.060	86.640	33.220
3	278.100	30.620	58.190	145.600	47.110	11.620	16.370	26.100	10.420	18.580	94.520	32.500
4	304.200	30.420	66.430	122.700	42.220	10.610	20.500	19.350	9.240	17.390	124.800	28.570
5	257.500	29.420	99.450	95.410	40.880	10.500	25.310	17.630	8.578	18.650	107.500	26.420
6	204.700	27.670	126.700	119.100	36.180	12.250	23.100	17.530	9.189	16.290	100.400	23.510
7	179.400	26.000	160.900	124.200	32.490	15.200	19.850	15.980	10.050	17.470	72.030	21.190
8	195.800	25.750	245.900	142.700	31.540	14.000	19.310	17.110	11.120	18.000	107.400	20.850
9	242.900	26.320	253.600	117.900	30.190	14.020	16.910	15.840	10.850	47.450	115.400	21.530
10	282.600	25.240	208.900	95.980	27.680	14.870	14.760	11.240	9.964	41.780	90.160	20.320
11	299.200	23.670	174.000	83.930	24.420	21.050	19.780	17.610	9.703	56.110	82.670	19.510
12	314.700	24.090	142.500	57.450	24.160	21.340	16.430	42.230	10.180	41.160	137.200	18.500
13	237.500	23.340	112.100	49.500	23.180	19.220	13.140	27.460	11.140	31.180	114.700	18.510
14	155.900	24.100	103.700	43.280	22.220	18.380	13.040	22.080	10.010	27.840	122.100	16.270
15	117.800	29.030	114.000	38.630	19.920	18.560	15.990	19.780	10.940	24.400	109.000	17.490
16	101.900	58.680	100.000	35.730	19.320	18.730	17.020	17.790	13.050	22.150	92.090	20.340
17	89.450	66.360	121.800	32.660	19.650	25.750	14.920	13.050	11.960	20.900	78.010	20.850
18	80.510	48.690	88.810	31.940	18.060	21.820	16.160	11.560	13.340	29.560	72.260	22.450
19	83.780	40.630	112.700	30.740	18.240	18.400	14.670	11.490	14.360	46.320	139.500	38.260
20	91.530	37.560	152.200	29.410	17.830	16.490	14.780	10.280	13.030	41.010	177.900	128.900
21	76.150	38.050	145.900	28.200	16.870	19.170	14.850	8.450	11.520	32.720	134.600	113.100
22	67.190	75.490	132.300	27.170	14.810	15.560	14.090	9.319	11.030	31.580	94.590	170.600
23	59.510	149.900	106.900	26.000	13.640	13.370	13.170	12.130	11.810	29.450	78.400	218.200
24	55.490	221.500	95.210	25.370	13.210	17.450	11.490	11.830	11.770	26.180	64.800	245.700
25	52.900	262.800	67.530	23.470	13.300	18.930	12.960	22.820	13.670	23.870	56.770	167.900
26	48.590	209.500	58.060	23.090	12.870	21.660	15.330	24.350	17.620	20.280	49.340	114.800
27	46.570	139.400	52.300	22.630	13.240	27.930	17.570	18.360	17.040	20.910	44.800	88.090
28	43.710	107.800	46.630	21.650	12.570	29.340	14.640	13.850	14.640	20.340	41.100	65.250
29	43.040		42.110	26.640	14.130	29.120	12.630	13.750	20.760	19.840	39.760	52.740
30	37.210		39.050	69.970	11.950	20.500	12.880	14.530	41.660	20.730	36.910	46.160
31	35.050		36.810		9.964		21.630	11.430		26.220		42.690
Average	147.100	66.720	110.200	59.160	26.450	17.860	16.400	18.730	13.060	27.960	90.400	61.600
Lowest	35.050	23.340	36.810	21.650	9.964	9.481	11.490	8.450	8.578	16.290	36.910	16.270
Highest	314.700	262.800	253.600	145.600	114.600	29.340	25.310	46.190	41.660	56.110	177.900	245.700
Peak flow	324.10	270.90	262.80	160.90	131.90	32.43	28.60	64.14	53.72	65.30	184.00	254.60
Day of peak	12	25	9	3	1	29	5	1	30	9	20	24
Monthly total (million cu m)	394.10	161.40	295.30	153.30	70.85	46.30	43.94	50.17	33.86	74.89	234.30	165.00
Runoff (mm)	91	37	68	35	16	11	10	12	8	17	54	38
Rainfall (mm)	100	59	83	87	11	84	94	34	52	74	99	56

Statistics of monthly data for previous record (Apr 1921 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	114.700	103.100	74.510	52.820	38.210	29.200	22.770	27.840	36.110	54.050	89.210	100.800
	Low	22.100	21.200	23.200	15.880	10.230	9.804	9.587	7.461	7.668	10.490	21.730	17.850
	(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	91.240	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.	71	58	46	32	24	18	14	17	22	33	53	62
	Low	14	12	14	10	6	6	6	5	5	7	13	11
	High	155	130	162	67	81	70	57	57	76	87	143	184
Rainfall:	Avg.	93	69	63	60	69	61	71	77	77	85	96	96
	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 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	54.650		61.740		89
Lowest yearly mean			36.460	1964	
Highest yearly mean			94.740	1960	
Lowest monthly mean	13.060	Sep	7.461	Aug 1976	
Highest monthly mean	147.100	Jan	297.400	Dec 1965	
Lowest daily mean	8.450	21 Aug	5.990	4 Sep 1976	
Highest daily mean	314.700	12 Jan	637.100	21 Mar 1947	
Peak	324.100	12 Jan			
10% exceedance	134.900		148.100		91
50% exceedance	27.080		37.270		73
95% exceedance	10.920		10.960		100
Annual total (million cu m)	1723.00		1948.00		88
Annual runoff (mm)	398		450		88
Annual rainfall (mm)	833		917		91
[1941-70 rainfall average (mm)			936]		

Factors affecting runoff

- 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. Peak flows from 1972. Stage monitoring site relocated in 1950 and 1970; lowest flows not reliable in earlier record. US gauge since 1988. 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 1991

Measuring authority: NRA-ST
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	18.450	8.753	14.490	8.469	30.400	5.772	6.775	18.500	4.342	10.960	17.020	5.276
2	21.500	8.408	13.260	9.806	19.070	5.870	6.641	11.080	4.341	7.373	13.770	5.310
3	20.940	8.087	12.080	11.410	13.910	5.930	19.620	7.664	4.374	6.072	13.760	5.428
4	19.780	8.162	12.470	11.960	12.300	5.798	21.650	6.387	4.350	5.452	10.270	5.321
5	24.260	7.909	14.860	12.050	10.990	5.931	15.560	5.904	4.435	5.585	7.498	5.186
6	27.940	7.819	20.700	10.690	9.650	6.228	13.310	7.057	4.383	5.334	6.259	5.059
7	23.360	7.792	75.760	12.350	9.099	6.547	10.310	7.032	4.346	4.917	5.803	5.013
8	35.750	8.193	79.980	11.480	8.544	6.178	8.703	6.470	4.303	5.021	5.871	5.058
9	74.780	7.970	58.150	10.160	8.223	6.469	7.654	5.887	4.182	5.008	5.645	4.988
10	126.000	7.751	43.800	9.402	7.749	6.065	6.595	5.507	4.335	5.068	5.559	5.016
11	105.800	7.834	36.650	9.026	7.445	5.846	6.191	5.326	4.293	4.869	6.394	4.977
12	75.260	7.775	27.800	8.769	7.278	5.894	5.952	5.152	4.328	4.833	6.404	4.857
13	40.800	7.924	22.320	8.308	7.323	6.108	5.725	5.035	4.335	4.832	7.172	4.889
14	27.540	8.085	18.640	7.921	7.128	6.032	5.635	4.936	4.398	4.739	6.631	4.906
15	21.760	18.320	16.220	7.700	7.197	8.332	5.504	4.946	4.336	4.766	6.039	5.036
16	17.820	31.140	15.660	7.703	8.521	10.160	5.875	4.856	4.351	5.019	5.696	5.306
17	15.520	26.230	16.050	7.711	8.134	7.654	5.538	4.756	4.328	4.966	5.583	6.123
18	16.470	22.350	16.370	8.352	7.493	6.852	7.902	4.782	4.197	5.175	8.052	8.003
19	35.100	21.030	17.880	10.250	7.130	6.640	7.457	4.762	4.196	4.845	23.730	8.503
20	31.130	18.840	18.530	8.747	6.853	6.931	5.929	4.749	4.295	4.625	22.870	8.245
21	23.360	20.340	20.450	8.062	6.702	6.312	5.350	4.705	4.332	4.514	17.700	7.989
22	18.510	21.680	17.690	8.738	6.412	6.336	5.067	4.694	4.575	4.559	11.310	7.307
23	16.030	24.620	14.720	7.440	6.170	7.701	5.111	4.753	4.509	4.511	8.506	7.273
24	14.190	22.740	12.470	7.116	6.153	9.784	5.326	4.587	4.393	4.569	7.169	6.461
25	12.810	19.670	11.280	7.189	6.007	11.820	6.308	4.565	4.553	4.597	6.761	5.735
26	11.680	16.850	10.790	7.163	5.948	11.100	5.872	4.502	5.050	4.558	6.407	5.414
27	10.900	14.740	10.190	7.205	6.010	12.670	5.409	4.536	18.800	4.501	6.017	5.254
28	10.620	14.390	9.477	7.159	5.911	12.220	5.103	4.536	13.810	4.604	5.909	5.225
29	10.190		9.055	13.290	5.850	9.354	4.873	4.544	23.990	5.058	5.728	5.446
30	9.743		8.792	36.170	5.931	7.681	6.787	4.462	17.590	9.287	5.506	5.341
31	9.147		8.417		5.850		29.040	4.362		8.526		5.343
Average	29.910	14.480	22.100	10.060	8.754	7.540	8.476	5.840	6.268	5.443	9.035	5.783
Lowest	9.147	7.751	8.417	7.116	5.850	5.772	4.873	4.362	4.182	4.501	5.506	4.857
Highest	126.000	31.140	79.980	36.170	30.400	12.670	29.040	18.500	23.990	10.960	23.730	8.503
Peak flow	134.30	31.98	92.18	38.96	35.11	15.03	38.18	25.78	28.37	14.01	28.43	9.14
Day of peak	10	16	7	30	1	27	31	1	27	1	19	19
Monthly total (million cu m)	80.10	35.03	59.18	26.08	23.45	19.54	22.70	15.64	16.25	14.58	23.42	15.49
Runoff (mm)	36	16	27	12	11	9	10	7	7	7	11	7
Rainfall (mm)	64	29	46	60	13	74	89	12	62	43	49	16

Statistics of monthly data for previous record (Dec 1936 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	28.280	28.060	22.510	15.260	11.410	8.690	6.564	6.738	6.706	9.354	17.230	22.700
	Low	5.143	4.868	2.261	3.237	2.220	1.935	2.256	2.042	1.968	2.485	2.681	3.549
	(year)	1950	1944	1944	1938	1944	1944	1976	1943	1959	1959	1943	1943
	High	73.520	77.930	75.600	36.100	37.690	27.380	42.220	16.100	24.200	45.420	55.910	65.160
	(year)	1939	1977	1947	1987	1983	1977	1968	1969	1960	1960	1960	1965
Runoff:	Avg.	34	31	27	18	14	10	8	8	8	11	20	28
	Low	6	6	3	4	3	2	3	2	2	3	3	4
	High	89	85	92	42	46	32	51	20	28	55	66	79
Rainfall:	Avg.	60	44	48	43	54	54	56	70	54	59	63	61
(1937-	Low	13	3	5	5	8	10	8	5	3	6	8	15
1990)	High	127	122	140	94	130	121	122	130	127	150	163	121

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	11.140		15.230		73
Lowest yearly mean			6.895	1944	
Highest yearly mean			25.020	1960	
Lowest monthly mean	5.443	Oct	1.935	Jun 1944	
Highest monthly mean	29.910	Jan	77.930	Feb 1977	
Lowest daily mean	4.182	9 Sep	1.274	9 Oct 1959	
Highest daily mean	126.000	10 Jan	277.100	11 Jul 1968	
Peak	134.300	10 Jan	371.000	11 Jul 1968	
10% exceedance	20.870		34.030		61
50% exceedance	7.187		8.165		88
95% exceedance	4.403		2.882		153
Annual total (million cu m)	351.30		480.60		73
Annual runoff (mm)	159		217		73
Annual rainfall (mm)	557		666		84
[1941-70 rainfall average (mm)			672]		

Factors affecting runoff

- 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

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.

054008 Teme at Tenbury 1991

Measuring authority: NRA-ST
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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	45.300	9.689	17.730	10.790	15.830	3.893	3.992	8.124	1.886	4.072	15.270	7.081
2	65.250	8.920	16.170	12.260	12.970	3.772	3.922	5.695	1.876	3.232	13.840	6.509
3	54.380	8.432	16.570	12.720	11.740	3.763	4.863	5.013	1.817	2.880	22.030	6.166
4	45.940	7.959	30.890	15.700	13.820	3.732	4.914	4.420	1.784	2.661	19.180	5.911
5	52.590	7.554	54.300	17.210	11.770	3.745	3.947	4.070	1.772	2.620	15.460	5.651
6	42.020	7.233	46.360	18.290	10.680	3.895	4.898	4.134	1.746	2.531	12.220	5.350
7	37.680	6.811	114.500	25.790	10.280	3.883	4.604	4.025	1.686	2.476	11.300	5.142
8	58.640	7.145	101.800	23.850	9.591	3.850	4.089	3.530	1.654	4.695	11.140	5.015
9	96.600	6.824	73.370	20.170	9.091	4.130	4.240	3.191	1.618	5.060	10.070	4.854
10	122.200	6.630	63.060	17.840	8.346	4.124	3.895	3.141	1.606	10.140	9.562	4.707
11	87.350	6.274	52.610	15.980	7.950	4.008	3.579	3.011	1.611	8.399	14.770	4.556
12	66.240	6.178	42.310	14.480	7.482	3.900	3.535	2.870	1.624	6.940	16.350	4.300
13	50.490	6.046	34.650	12.720	7.091	3.834	3.542	2.721	1.603	5.815	25.550	4.342
14	37.560	5.938	30.070	11.320	6.667	3.699	3.500	2.583	1.570	5.016	20.560	4.250
15	29.870	13.630	26.200	10.510	6.350	3.992	3.182	2.492	1.617	4.510	16.520	4.317
16	24.710	19.240	26.690	9.965	6.232	4.251	3.117	2.419	1.689	4.134	14.010	4.616
17	24.200	14.290	27.220	9.415	6.145	3.918	3.057	2.351	1.599	3.950	12.660	5.080
18	24.820	12.260	26.320	9.376	5.910	3.709	3.672	2.253	1.546	3.797	18.010	7.878
19	28.900	10.960	32.190	9.018	5.648	3.667	3.595	2.171	1.486	3.717	43.690	9.466
20	22.960	10.740	37.340	8.401	5.367	3.547	3.134	2.117	1.440	3.502	30.210	10.760
21	20.260	21.580	36.180	8.065	5.048	3.435	2.856	2.052	1.467	3.789	22.570	25.410
22	18.210	42.910	29.780	7.559	4.827	3.627	2.744	2.080	1.482	3.649	18.540	31.600
23	16.970	52.410	24.940	7.136	4.763	4.014	2.661	2.393	1.466	3.424	15.340	22.640
24	15.990	42.250	20.950	6.947	4.631	3.957	2.931	3.338	1.456	3.284	13.260	16.800
25	14.690	32.620	18.530	6.849	4.463	5.111	3.694	2.875	1.415	3.217	11.770	14.010
26	13.520	26.740	16.840	6.589	4.372	5.313	3.437	2.455	1.448	3.200	10.410	12.590
27	12.520	22.840	15.100	6.272	4.261	5.480	3.001	2.278	1.487	3.167	9.196	11.030
28	11.880	20.860	13.470	5.992	4.183	5.585	2.824	2.178	2.300	3.125	8.659	9.949
29	11.260		12.440	11.270	4.178	4.702	2.649	2.107	10.550	3.166	8.147	9.048
30	10.600		11.760	28.270	4.080	4.254	2.888	1.997	6.022	5.279	7.679	8.249
31	10.160		11.100		4.055		12.800	1.925		7.702		7.829
Average	37.860	15.890	34.890	12.690	7.349	4.093	3.863	3.097	2.077	4.295	15.930	9.197
Lowest	10.160	5.938	11.100	5.992	4.055	3.435	2.649	1.925	1.415	2.476	7.679	4.250
Highest	122.200	52.410	114.500	28.270	15.830	5.585	12.800	8.124	10.550	10.140	43.690	31.600
Peak flow	133.40	58.79	140.20	35.41	19.05	5.90	18.15	11.49	14.95	18.43	51.74	36.69
Day of peak	10	22	7	30	1	25	31	1	29	31	19	22
Monthly total (million cu m)	101.40	38.44	93.44	32.90	19.68	10.61	10.35	8.29	5.38	11.50	41.30	24.63
Runoff (mm)	89	34	82	29	17	9	9	7	5	10	36	22
Rainfall (mm)	105	48	95	80	9	80	96	27	56	76	74	36

Statistics of monthly data for previous record (Oct 1956 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	28.400	25.650	21.290	14.870	10.300	5.992	4.091	3.988	5.893	10.990	16.310	24.770
	Low	6.281	8.011	7.435	4.599	2.569	1.558	1.010	0.744	1.075	1.347	3.087	5.567
	(year)	1964	1965	1976	1990	1976	1976	1976	1976	1990	1959	1975	1975
	High	51.630	58.160	51.940	32.850	35.380	13.090	21.920	16.680	29.650	43.130	50.140	57.290
	(year)	1960	1990	1981	1987	1969	1969	1968	1957	1958	1960	1960	1965
Runoff:	Avg.	67	55	50	34	24	14	10	9	13	26	37	58
	Low	15	17	18	11	6	4	2	2	2	3	7	13
	High	122	124	123	75	84	30	52	39	68	102	115	135
Rainfall:	Avg.	87	65	69	58	63	58	57	71	78	76	81	92
	Low	23	8	5	7	24	12	15	23	3	17	33	23
	High	157	138	146	132	174	125	122	165	211	183	169	183

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	12.620		14.330		88
Lowest yearly mean			7.279	1964	
Highest yearly mean			23.490	1960	
Lowest monthly mean	2.077	Sep	0.744	Aug 1976	
Highest monthly mean	37.860	Jan	58.160	Feb 1990	
Lowest daily mean	1.415	25 Sep	0.647	27 Aug 1976	
Highest daily mean	122.200	10 Jan	248.900	4 Dec 1960	
Peak	140.200	7 Mar	266.500	4 Dec 1960	
10% exceedance	29.660		34.300		86
50% exceedance	6.300		8.623		73
95% exceedance	1.635		1.509		108
Annual total (million cu m)	398.00		452.20		88
Annual runoff (mm)	351		399		88
Annual rainfall (mm)	782		855		91
[1941-70 rainfall average (mm)			878]		

Factors affecting runoff

- Augmentation from effluent returns.
- Natural to within 10% at 95 percentile flow.

Station and catchment description

Velocity-area station with a gravel control. Upstream shoaling may render low flow rating variable from year to year. Rarely goes out of bank. Adjustments small and dispersed; natural catchment. Left bank characterised by high relief hills and broad valleys. Steep and narrow on the right bank. Geology mainly Palaeozoic sediments with Pre-Cambrian crystalline rocks of the Longmynd. Relatively Drift free; some valley gravel and Boulder Clay in the lower reaches. Forestry, grazing.

055026 Wye at Ddol Farm 1991

Measuring authority: NRA-WEL | Grid reference: 22 (SN) 976 676 | Catchment area (sq km): 174.0
First year: 1937 | Level stn. (m OD): 192.80 | 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	69.640	2.198	5.699	8.518	6.989	0.501	2.512	2.583	1.268	4.681	21.430	2.700
2	34.020	2.009	4.896	32.850	5.254	0.510	2.257	2.009	1.136	3.585	28.200	2.526
3	21.010	1.884	5.390	13.360	4.303	0.563	3.135	1.832	0.988	5.823	31.990	2.386
4	79.350	1.739	20.030	18.290	3.969	0.475	2.267	1.622	0.895	3.906	24.240	2.262
5	22.140	1.606	15.460	48.570	3.249	0.477	1.793	1.591	0.806	4.788	16.380	2.139
6	11.960	1.268	11.460	28.490	2.989	0.495	1.593	2.876	0.733	3.544	29.220	2.025
7	12.590	1.342	18.740	26.430	2.926	0.458	1.345	2.325	0.674	11.290	63.040	1.929
8	22.950	1.464	15.100	14.790	2.509	0.532	2.579	1.712	0.605	12.420	26.940	1.835
9	46.560	1.335	17.120	9.466	2.218	1.139	4.777	10.930	0.555	15.000	15.350	1.746
10	36.140	1.439	13.150	6.823	1.983	2.062	2.449	20.470	0.516	12.670	38.920	1.656
11	25.250	1.236	9.508	6.109	1.856	1.270	2.058	9.785	0.496	8.542	26.880	1.530
12	14.740	1.382	7.396	5.499	1.699	1.173	2.912	4.990	0.478	6.581	22.240	1.457
13	9.588	1.133	6.182	4.171	1.586	1.593	3.964	3.456	0.446	4.925	17.440	1.536
14	7.126	1.478	5.810	3.489	1.588	1.263	3.346	2.701	0.499	4.116	15.490	1.463
15	5.552	12.630	5.332	3.122	1.325	3.546	3.138	2.382	0.814	3.499	13.010	1.548
16	4.888	6.953	5.698	2.778	1.245	2.375	2.682	2.102	1.686	7.912	9.532	1.698
17	6.555	4.684	5.268	2.434	1.208	1.981	2.142	2.423	1.068	11.050	10.370	5.371
18	9.998	3.826	15.680	2.286	1.114	2.442	3.918	1.748	0.874	11.160	33.180	11.290
19	7.923	3.279	16.660	2.007	1.043	4.567	2.581	1.903	0.726	6.750	21.810	24.760
20	8.537	3.864	19.300	1.773	0.943	2.673	2.131	2.018	0.605	5.364	11.930	30.600
21	7.350	10.730	16.300	1.922	0.836	2.147	1.829	1.544	0.581	4.785	8.950	291.400
22	5.924	108.000	10.100	1.765	0.879	2.844	1.580	1.490	1.671	3.995	6.940	70.670
23	5.109	84.910	7.231	1.515	0.837	2.061	1.541	11.190	2.465	3.458	5.427	23.860
24	4.639	24.810	5.775	1.422	0.777	2.459	3.814	7.319	5.585	3.061	4.584	12.300
25	3.929	13.370	4.585	1.957	0.727	5.985	2.741	4.047	2.448	2.784	4.622	8.622
26	3.425	9.215	3.797	1.673	0.702	4.889	2.023	3.055	16.210	2.551	3.864	8.420
27	3.104	7.579	3.313	1.370	0.657	3.944	1.719	2.509	5.805	2.334	3.436	5.938
28	2.849	6.302	2.883	1.567	0.605	3.071	1.467	2.165	12.840	2.143	3.558	4.866
29	2.606		2.577	17.470	0.564	2.624	1.200	1.874	9.918	3.604	3.245	4.177
30	2.576		2.335	13.510	0.553	2.429	1.136	1.590	5.790	3.471	2.927	3.702
31	2.367		2.162		0.546		5.041	1.369		21.850		3.391
Average	16.140	11.490	9.191	9.514	1.861	2.085	2.505	3.858	2.639	6.505	17.500	17.410
Lowest	2.367	1.133	2.162	1.370	0.546	0.458	1.136	1.369	0.446	2.143	2.927	1.457
Highest	79.350	108.000	20.030	48.570	6.989	5.985	5.041	20.470	16.210	21.850	63.040	291.400
Peak flow	149.00	246.00	39.70	81.00	8.40	10.00	12.00	34.00	48.00	48.00	128.00	487.00
Day of peak	1	22	18	5	1	25	8	23	26	31	7	21
Monthly total (million cu m)	43.23	27.79	24.62	24.66	4.98	5.40	6.71	10.33	6.84	17.42	45.37	46.64
Runoff (mm)	248	160	141	142	29	31	39	59	39	100	261	268
Rainfall (mm)	180	127	140	174	15	120	104	103	117	161	218	145

Statistics of monthly data for previous record (Oct 1937 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	10.750	8.885	6.745	4.855	3.148	2.657	2.702	3.705	5.195	7.485	10.230	11.050
	Low	1.972	1.476	1.373	1.014	0.485	0.497	0.316	0.177	0.291	0.683	2.011	1.947
	(year)	1940	1947	1943	1974	1980	1975	1984	1976	1959	1972	1945	1963
	High	20.990	21.310	19.610	12.460	8.773	8.867	8.455	10.370	16.830	18.840	22.030	23.930
	(year)	1948	1990	1981	1972	1979	1985	1939	1957	1946	1981	1939	1965
Runoff:	Avg.	165	124	104	72	48	40	42	57	77	115	152	170
	Low	30	21	21	15	7	7	5	3	4	11	30	30
	High	323	296	302	186	135	132	130	160	251	290	328	368
Rainfall:	Avg.	183	135	123	96	97	92	103	123	140	156	182	193
	Low	41	10	25	11	25	21	14	13	13	28	28	28
	High	386	310	310	206	204	202	267	251	325	329	356	452

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	8.372		6.440		130
Lowest yearly mean			4.304	1976	
Highest yearly mean			8.529	1954	
Lowest monthly mean	1.861	May	0.177	Aug 1976	
Highest monthly mean	17.500	Nov	23.930	Dec 1965	
Lowest daily mean	0.446	13 Sep	0.083	15 Aug 1983	
Highest daily mean	291.400	21 Dec	199.400	28 Oct 1989	
Peak	487.000	21 Dec	767.200	28 Oct 1989	
10% exceedance	19.400		15.540		125
50% exceedance	3.201		3.507		91
95% exceedance	0.597		0.534		112
Annual total (million cu m)	264.00		203.20		130
Annual runoff (mm)	1517		1168		130
Annual rainfall (mm)	1604		1623		99
(1941-70 rainfall average (mm)			1618)		

Factors affecting runoff

- Abstraction for public water supplies.

Station and catchment description

Initially, gauged nearby at Rhayader (55005,1937-69); resited as velocity-area station with a rock bar as control. Informal Flat V installed 1972. Bankfull width - 30m. Cableway span 54m. All but exceptional floods contained. Lowest g/s on Wye unaffected by large water supply res (flows from the Elan valley complex enter just d/s). 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 1991

Measuring authority: NRA-WEL
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	200.000	17.660	34.170	18.960	26.430	5.816	8.783	10.060	3.915	12.000	75.160	16.610
2	165.100	16.120	31.840	68.200	21.690	5.702	8.338	7.751	3.906	9.424	88.910	15.520
3	92.030	15.350	33.390	43.860	19.280	5.660	8.630	7.099	3.793	16.990	119.800	14.690
4	78.020	14.500	85.430	73.970	18.220	5.513	7.929	6.871	3.711	12.000	93.230	13.990
5	132.900	13.790	86.430	85.590	16.660	5.779	7.130	6.600	3.660	12.460	69.650	13.280
6	78.000	13.050	63.600	95.540	15.340	5.869	6.941	7.680	3.576	11.290	49.070	12.580
7	79.880	11.860	68.710	73.290	16.040	5.681	6.608	9.097	3.485	13.510	42.420	12.060
8	170.300	12.590	84.900	51.850	14.630	5.893	7.619	7.096	3.428	48.370	40.980	11.640
9	268.800	12.140	83.970	42.000	13.470	7.197	12.310	6.293	3.389	95.930	37.310	11.270
10	206.800	11.200	77.520	36.210	12.810	12.070	8.459	6.254	3.319	60.420	39.710	10.740
11	128.800	11.010	60.070	31.960	12.170	8.476	7.119	6.388	3.301	37.660	86.900	10.290
12	94.100	11.080	50.500	31.750	11.720	11.600	7.277	6.333	3.293	33.070	70.870	9.796
13	70.920	11.120	42.820	26.960	11.150	12.320	8.833	5.699	3.250	24.880	63.530	9.616
14	56.410	10.440	37.760	23.690	10.420	9.502	8.230	5.476	3.205	20.610	55.300	9.395
15	46.330	31.730	34.760	21.750	9.840	9.453	7.142	5.266	3.231	17.770	45.550	9.595
16	40.520	32.200	46.460	20.130	9.441	10.020	9.488	5.073	3.630	19.380	38.210	10.970
17	47.930	22.770	43.840	18.750	9.242	8.161	9.708	4.896	3.394	18.130	36.440	11.690
18	55.190	19.520	68.460	17.770	8.964	7.361	23.310	4.768	3.279	18.880	61.930	16.160
19	54.580	17.440	94.340	16.830	8.688	7.139	15.280	4.644	3.090	16.670	76.060	31.800
20	44.830	18.570	107.000	15.620	8.342	6.835	11.680	4.459	3.074	14.750	48.060	25.760
21	40.810	66.120	81.050	15.080	7.842	6.448	10.030	4.396	3.025	14.820	39.770	68.600
22	34.530	150.600	54.940	14.540	7.568	7.070	9.083	4.567	3.058	13.490	35.170	61.110
23	31.640	202.100	45.260	13.540	7.330	10.740	8.511	6.154	3.653	12.280	30.910	55.310
24	29.130	147.200	37.850	13.050	7.172	17.560	9.485	9.624	3.460	11.540	28.090	36.580
25	26.510	75.560	32.830	14.630	6.943	23.920	10.770	6.616	4.897	10.940	27.910	29.410
26	24.330	57.900	29.570	14.860	6.786	17.090	8.378	5.366	3.959	10.420	24.890	26.070
27	22.640	47.170	26.800	12.880	6.608	16.550	7.569	4.875	4.105	9.934	21.440	22.660
28	21.310	40.140	24.020	11.530	6.368	12.630	7.130	4.596	36.830	9.452	20.230	20.350
29	20.010		22.060	27.820	6.182	10.500	6.622	4.377	39.990	12.590	19.450	18.270
30	19.190		20.570	43.810	6.104	9.493	6.511	4.172	16.320	22.680	17.920	16.830
31	18.760		19.340		5.984		13.900	3.986		78.180		15.970
Average	77.430	39.680	52.590	33.210	11.270	9.602	9.316	6.017	6.274	23.240	50.160	20.920
Lowest	18.760	10.440	19.340	11.530	5.984	5.513	6.511	3.986	3.025	9.424	17.920	9.395
Highest	268.800	202.100	107.000	95.540	26.430	23.920	23.310	10.060	39.990	95.930	119.800	68.600
Peak flow	465.10	202.10	186.40	174.00	30.78	30.72	42.28	13.63	94.80	174.50	162.90	107.70
Day of peak	9	23	4	6	1	25	18	1	28	9	11	21
Monthly total (million cu m)	207.40	95.98	140.90	86.09	30.19	24.89	24.95	16.12	16.26	62.25	130.00	56.04
Runoff (mm)	227	105	155	94	33	27	27	18	18	68	143	61
Rainfall (mm)	207	110	147	144	9	115	100	38	97	161	155	67

Statistics of monthly data for previous record (Mar 1957 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	51.960	43.520	34.940	23.660	17.000	11.020	8.188	10.350	15.810	28.680	39.050	50.270
	Low	10.850	12.680	10.010	8.120	6.051	4.273	3.390	2.698	2.939	4.303	13.760	17.770
	(year)	1964	1963	1962	1974	1990	1957	1976	1976	1959	1978	1988	1988
	High	88.650	116.000	100.700	49.330	46.590	26.740	27.490	38.540	45.680	86.350	99.840	112.700
	(year)	1974	1990	1981	1985	1983	1972	1968	1985	1974	1967	1960	1959
Runoff:	Avg.	153	116	103	67	50	31	24	30	45	84	111	148
	Low	32	34	29	23	18	12	10	8	8	13	39	52
	High	260	308	296	140	137	76	81	113	130	254	284	331
Rainfall:	Avg.	160	116	115	84	89	76	76	96	121	140	146	170
	Low	28	10	15	8	16	17	21	25	8	19	55	46
	High	331	289	303	175	221	144	177	210	259	325	323	351

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	28.250		27.810		102
Lowest yearly mean			14.880	1973	
Highest yearly mean			44.050	1960	
Lowest monthly mean	6.017	Aug	2.698	Aug 1976	
Highest monthly mean	77.430	Jan	116.000	Feb 1990	
Lowest daily mean	3.025	21 Sep	1.607	27 Aug 1976	
Highest daily mean	268.800	9 Jan	585.400	27 Dec 1979	
Peak	465.100	9 Jan	945.000	27 Dec 1979	
10% exceedance	72.050		63.950		113
50% exceedance	14.710		16.430		90
95% exceedance	3.647		4.176		87
Annual total (million cu m)	890.90		877.60		102
Annual runoff (mm)	977		963		102
Annual rainfall (mm)	1350		1389		97
[1941-70 rainfall average (mm)			1378]		

Factors affecting runoff

- Reservoir(s) in catchment.

Station and catchment description

Velocity-area station; permanent cableway. Low flows measured at complementary station downstream (56010 - 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 1991

Measuring authority: NRA-WEL | Grid reference: 22 (SN) 244 416 | Catchment area (sq km): 893.6
First year: 1959 | Level stn. (m OD): 5.20 | Max alt. (m OD): 593

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	160.000	17.360	39.920	16.380	26.170	5.631	8.759	20.290	8.138	11.420	159.700	19.930
2	169.000	15.970	37.660	33.580	19.840	5.565	8.685	15.790	7.776	9.996	136.400	18.650
3	114.800	14.830	39.150	32.910	18.050	5.297	8.900	13.460	7.336	11.450	131.400	17.620
4	92.250	13.860	73.950	51.340	18.790	5.066	7.688	12.140	6.912	11.340	113.600	16.660
5	107.000	13.150	82.160	59.150	16.510	5.142	6.603	12.110	6.641	13.100	111.300	15.760
6	82.020	12.220	64.770	83.640	15.180	5.180	5.854	14.050	6.371	13.660	86.770	14.980
7	79.720	11.200	55.350	80.330	16.250	4.988	5.482	14.780	6.146	36.780	68.250	14.220
8	109.200	11.420	54.780	62.940	15.780	5.883	6.712	12.450	5.964	61.300	62.830	13.570
9	144.500	10.760	62.930	49.250	13.220	6.942	7.264	11.010	5.764	73.590	58.410	12.920
10	146.300	10.180	57.170	41.220	12.250	7.582	7.293	11.150	5.561	75.510	57.750	12.330
11	114.900	9.883	49.650	38.640	11.710	7.611	6.626	13.660	5.327	55.870	67.750	11.030
12	85.410	14.170	44.930	55.940	11.270	7.023	7.005	13.290	5.118	45.670	83.320	10.460
13	64.290	13.000	40.520	42.780	10.930	6.363	7.091	11.540	5.036	37.070	78.970	10.370
14	51.630	14.840	37.340	36.440	10.610	5.667	6.687	10.180	5.426	30.060	74.620	10.170
15	43.820	55.080	38.060	31.010	10.170	5.597	6.604	9.487	6.324	25.670	64.640	11.160
16	39.660	48.850	50.770	26.950	9.712	6.860	11.100	8.887	6.293	25.560	56.150	12.620
17	44.490	38.490	46.540	23.940	9.469	6.439	9.841	8.355	5.672	24.380	52.510	14.450
18	53.980	29.610	65.400	22.080	9.189	5.690	20.590	7.911	5.420	28.310	65.050	18.820
19	55.440	25.420	69.650	20.140	8.928	6.941	15.490	7.567	4.987	29.800	71.090	25.000
20	46.990	24.000	73.860	18.240	8.551	8.965	12.340	7.311	4.824	30.090	62.120	22.420
21	44.750	44.800	65.780	17.130	8.203	7.032	10.900	7.110	4.938	44.680	51.140	28.590
22	38.730	93.540	54.740	16.520	7.821	9.846	9.969	7.134	5.775	37.590	44.680	29.720
23	33.390	127.300	47.070	15.320	7.511	9.710	9.802	24.050	6.062	30.240	39.310	29.980
24	30.180	112.800	40.820	14.600	7.301	11.330	10.170	26.820	5.573	26.510	33.980	24.820
25	26.530	78.860	34.540	14.930	7.047	17.550	11.970	17.600	6.761	24.100	33.510	20.650
26	23.620	62.220	30.100	14.810	6.903	16.320	10.940	13.750	8.095	22.140	28.670	19.040
27	21.510	53.360	25.020	13.150	6.733	17.290	9.397	11.760	7.984	20.330	25.190	18.260
28	19.900	46.520	21.880	12.050	6.448	14.200	8.537	10.620	13.430	18.900	24.690	16.710
29	18.400		19.670	24.210	6.198	11.180	7.699	9.821	16.710	24.690	24.750	15.580
30	19.250		17.950	41.790	6.007	9.632	7.678	9.116	13.550	27.650	21.880	14.720
31	19.550		16.690		5.860		28.730	8.473		156.600		14.120
Average	67.780	36.560	47.060	33.710	11.250	8.284	9.755	12.310	6.997	34.970	66.350	17.270
Lowest	18.400	9.883	16.690	12.050	5.860	4.988	5.482	7.110	4.824	9.996	21.880	10.170
Highest	169.000	127.300	82.160	83.640	26.170	17.550	28.730	26.820	16.710	156.600	159.700	29.980
Peak flow	217.00	134.70	97.85	98.07	31.18	20.59	34.54	35.73	18.97	191.90	178.00	30.92
Day of peak	1	23	4	6	1	25	31	24	29	31	1	21
Monthly total (million cu m)	181.50	88.45	126.00	87.39	30.12	21.47	26.13	32.98	18.14	93.66	172.00	46.25
Runoff (mm)	203	99	141	98	34	24	29	37	20	105	192	52
Rainfall (mm)	167	109	122	141	17	105	114	64	83	193	146	46

Statistics of monthly data for previous record (Jul 1959 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	48.120	39.370	31.580	22.060	17.240	10.880	8.274	11.970	16.440	35.280	45.680	53.100
	Low	7.086	11.140	8.280	7.481	4.228	2.975	1.819	1.127	1.073	3.886	16.060	17.820
	(year)	1963	1965	1962	1974	1984	1984	1984	1976	1959	1972	1983	1963
	High	106.000	87.130	96.730	41.810	36.780	41.700	24.930	39.210	48.680	102.000	85.130	93.960
	(year)	1974	1990	1981	1985	1979	1972	1968	1985	1974	1981	1986	1965
Runoff:	Avg.	144	108	95	64	52	32	25	36	48	106	132	159
	Low	21	30	25	22	13	9	5	3	3	12	47	53
	High	318	236	290	121	110	121	75	118	141	306	247	282
Rainfall:	Avg.	148	97	105	83	78	80	79	99	115	152	152	161
	Low	28	2	25	10	22	17	25	16	10	40	75	28
	High	326	213	312	163	168	148	166	180	242	293	279	315

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	29.300		28.300		104
Lowest yearly mean			18.860	1964	
Highest yearly mean			38.230	1974	
Lowest monthly mean	6.997	Sep	1.073	Sep 1959	
Highest monthly mean	67.780	Jan	106.000	Jan 1974	
Lowest daily mean	4.824	20 Sep	0.731	29 Aug 1976	
Highest daily mean	169.000	2 Jan	373.600	18 Oct 1987	
Peak	217.000	1 Jan	448.800	18 Oct 1987	
10% exceedance	67.510		63.920		106
50% exceedance	16.570		18.530		89
95% exceedance	5.618		2.916		193
Annual total (million cu m)	924.00		893.10		103
Annual runoff (mm)	1034		999		103
Annual rainfall (mm)	1307		1349		97
[1941-70 rainfall average (mm)			1364]		

Factors affecting runoff

- 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. Tregaron bog (10 sq. km.) 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 1991

Measuring authority: NRA-WEL
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	40.060	1.076	2.087	12.030	2.591	0.278	2.708	1.561	0.629	3.210	11.890	2.090
2	15.540	0.895	1.931	32.440	1.829	0.357	2.755	1.204	0.605	6.480	16.060	1.744
3	7.878	0.749	1.800	7.154	7.359	0.342	2.596	1.194	0.697	7.907	10.150	1.702
4	6.754	0.662	4.580	5.224	5.575	0.318	1.876	1.100	0.791	8.546	13.240	1.594
5	7.140	0.562	4.368	6.019	2.731	0.346	1.257	5.927	0.756	11.050	8.601	1.404
6	3.857	0.475	3.999	6.815	2.062	0.419	1.014	15.830	0.730	4.245	8.342	1.255
7	4.169	0.452	8.255	4.144	2.943	0.394	0.802	4.485	0.626	37.440	7.625	1.072
8	8.474	0.419	4.855	3.097	2.544	0.989	6.041	2.378	0.479	12.820	5.906	0.871
9	12.310	0.381	8.095	2.466	2.169	1.972	6.039	7.555	0.450	5.548	4.820	0.737
10	8.783	0.400	4.136	2.136	1.580	2.993	2.801	20.980	0.567	3.787	23.270	0.656
11	5.223	0.396	3.159	2.221	1.163	13.250	3.195	6.742	0.608	2.801	11.640	0.689
12	3.308	0.509	2.937	5.972	0.952	6.752	3.934	3.363	0.580	2.040	7.353	0.720
13	2.318	0.571	2.543	3.170	1.277	3.843	2.987	2.207	0.576	1.500	5.255	0.753
14	2.216	2.674	2.206	1.980	1.206	2.475	3.321	1.617	1.227	1.727	4.510	0.746
15	2.354	8.157	4.290	1.495	0.947	1.906	4.513	2.832	2.265	3.816	3.502	0.684
16	2.083	3.574	7.308	1.466	0.905	2.833	3.058	2.827	6.377	9.395	2.887	0.683
17	3.471	2.057	5.449	1.499	0.908	2.356	2.509	1.937	2.961	7.632	7.701	4.148
18	4.995	1.699	31.190	1.485	0.816	14.080	4.320	1.354	3.651	9.190	12.830	7.782
19	4.076	1.702	15.330	1.434	0.816	9.854	2.809	2.048	1.956	5.513	5.601	7.248
20	3.848	2.712	30.920	1.156	0.784	4.311	1.920	2.198	1.281	9.453	3.650	5.903
21	3.196	10.090	13.260	1.403	0.869	3.362	1.407	2.137	4.410	7.865	2.834	24.130
22	2.570	42.630	5.605	1.184	0.925	2.625	1.146	2.310	3.523	5.108	2.274	14.450
23	2.121	32.650	3.491	1.002	0.816	2.732	1.229	3.338	3.425	3.784	1.742	6.533
24	1.928	16.620	2.360	0.839	0.651	4.452	1.847	2.238	4.095	3.043	1.452	4.340
25	1.610	5.574	2.049	0.851	0.541	9.007	1.941	1.559	2.967	2.367	1.775	3.277
26	1.279	3.578	2.161	0.719	0.466	5.428	1.385	1.188	3.131	1.758	1.829	3.624
27	1.047	2.969	2.401	0.617	0.414	3.832	1.119	0.962	3.021	1.317	2.742	2.436
28	0.944	2.513	2.083	0.555	0.369	2.577	0.961	1.022	2.033	1.301	8.407	1.844
29	0.963		1.472	6.688	0.331	2.525	0.779	1.148	1.818	2.324	4.720	1.518
30	1.097		1.043	4.894	0.310	2.659	0.771	0.990	2.438	2.197	2.975	1.326
31	1.195		0.854		0.298		1.516	0.811		6.389		1.372
Average	5.381	5.241	6.007	4.072	1.521	3.642	2.405	3.453	1.956	6.179	6.853	3.462
Lowest	0.944	0.381	0.854	0.555	0.298	0.278	0.771	0.811	0.450	1.301	1.452	0.656
Highest	40.060	42.630	31.190	32.440	7.359	14.080	6.041	20.980	6.377	37.440	23.270	24.130
Peak flow	78.08	65.82	60.78	56.18	21.94	25.69	12.65	28.42	10.80	52.34	48.67	41.36
Day of peak	1	22	18	2	3	18	8	10	16	7	10	21
Monthly total (million cu m)	14.41	12.68	16.09	10.55	4.07	9.44	6.44	9.25	5.07	16.55	17.76	9.27
Runoff (mm)	210	185	235	154	59	138	94	135	74	241	259	135
Rainfall (mm)	188	226	268	209	82	249	185	195	168	331	302	225

Statistics of monthly data for previous record (Dec 1961 to Dec 1990—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	7.956	5.824	6.202	3.748	3.230	3.230	3.493	4.925	5.773	7.410	8.422	9.006
	Low	1.535	1.139	1.734	0.814	0.325	0.625	0.495	0.305	1.840	3.526	3.399	1.793
	(year)	1963	1986	1984	1974	1980	1988	1984	1976	1989	1978	1983	1963
	High	13.630	13.040	15.600	8.228	7.064	7.429	7.132	12.860	11.830	13.370	14.460	16.400
	(year)	1983	1977	1981	1975	1986	1971	1978	1985	1974	1980	1980	1965
Runoff:	Avg.	311	207	242	142	126	122	136	192	218	289	318	352
	Low	60	40	68	31	13	24	19	12	70	138	128	70
	High	532	460	609	311	276	281	278	502	447	522	546	640
Rainfall:	Avg.	318	208	255	179	172	195	202	264	271	325	352	356
	Low	28	20	69	20	39	41	60	16	35	136	130	74
	High	563	475	638	482	334	358	380	563	508	726	564	700

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	4.173		5.773		72
Lowest yearly mean			4.185	1968	
Highest yearly mean			6.942	1980	
Lowest monthly mean	1.521	May	0.305	Aug 1976	
Highest monthly mean	6.853	Nov	16.400	Dec 1965	
Lowest daily mean	0.278	1 Jun	0.039	9 Jul 1973	
Highest daily mean	42.630	22 Feb	86.290	9 Mar 1989	
Peak	78.080	1 Jan	220.700	26 Mar 1987	
10% exceedance	8.568		13.270		65
50% exceedance	2.387		3.199		75
95% exceedance	0.460		0.518		89
Annual total (million cu m)	131.60		182.20		72
Annual runoff (mm)	1918		2656		72
Annual rainfall (mm)	2628		3097		85
[1941-70 rainfall average (mm)			3030]		

Factors affecting runoff

- Reservoir(s) in catchment.
- 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 1991

Measuring authority: NRA-WEL | Grid reference: 33 (SJ) 348 415 | Catchment area (sq km): 1019.3
First year: 1937 | Level stn. (m OD): 25.40 | 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	149.600	13.820	41.990	13.740	22.460	10.410	11.100	16.130	12.880	12.520	86.200	16.960
2	158.900	13.010	37.280	77.330	16.330	10.650	11.000	14.450	12.950	11.700	98.650	15.590
3	122.200	11.970	38.450	89.650	14.000	10.870	17.950	13.530	13.160	12.410	120.900	14.930
4	94.360	11.100	58.390	82.870	18.770	10.800	18.030	13.220	13.490	12.540	104.900	14.740
5	100.100	10.400	68.900	70.750	14.750	10.770	15.340	13.410	13.740	10.660	101.700	13.810
6	79.110	12.130	59.950	76.840	13.380	11.000	13.390	14.520	13.570	10.550	75.400	11.900
7	65.220	9.689	87.100	80.140	13.780	11.090	11.830	14.700	13.040	12.770	64.350	10.820
8	71.380	9.727	81.380	62.940	12.860	11.090	12.090	13.890	12.950	37.790	61.720	10.160
9	100.900	9.100	83.210	47.650	11.930	13.260	13.660	13.770	12.440	31.380	58.710	9.667
10	120.600	8.640	72.220	44.240	11.400	13.300	12.290	17.800	10.680	20.950	59.840	10.310
11	91.560	8.569	61.260	35.280	10.970	11.460	11.490	26.970	10.600	15.250	80.970	9.715
12	74.390	8.720	51.570	28.720	10.660	11.410	11.270	22.710	10.630	14.030	81.120	8.942
13	57.630	8.576	43.000	26.310	10.740	12.490	11.100	12.210	10.770	12.690	72.630	9.965
14	46.520	8.231	37.900	24.390	11.860	11.650	11.120	10.500	10.840	11.870	61.510	10.820
15	38.450	16.730	32.650	22.360	10.650	11.830	10.710	10.370	10.880	11.020	49.110	11.380
16	33.040	17.220	32.650	18.810	10.170	12.180	10.500	10.560	11.160	10.740	39.670	12.140
17	32.710	14.130	32.130	14.670	10.380	11.840	11.380	12.940	11.150	11.850	34.670	12.740
18	34.680	12.890	33.090	12.620	9.949	11.200	11.500	13.190	10.330	25.170	65.950	18.240
19	38.010	11.380	51.820	11.680	9.770	12.140	11.400	13.340	10.130	28.220	80.530	55.260
20	34.450	11.070	52.080	10.900	9.565	11.660	11.230	13.250	10.390	27.510	62.380	51.900
21	32.090	21.570	55.520	10.820	9.348	10.870	11.090	13.160	10.540	30.720	51.260	133.000
22	28.860	61.380	47.340	10.330	9.310	11.380	10.980	13.260	11.060	25.190	41.170	162.600
23	26.240	228.500	40.800	9.617	9.996	11.770	11.020	14.990	10.840	21.260	33.670	153.300
24	25.850	170.400	34.710	9.206	10.580	11.340	13.940	15.440	10.940	18.410	28.460	95.440
25	23.800	124.700	30.310	9.320	10.460	13.350	15.340	13.670	10.910	16.220	25.230	64.840
26	22.130	85.600	25.120	8.938	10.420	13.210	14.900	13.770	10.840	14.530	22.400	48.570
27	20.810	63.600	23.040	8.857	10.360	12.570	14.550	13.600	11.150	12.880	19.800	38.660
28	18.690	50.860	21.330	9.177	10.410	14.150	14.260	13.720	11.780	12.020	20.310	31.890
29	16.820		15.180	19.280	10.710	12.090	14.080	13.540	17.270	13.920	20.580	26.830
30	15.460		13.620	29.100	10.480	11.360	14.160	13.420	13.740	19.530	18.620	23.300
31	14.570		12.680		10.510		17.850	12.920		55.180		21.630
Average	57.710	36.920	44.410	32.550	11.840	11.770	12.920	14.290	11.830	18.760	58.080	36.450
Lowest	14.570	8.231	12.680	8.857	9.310	10.410	10.500	10.370	10.130	10.550	18.620	8.942
Highest	158.900	228.500	87.100	89.650	22.460	14.150	18.030	26.970	17.270	55.180	120.900	162.600
Peak flow	217.73	278.03	108.21	107.01	25.12	17.01	20.13	28.87	20.06	103.57	144.20	179.12
Day of peak	1	23	7	2	1	28	31	11	29	31	3	21
Monthly total (million cu m)	154.60	89.31	118.90	84.37	31.71	30.52	34.61	38.27	30.66	50.24	150.50	97.64
Runoff (mm)	152	88	117	83	31	30	34	38	30	49	148	96
Rainfall (mm)	136	123	121	130	18	109	83	51	73	151	170	125

Statistics of monthly data for previous record (Oct 1937 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	52.200	45.450	33.480	24.460	17.310	13.740	13.040	17.200	23.320	33.530	46.700	52.150
	Low	13.460	7.858	8.128	7.841	4.273	3.742	3.113	3.288	3.052	4.216	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	41.940	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.	137	109	88	62	45	35	34	45	59	88	119	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:	Avg.	153	111	104	83	91	82	93	109	120	140	158	158
	Low	41	14	33	10	30	13	20	9	13	25	15	36
	High	338	252	251	182	197	168	244	211	306	317	300	314

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	28.900		30.980		93
Lowest yearly mean			20.460	1964	
Highest yearly mean			44.600	1954	
Lowest monthly mean	11.770	Jun	3.052	Sep 1949	
Highest monthly mean	58.080	Nov	109.300	Jan 1948	
Lowest daily mean	8.231	14 Feb	1.926	30 Jul 1949	
Highest daily mean	228.500	23 Feb	521.000	14 Dec 1964	
Peak			665.400	14 Dec 1964	
10% exceedance					
50% exceedance					
95% exceedance					
Annual total (million cu m)	911.40		977.60		93
Annual runoff (mm)	894		959		93
Annual rainfall (mm)	1290		1402		92
[1941-70 rainfall average (mm)			1395]		

Factors affecting runoff

- 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 profile weir, checked by current meter. Drowns at flows above 200 cumecs. Low flows maintained by releases from major river regulating res. (Celyn and Brenig). Data prior to February 1970 is poorer quality - based on d/s Erbistock (67002, area: 1040.0 sq. km.) flow record. D/s flood attenuation is notable. 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 1991

Measuring authority: NRA-NW
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	22.230	4.811	7.157	3.280	4.311	1.524	1.769	1.709	0.975	1.456	3.571	1.775
2	26.360	4.557	6.079	3.995	3.356	1.694	3.067	1.488	0.983	1.291	2.801	1.723
3	17.740	4.330	6.872	3.922	3.188	1.667	3.672	1.507	0.998	1.535	3.093	1.712
4	15.250	4.135	9.916	3.639	3.361	1.703	2.712	1.400	1.030	1.270	2.723	1.670
5	16.420	3.874	15.630	3.816	2.971	1.709	2.128	1.828	0.887	1.309	2.192	1.622
6	13.530	3.726	14.080	3.606	2.671	1.764	2.692	2.025	0.961	1.192	2.094	1.578
7	16.510	3.619	23.080	3.632	2.722	1.840	2.087	1.988	0.895	1.307	2.560	1.543
8	24.280	3.716	26.240	3.383	2.559	1.843	1.892	1.619	0.906	1.984	2.602	1.525
9	33.510	3.411	17.150	3.163	2.221	2.257	1.846	1.841	0.888	1.584	4.199	1.506
10	37.530	3.228	13.110	3.030	2.087	2.017	1.597	1.715	0.924	1.394	3.194	1.478
11	27.010	3.150	11.410	2.939	2.012	1.951	1.508	1.557	0.895	1.297	3.257	1.462
12	17.950	3.188	9.668	2.837	1.955	1.806	1.619	1.471	0.983	1.316	3.313	1.490
13	13.140	3.102	8.409	2.638	1.919	1.922	1.612	1.410	0.953	1.228	3.319	1.549
14	10.260	3.073	7.988	2.468	1.900	1.654	1.549	1.366	0.890	1.209	2.690	1.552
15	8.644	4.832	7.659	2.438	1.904	2.292	1.495	1.333	1.094	1.196	2.450	1.619
16	7.591	6.381	7.613	2.377	1.928	2.808	1.536	1.314	1.564	1.530	2.113	1.698
17	7.299	5.331	8.243	2.346	1.985	2.159	1.476	1.270	1.230	1.756	2.086	1.963
18	9.387	4.707	9.225	2.663	1.938	2.394	2.617	1.223	1.145	2.207	4.844	2.130
19	13.250	4.411	9.666	2.481	1.860	2.661	1.939	1.309	1.035	1.580	7.564	2.890
20	10.960	4.356	10.600	2.259	1.843	2.404	1.637	1.250	1.003	1.345	4.550	4.346
21	9.169	7.041	11.030	2.350	1.763	2.203	1.484	1.188	1.037	1.307	3.383	23.220
22	7.725	9.353	8.027	2.294	1.709	1.950	1.497	1.512	1.175	1.284	2.926	26.710
23	7.036	9.369	6.807	2.248	1.700	1.773	1.520	1.612	1.051	1.350	2.581	11.440
24	7.056	8.735	5.796	2.322	1.653	1.735	1.909	1.381	1.385	1.329	2.348	6.874
25	6.545	7.667	5.267	2.262	1.603	3.132	2.487	1.289	1.131	1.318	2.198	4.743
26	5.956	6.586	4.936	2.216	1.602	2.796	1.825	1.216	2.177	1.304	2.069	4.043
27	5.495	6.547	4.328	2.112	1.557	2.159	1.597	1.252	3.135	1.291	1.966	3.703
28	5.280	8.550	3.878	2.053	1.541	1.833	1.447	1.141	2.056	1.302	1.987	3.259
29	5.043		3.595	4.797	1.519	1.659	1.346	1.119	2.227	1.833	1.889	2.920
30	4.848		3.418	7.675	1.578	1.610	1.626	1.078	1.791	2.877	1.816	2.657
31	4.753		3.284		1.564		2.361	1.060		3.547		2.525
Average	13.480	5.207	9.360	3.041	2.145	2.031	1.921	1.435	1.247	1.540	2.946	4.159
Lowest	4.753	3.073	3.284	2.053	1.519	1.524	1.346	1.060	0.887	1.192	1.816	1.462
Highest	37.530	9.369	26.240	7.675	4.311	3.132	3.672	2.025	3.135	3.547	7.564	26.710
Peak flow	40.41	9.72	29.08	8.75	5.22	4.32	5.38	2.30	6.00	5.92	8.76	37.53
Day of peak	9	21	8	30	1	25	2	6	27	31	18	21
Monthly total (million cu m)	36.09	12.60	25.07	7.88	5.74	5.26	5.14	3.84	3.23	4.12	7.64	11.14
Runoff (mm)	58	20	40	13	9	8	8	6	5	7	12	18
Rainfall (mm)	55	27	52	44	9	66	67	22	41	59	62	47

Statistics of monthly data for previous record (Oct 1937 to Dec 1990—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	10.430	9.207	6.755	4.974	3.747	2.776	2.745	2.991	3.222	4.446	7.617	9.444
	Low	1.966	2.376	2.183	1.491	0.904	1.125	0.737	0.641	0.918	1.184	1.302	2.430
	(year)	1964	1965	1938	1938	1946	1962	1976	1976	1964	1947	1942	1947
	High	21.950	19.860	18.580	11.760	22.720	6.996	12.750	8.405	16.990	15.970	22.540	22.250
	(year)	1939	1980	1947	1986	1969	1954	1968	1971	1957	1954	1954	1965
Runoff:	Avg.	45	36	29	21	16	12	12	13	13	19	32	41
	Low	8	9	9	6	4	5	3	3	4	5	5	10
	High	95	80	80	49	98	29	55	36	71	69	94	96
Rainfall:	Avg.	68	50	51	49	59	59	67	71	65	69	76	69
	Low	18	2	16	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 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	4.051		5.682		71
Lowest yearly mean			2.752	1964	
Highest yearly mean			9.209	1954	
Lowest monthly mean	1.247	Sep	0.641	Aug 1976	
Highest monthly mean	13.480	Jan	22.720	May 1969	
Lowest daily mean	0.887	5 Sep	0.394	17 Aug 1976	
Highest daily mean	37.530	10 Jan	84.950	9 Feb 1946	
Peak	40.410	9 Jan	212.400	8 Feb 1946	
10% exceedance	8.862		12.490		71
50% exceedance	2.186		3.240		67
95% exceedance	1.057		1.132		93
Annual total (million cu m)	127.80		179.30		71
Annual runoff (mm)	205		288		71
Annual rainfall (mm)	551		753		73
[1941-70 rainfall average (mm)			765]		

Factors affecting runoff

- 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 ratings 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 V 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.

072004 Lune at Caton 1991

Measuring authority: NRA-NW
First year: 1959

Grid reference: 34 (SD) 529 653
Level stn. (m OD): 10.70

Catchment area (sq km): 983.0
Max alt. (m OD): 736

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	218.100	9.514	28.580	174.900	5.872	2.307	14.640	3.679	4.694	12.010	120.600	18.290
2	124.200	9.047	23.960	282.300	5.223	2.883	10.170	3.459	4.406	15.400	193.000	16.200
3	66.510	8.387	53.170	72.170	5.027	2.881	8.233	3.334	4.106	41.620	182.200	14.590
4	50.830	8.194	148.700	68.660	5.034	2.646	7.492	3.172	3.669	16.960	109.700	13.180
5	93.990	7.413	84.140	76.550	4.850	2.586	6.252	3.284	3.351	57.780	53.280	12.120
6	122.000	7.323	44.470	61.570	4.624	2.458	5.559	16.300	3.209	22.460	112.500	11.160
7	48.590	6.818	35.200	54.770	4.669	2.396	5.144	12.170	3.241	57.010	264.400	10.310
8	53.330	6.840	33.960	32.280	4.431	2.536	5.440	7.225	3.188	100.300	99.970	9.505
9	79.190	6.753	43.190	24.530	3.581	14.990	46.920	56.650	2.988	32.050	51.540	8.887
10	93.520	6.481	42.350	20.150	3.223	36.050	14.030	77.090	2.873	21.430	275.700	8.328
11	73.190	6.036	26.420	17.050	3.295	27.720	9.341	34.270	2.959	16.630	136.200	7.331
12	53.940	6.280	21.450	15.070	3.344	28.310	10.270	15.580	2.882	13.580	87.290	7.538
13	31.160	5.885	18.870	13.250	4.333	38.150	13.190	10.990	2.606	15.140	106.600	8.078
14	23.970	5.896	17.120	11.740	5.493	28.180	12.150	8.525	3.071	15.460	102.600	8.356
15	19.800	26.320	16.010	10.700	4.084	28.500	18.060	7.799	5.667	12.580	69.960	7.806
16	17.020	19.520	23.910	9.788	3.492	23.690	15.950	10.330	12.950	85.890	42.830	7.345
17	31.350	12.990	39.780	9.053	3.544	16.070	10.700	12.920	11.060	69.040	42.390	46.250
18	54.120	10.570	137.600	8.765	3.308	18.030	9.807	8.631	7.565	39.340	104.900	98.850
19	44.490	9.266	198.000	8.172	3.253	45.050	17.760	16.920	5.992	22.370	77.330	275.500
20	51.580	48.500	124.100	7.715	3.220	22.890	11.110	12.220	4.590	17.280	37.360	82.030
21	31.750	125.500	98.160	7.777	3.144	16.670	8.053	8.052	10.950	14.480	48.830	369.900
22	22.130	277.200	45.830	7.444	3.093	31.770	6.806	7.067	27.420	12.460	46.270	232.600
23	18.460	508.100	31.860	6.944	2.905	23.650	6.517	28.590	31.440	10.980	29.220	164.600
24	18.730	241.100	24.720	6.597	2.997	15.850	8.984	24.300	63.940	9.918	23.410	62.520
25	16.560	69.590	20.110	6.231	2.762	22.160	10.480	11.750	33.840	9.177	24.280	49.640
26	14.290	43.770	17.120	5.825	2.730	19.570	7.525	8.897	39.430	8.616	21.900	61.160
27	13.050	34.340	14.910	5.524	2.691	15.630	6.050	7.553	26.450	8.029	22.050	33.430
28	12.000	45.270	13.140	5.291	2.566	13.670	5.374	6.733	15.150	7.455	44.060	28.860
29	11.200		11.890	6.116	2.711	9.975	4.690	6.212	11.790	19.850	28.590	25.080
30	10.400		11.070	7.606	2.652	10.660	4.270	5.654	9.860	59.210	21.780	22.360
31	9.878		10.730		2.385		3.900	5.112		182.300		20.710
Average	49.330	56.180	47.110	34.820	3.695	17.600	10.480	14.340	12.180	33.120	86.020	56.210
Lowest	9.878	5.885	10.730	5.291	2.385	2.307	3.900	3.172	2.606	7.455	21.780	7.331
Highest	218.100	508.100	198.000	282.300	5.872	45.050	46.920	77.090	63.940	182.300	275.700	369.900
Peak flow	539.40	686.40	391.90	464.40	6.55	93.18	98.99	115.80	141.90	348.40	680.30	572.50
Day of peak	1	22	18	2	1	9	9	10	24	31	10	21
Monthly total (million cu m)	132.10	135.90	126.20	90.25	9.90	45.61	28.07	38.40	31.57	88.72	223.00	150.60
Runoff (mm)	134	138	128	92	10	46	29	39	32	90	227	153
Rainfall (mm)	122	162	168	86	22	143	68	96	98	150	237	161

Statistics of monthly data for previous record (Jan 1959 to Dec 1990—incomplete or missing months total 4.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	54.140	40.040	36.480	27.740	18.150	15.020	18.920	25.120	32.520	45.180	50.310	55.880
	Low	6.622	3.842	11.820	4.203	2.565	3.385	1.882	2.167	2.790	4.314	24.640	18.730
	(year)	1963	1963	1975	1974	1974	1975	1984	1976	1959	1972	1985	1971
	High	88.800	114.000	113.800	67.970	40.700	49.190	42.800	71.330	67.010	134.400	97.220	108.900
	(year)	1990	1990	1981	1970	1986	1972	1988	1985	1985	1967	1963	1986
Runoff:	Avg.	148	99	99	73	49	40	52	68	86	123	133	152
	Low	18	9	32	11	7	9	5	6	7	12	65	51
	High	242	280	310	179	111	130	117	194	177	366	256	297
Rainfall:	Avg.	153	100	109	92	89	91	113	128	137	159	147	164
	Low	20	9	48	5	21	22	29	24	26	54	72	55
	High	279	309	246	193	178	169	245	270	262	402	277	333

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	34.890		34.960		100
Lowest yearly mean			24.700	1976	
Highest yearly mean			46.500	1967	
Lowest monthly mean	3.695	May	1.882	Jul 1984	
Highest monthly mean	86.020	Nov	134.400	Oct 1967	
Lowest daily mean	2.307	1 Jun	1.166	25 Aug 1984	
Highest daily mean	508.100	23 Feb	718.300	23 Mar 1968	
Peak	686.400	22 Feb	873.600	19 Feb 1990	
10% exceedance	87.110		84.640		103
50% exceedance	14.460		17.290		84
95% exceedance	2.910		3.087		94
Annual total (million cu m)	1100.00		1103.00		100
Annual runoff (mm)	1119		1122		100
Annual rainfall (mm)	1513		1482		102
[1941-70 rainfall average (mm)			1525]		

Factors affecting runoff

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

Station and catchment description

Bazin type compound broad-crested weir operated after 10/6/77 as full-range station. Previously used for low/medium flows; high flows from Halton 3km downstream. High flows inundate wide floodplain. Transfers to river Wyre under Lancs. Conjunctive Use Scheme. Major abstractions for PWS. Headwaters rise from Shap Fell and the Pennines. Mixed geology: Carboniferous Limestone, Silurian shales, Millstone Grit and Coal Measures, substantial Drift cover. Agriculture in valleys; grassland rising to peat moss in highest areas.

073010 Leven at Newby Bridge 1991

Measuring authority: NRA-NW
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	51.670	5.200	24.540	14.480	2.887	1.266	9.331	1.856	2.419	4.875	27.920	12.530
2	68.240	4.676	20.140	35.410	2.583	1.650	9.591	1.924	2.318	5.644	41.430	11.020
3	57.390	4.131	18.460	34.590	2.470	1.313	8.347	1.713	2.015	9.588	50.050	9.519
4	46.620	3.847	20.870	31.920	2.588	1.109	7.471	1.587	1.797	10.780	47.870	8.144
5	39.090	3.498	29.350	32.430	2.113	1.233	6.197	2.056	1.750	16.380	41.680	6.950
6	43.090	3.421	28.390	30.580	1.850	1.194	4.231	4.417	1.444	16.200	38.050	5.887
7	39.140	3.416	25.340	30.200	2.041	1.111	3.466	5.223	1.231	19.450	53.150	4.995
8	35.120	2.730	23.150	27.170	1.628	1.145	3.047	4.668	1.206	33.210	60.280	4.149
9	32.510	2.421	22.840	23.050	1.435	2.582	6.988	8.503	1.090	29.980	50.640	3.597
10	31.660	2.385	23.670	19.790	1.350	5.394	8.057	12.090	1.522	25.340	49.230	3.166
11	31.090	2.093	21.690	16.840	1.406	8.278	7.100	12.060	1.453	21.020	59.520	2.729
12	29.350	2.229	19.060	15.110	1.341	12.330	7.037	10.460	1.201	16.800	52.720	2.481
13	25.830	1.943	16.660	13.320	2.028	14.010	7.432	8.593	1.067	14.140	48.930	2.138
14	22.050	2.116	14.740	11.380	2.778	15.110	6.861	6.950	1.513	11.750	44.260	2.183
15	18.540	2.975	13.370	9.657	2.765	14.160	7.191	5.986	2.265	9.994	38.520	2.056
16	15.650	3.622	15.190	8.620	2.473	12.250	7.854	5.432	4.039	20.220	32.490	1.837
17	15.340	3.601	17.990	6.905	2.209	10.140	7.524	5.334	5.052	27.640	25.790	4.117
18	16.420	3.453	23.220	6.409	1.906	8.399	7.400	4.597	4.830	30.080	23.220	10.410
19	18.360	3.203	44.150	5.307	1.725	7.784	7.867	3.988	3.979	25.800	20.380	41.280
20	20.000	6.198	48.720	4.161	1.698	7.094	7.671	3.569	3.413	21.530	17.400	45.110
21	20.120	11.910	51.630	3.968	1.646	6.145	6.808	3.263	3.499	17.670	15.370	62.030
22	18.060	23.460	45.330	3.758	1.809	6.610	5.909	2.839	6.184	14.380	14.170	84.830
23	15.830	50.620	37.780	3.253	1.634	7.230	5.315	4.318	8.299	11.670	12.790	90.660
24	13.810	66.080	29.440	2.813	1.519	7.013	5.563	7.159	11.610	9.373	11.320	76.780
25	12.030	56.910	24.080	2.705	1.429	7.367	5.117	7.194	12.170	7.512	10.970	59.480
26	10.470	45.950	19.320	2.545	1.251	7.650	4.058	6.632	10.750	6.075	11.150	49.330
27	9.137	36.290	15.620	2.262	1.446	7.314	3.477	5.978	9.209	4.856	11.200	38.610
28	7.961	29.940	12.690	2.078	1.512	6.523	3.310	4.925	8.186	3.844	13.430	30.600
29	6.994		10.130	2.763	1.346	5.659	2.943	3.950	5.632	4.228	14.370	24.690
30	6.260		8.196	3.434	1.125	7.109	2.517	3.409	4.164	10.670	13.700	19.980
31	5.659		6.905		1.603		2.147	2.797		18.970		16.010
Average	25.270	13.870	23.630	13.560	1.858	6.539	6.059	5.273	4.177	15.470	31.730	23.780
Lowest	5.659	1.943	6.905	2.078	1.125	1.109	2.147	1.587	1.067	3.844	10.970	1.837
Highest	68.240	66.080	51.630	35.410	2.887	15.110	9.591	12.090	12.170	33.210	60.280	90.660
Peak flow	71.43	68.21	53.48	38.31	3.77	15.54	10.26	12.87	12.77	34.74	63.63	93.98
Day of peak	2	24	21	2	23	14	2	10	25	8	8	23
Monthly total (million cu m)	67.69	33.55	63.30	35.16	4.98	16.95	16.23	14.12	10.83	41.44	82.25	63.70
Runoff (mm)	274	136	256	142	20	69	66	57	44	168	333	258
Rainfall (mm)	226	187	257	155	29	185	103	120	122	279	334	283

Statistics of monthly data for previous record (Jan 1939 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	20.060	17.010	13.790	11.140	7.486	6.327	7.402	10.470	14.250	17.510	20.180	21.050
	Low	1.935	0.974	3.699	1.796	0.641	0.545	0.774	0.652	0.560	1.438	6.873	8.207
	(year)	1963	1963	1962	1974	1980	1978	1941	1984	1959	1972	1983	1963
	High	38.020	37.450	36.040	21.640	18.680	18.730	16.990	31.070	33.930	50.170	36.450	40.110
	(year)	1975	1990	1989	1949	1986	1972	1953	1985	1946	1967	1986	1954
Runoff:	Avg.	217	168	150	117	81	66	80	114	150	190	212	228
	Low	21	10	40	19	7	6	8	7	6	16	72	89
	High	412	367	391	227	203	197	184	337	356	544	383	435
Rainfall:	Avg.	232	156	165	119	116	125	148	184	214	227	232	239
	Low	26	7	32	12	22	17	32	7	29	30	17	90
	High	439	410	398	243	241	269	309	428	427	557	428	450

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	14.280		13.870		103
Lowest yearly mean			9.234	1973	
Highest yearly mean			21.840	1954	
Lowest monthly mean	1.858	May	0.545	Jun 1978	
Highest monthly mean	31.730	Nov	50.170	Oct 1967	
Lowest daily mean	1.067	13 Sep	0.108	7 Oct 1972	
Highest daily mean	90.660	23 Dec	115.900	2 Dec 1954	
Peak	93.980	23 Dec	135.800	2 Dec 1954	
10% exceedance	38.740		30.920		125
50% exceedance	7.579		10.120		75
95% exceedance	1.431		1.193		120
Annual total (million cu m)	450.30		437.70		103
Annual runoff (mm)	1823		1772		103
Annual rainfall (mm)	2280		2157		106
[1941-70 rainfall average (mm)			2215]		

Factors affecting runoff

- 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 profile 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 slate in south. Boulder Clay along river valleys. Mainly grassland, very wooded in lower reaches.

076007 Eden at Sheepmount 1991

Measuring authority: NRA-NW
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	353.400	27.640	82.140	50.130	16.550	11.400	19.710	14.470	10.610	15.000	221.800	37.040
2	388.500	26.020	65.850	171.900	15.790	12.400	17.710	12.500	10.220	16.000	281.500	33.490
3	162.600	24.170	62.850	90.610	15.700	12.420	15.620	11.610	10.020	24.930	308.800	30.910
4	137.100	22.750	120.900	108.300	16.150	11.870	14.760	10.990	9.807	23.660	179.700	28.480
5	216.800	21.000	172.100	132.300	15.880	11.590	13.870	10.760	9.580	58.970	116.000	26.420
6	306.800	20.770	94.460	103.100	15.670	11.390	13.160	18.940	9.416	36.670	93.390	24.780
7	141.600	19.780	81.810	131.500	15.930	11.310	12.720	20.840	9.341	36.020	203.200	23.210
8	113.600	19.040	90.190	88.990	15.180	11.500	12.920	15.450	9.163	97.760	163.100	21.560
9	120.300	19.640	86.530	70.810	14.550	13.720	18.790	19.830	9.074	48.420	94.320	20.370
10	192.200	19.090	100.000	61.620	14.090	27.150	18.400	24.330	8.964	35.990	193.500	19.390
11	191.700	18.210	72.570	51.670	14.030	21.580	15.090	22.300	8.759	29.140	259.200	18.270
12	157.500	18.300	58.970	46.800	13.840	29.760	14.130	16.470	8.551	24.450	167.000	17.630
13	89.840	17.700	54.280	41.150	15.590	43.610	14.400	14.170	8.506	22.480	164.700	18.750
14	67.760	17.930	61.130	35.740	14.750	35.000	14.300	12.980	9.944	25.390	146.000	18.930
15	56.630	47.310	50.680	31.970	13.890	29.030	14.310	12.480	12.050	23.430	113.100	18.310
16	48.640	50.110	52.090	29.020	13.680	28.560	34.650	12.180	12.550	68.840	79.940	17.440
17	66.960	33.380	87.990	26.800	13.580	27.420	22.070	12.900	13.740	71.830	64.760	19.460
18	110.200	27.160	99.530	25.590	13.560	28.430	16.070	14.390	12.170	62.380	68.060	63.160
19	120.800	25.530	293.500	23.770	13.410	29.860	16.300	13.700	10.810	37.100	112.700	207.700
20	115.400	60.450	239.600	22.450	13.130	25.310	16.400	13.820	10.160	28.700	65.830	102.900
21	87.080	129.300	267.400	22.580	12.970	19.380	15.470	12.370	11.770	24.390	84.610	326.600
22	64.590	228.300	124.700	22.440	12.610	21.960	14.050	11.740	20.640	21.610	84.080	312.100
23	56.860	587.000	91.230	20.890	12.500	27.520	13.520	11.720	23.590	19.550	57.760	388.300
24	54.210	523.200	72.110	19.770	12.510	22.220	16.300	14.500	31.700	18.030	47.220	160.800
25	48.460	161.400	59.300	18.710	12.380	23.560	18.060	14.210	25.310	17.030	42.950	106.200
26	42.160	115.200	50.940	17.820	12.150	28.260	15.490	12.870	19.430	16.110	43.590	90.420
27	38.200	95.620	44.740	17.170	11.940	19.290	13.790	12.650	16.360	15.460	42.270	69.940
28	35.030	111.600	39.330	16.560	11.690	16.800	12.690	12.790	16.660	14.750	49.320	59.860
29	32.460		35.720	16.530	11.570	15.890	12.040	13.190	14.880	14.450	49.320	52.690
30	30.320		33.010	17.350	11.490	17.390	11.350	12.000	14.040	41.520	42.430	47.230
31	28.930		31.310		11.440		11.930	11.230		143.300		43.380
Average	118.600	88.840	92.810	51.130	13.810	21.520	15.810	14.330	13.260	36.560	121.300	78.250
Lowest	28.930	17.700	31.310	16.530	11.440	11.310	11.350	10.760	8.506	14.450	42.270	17.440
Highest	388.500	587.000	293.500	171.900	16.550	43.610	34.650	24.330	31.700	143.300	308.800	388.300
Peak flow	680.00	750.10	431.00	227.40	17.02	56.36	50.59	30.73	39.69	262.00	453.10	468.50
Day of peak	2	24	21	2	1	13	16	6	24	31	11	23
Monthly total (million cu m)	317.70	214.90	248.60	132.50	37.00	55.78	42.34	38.39	34.37	97.92	314.50	209.60
Runoff (mm)	139	94	109	58	16	24	19	17	15	43	138	92
Rainfall (mm)	139	125	128	101	19	102	56	55	65	140	191	122

Statistics of monthly data for previous record (Oct 1967 to Dec 1990—incomplete or missing months total 3.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	87.130	69.510	58.460	40.290	27.770	22.340	23.250	26.100	38.020	63.710	71.940	77.030
	Low	39.880	26.440	24.360	13.070	11.050	10.420	8.377	7.023	9.216	7.961	30.430	32.490
	(year)	1985	1986	1975	1974	1974	1973	1984	1976	1972	1972	1973	1971
	High	151.200	210.700	119.700	63.960	69.120	50.380	59.240	92.380	105.400	225.000	126.400	143.100
	(year)	1975	1990	1968	1970	1983	1972	1988	1985	1985	1967	1984	1986
Runoff:	Avg.	102	74	68	46	33	25	27	31	43	75	82	90
	Low	47	28	29	15	13	12	10	8	10	9	34	38
	High	177	223	140	73	81	57	69	108	120	264	143	168
Rainfall:	Avg.	133	84	99	64	70	73	87	93	110	132	121	129
	Low	50	13	43	8	25	27	22	19	25	31	54	43
	High	232	279	179	111	133	126	221	211	231	307	208	371

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m³s⁻¹)	55.290		50.400		110
Lowest yearly mean			28.190	1973	
Highest yearly mean			60.790	1982	
Lowest monthly mean	13.260	Sep	7.023	Aug 1976	
Highest monthly mean	121.300	Nov	225.000	Oct 1967	
Lowest daily mean	8.506	13 Sep	5.468	7 Sep 1976	
Highest daily mean	587.000	23 Feb	772.900	23 Mar 1968	
Peak	750.100	24 Feb	1357.000	24 Mar 1968	
10% exceedance	134.100		108.100		124
50% exceedance	23.860		31.310		76
95% exceedance	11.100		9.944		112
Annual total (million cu m)	1744.00		1591.00		110
Annual runoff (mm)	763		696		110
Annual rainfall (mm)	1243		1195		104
[1941-70 rainfall average (mm)			1225]		

Factors affecting runoff

- 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 east, impervious Lower Palaeozoics of Lake District massif to west; moorland. Extensive Boulder Clay covered Permo-Triassic sandstone in Vale of Eden. Arable and grazing.

079006 Nith at Drumlanrig 1991

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	154.600	5.444	16.100	51.730	3.611	1.367	6.927	2.250	1.509	28.910	124.800	13.180
2	61.860	4.854	17.180	52.990	3.567	2.476	6.387	2.181	1.475	16.240	75.940	11.320
3	30.300	4.611	20.640	17.970	3.556	2.378	4.114	2.047	1.420	18.020	70.450	9.953
4	44.820	4.294	59.450	72.930	3.680	1.880	3.326	2.039	1.375	14.960	45.620	8.782
5	112.500	3.855	60.680	37.550	3.516	1.642	2.623	2.398	1.352	20.180	23.950	7.964
6	81.340	3.802	23.750	70.310	3.489	1.502	2.337	2.853	1.294	21.720	59.290	7.209
7	35.750	3.656	16.910	43.240	2.712	1.461	2.240	2.376	1.273	40.770	112.400	6.643
8	23.440	3.679	21.720	23.820	2.474	2.784	3.299	2.184	1.233	25.530	61.340	6.196
9	18.550	3.550	16.870	29.140	2.370	12.740	10.920	16.700	1.247	13.360	30.540	5.750
10	18.690	3.323	12.840	43.300	2.293	8.912	5.220	6.856	1.248	10.030	97.420	5.319
11	34.270	3.357	10.070	56.650	2.246	9.062	6.112	4.580	1.175	7.998	51.680	4.806
12	22.670	3.749	9.146	133.700	2.280	28.290	17.010	3.355	1.133	6.594	110.900	5.353
13	13.870	3.377	11.670	49.940	2.818	35.060	10.310	2.840	1.249	5.777	60.700	5.836
14	11.460	4.253	10.610	24.760	2.866	19.820	6.158	2.529	1.500	5.100	38.420	5.572
15	9.552	26.270	14.240	16.440	2.297	14.130	7.616	2.451	1.638	7.223	25.610	6.657
16	8.823	8.666	26.280	12.220	2.253	10.210	19.800	2.710	2.637	33.060	17.480	6.680
17	11.460	5.935	22.540	9.824	2.286	6.356	8.272	5.117	2.349	30.990	15.430	35.040
18	89.680	4.970	65.400	8.559	2.160	5.674	7.397	3.383	2.182	14.130	15.830	77.260
19	49.180	4.861	54.010	7.225	2.102	5.756	6.028	3.245	1.985	9.208	15.390	84.620
20	65.010	15.140	36.990	6.514	2.133	4.539	4.797	3.350	2.035	7.667	11.200	33.850
21	26.600	13.460	33.940	6.578	2.423	3.893	4.035	2.474	30.620	6.974	20.650	203.200
22	17.500	73.840	18.150	5.519	2.293	4.248	3.822	2.436	17.180	6.279	15.220	190.700
23	14.920	83.080	13.380	5.064	2.205	3.633	4.611	2.803	18.270	5.544	11.830	118.500
24	12.660	46.900	10.680	4.721	2.144	3.212	5.100	2.713	19.650	5.021	16.290	44.950
25	10.570	22.630	8.831	4.316	1.950	4.711	3.969	2.319	9.763	4.780	42.920	30.310
26	9.121	65.190	7.546	3.983	1.863	3.636	3.306	2.093	6.190	4.630	36.420	25.620
27	8.241	30.810	6.715	3.833	1.798	3.165	3.101	1.964	4.766	4.259	23.430	16.440
28	7.414	23.690	5.973	3.780	1.668	2.847	2.886	1.917	4.011	3.974	25.410	13.980
29	6.787		5.425	4.005	1.541	3.396	2.607	1.843	3.471	24.550	23.210	11.870
30	6.464		5.152	4.444	1.471	6.515	2.357	1.725	3.224	39.000	16.120	10.330
31	5.854		5.038		1.424		2.231	1.603		178.900		11.450
Average	33.030	17.190	20.900	27.170	2.435	7.176	5.772	3.204	4.948	20.040	43.200	33.080
Lowest	5.854	3.323	5.038	3.780	1.424	1.367	2.231	1.603	1.133	3.974	11.200	4.806
Highest	154.600	83.080	65.400	133.700	3.680	35.060	19.800	16.700	30.620	178.900	124.800	203.200
Peak flow	374.90	141.30	145.50	210.50	3.93	63.04	31.85	29.27	80.03	275.50	233.50	340.40
Day of peak	1	23	4	12	4	13	16	9	21	31	12	22
Monthly total (million cu m)	88.47	41.58	55.98	70.42	6.52	18.60	15.46	8.58	12.83	53.69	112.00	88.59
Runoff (mm)	188	88	119	150	14	39	33	18	27	114	238	188
Rainfall (mm)	188	107	140	175	21	128	85	65	97	200	236	203

Statistics of monthly data for previous record (Jun 1967 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	29.300	21.880	19.430	9.504	7.585	5.315	5.557	8.359	14.250	23.530	25.290	25.640
	Low	9.037	4.288	4.427	2.457	1.390	1.489	0.868	0.841	1.260	2.744	5.268	12.770
	(year)	1985	1986	1969	1974	1980	1984	1984	1984	1972	1972	1983	1971
	High	61.220	60.660	34.800	24.190	27.570	14.660	15.780	38.280	39.000	39.200	49.350	55.190
	(year)	1974	1990	1989	1972	1986	1972	1988	1985	1985	1967	1982	1986
Runoff:	Avg.	167	114	111	52	43	29	32	48	78	134	139	146
	Low	51	22	25	14	8	8	5	5	7	16	29	73
	High	348	312	198	133	157	81	90	218	215	223	272	314
Rainfall:	Avg.	188	121	137	72	94	85	95	113	149	182	166	167
	Low	67	10	34	11	19	30	41	23	20	66	35	69
	High	398	382	239	175	230	163	211	302	247	301	285	345

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	18.160		16.290		111
Lowest yearly mean			10.720	1971	
Highest yearly mean			21.700	1982	
Lowest monthly mean	2.435	May	0.841	Aug 1984	
Highest monthly mean	43.200	Nov	61.220	Jan 1974	
Lowest daily mean	1.133	12 Sep	0.606	26 Aug 1984	
Highest daily mean	203.200	21 Dec	231.700	19 Dec 1982	
Peak	374.900	1 Jan	538.400	18 Oct 1982	
10% exceedance	49.430		41.920		118
50% exceedance	6.670		8.113		82
95% exceedance	1.502		1.333		113
Annual total (million cu m)	572.70		514.10		111
Annual runoff (mm)	1216		1091		111
Annual rainfall (mm)	1645		1569		105
[1941-70 rainfall average (mm)			1579]		

Factors affecting runoff

- 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 1991

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	280.600	20.560	50.740	93.950	13.210	7.857	25.150	9.219	6.518	27.130	218.600	34.300
2	268.500	19.050	40.840	166.700	12.430	13.190	18.770	9.083	6.514	31.380	158.300	30.090
3	113.700	17.780	38.540	67.480	12.390	12.210	13.220	8.776	6.542	33.100	164.500	26.890
4	177.800	17.040	39.360	70.700	12.580	10.650	11.110	8.705	6.517	32.990	98.490	24.350
5	232.500	15.770	100.600	82.620	12.120	8.827	9.803	8.356	6.379	37.660	64.870	22.780
6	200.900	14.930	54.550	60.730	11.870	8.321	9.193	8.691	6.254	27.200	71.560	21.260
7	113.300	14.540	27.230	108.000	11.570	7.788	9.338	8.834	6.365	58.250	210.700	20.070
8	79.350	14.620	23.770	74.530	11.060	8.187	12.770	9.072	6.263	58.170	144.300	19.040
9	64.820	14.840	30.560	63.250	10.810	9.694	16.450	27.890	6.244	39.200	74.070	17.720
10	78.490	13.940	21.790	119.500	10.380	12.460	17.370	21.080	6.202	29.210	146.200	16.120
11	126.100	13.490	16.690	91.490	10.260	14.570	13.180	13.560	5.824	24.610	187.700	14.360
12	92.110	13.770	11.900	280.800	10.550	24.040	19.190	11.120	6.422	21.140	209.000	15.920
13	51.750	11.890	12.760	182.100	11.960	39.370	30.830	10.140	6.231	19.020	211.400	18.140
14	39.420	15.750	16.890	83.330	11.940	37.830	22.320	9.348	7.408	17.530	117.200	17.870
15	33.380	57.170	11.540	55.590	10.450	26.300	25.660	8.604	7.793	18.060	93.590	19.750
16	30.820	36.410	17.800	42.550	10.180	21.180	52.240	8.940	9.795	78.320	63.170	19.540
17	31.680	23.410	31.860	34.940	10.020	17.060	29.670	9.366	9.903	77.560	51.920	65.530
18	115.200	20.380	38.250	30.430	10.040	19.080	20.450	10.400	9.022	48.190	55.010	127.300
19	134.700	21.560	224.400	26.700	9.968	20.970	18.890	9.708	8.984	29.710	71.930	233.700
20	140.200	46.850	114.000	24.370	9.999	14.330	15.530	8.880	8.194	24.590	46.280	91.310
21	85.380	50.200	132.300	23.460	10.180	13.020	13.890	8.393	28.530	21.930	50.520	232.400
22	56.570	156.100	75.610	20.930	10.080	12.850	13.140	9.117	57.480	19.700	49.650	551.200
23	47.610	273.100	54.100	19.850	10.100	13.450	13.320	9.478	52.410	17.750	38.340	349.200
24	41.070	201.600	43.180	18.610	10.080	12.050	11.750	10.630	70.420	16.370	32.740	134.000
25	35.670	89.150	36.000	16.570	9.858	11.370	10.540	8.751	40.620	15.390	34.200	103.700
26	31.460	81.180	31.120	15.260	9.703	11.400	10.080	7.763	23.070	15.290	49.270	97.710
27	28.970	79.350	28.120	14.310	9.617	10.350	9.831	7.428	17.410	14.730	48.050	61.860
28	26.690	63.740	25.310	14.130	9.800	9.727	9.582	7.311	14.260	13.860	58.960	52.710
29	25.000		23.170	14.500	8.875	9.627	9.928	7.126	13.350	14.280	50.120	45.530
30	23.580		22.090	14.490	8.374	11.320	9.457	7.203	13.260	36.880	39.550	40.270
31	21.800		21.400		8.023		9.254	6.897		196.300		50.400
Average	91.260	50.650	45.690	64.400	10.600	14.970	16.510	9.996	15.810	35.980	97.010	83.070
Lowest	21.800	11.890	11.540	14.130	8.023	7.788	9.193	6.897	5.824	13.860	32.740	14.360
Highest	280.600	273.100	224.400	280.800	13.210	39.370	52.240	27.890	70.420	196.300	218.600	551.200
Peak flow	414.90	341.20	282.00	354.60	14.18	43.33	60.18	34.13	81.76	252.00	317.60	611.60
Day of peak	2	23	20	13	1	14	17	10	24	31	13	23
Monthly total (million cu m)	244.40	122.50	122.40	166.90	28.38	38.80	44.23	26.77	40.97	96.38	251.40	222.50
Runoff (mm)	143	72	72	98	17	23	26	16	24	57	148	131
Rainfall (mm)	137	88	98	115	18	102	77	50	94	127	155	150

Statistics of monthly data for previous record (Oct 1958 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	67.170	53.940	47.820	29.830	22.840	16.910	15.880	24.900	36.260	52.130	62.250	65.290
	Low	11.920	8.854	14.810	10.430	7.994	7.491	5.041	4.536	7.630	8.243	15.870	26.080
	(year)	1963	1963	1969	1974	1980	1984	1984	1984	1972	1972	1983	1963
	High	134.300	160.200	91.070	58.700	56.230	41.190	47.620	82.370	128.400	114.600	129.600	133.400
	(year)	1975	1990	1990	1972	1986	1972	1985	1985	1985	1967	1982	1986
Runoff:	Avg.	106	77	75	45	36	26	25	39	55	82	95	103
	Low	19	13	23	16	13	11	8	7	12	13	24	41
	High	211	227	143	89	88	63	75	129	195	180	197	210
Rainfall:	Avg.	117	79	95	64	72	72	81	101	114	124	120	119
	Low	25	16	28	9	18	17	32	24	16	33	24	38
	High	250	254	163	125	150	157	166	206	230	231	221	237

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	44.570		41.230		108
Lowest yearly mean			27.090	1973	
Highest yearly mean			58.800	1990	
Lowest monthly mean	9.996	Aug	4.536	Aug 1984	
Highest monthly mean	97.010	Nov	160.200	Feb 1990	
Lowest daily mean	5.824	11 Sep	3.366	23 Aug 1984	
Highest daily mean	551.200	22 Dec	581.700	21 Sep 1985	
Peak	611.600	23 Dec	666.400	22 Sep 1985	
10% exceedance	113.200		97.060		117
50% exceedance	20.770		23.840		87
95% exceedance	7.617		7.825		97
Annual total (million cu m)	1406.00		1301.00		108
Annual runoff (mm)	825		763		108
Annual rainfall (mm)	1211		1158		105
[1941-70 rainfall average (mm)			1152]		

Factors affecting runoff

Station and catchment description

Recorder 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 3.4m, just below max. recorded stage. Some naturalised flows available. Very mixed geology with the older formations (Ordovician/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 1991

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	78.450	0.718	1.680	58.690	0.420	0.293	11.690	0.510	0.351	23.490	21.640	1.999
2	11.210	0.654	2.487	11.450	0.419	0.779	2.040	0.549	0.330	15.860	5.290	1.435
3	5.400	0.586	2.670	10.850	0.446	0.425	1.149	0.692	0.301	16.370	1.371	1.222
4	27.820	0.557	22.450	19.460	0.445	0.354	0.758	6.921	0.287	33.980	0.949	1.040
5	19.340	0.514	15.480	6.816	0.376	0.313	0.531	2.997	0.276	3.982	0.747	0.910
6	9.527	0.459	3.699	28.460	0.383	0.295	0.437	1.040	0.264	22.600	36.420	0.796
7	2.555	0.463	3.980	27.460	0.383	0.301	0.427	0.706	0.252	8.026	19.830	0.740
8	1.797	0.476	5.403	6.723	0.348	3.697	5.580	9.630	0.254	6.079	6.158	0.722
9	1.498	0.535	4.207	22.770	0.338	5.201	10.000	5.732	0.258	1.895	2.423	0.654
10	4.064	0.512	2.955	33.380	0.393	1.392	1.285	2.618	0.252	1.325	39.090	0.608
11	6.935	0.454	2.155	26.480	0.483	5.912	5.706	3.016	0.235	1.134	18.580	0.568
12	1.760	0.408	3.759	9.477	0.645	14.530	14.530	1.869	0.229	0.944	44.980	2.712
13	1.641	0.437	3.573	2.635	3.037	10.490	13.890	3.608	3.227	0.852	4.729	6.383
14	1.155	0.712	2.968	1.490	0.734	2.324	3.248	2.564	5.282	0.741	4.489	7.625
15	0.887	1.049	11.310	1.197	0.547	1.688	3.887	5.019	1.927	9.555	2.224	1.559
16	0.942	0.624	10.320	0.875	0.485	1.113	2.716	7.893	13.790	16.420	1.460	1.261
17	1.898	0.508	6.379	0.707	0.441	0.763	1.339	2.973	9.890	11.920	1.561	13.510
18	19.010	0.502	43.710	0.619	0.581	0.699	2.206	1.283	5.248	1.115	6.642	33.260
19	32.830	3.960	27.250	0.535	0.821	0.607	3.124	1.677	13.720	0.748	2.164	6.863
20	27.920	5.342	6.957	0.601	5.827	0.502	1.050	0.904	2.355	0.609	3.403	2.472
21	3.760	1.810	2.754	0.766	2.941	2.330	0.697	0.743	30.150	0.514	17.680	41.830
22	4.235	12.190	1.479	0.558	0.918	1.581	0.946	1.003	14.490	0.412	8.506	57.870
23	7.132	18.240	1.180	1.606	0.781	0.898	5.097	0.842	53.270	0.350	13.610	6.085
24	2.976	7.613	1.000	2.668	0.665	1.089	1.545	0.697	16.720	0.357	22.190	2.507
25	1.824	4.136	0.906	1.182	0.524	7.931	0.813	0.590	6.704	0.345	17.760	26.350
26	1.530	25.920	0.776	0.758	0.466	2.636	0.644	0.571	1.947	0.403	10.070	3.297
27	1.376	8.079	0.680	0.618	0.422	4.879	1.672	0.537	1.605	0.364	10.560	1.993
28	1.161	3.418	0.654	0.545	0.374	1.439	2.331	0.478	1.259	0.330	8.582	3.304
29	1.150		0.718	0.524	0.344	3.086	0.816	0.443	1.091	12.670	6.727	2.281
30	0.969		1.135	0.470	0.320	7.056	0.580	0.400	4.569	10.760	3.158	1.569
31	0.827		5.230		0.296		0.475	0.374		21.750		25.200
Average	9.148	3.603	6.449	9.346	0.826	2.820	3.265	2.222	6.351	7.287	11.430	8.343
Lowest	0.827	0.408	0.654	0.470	0.296	0.293	0.427	0.374	0.229	0.330	0.747	0.568
Highest	78.450	25.920	43.710	58.690	5.827	14.530	14.530	9.630	53.270	33.980	44.980	57.870
Peak flow	154.80	54.33	98.11	168.90	10.11	50.58	47.11	59.07	187.60	104.70	180.30	217.10
Day of peak	2	27	19	2	21	13	9	9	22	7	13	22
Monthly total (million cu m)	24.50	8.72	17.27	24.22	2.21	7.31	8.74	5.95	16.46	19.52	29.63	22.35
Runoff (mm)	305	109	215	302	28	91	109	74	205	243	369	278
Rainfall (mm)	376	126	262	357	49	182	158	123	305	357	458	312

Statistics of monthly data for previous record (Oct 1970 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	8.869	5.793	7.091	2.947	2.733	2.260	2.667	3.882	6.606	7.464	8.188	8.279
	Low	1.926	0.489	0.853	0.408	0.133	0.328	0.634	0.339	0.751	1.362	3.068	1.416
	(year)	1985	1986	1975	1974	1980	1977	1984	1983	1972	1974	1988	1981
	High	19.630	18.500	21.400	6.325	10.980	5.609	7.401	10.510	11.210	16.050	14.670	15.740
	(year)	1974	1990	1990	1977	1986	1973	1988	1985	1981	1983	1986	1986
Runoff:	Avg.	296	176	237	95	91	73	89	129	213	249	264	276
	Low	64	15	28	13	4	11	21	11	24	45	99	47
	High	655	557	714	204	366	181	247	351	362	535	474	525
Rainfall:	Avg.	370	234	281	122	137	136	164	201	298	323	339	350
	Low	93	11	100	15	19	42	66	42	40	100	117	111
	High	715	675	696	261	439	249	365	507	468	645	614	637

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	5.926		5.569		106
Lowest yearly mean			4.440	1972	
Highest yearly mean			7.729	1990	
Lowest monthly mean	0.826	May	0.133	May 1980	
Highest monthly mean	11.430	Nov	21.400	Mar 1990	
Lowest daily mean	0.229	12 Sep	0.032	12 Jul 1977	
Highest daily mean	78.450	1 Jan	113.400	2 Mar 1979	
Peak	217.100	22 Dec	226.700	22 Oct 1971	
10% exceedance	17.790		15.630		114
50% exceedance	1.680		2.117		79
95% exceedance	0.335		0.255		131
Annual total (million cu m)	186.90		175.70		106
Annual runoff (mm)	2327		2189		106
Annual rainfall (mm)	3065		2955		104
[1941-70 rainfall average (mm)			2761]		

Factors affecting runoff

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 1991

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	75.890	2.074	3.687	77.360	1.403	1.051	2.568	2.033	1.190	24.260	5.521	5.716
2	46.820	1.761	2.854	26.250	1.413	1.263	2.079	1.771	1.132	14.760	13.320	4.128
3	12.890	1.554	3.246	19.710	2.527	1.345	1.746	1.578	1.034	24.150	12.600	4.201
4	36.150	1.500	4.002	8.708	2.357	1.258	1.454	1.801	0.958	20.640	16.280	3.346
5	18.980	1.325	13.050	12.800	1.819	1.105	1.299	2.731	0.925	14.650	8.803	2.698
6	19.250	1.241	7.328	9.235	1.779	1.026	1.119	2.068	0.835	28.020	63.420	2.260
7	8.603	1.166	4.246	40.750	1.922	0.937	1.005	1.611	0.794	18.360	32.440	1.982
8	5.048	1.124	3.803	14.770	1.642	0.902	1.220	3.415	0.762	9.630	21.400	2.025
9	3.752	1.046	3.936	16.030	1.691	1.200	5.417	8.769	0.749	5.769	11.450	1.913
10	5.667	1.018	5.596	35.060	2.181	2.265	4.323	5.552	0.736	4.140	48.760	1.683
11	5.958	1.035	5.205	35.290	2.679	2.377	2.634	26.380	0.733	3.325	25.150	1.557
12	3.798	0.999	4.370	12.170	6.519	2.483	3.569	12.950	0.708	2.735	47.820	3.336
13	2.843	0.973	5.578	7.061	5.198	6.199	27.080	10.320	6.819	2.393	14.660	18.810
14	2.362	1.990	7.901	4.532	5.642	8.024	15.310	7.476	9.848	2.135	21.470	31.450
15	1.995	3.514	5.940	3.475	10.210	4.899	10.170	15.570	5.645	5.879	8.773	9.576
16	1.903	2.692	9.422	2.813	6.815	3.511	12.140	11.670	40.760	70.120	4.934	5.166
17	2.922	1.954	16.320	2.425	4.625	5.565	5.756	11.270	29.950	73.690	3.539	17.250
18	12.440	1.538	16.270	3.155	4.016	6.894	4.157	6.155	28.930	19.980	12.760	27.310
19	76.690	4.330	35.620	2.866	4.747	4.166	3.135	6.863	39.510	9.964	9.977	25.490
20	80.980	6.955	32.870	4.496	9.811	2.738	2.616	4.163	13.950	11.250	21.440	8.203
21	14.780	5.168	13.820	6.840	9.815	2.416	2.236	3.368	26.370	9.347	82.480	9.300
22	11.510	7.730	13.280	4.784	4.838	2.796	1.921	4.113	28.610	5.431	39.010	54.730
23	13.750	34.690	9.681	8.277	3.252	2.366	1.756	4.935	60.080	3.935	33.720	20.950
24	7.089	15.340	6.376	5.712	2.794	1.988	1.612	4.050	41.710	3.150	17.100	11.030
25	4.551	6.429	4.634	3.534	2.442	3.829	1.402	3.081	14.370	2.678	12.860	27.930
26	4.837	5.001	3.488	2.600	2.170	5.154	1.282	2.563	7.664	2.345	19.620	12.230
27	4.675	4.475	2.755	2.149	1.995	7.438	45.720	2.161	4.997	2.102	16.680	6.354
28	3.520	4.011	2.309	1.859	1.742	3.897	22.640	1.788	3.676	1.877	20.940	9.943
29	3.159		2.353	1.675	1.536	2.785	6.952	1.582	3.028	1.709	13.260	9.292
30	3.062		4.300	1.494	1.320	2.955	3.804	1.427	4.797	2.372	8.539	5.406
31	2.459		28.670		1.188		2.606	1.282		5.548		32.110
Average	16.080	4.380	9.126	12.600	3.616	3.161	6.475	5.629	12.710	13.110	22.290	12.170
Lowest	1.903	0.973	2.309	1.494	1.188	0.902	1.005	1.282	0.708	1.709	3.539	1.557
Highest	80.980	34.690	35.620	77.360	10.210	8.024	45.720	26.380	60.080	73.690	82.480	54.730
Peak flow	213.90	42.18	69.01	116.60	13.25	10.82	89.97	42.78	105.20	128.80	153.10	81.48
Day of peak	19	23	31	1	21	27	27	11	23	16	21	22
Monthly total (million cu m)	43.06	10.60	24.44	32.65	9.68	8.19	17.34	15.08	32.94	35.11	57.78	32.61
Runoff (mm)	312	77	177	237	70	59	126	109	239	255	419	237
Rainfall (mm)	260	88	225	227	103	127	157	159	333	342	526	289

Statistics of monthly data for previous record (Jan 1979 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	15.330	11.940	14.720	6.803	4.807	4.116	5.987	8.646	14.550	13.920	15.030	17.840
	Low	5.886	1.361	4.103	2.863	0.698	0.921	2.426	2.703	7.088	6.332	6.369	5.636
	(year)	1985	1986	1980	1980	1980	1982	1984	1984	1986	1979	1989	1989
	High	31.650	32.590	38.990	13.440	14.120	8.623	10.430	15.050	21.050	24.070	31.120	30.710
	(year)	1989	1989	1990	1984	*1986	1980	1985	1989	1990	1983	1981	1983
Runoff:	Avg.	298	211	286	128	93	77	116	168	274	271	283	347
	Low	114	24	80	54	14	17	47	53	133	123	120	110
	High	615	572	758	253	274	162	203	293	396	468	585	597
Rainfall:	Avg.	329	219	316	127	110	121	152	207	310	321	315	373
	Low	94	6	95	70	36	28	89	85	150	182	114	124
	High	623	583	768	223	295	275	248	360	425	532	629	546

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	10.130		11.150		91
Lowest yearly mean			8.852	1987	
Highest yearly mean			14.740	1990	
Lowest monthly mean	3.161	Jun	0.698	May 1980	
Highest monthly mean	22.290	Nov	38.990	Mar 1990	
Lowest daily mean	0.708	12 Sep	0.425	27 Jun 1982	
Highest daily mean	82.480	21 Nov	201.100	31 Dec 1983	
Peak	213.900	19 Jan	337.400	18 Sep 1990	
10% exceedance	26.950		27.230		99
50% exceedance	4.577		5.608		82
95% exceedance	1.043		1.021		102
Annual total (million cu m)	319.50		351.90		91
Annual runoff (mm)	2318		2553		91
Annual rainfall (mm)	2836		2900		98
[1941-70 rainfall average (mm)			2498]		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Station and catchment description
40m wide river section with floodbank on right. 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.

201005 Camowen at Camowen Terrace 1991

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

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	35.570	3.969	5.637	7.243	4.372	1.221	6.492	1.329	0.757	1.195	7.942	4.311
2	21.090	3.672	11.220	11.390	3.511	1.216	3.530	1.236	0.762	1.299	8.836	3.729
3	13.790	5.344	8.661	9.620	3.215	1.179	2.433	1.257	0.806	1.734	11.350	3.526
4	21.790	10.340	20.190	19.290	3.005	1.093	1.955	1.255	0.759	4.984	10.850	3.443
5	62.710	5.846	13.240	16.590	2.684	1.083	1.617	1.294	0.766	4.832	8.372	3.129
6	31.910	4.444	8.183	28.420	2.659	1.094	1.441	1.343	0.753	3.644	7.508	2.851
7	15.920	3.739	15.880	18.020	2.607	1.104	1.338	1.345	0.745	4.843	22.890	2.784
8	12.020	3.401	16.470	11.210	2.469	1.418	1.292	1.253	0.736	2.610	13.270	2.679
9	10.020	3.158	10.700	9.362	2.396	2.291	1.326	1.327	0.746	1.985	8.755	2.563
10	11.000	2.810	7.782	15.720	2.372	1.738	1.227	1.462	0.713	1.612	28.600	2.393
11	25.480	2.747	6.444	11.750	2.326	1.627	1.327	1.335	0.674	1.541	17.330	2.335
12	14.370	6.416	8.013	11.770	2.314	1.987	1.333	1.194	0.679	1.461	28.310	2.160
13	9.036	4.479	6.089	7.545	2.262	1.917	1.261	0.992	0.724	1.466	26.640	2.150
14	7.647	7.204	5.403	5.974	2.163	2.201	1.195	1.024	0.892	1.476	18.840	2.144
15	6.655	8.252	12.890	5.096	2.102	2.427	1.330	0.975	1.084	1.436	10.970	2.061
16	15.830	5.338	20.160	4.471	2.008	3.494	1.735	1.082	1.416	3.600	8.480	2.084
17	16.890	4.429	18.930	4.053	1.649	2.135	1.726	1.186	0.945	4.761	11.030	5.486
18	16.700	4.036	41.260	3.701	1.652	1.861	1.500	0.987	0.977	6.733	13.960	28.480
19	10.540	4.019	27.020	3.364	1.700	2.558	1.954	1.036	0.834	4.320	8.712	33.160
20	9.496	4.500	24.770	3.352	1.691	2.674	1.662	1.194	0.792	4.201	5.946	38.350
21	7.735	3.947	16.460	3.514	1.612	4.224	1.442	0.888	1.113	3.981	7.037	75.630
22	7.004	6.894	12.760	3.216	1.608	5.129	1.295	0.914	1.723	2.928	5.947	37.420
23	7.202	10.380	10.940	3.055	1.618	4.482	6.217	0.889	2.032	3.419	5.132	60.240
24	6.769	9.567	7.833	3.931	1.620	2.749	4.886	0.883	2.670	2.119	14.440	17.110
25	5.577	5.651	6.121	4.265	1.522	2.042	2.374	0.856	2.084	2.001	14.700	12.280
26	4.954	8.608	5.263	3.246	1.433	2.391	1.747	0.866	1.698	1.857	7.129	10.100
27	4.542	12.110	5.070	2.986	1.409	2.508	1.518	0.860	1.300	1.819	5.531	8.194
28	4.228	7.781	4.753	2.952	1.355	1.856	1.558	0.813	1.416	1.657	5.148	7.141
29	6.627		4.441	21.960	1.266	2.402	1.398	0.806	1.323	6.016	6.062	6.792
30	5.611		4.250	7.455	1.380	5.280	1.284	0.758	1.172	11.000	5.028	6.040
31	4.322		3.919		1.264		1.259	0.737		28.830		5.095
Average	13.970	5.824	11.960	8.817	2.105	2.313	2.021	1.077	1.103	4.044	11.820	12.770
Lowest	4.228	2.747	3.919	2.952	1.264	1.083	1.195	0.737	0.674	1.195	5.028	2.061
Highest	62.710	12.110	41.260	28.420	4.372	5.280	6.492	1.462	2.670	28.830	28.600	75.630
Peak flow	93.58	16.44	64.46	40.97	5.17	8.41	11.37	1.60	3.07	58.76	52.37	96.76
Day of peak	6	27	18	6	1	23	24	10	24	31	10	23
Monthly total (million cu m)	37.41	14.09	32.03	22.85	5.64	5.99	5.41	2.88	2.86	10.83	30.65	34.20
Runoff (mm)	136	51	117	83	21	22	20	11	10	39	112	125
Rainfall (mm)	123	57	130	123	11	105	68	37	69	108	146	142

Statistics of monthly data for previous record (May 1972 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	12.530	9.537	8.739	4.889	3.526	2.715	2.254	3.854	5.099	7.944	9.034	11.050
	Low	7.334	2.992	2.210	1.701	1.076	0.911	0.554	0.927	0.680	1.215	3.757	5.000
	(year)	1989	1986	1973	1974	1980	1974	1989	1983	1972	1972	1983	1989
	High	19.140	19.580	13.630	9.765	9.152	5.471	5.542	13.070	14.560	14.560	18.020	17.330
	(year)	1984	1990	1981	1986	1986	1981	1985	1985	1985	1990	1979	1978
Runoff:	Avg.	122	85	85	46	34	26	22	38	48	77	85	108
	Low	72	26	22	16	11	9	5	9	6	12	35	49
	High	187	173	133	92	89	52	54	127	137	142	170	169
Rainfall:	Avg.	128	86	107	60	71	71	73	97	101	117	106	119
	Low	55	4	38	20	20	28	20	20	13	55	45	39
	High	194	199	156	118	145	129	146	188	177	208	182	183

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	6.496		6.758		96
Lowest yearly mean			4.102	1975	
Highest yearly mean			8.435	1986	
Lowest monthly mean	1.077	Aug	0.554	Jul 1989	
Highest monthly mean	13.970	Jan	19.580	Feb 1990	
Lowest daily mean	0.674	11 Sep	0.367	14 Jul 1989	
Highest daily mean	75.630	21 Dec	139.600	21 Oct 1987	
Peak	96.763	23 Dec	180.200	21 Oct 1987	
10% exceedance	16.030		15.380		104
50% exceedance	3.429		4.180		82
95% exceedance	0.823		1.029		80
Annual total (million cu m)	204.90		213.30		96
Annual runoff (mm)	746		777		96
Annual rainfall (mm)	1119		1136		99
[1941-70 rainfall average (mm)			1183]		

Factors affecting runoff

Station and catchment description
Velocity-area station with cableway and weir control - informal broad-crested structure (for angling enhancement), dimensions not known. The net effect of abstractions for public water supply and augmentations from effluent returns is minor. Catchment geology: mixed impermeable rocks (granite, schist and gneiss, and sandstone) overlain by substantial deposits of till, sand and gravel. Largely upland given over mainly to grassland or heath.

203010 Blackwater at Maydown Bridge 1991

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): 380

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	58.370	11.700	16.610	9.774	13.460	2.775	6.720	2.471	1.836	2.246	24.480	11.350
2	78.720	10.450	16.240	22.360	10.080	2.706	5.775	2.555	1.805	2.820	18.860	10.090
3	47.980	10.000	19.630	15.460	8.653	2.614	4.633	2.475	1.865	4.342	21.120	9.356
4	46.090	21.810	18.660	34.300	7.866	2.524	4.017	2.313	1.801	4.292	13.340	8.760
5	9.175	17.240	31.550	36.440	6.980	2.472	3.549	2.294	1.752	9.697	11.870	8.136
6	37.130	13.330	19.780	68.320	6.461	2.464	3.217	3.942	1.687	5.770	10.080	7.597
7	66.900	11.240	29.950	56.860	6.213	2.477	2.997	4.375	1.665	6.163	37.960	7.185
8	37.420	10.110	48.090	26.500	5.826	2.491	2.882	3.053	1.665	5.221	36.780	6.875
9	27.310	9.385	37.250	20.680	5.617	3.752	2.810	2.608	1.660	3.874	18.110	6.544
10	38.340	8.392	32.900	49.240	5.549	5.342	3.747	2.959	1.637	3.303	30.860	6.285
11	39.010	8.019	18.140	39.040	5.247	4.347	2.668	3.466	1.637	3.030	52.800	6.068
12	35.900	9.497	22.900	55.220	5.014	5.365	2.717	2.903	1.637	3.390	44.880	5.940
13	22.030	10.630	19.410	36.380	4.978	5.241	2.791	2.497	1.634	4.649	55.240	5.836
14	17.850	10.040	15.860	21.580	4.768	4.632	2.701	2.337	1.633	4.182	47.530	5.680
15	15.930	16.380	24.340	16.490	4.423	4.602	2.655	2.330	1.613	3.661	23.360	5.578
16	17.480	13.090	53.690	13.590	4.306	4.382	2.559	2.162	2.205	3.985	17.050	5.516
17	22.990	10.890	68.860	11.680	4.129	4.157	2.690	2.280	3.162	6.018	18.100	7.463
18	24.640	9.875	86.620	10.540	4.085	3.539	2.608	2.724	2.510	5.998	32.150	37.670
19	24.820	9.286	129.500	9.522	4.076	3.349	2.974	2.507	2.176	6.115	30.540	123.800
20	18.050	12.850	92.890	8.827	3.926	3.555	3.437	2.330	2.041	4.865	17.680	108.100
21	15.560	12.340	84.830	8.639	3.795	3.944	2.884	2.205	1.976	5.178	15.350	163.600
22	14.450	13.300	39.800	8.012	3.619	5.945	2.644	2.093	3.097	4.817	14.850	172.000
23	13.880	21.410	28.020	7.479	3.523	6.746	3.679	2.080	3.646	4.195	12.900	171.800
24	13.960	27.730	20.940	7.441	3.433	5.653	8.687	2.092	5.395	3.760	18.390	160.600
25	12.910	18.370	16.950	8.659	3.362	4.308	5.759	2.102	4.123	3.474	41.350	107.500
26	11.440	17.080	14.640	7.795	3.243	4.577	3.965	2.026	3.067	3.315	20.150	51.660
27	10.520	23.840	13.320	6.949	3.134	7.866	3.312	2.032	2.610	3.314	14.590	31.010
28	9.968	22.680	12.190	6.486	3.029	5.090	2.940	2.010	2.443	3.252	13.040	23.260
29	16.060		11.220	45.060	2.981	4.233	2.734	1.943	2.460	5.180	14.410	20.100
30	19.990		10.370	30.510	2.920	8.014	2.547	1.915	2.305	11.880	13.280	18.410
31	13.750		9.624		2.857		2.432	1.885		61.150		16.980
Average	27.050	13.960	34.350	23.330	5.082	4.305	3.540	2.483	2.291	6.553	24.700	42.930
Lowest	9.175	8.019	9.624	6.486	2.857	2.464	2.432	1.885	1.613	2.246	10.080	5.516
Highest	78.720	27.730	129.500	68.320	13.460	8.014	8.687	4.375	5.395	61.150	55.240	172.000
Peak flow	159.51	31.85	141.20	95.05	16.68	9.45	9.74	5.71	6.32	87.42	81.39	174.22
Day of peak	5	24	19	6	1	27	24	7	24	31	11	23
Monthly total (million cu m)	72.46	33.78	92.00	60.47	13.61	11.16	9.48	6.65	5.94	17.55	64.03	115.00
Runoff (mm)	76	36	97	64	14	12	10	7	6	18	67	121
Rainfall (mm)	98	50	108	109	8	92	54	36	52	96	116	128

Statistics of monthly data for previous record (Jul 1970 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	33.330	27.760	23.000	12.960	7.837	5.728	3.830	8.424	10.580	18.720	25.750	29.880
	Low	18.050	7.186	8.772	3.441	1.306	0.973	0.859	0.596	1.920	2.163	8.857	10.570
	(year)	1971	1986	1973	1974	1984	1975	1984	1975	1972	1972	1983	1971
	High	56.780	66.170	43.250	33.100	19.810	17.540	12.690	32.480	30.110	33.770	51.680	50.390
	(year)	1984	1990	1981	1989	1983	1981	1985	1985	1985	1988	1970	1978
Runoff:	Avg.	94	71	65	35	22	16	11	24	29	53	70	84
	Low	51	18	25	9	4	3	2	2	5	6	24	30
	High	160	168	122	90	56	48	36	91	82	95	141	142
Rainfall:	Avg.	110	79	87	55	60	61	65	84	85	100	93	95
	Low	46	4	33	14	19	19	17	15	7	43	36	30
	High	185	177	142	122	124	111	129	160	153	178	146	164

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	15.920		17.280		92
Lowest yearly mean			9.712	1975	
Highest yearly mean			23.860	1988	
Lowest monthly mean	2.291	Sep	0.596	Aug 1975	
Highest monthly mean	42.930	Dec	66.170	Feb 1990	
Lowest daily mean	1.613	15 Sep	0.043	6 Sep 1975	
Highest daily mean	172.000	22 Dec	156.100	7 Feb 1990	
Peak	174.221	23 Dec	163.800	Feb 1990	
10% exceedance	37.750		44.280		85
50% exceedance	6.831		10.170		67
95% exceedance	1.970		1.003		196
Annual total (million cu m)	502.10		545.30		92
Annual runoff (mm)	528		573		92
Annual rainfall (mm)	947		974		97
[1941-70 rainfall average (mm)			1005]		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Velocity-area station with cableway and natural control. Flows influenced by major arterial drainage scheme - started in 1988. A substantial portion of the catchment 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.

203028 Agivey at White Hill 1991

Measuring authority: DOEN
First year: 1972

Grid reference: 24 (IC) 883 193
Level stn. (m OD): 17.00

Catchment area (sq km): 98.9
Max alt. (m OD): 461

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	20.460	1.320	1.945	1.255	1.888	0.454	3.764	1.325	0.325	0.511	5.044	1.743
2	7.345	1.147	3.558	1.691	1.398	0.444	1.624	1.092	0.295	0.670	7.593	1.498
3	4.585	1.900	2.789	3.605	1.280	0.424	1.022	0.717	0.273	1.195	6.932	1.325
4	10.470	3.194	11.000	8.850	1.619	0.409	0.822	0.663	0.274	2.030	10.550	1.192
5	27.660	4.871	4.908	6.360	1.229	0.386	0.668	0.775	0.273	2.033	6.425	1.093
6	8.645	1.433	2.590	12.820	1.094	0.374	0.593	0.538	0.274	1.817	7.676	1.021
7	4.933	1.143	4.218	6.429	1.134	0.386	0.606	0.457	0.274	2.024	15.680	0.971
8	3.507	1.126	7.809	3.769	1.024	0.565	0.692	0.412	0.270	1.010	8.371	0.928
9	2.772	1.082	3.549	2.535	0.902	1.849	0.607	0.435	0.267	0.747	6.710	0.875
10	3.307	0.960	2.383	5.138	0.860	1.523	0.542	0.431	0.266	0.647	6.186	0.848
11	9.094	0.978	2.017	3.762	0.863	1.420	0.529	0.412	0.264	0.610	4.510	0.820
12	3.840	2.227	3.327	4.476	0.839	2.768	0.542	0.375	0.259	0.594	11.890	0.808
13	2.462	1.487	2.337	2.668	0.794	7.019	0.542	0.359	0.267	0.694	7.232	0.794
14	2.135	2.212	1.813	1.924	0.709	3.930	0.516	0.365	0.270	0.684	6.184	0.769
15	1.887	2.997	7.946	1.602	0.678	1.559	0.557	0.351	0.305	0.588	3.520	0.747
16	3.298	1.921	7.857	1.339	0.667	1.450	0.724	0.379	0.515	0.915	3.651	0.728
17	5.370	1.474	7.352	1.190	0.667	1.420	0.879	0.428	0.357	4.266	6.450	1.325
18	6.522	1.274	10.820	1.146	0.664	6.495	0.707	0.450	0.335	4.001	14.900	9.096
19	3.335	1.264	6.338	1.056	0.669	3.628	0.760	0.521	0.305	5.433	4.380	7.689
20	2.638	1.651	5.819	1.014	0.624	1.514	0.677	0.480	0.283	5.410	2.678	17.630
21	3.218	1.182	4.555	1.524	0.602	4.215	0.628	0.432	0.377	2.360	2.956	36.660
22	2.008	3.606	4.528	1.196	0.590	1.816	0.617	0.430	0.484	1.549	2.366	13.650
23	2.014	3.880	3.322	1.055	0.597	1.230	3.526	0.430	0.464	1.196	1.956	14.600
24	1.884	3.378	2.252	2.783	0.585	0.961	4.942	0.427	0.924	0.995	7.545	4.249
25	1.617	1.953	1.854	3.023	0.554	0.788	1.297	0.423	0.554	0.888	5.309	2.936
26	1.457	5.284	1.614	1.549	0.554	1.303	0.876	0.403	0.428	0.947	2.570	2.360
27	1.350	4.650	1.434	1.190	0.536	1.087	0.719	0.437	0.443	0.955	1.992	2.019
28	1.340	2.632	1.339	1.058	0.507	0.742	0.652	0.436	1.617	0.835	1.793	1.812
29	2.627		1.238	19.670	0.496	0.744	0.614	0.390	0.680	9.209	3.047	1.680
30	2.275		1.192	3.945	0.468	1.137	0.549	0.367	0.506	13.550	2.075	1.582
31	1.507		1.167		0.459		0.680	0.352		17.850		1.497
Average	5.018	2.222	4.028	3.654	0.824	1.735	1.048	0.500	0.414	2.781	5.939	4.353
Lowest	1.340	0.960	1.167	1.014	0.459	0.374	0.516	0.351	0.259	0.511	1.793	0.728
Highest	27.660	5.284	11.000	19.670	1.888	7.019	4.942	1.325	1.617	17.850	15.680	36.660
Peak flow		12.96	31.22	46.35	22.92	17.62	10.05	1.73	11.46	68.61	28.46	63.87
Day of peak		26	4	30	1	13	24	2	28	31	12	21
Monthly total (million cu m)	13.44	5.38	10.79	9.47	2.21	4.50	2.81	1.34	1.07	7.45	15.39	11.66
Runoff (mm)	136	54	109	96	22	45	28	14	11	75	156	118
Rainfall (mm)	133	62	127	149	14	131	80	40	70	143	180	148

Statistics of monthly data for previous record (Dec 1972 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.339	4.076	3.296	1.886	1.491	1.060	0.977	1.538	2.259	3.955	3.767	4.440
	Low	2.609	0.847	1.384	0.870	0.282	0.340	0.190	0.212	0.421	1.841	0.815	2.218
	(year)	1989	1986	1973	1984	1984	1984	1984	1983	1986	1973	1983	1987
	High	7.902	8.037	5.203	4.758	3.909	2.389	1.924	5.077	6.371	6.337	8.405	7.077
	(year)	1974	1990	1989	1989	1981	1982	1990	1985	1985	1981	1982	1978
Runoff:	Avg.	145	101	89	49	40	28	26	42	59	107	99	120
	Low	71	21	37	23	8	9	5	6	11	50	21	60
	High	214	197	141	125	106	63	52	137	167	172	220	192
Rainfall:	Avg.	148	99	108	65	74	72	78	94	101	139	117	126
	Low	63	5	36	22	20	37	26	23	15	53	33	58
	High	221	217	167	125	161	150	144	218	213	233	196	206

Summary statistics

	For 1991		For record preceding 1991		1991 As % of pre-1991
Mean flow (m^3s^{-1})	2.711		2.838		96
Lowest yearly mean			2.165	1983	
Highest yearly mean			3.599	1981	
Lowest monthly mean	0.414	Sep	0.190	Jul 1984	
Highest monthly mean	5.939	Nov	8.405	Nov 1982	
Lowest daily mean	0.259	12 Sep	0.080	7 Sep 1976	
Highest daily mean	36.660	21 Dec	76.500	21 Oct 1987	
Peak			159.300	21 Oct 1987	
10% exceedance	6.578		6.591		100
50% exceedance	1.307		1.578		83
95% exceedance	0.350		0.305		115
Annual total (million cu m)	85.49		89.56		95
Annual runoff (mm)	864		906		95
Annual rainfall (mm)	1277		1221		105
(1941-70 rainfall average (mm)			)		

Factors affecting runoff

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Velocity-area station with cableway. Geology: mainly basalt overlain by till with some peat. Significant proportion of upland, predominantly grassland or heath. No urban areas or major industry.

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.

A 'comment' - appearing at the end of the station entry - may be used to draw attention to any particular factors influencing the accuracy of the data for the featured year or, more generally, to indicate that the published hydrometric data are subject to review.

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). An asterisk indicates an incomplete rainfall series; the first and last years of data are given in parentheses. 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. Where the peak value - in an incomplete series - is exceeded by the highest daily mean flow on record, the latter is substituted; such substitutions are indicated by a 'd' flag. 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 runoff

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 shallow-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

003002 Carron at Sgodachail 1991

Measuring authority: HRPB
First year: 1974

Grid reference: 28 (NH) 490 921
Level stn. (m OD): 70.70

Catchment area (sq km): 241.1
Max alt. (m OD): 954

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	11.420	5.546	8.296	6.000	3.296	10.270	4.826	2.445	5.075	13.250	19.360	8.895	**8.224**
(m^{3}s^{-1}):	Peak	137.90	58.07	80.01	47.00	27.28	76.12	35.97	29.63	52.58	195.80	219.10	123.30	**219.10**
Runoff (mm)		127	56	92	65	37	110	54	27	55	147	208	99	**1076**
Rainfall (mm)		163	76	141	123	65	154	106	67	142	220	352	168	**1777**

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	14.550	10.270	11.580	7.467	4.727	3.831	3.571	4.495	8.665	11.870	12.500	13.400	**8.909**
flows	Low	7.226	1.944	3.680	1.294	1.020	1.105	1.142	0.983	3.659	3.963	4.228	5.595	**6.846**
(m^{3}s^{-1})	High	29.740	25.850	33.120	15.030	10.110	7.594	9.481	10.680	17.670	29.670	25.410	28.120	**12.192**
Peak flow (m^{3}s^{-1})		281.80	264.70	225.00	98.60	101.20	140.40	165.20	112.00	340.30	288.90	194.00	255.70	**340.30**
Runoff (mm)		162	104	129	80	53	41	40	50	93	132	134	149	**1166**
Rainfall (mm)*		276	175	243	89	96	93	92	130	211	257	217	251	**2130**

*(1981-1990)

Factors affecting runoff: H
Station type: VA

1991 runoff is 92% of previous mean
rainfall 83%

004001 Conon at Moy Bridge 1991

Measuring authority: HRPB
First year: 1947

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	86.580	33.020	51.740	59.030	14.040	19.720	36.140	27.160	34.890	76.960	100.700	71.640	**51.087**
(m^{3}s^{-1}):	Peak	236.00	103.00	150.50	131.30	56.13	74.48	111.60	73.83	179.30	238.20	220.40	165.10	**238.20**
Runoff (mm)		241	83	144	159	39	53	101	76	94	214	271	200	**1675**
Rainfall (mm)		169	64	134	117	51	136	111	64	170	213	325	184	**1738**

Monthly and yearly statistics for previous record (Oct 1947 to Dec 1990—**incomplete or missing months total 5.7 years**)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	68.750	62.500	60.150	41.800	31.710	21.960	20.970	27.950	41.060	55.110	63.660	71.600	**47.210**
flows	Low	31.690	25.810	18.670	13.940	10.940	8.861	2.959	8.162	12.510	23.090	24.090	27.970	**29.991**
(m^{3}s^{-1})	High	138.300	164.600	191.500	75.730	53.050	47.560	40.010	45.140	94.870	94.030	121.700	165.100	**77.537**
Peak flow (m^{3}s^{-1})		486.20	703.90	507.00	203.90	232.20	165.20	247.40	254.90	223.70	324.80	411.80	1076.00	**1076.00**
Runoff (mm)		191	159	168	113	88	59	58	78	111	153	172	199	**1549**
Rainfall (mm)*		198	142	171	102	103	95	106	127	167	214	199	226	**1850**

*(1953-1990)

Factors affecting runoff: H
Station type: VA

1991 runoff is 108% of previous mean
rainfall 94%

006008 Enrick at Mill of Tore 1991

Measuring authority: HRPB
First year: 1979

Grid reference: 28 (NH) 450 300
Level stn. (m OD): 109.40

Catchment area (sq km): 105.9
Max alt. (m OD): 678

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	7.932	1.848	3.797	3.361	0.318	1.562	1.433	0.344	1.655	4.624	7.526	3.679	**3.180**
(m^{3}s^{-1}):	Peak	54.72	12.88	23.43	20.17	0.61	9.54	4.57	0.60	12.23	27.17	60.66	25.47	**60.66**
Runoff (mm)		201	42	96	82	8	38	36	9	41	117	184	93	**947**
Rainfall (mm)		147	48	101	110	30	123	80	51	133	184	222	129	**1358**

Monthly and yearly statistics for previous record (Dec 1979 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	5.501	5.298	4.923	1.816	1.395	0.980	1.028	1.048	2.357	4.388	4.381	5.378	**3.201**
flows	Low	1.947	0.707	1.154	0.422	0.184	0.119	0.070	0.020	0.397	2.654	1.685	1.422	**2.118**
(m^{3}s^{-1})	High	9.679	18.220	13.880	3.466	4.386	1.959	3.332	3.235	3.994	7.068	7.360	9.554	**4.986**
Peak flow (m^{3}s^{-1})		52.05	77.96	51.08	11.23	18.65	19.34	59.86	15.83	51.30	50.41	36.09	49.71	**77.96**
Runoff (mm)		139	122	125	44	35	24	26	27	58	111	107	136	**954**
Rainfall (mm)		184	121	164	58	72	75	71	89	138	169	153	188	**1482**

Factors affecting runoff: N
Station type: VA

1991 runoff is 99% of previous mean
rainfall 92%

008007 Spey at Invertruim 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13.790	5.443	7.839	5.875	2.833	4.238	4.046	2.346	5.580	8.548	9.944	8.171	**6.565**
(m^{3}s^{-1}):	Peak	94.81	39.57	60.70	34.02	3.79	13.81	21.55	4.88	58.78	87.38	84.04	85.40	**94.81**
Runoff (mm)		92	33	52	38	19	27	27	16	36	57	64	55	**517**
Rainfall (mm)		192	82	118	131	35	110	85	49	182	213	225	161	**1583**

Monthly and yearly statistics for previous record (Oct 1952 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	9.151	7.550	7.548	4.190	3.577	2.934	2.838	3.347	4.710	6.872	7.438	9.371	**5.791**
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	**3.935**
(m^{3}s^{-1})	High	23.280	39.980	42.630	7.126	6.210	6.269	5.021	7.545	14.650	14.830	15.960	24.970	**11.121**
Peak flow (m^{3}s^{-1})		264.50	269.10	274.50	61.90	43.92	45.93	72.83	75.00	108.00	106.90	170.60	259.50	**274.50**
Runoff (mm)		61	46	50	27	24	19	19	22	30	46	48	63	**456**
Rainfall (mm)		165	114	130	73	86	76	86	105	133	167	159	180	**1474**

Factors affecting runoff: H
Station type: VA

1991 runoff is 113% of previous mean
rainfall 107%

009001 Deveron at Avochie 1991

Measuring authority: NERPB
First year: 1959

Grid reference: 38 (NJ) 532 464
Level stn. (m OD): 81.80

Catchment area (sq km): 441.6
Max alt. (m OD): 775

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	5.707	7.304	11.720	6.493	5.791	6.962	4.756	2.666	2.148	4.663	11.890	5.654	**6.299**
(m^3s^{-1}): Peak	18.04	43.40	44.16	17.43	22.22	21.39	13.62	3.46	3.10	43.25	89.01	51.91	**89.01**
Runoff (mm)	35	40	71	38	35	41	29	16	13	28	70	34	**450**
Rainfall (mm)	25	74	78	61	67	133	50	33	43	103	132	45	**844**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	12.220	10.590	11.590	10.120	7.602	5.142	4.676	5.930	5.782	8.948	10.720	11.440	**8.724**
Low	3.527	3.052	3.391	4.314	3.274	2.610	1.766	1.621	2.092	1.934	2.668	3.504	**4.051**
(m^3s^{-1}) High	24.440	19.720	22.230	21.500	21.930	11.130	9.841	19.110	16.040	28.210	29.790	23.590	**12.437**
Peak flow (m^3s^{-1})	120.50	84.90	118.00	76.13	183.70	153.10	146.40	236.50	155.70	221.90	177.70	157.10	**236.50**
Runoff (mm)	74	59	70	59	46	30	28	36	34	54	63	69	**624**
Rainfall (mm)	92	65	76	69	73	67	76	93	84	100	104	89	**988**

Factors affecting runoff: N
Station type: VA

1991 runoff is 72% of previous mean
rainfall 85%

010002 Ugie at Inverugie 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	3.318	6.268	9.750	3.702	2.415	2.318	1.877	1.263	1.044	1.911	9.226	3.255	**3.840**
(m^3s^{-1}): Peak	6.02	38.66	37.79	6.40	3.54	5.40	2.41	2.11	1.81	18.09	20.73	9.53	**38.66**
Runoff (mm)	27	47	80	30	20	18	15	10	8	16	74	27	**373**
Rainfall (mm)	24	81	80	35	29	74	37	23	34	98	121	33	**669**

Monthly and yearly statistics for previous record (Feb 1971 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	7.813	6.431	5.577	4.243	3.382	2.296	2.006	2.135	2.454	4.776	6.220	7.213	**4.539**
Low	2.085	2.088	1.791	1.624	1.467	1.200	0.927	0.858	0.912	0.894	1.531	1.360	**2.069**
(m^3s^{-1}) High	11.300	14.620	9.576	7.785	8.103	4.296	4.901	6.225	7.052	9.079	18.230	13.320	**6.505**
Peak flow (m^3s^{-1})	66.40	96.74	66.40	40.26	35.57	13.29	23.66	21.24	36.25	94.52	99.28	87.75	**99.28**
Runoff (mm)	64	48	46	34	28	18	17	18	20	39	50	59	**441**
Rainfall (mm)	79	47	65	51	50	53	58	64	80	86	87	77	**797**

Factors affecting runoff: N
Station type: VA

1991 runoff is 85% of previous mean
rainfall 84%

011001 Don at Parkhill 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	16.870	21.100	40.210	18.200	12.170	13.670	13.180	7.901	6.036	8.851	30.970	13.390	**16.841**
(m^3s^{-1}): Peak	42.14	72.92	103.00	26.84	25.48	29.49	34.88	10.04	8.06	66.22	116.10	37.14	**116.10**
Runoff (mm)	35	40	85	37	26	28	28	17	12	19	63	28	**417**
Rainfall (mm)	31	83	75	53	44	122	55	29	33	105	119	30	**779**

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	29.510	27.540	27.490	24.420	16.340	11.840	10.450	11.510	10.920	18.730	22.490	26.550	**19.785**
Low	8.070	6.557	6.274	8.487	7.514	6.424	5.128	4.644	5.019	4.567	5.692	7.738	**8.833**
(m^3s^{-1}) High	48.660	52.240	48.950	44.750	34.770	27.560	27.530	40.150	36.470	51.940	86.230	50.960	**29.185**
Peak flow (m^3s^{-1})	185.90	131.00	143.70	107.50	92.06	101.60	118.10	277.40	107.20	273.10	213.20	154.50	**277.40**
Runoff (mm)	62	53	58	50	34	24	22	24	22	39	46	56	**491**
Rainfall (mm)	94	58	72	63	63	61	69	74	75	87	87	78	**881**

Factors affecting runoff: N
Station type: VA

1991 runoff is 85% of previous mean
rainfall 88%

012006 Gairn at Invergairn 1991

Measuring authority: NERPB
First year: 1978

Grid reference: 37 (NO) 353 971
Level stn. (m OD): 217.70

Catchment area (sq km): 150.0
Max alt. (m OD): 1171

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	4.612	3.464	7.101	4.210	3.390	4.371	2.891	1.225	0.999	3.250	6.653	2.518	**3.722**
(m^3s^{-1}): Peak	34.25	21.42	25.08	13.68	10.68	21.37	14.27	2.51	2.71	31.67	61.22	18.84	**61.22**
Runoff (mm)	82	56	127	73	61	76	52	22	17	58	115	45	**783**
Rainfall (mm)	73	75	74	80	40	127	68	35	47	139	137	51	**946**

Monthly and yearly statistics for previous record (Nov 1978 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	4.631	4.428	5.629	5.348	3.842	2.711	1.839	2.152	2.658	4.568	4.286	4.994	**3.922**
Low	2.698	1.548	3.565	2.110	1.732	1.215	0.743	0.612	1.191	1.319	1.257	1.832	**2.338**
(m^3s^{-1}) High	8.758	7.692	7.418	9.595	7.605	5.608	3.036	5.057	6.389	12.420	12.420	7.661	**4.871**
Peak flow (m^3s^{-1})	37.70	38.88	88.91	37.34	27.41	47.25	24.92	65.18	58.09	95.09	54.80	48.55	**95.09**
Runoff (mm)	83	72	101	92	69	47	33	38	46	82	74	89	**825**
Rainfall (mm)*	105	76	91	53	67	70	61	78	96	115	99	90	**1001**

*(1981-1990)

Factors affecting runoff: N
Station type: VA

1991 runoff is 95% of previous mean
rainfall 95%

013007 North Esk at Logie Mill 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	22.730	18.810	45.230	16.910	6.270	14.040	14.050	6.016	4.312	15.280	29.030	9.358	**16.828**
(m^3s^{-1}): Peak	199.10	101.00	279.30	59.98	11.97	55.26	63.92	10.16	18.24	376.60	183.30	37.23	**376.60**
Runoff (mm)	83	62	166	60	23	50	52	22	15	56	103	34	**727**
Rainfall (mm)	84	111	110	69	33	138	77	34	53	154	124	31	**1018**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1990—incomplete or missing months total 0.1 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	24.260	26.130	29.210	21.430	14.880	9.127	6.950	9.771	11.080	27.510	24.070	28.590	**19.399**
flows Low	12.460	9.795	16.190	7.156	4.110	3.684	2.685	2.548	3.622	4.099	5.281	15.760	**11.043**
(m^3s^{-1}) High	48.590	46.630	42.750	34.750	36.420	24.300	18.060	35.810	30.540	80.410	91.170	59.880	**24.926**
Peak flow (m^3s^{-1})	240.80	195.00	169.10	230.40	180.80	271.90	133.00	199.20	342.80	452.80	462.10	398.10	**462.10**
Runoff (mm)	89	88	107	76	55	32	25	36	39	101	85	105	**839**
Rainfall (mm)	118	85	107	59	77	68	71	84	100	138	104	119	**1130**

Factors affecting runoff: S P I
Station type: VA

1991 runoff is 87% of previous mean
rainfall 90%

013008 South Esk at Brechin 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	19.020	10.270	28.630	13.830	4.682	7.581	8.238	3.687	3.269	11.200	21.010	7.894	**11.622**
(m^3s^{-1}): Peak	104.60	42.68	107.00	38.96	8.85	30.18	39.43	7.10	21.02	107.50	91.68	39.59	**107.50**
Runoff (mm)	104	51	157	73	26	40	45	20	17	61	111	43	**748**
Rainfall (mm)	107	99	113	79	28	137	83	33	71	153	122	46	**1071**

Monthly and yearly statistics for previous record (Jan 1983 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	15.930	15.630	16.900	13.310	11.140	6.648	4.938	7.409	8.040	12.930	14.470	15.490	**11.889**
flows Low	10.600	7.069	9.773	6.356	3.478	3.316	1.685	1.405	2.401	3.494	3.949	9.996	**8.317**
(m^3s^{-1}) High	21.180	34.820	26.610	21.340	28.180	11.120	10.010	25.920	21.860	28.630	49.350	23.650	**14.856**
Peak flow (m^3s^{-1})	73.93	102.20	96.99	90.85	96.29	88.02	56.63	117.70	122.50	170.60	144.30	149.70	**170.60**
Runoff (mm)	87	78	92	70	61	35	27	40	43	71	77	85	**766**
Rainfall (mm)	134	85	104	64	78	74	67	96	88	125	106	113	**1134**

Factors affecting runoff: I
Station type: VA

1991 runoff is 98% of previous mean
rainfall 94%

014001 Eden at Kemback 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	10.300	6.018	8.238	3.647	2.012	2.094	1.576	1.092	1.086	1.500	2.860	3.049	**3.616**
(m^3s^{-1}): Peak	31.73	31.02	31.16	9.43	2.42	3.62	2.06	1.59	2.09	3.53	6.24	14.21	**31.73**
Runoff (mm)	90	47	72	31	18	18	14	10	9	13	24	27	**371**
Rainfall (mm)	91	77	77	36	18	106	63	21	54	71	55	50	**719**

Monthly and yearly statistics for previous record (Oct 1967 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	6.890	6.465	4.968	3.673	3.016	2.183	1.535	1.697	1.993	3.197	4.471	5.644	**3.799**
flows Low	2.546	2.170	1.408	1.199	1.406	1.077	0.861	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	52.69	47.48	41.93	26.20	17.19	53.64	35.97	39.37	47.82	**71.31**
Runoff (mm)	60	51	43	31	26	18	13	15	17	28	38	49	**390**
Rainfall (mm)	85	57	64	46	64	57	58	61	72	79	72	74	**789**

Factors affecting runoff: S GEI
Station type: VA

1991 runoff is 95% of previous mean
rainfall 91%

015011 Lyon at Comrie Bridge 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	21.360	11.170	18.640	17.390	4.889	6.858	7.363	3.938	7.810	15.310	20.990	11.560	**12.271**
(m^3s^{-1}): Peak	223.20	100.80	115.80	129.00	8.73	27.93	26.26	14.87	84.84	128.30	158.40	199.60	**223.20**
Runoff (mm)	146	69	128	115	33	45	50	27	52	105	139	79	**989**
Rainfall (mm)	299	122	173	216	24	136	110	67	212	261	307	205	**2132**

Monthly and yearly statistics for previous record (Jan 1958 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	17.560	14.920	15.790	9.976	9.484	6.514	6.179	7.517	10.300	15.030	14.410	15.830	**11.955**
flows Low	3.596	3.198	4.219	4.002	3.537	3.514	3.062	2.221	2.843	3.662	5.320	6.182	**8.330**
(m^3s^{-1}) High	43.920	54.190	67.160	17.100	24.520	18.870	20.800	28.940	28.120	29.930	30.550	32.780	**19.870**
Peak flow (m^3s^{-1})	254.70	377.90	311.30	89.80	124.90	109.70	154.70	128.70	145.10	191.90	271.30	198.00	**377.90**
Runoff (mm)	120	93	108	66	65	43	42	51	68	103	96	108	**965**
Rainfall (mm)*	270	161	213	81	104	89	103	125	182	220	228	241	**2017**

*(1971-1990)

Factors affecting runoff: H
Station type: VA

1991 runoff is 103% of previous mean
rainfall 106%

016003 Ruchill Water at Cultybraggan 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.524	3.668	7.106	7.108	0.448	2.099	3.588	1.077	2.928	5.858	8.216	4.880	**4.458**
(m^3s^{-1}):	Peak	72.95	50.28	66.40	60.02	0.85	34.46	39.73	9.23	134.00	75.86	110.50	85.38	**134.00**
Runoff (mm)		176	89	191	185	12	55	97	29	76	158	214	131	**1413**
Rainfall (mm)		266	101	178	224	11	151	162	66	168	222	252	169	**1970**

Monthly and yearly statistics for previous record (Oct 1970 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	8.070	6.688	6.865	2.962	2.665	1.875	1.764	2.612	4.762	6.349	7.252	7.447	**4.937**
flows	Low	2.263	1.050	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	20.280	13.660	5.156	10.120	4.562	5.739	9.246	10.260	12.130	16.550	12.350	**6.586**
Peak flow (m^3s^{-1})		250.40	189.20	165.30	87.32	165.00	221.30	160.00	143.00	227.30	176.50	183.30	174.50	**250.40**
Runoff (mm)		217	164	185	77	72	49	47	70	124	171	189	200	**1566**
Rainfall (mm)		246	172	189	87	115	97	112	137	193	214	224	233	**2019**

Factors affecting runoff: N
Station type: VA

1991 runoff is 90% of previous mean
rainfall 98%

016004 Earn at Forteviot Bridge 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	72.440	26.040	46.830	45.860	9.231	8.450	13.810	5.981	11.840	28.400	46.680	28.900	**28.732**
(m^3s^{-1}):	Peak	264.20	94.84	158.10	160.70	16.08	31.37	35.76	13.95	105.00	123.30	149.30	140.80	**264.20**
Runoff (mm)		248	81	160	152	32	28	47	20	39	97	155	99	**1158**
Rainfall (mm)		197	83	130	148	15	132	113	40	120	157	168	116	**1419**

Monthly and yearly statistics for previous record (Oct 1972 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	48.610	42.440	39.560	20.410	14.630	9.580	8.471	11.540	19.680	32.070	40.020	42.900	**27.438**
flows	Low	19.630	16.070	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	127.100	74.340	33.790	47.200	20.070	24.620	46.660	55.680	61.980	89.750	79.160	**33.908**
Peak flow (m^3s^{-1})		277.50	337.00	264.60	162.20	155.20	114.90	142.30	169.70	271.80	241.20	328.60	238.70	**337.00**
Runoff (mm)		166	132	135	68	50	32	29	40	65	110	133	147	**1107**
Rainfall (mm)		174	119	145	57	81	73	83	104	147	155	157	165	**1460**

Factors affecting runoff: P H
Station type: VA

1991 runoff is 105% of previous mean
rainfall 97%

017001 Carron at Headswood 1991

Measuring authority: FRPB
First year: 1969

Grid reference: 26 (NS) 832 820
Level stn. (m OD): 17.809

Catchment area (sq km): 122.3
Max alt. (m OD): 570

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	8.333	2.522	5.957	4.616	0.651	0.819	1.336	0.723	2.069	2.723	3.820	5.216	**3.242**
(m^3s^{-1}):	Peak	138.10	30.50	132.90	34.37	0.99	3.31	7.13	2.83	36.10	29.62	46.50	65.59	**138.10**
Runoff (mm)		182	50	130	98	14	17	29	16	44	60	81	114	**836**
Rainfall (mm)		202	98	155	156	18	147	121	69	181	166	202	179	**1694**

Monthly and yearly statistics for previous record (Aug 1969 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	5.839	4.443	4.123	1.989	1.504	1.201	1.128	1.625	2.972	4.083	5.182	5.225	**3.272**
flows	Low	1.943	1.018	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	11.300	14.130	9.819	3.444	5.724	2.834	4.650	8.092	16.720	10.270	9.759	10.470	**4.606**
Peak flow (m^3s^{-1})		130.30	147.70	92.83	43.62	51.35	33.74	65.38	84.48	124.30	124.80	105.80	147.90	**147.90**
Runoff (mm)		128	89	90	42	33	25	25	36	63	89	110	114	**844**
Rainfall (mm)		179	118	146	74	87	86	87	116	151	168	175	169	**1556**

Factors affecting runoff: S E
Station type: FVVA

1991 runoff is 99% of previous mean
rainfall 109%

017002 Leven at Leven 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	17.140	9.885	13.020	6.162	2.910	3.639	3.001	2.990	2.003	3.765	7.643	6.219	**6.522**
(m^3s^{-1}):	Peak	37.24	27.40	50.36	10.85	4.14	7.88	6.60	4.50	4.32	6.22	11.47	20.09	**50.36**
Runoff (mm)		108	56	82	38	18	22	19	19	12	24	47	39	**485**
Rainfall (mm)		110	77	95	45	18	122	77	29	74	87	81	76	**891**

Monthly and yearly statistics for previous record (Aug 1969 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	11.390	10.650	7.803	5.078	3.613	3.050	1.987	3.189	3.747	6.015	8.234	10.230	**6.229**
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	14.670	9.712	12.050	7.044	5.300	11.840	21.040	13.170	26.510	19.200	**9.294**
Peak flow (m^3s^{-1})		53.54	128.00	39.19	44.68	44.54	26.93	28.83	25.69	84.25	40.67	56.76	62.69	**128.00**
Runoff (mm)		72	61	49	31	23	19	13	20	23	38	50	65	**464**
Rainfall (mm)		98	65	79	49	61	67	64	75	87	91	93	94	**923**

Factors affecting runoff: SR EI
Station type: VA

1991 runoff is 105% of previous mean
rainfall 97%

018003 Teith at Bridge of Teith 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	53.820	14.070	34.780	44.110	4.689	9.251	14.900	7.146	15.610	26.250	44.930	33.110	**25.278**
(m^3s^{-1}):	Peak	254.40	61.73	143.00	182.40	6.91	36.04	39.87	15.56	172.80	120.60	150.40	186.00	**254.40**
Runoff (mm)		278	66	180	221	24	46	77	37	78	136	225	171	**1539**
Rainfall (mm)		263	100	188	243	19	156	143	67	194	245	283	209	**2110**

Monthly and yearly statistics for previous record (Jan 1957 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	35.900	30.710	28.910	15.740	14.500	9.373	9.538	13.350	20.020	28.160	30.760	34.390	**22.590**
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	109.100	81.670	30.040	55.000	21.520	26.390	54.210	45.020	66.410	70.650	72.370	**32.715**
Peak flow (m^3s^{-1})		303.90	361.80	217.40	93.10	158.00	161.70	118.30	174.40	184.10	242.60	245.10	241.10	**361.80**
Runoff (mm)		186	144	149	79	75	47	49	69	100	146	154	178	**1376**
Rainfall (mm)*		238	158	185	90	119	104	109	135	199	223	216	220	**1996**

*(1963-1990)

Factors affecting runoff: S P
Station type: VA

1991 runoff is 112% of previous mean
rainfall 106%

018005 Allan Water at Bridge of Allan 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	16.630	6.307	9.980	9.120	1.524	2.970	5.587	1.715	3.308	6.991	9.912	8.919	**6.925**
(m^3s^{-1}):	Peak	136.80	48.44	83.31	64.09	2.12	12.53	30.15	5.11	50.52	54.58	65.47	80.34	**136.80**
Runoff (mm)		212	73	127	113	19	37	71	22	41	89	122	114	**1040**
Rainfall (mm)		173	81	123	122	13	127	121	45	123	135	140	127	**1330**

Monthly and yearly statistics for previous record (Jul 1971 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	11.130	9.213	9.265	4.609	3.717	2.618	2.128	3.129	4.935	7.313	8.872	9.909	**6.395**
flows	Low	4.751	3.631	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	22.270	18.170	7.717	15.430	5.423	6.309	12.390	14.600	12.420	17.760	17.140	**9.090**
Peak flow (m^3s^{-1})		98.20	81.93	83.43	69.62	72.11	61.86	66.37	67.48	105.60	111.00	97.89	112.60	**112.60**
Runoff (mm)		142	107	118	57	47	32	27	40	61	93	110	126	**961**
Rainfall (mm)		152	101	125	62	78	73	79	97	125	136	135	144	**1307**

Factors affecting runoff: I
Station type: VA

1991 runoff is 108% of previous mean
rainfall 102%

020001 Tyne at East Linton 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.184	7.853	6.089	2.031	1.164	0.975	1.034	0.664	0.503	0.697	2.402	2.209	**2.620**
(m^3s^{-1}):	Peak	27.77	53.51	29.37	4.39	1.51	2.00	2.05	0.97	0.83	3.16	7.71	21.91	**53.51**
Runoff (mm)		54	62	53	17	10	8	9	6	4	6	20	19	**269**
Rainfall (mm)		63	96	65	29	24	70	67	26	51	56	70	49	**666**

Monthly and yearly statistics for previous record (Jan 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.598	3.797	3.882	2.808	2.366	1.461	1.288	1.644	1.759	2.341	3.494	3.723	**2.760**
flows	Low	1.032	0.783	0.531	0.644	0.781	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	7.824	11.600	6.142	4.393	9.855	8.490	7.402	11.210	8.405	**4.146**
Peak flow (m^3s^{-1})		93.02	39.39	66.17	50.88	119.70	59.12	70.18	112.70	90.84	148.50	127.50	52.02	**148.50**
Runoff (mm)		40	30	34	24	21	12	11	14	15	20	29	32	**284**
Rainfall (mm)		64	42	57	47	59	54	61	77	67	70	69	61	**728**

Factors affecting runoff: EI
Station type: VA

1991 runoff is 95% of previous mean
rainfall 91%

021006 Tweed at Boleside 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	88.860	54.710	67.600	47.900	10.050	14.980	15.680	9.465	9.994	30.750	90.220	60.480	**41.360**
(m^3s^{-1}):	Peak	453.30	367.30	262.30	129.80	15.13	29.09	24.02	27.65	46.48	234.30	286.50	393.90	**453.30**
Runoff (mm)		159	88	121	83	18	26	28	17	17	55	156	108	**876**
Rainfall (mm)		146	105	118	106	17	112	70	43	81	148	159	130	**1235**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	58.580	49.740	45.960	31.190	25.210	16.400	19.390	21.960	31.440	40.970	48.620	54.330	**37.030**
flows	Low	14.740	10.780	16.230	10.250	7.290	7.466	6.694	4.641	4.316	4.655	15.940	24.150	**20.090**
(m^3s^{-1})	High	111.900	159.700	104.300	58.940	67.600	30.550	107.600	47.740	64.820	99.430	121.300	101.900	**49.780**
Peak flow (m^3s^{-1})		678.60	507.60	470.10	248.90	182.80	126.00	342.60	444.30	496.30	1019.00	486.30	571.90	**1019.00**
Runoff (mm)		105	81	82	54	45	28	35	41	54	73	84	97	**779**
Rainfall (mm)		126	87	102	68	85	77	86	107	116	124	120	121	**1219**

Factors affecting runoff: S P
Station type: VA

Comment: Naturalised flows used

1991 runoff is 112% of previous mean
rainfall 101%

021012 Teviot at Hawick — 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	22.610	14.620	16.740	10.300	1.577	2.513	2.028	1.336	1.459	7.231	19.480	13.630	**9.429**
(m^3s^{-1}): Peak	257.40	157.30	109.90	41.48	2.61	7.01	7.11	6.58	19.81	106.00	188.20	170.60	**257.40**
Runoff (mm)	188	110	139	83	13	20	17	11	12	60	156	113	**921**
Rainfall (mm)	163	124	126	95	14	103	67	46	69	143	161	125	**1236**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	13.890	11.530	10.210	6.055	5.396	3.880	3.465	4.650	6.104	10.060	12.150	13.640	**8.411**
Low	6.981	4.234	2.991	2.189	1.296	1.099	0.675	0.734	0.915	0.816	2.555	4.522	**4.183**
(m^3s^{-1}) High	28.560	34.800	21.640	13.030	17.340	10.500	12.300	19.120	18.960	25.690	29.930	25.460	**10.959**
Peak flow (m^3s^{-1})	185.90	235.30	182.40	179.00	117.80	89.40	148.30	178.60	185.60	273.40	188.60	230.00	**273.40**
Runoff (mm)	115	87	85	49	45	31	29	39	49	83	98	113	**822**
Rainfall (mm)	120	83	103	63	87	78	87	101	105	119	119	125	**1190**

Factors affecting runoff: N
Station type: VA

1991 runoff is 112% of previous mean
rainfall 104%

021018 Lyne Water at Lyne Station — 1991

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): 562

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	7.479	5.301	4.978	3.279	1.178	1.374	1.419	0.861	1.011	1.726	6.449	5.826	**3.395**
(m^3s^{-1}): Peak	20.61	31.56	15.23	9.95	1.65	2.61	2.79	2.58	3.31	8.63	15.82	30.90	**31.56**
Runoff (mm)	114	73	76	49	18	20	22	13	15	26	96	89	**611**
Rainfall (mm)	96	91	82	65	24	94	74	37	80	92	120	119	**974**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	5.294	4.539	3.855	2.755	1.825	1.435	1.241	1.500	1.864	2.974	4.134	4.608	**2.995**
Low	1.956	2.443	1.491	1.197	0.881	0.795	0.683	0.522	0.542	0.540	1.100	1.756	**2.220**
(m^3s^{-1}) High	8.911	11.260	7.613	5.173	3.602	2.693	2.639	3.198	3.653	7.194	7.183	8.581	**4.304**
Peak flow (m^3s^{-1})	47.50	41.55	27.65	21.46	17.36	16.46	31.72	20.77	58.74	73.75	53.60	37.98	**73.75**
Runoff (mm)	81	63	59	41	28	21	19	23	28	46	61	70	**540**
Rainfall (mm)	95	63	82	51	62	64	70	79	92	98	94	91	**941**

Factors affecting runoff: S P
Station type: VA

1991 runoff is 112% of previous mean
rainfall 104%

021022 Whiteadder Water at Hutton Castle — 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	12.880	13.830	14.070	4.254	2.519	2.052	1.768	1.268	1.335	1.977	7.826	6.035	**5.773**
(m^3s^{-1}): Peak	39.95	83.98	74.27	9.92	3.74	4.45	3.68	2.28	7.63	14.66	27.20	44.53	**83.98**
Runoff (mm)	69	67	75	22	13	11	9	7	7	11	46	32	**363**
Rainfall (mm)	73	85	72	31	27	69	66	30	64	66	89	51	**723**

Monthly and yearly statistics for previous record (Sep 1969 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	11.020	10.540	9.208	7.186	4.517	3.241	2.396	3.183	2.641	4.969	6.182	8.378	**6.103**
Low	2.616	1.806	1.295	1.456	1.390	1.421	1.223	0.998	1.056	1.021	1.283	1.569	**2.098**
(m^3s^{-1}) High	21.270	27.460	19.270	16.170	9.384	7.728	5.287	8.413	5.063	17.890	11.010	20.830	**8.746**
Peak flow (m^3s^{-1})	265.90	160.90	133.90	103.10	226.20	75.82	84.85	181.10	105.80	226.20	279.80	108.10	**279.80**
Runoff (mm)	59	51	49	37	24	17	13	17	14	26	32	45	**383**
Rainfall (mm)	80	52	71	51	63	60	60	70	68	75	73	70	**793**

Factors affecting runoff: S P
Station type: CC

1991 runoff is 95% of previous mean
rainfall 91%

021024 Jed Water at Jedburgh — 1991

Measuring authority: TWRP
First year: 1971

Grid reference: 36 (NT) 655 214
Level stn. (m OD): 67.50

Catchment area (sq km): 139.0
Max alt. (m OD): 553

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	6.228	4.840	4.209	1.813	0.724	0.801	0.505	0.441	0.439	0.976	3.250	2.910	**2.248**
(m^3s^{-1}): Peak	69.33	50.67	37.75	8.43	1.32	2.76	1.36	0.89	1.37	20.38	40.79	58.96	**69.33**
Runoff (mm)	120	84	81	34	14	15	10	9	8	19	61	56	**510**
Rainfall (mm)	107	112	91	54	22	84	49	30	46	89	107	81	**872**

Monthly and yearly statistics for previous record (Aug 1971 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	4.135	3.352	3.048	1.924	1.499	1.140	1.174	1.253	1.135	2.119	2.989	3.628	**2.280**
Low	1.482	0.997	0.782	0.733	0.635	0.443	0.352	0.312	0.346	0.327	0.698	0.967	**1.068**
(m^3s^{-1}) High	7.748	9.041	6.822	4.548	4.864	2.345	4.770	4.329	3.883	5.002	9.432	6.961	**3.013**
Peak flow (m^3s^{-1})	72.93	74.82	84.94	68.83	35.21	58.35	66.25	63.76	50.94	71.65	70.34	84.60	**84.94**
Runoff (mm)	80	59	59	36	29	21	23	24	21	41	56	70	**518**
Rainfall (mm)	94	63	83	51	67	64	74	82	70	88	86	96	**918**

Factors affecting runoff: N
Station type: VA

1991 runoff is 98% of previous mean
rainfall 95%

022006 Blyth at Hartford Bridge 1991

Measuring authority: NRA-N
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.626	6.370	6.096	0.763	0.323	0.264	0.210	0.135	0.112	0.123	0.867	2.700	**1.776**
(m^3s^{-1}):	Peak	13.90	24.43	38.64	1.69	0.60	0.82	0.83	0.96	0.51	0.24	8.08	31.85	**38.64**
Runoff (mm)		36	57	61	7	3	3	2	1	1	1	8	27	**208**
Rainfall (mm)		46	94	74	20	18	56	59	34	33	39	85	58	**616**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1990—incomplete or missing months total 0.4 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.444	3.641	3.522	2.205	1.339	0.603	0.446	0.651	0.704	1.615	2.382	3.532	**2.086**
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	6.281	4.948	1.895	1.800	2.963	2.695	9.680	5.735	12.500	**3.410**
Peak flow (m^3s^{-1})		146.60	59.52	150.20	80.31	38.86	31.54	21.52	61.09	30.02	56.84	69.20	122.30	**150.20**
Runoff (mm)		44	33	35	21	13	6	4	6	7	16	23	35	**244**
Rainfall (mm)		65	46	60	44	56	52	57	69	61	61	64	64	**699**

Factors affecting runoff: E
Station type: FV

1991 runoff is 85% of previous mean
rainfall 88%

023001 Tyne at Bywell 1991

Measuring authority: NRA-N
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	100.600	111.800	79.200	32.880	9.044	13.400	10.610	10.740	11.500	27.780	92.710	82.170	**48.136**
(m^3s^{-1}):	Peak	958.00	1198.00	774.40	175.40	20.10	50.90	56.34	58.36	52.07	288.10	891.30	1114.00	**1198.0**
Runoff (mm)		124	124	98	39	11	16	13	13	14	34	110	101	**698**
Rainfall (mm)		114	138	106	58	26	90	68	50	61	100	156	115	**1082**

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	73.440	60.610	56.360	38.110	24.780	17.980	19.620	28.920	34.240	46.570	60.240	68.480	**44.060**
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	162.800	150.900	75.620	60.650	50.010	58.000	77.360	106.600	147.200	147.000	112.000	**63.834**
Peak flow (m^3s^{-1})		1525.00	1137.00	1472.00	905.60	476.30	440.30	1105.00	1561.00	1243.00	1586.00	1382.00	1317.00	**1586.00**
Runoff (mm)		90	68	69	45	31	21	24	36	41	57	72	84	**639**
Rainfall (mm)		104	75	85	62	68	69	83	96	89	96	102	106	**1035**

Factors affecting runoff: S
Station type: VA

1991 runoff is 109% of previous mean
rainfall 105%

Comment: Peak flows for May and June 1991 are estimates

023011 Kielder Burn at Kielder 1991

Measuring authority: NRA-N
First year: 1970

Grid reference: 35 (NY) 644 946
Level stn. (m OD): 214.00

Catchment area (sq km): 58.8
Max alt. (m OD): 602

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.307	4.033	2.849	1.451	0.495	1.178	0.819	0.402	0.562	1.710	3.371	2.696	**1.977**
(m^3s^{-1}):	Peak	83.02	66.12	41.71	8.94	1.59	12.30	17.03	1.18	4.65	33.34	42.43	46.50	**83.02**
Runoff (mm)		196	166	130	64	23	52	37	18	25	78	149	123	**1060**
Rainfall (mm)		170	178	131	78	26	121	70	46	72	131	169	122	**1314**

Monthly and yearly statistics for previous record (Jul 1970 to Dec 1990—incomplete or missing months total 2.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.965	2.409	2.467	1.458	1.168	1.060	0.893	1.245	1.362	2.055	2.604	2.821	**1.874**
flows	Low	1.646	0.722	0.945	0.389	0.331	0.316	0.302	0.243	0.316	0.247	0.694	1.011	**1.201**
(m^3s^{-1})	High	4.893	6.677	4.882	2.842	2.605	2.134	2.632	4.407	3.296	3.589	6.000	4.705	**2.470**
Peak flow (m^3s^{-1})		63.03	73.28	44.44	35.55	60.14	95.07	39.21	138.90	56.86	128.80	118.70	67.89	**138.90**
Runoff (mm)		135	100	112	64	53	47	41	57	60	94	115	128	**1006**
Rainfall (mm)		138	97	116	66	77	75	91	105	101	124	132	143	**1265**

Factors affecting runoff: N
Station type: FVVA

1991 runoff is 105% of previous mean
rainfall 104%

024004 Bedburn Beck at Bedburn 1991

Measuring authority: NRA-N
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): 535

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.103	3.093	2.607	0.809	0.320	0.234	0.153	0.124	0.110	0.244	1.505	1.546	**1.143**
(m^3s^{-1}):	Peak	14.31	30.14	16.69	2.44	0.49	0.43	0.30	0.38	0.22	6.64	14.64	18.79	**30.14**
Runoff (mm)		111	100	93	28	11	8	5	4	4	9	52	55	**481**
Rainfall (mm)		101	130	93	44	20	58	39	37	41	73	110	77	**823**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.084	1.800	1.808	1.356	0.879	0.538	0.449	0.566	0.583	1.188	1.538	1.845	**1.218**
flows	Low	0.515	0.471	0.436	0.316	0.270	0.191	0.152	0.120	0.124	0.146	0.244	0.444	**0.667**
(m^3s^{-1})	High	4.341	4.011	5.128	2.986	2.231	1.524	1.522	1.465	1.790	4.346	3.722	4.488	**1.842**
Peak flow (m^3s^{-1})		34.67	39.16	38.51	35.09	24.06	21.66	27.72	46.19	32.30	38.06	34.26	42.93	**46.19**
Runoff (mm)		75	59	65	47	31	19	16	20	20	42	53	66	**513**
Rainfall (mm)		90	66	73	58	63	58	64	76	70	82	88	87	**875**

Factors affecting runoff: N
Station type: CC

1991 runoff is 94% of previous mean
rainfall 94%

024009 Wear at Chester le Street 1991

Measuring authority: NRA-N
First year: 1977
Grid reference: 45 (NZ) 283 512
Level stn. (m OD): 5.50
Catchment area (sq km): 1008.3
Max alt. (m OD): 747

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	33.760	37.330	31.280	10.050	4.758	4.662	3.506	3.055	3.053	5.204	18.250	19.020	**14.366**
(m^{3}s^{-1}): Peak	198.00	263.70	222.10	48.90	7.77	7.64	10.45	6.39	7.29	80.67	141.90	228.00	**263.70**
Runoff (mm)	90	90	83	26	13	12	9	8	8	14	47	51	**449**
Rainfall (mm)	88	121	87	45	22	61	44	35	39	76	104	76	**798**

Monthly and yearly statistics for previous record (Sep 1977 to Dec 1990—incomplete or missing months total 0.1 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	24.330	22.020	24.030	16.590	10.070	7.177	5.900	6.982	6.115	11.230	16.710	23.820	**14.556**
flows Low	8.610	10.210	14.090	4.738	3.941	3.447	2.948	3.335	3.093	4.563	4.812	12.780	**8.661**
(m^{3}s^{-1}) High	40.980	39.880	64.200	36.800	30.170	14.650	14.010	19.300	12.080	27.060	35.820	50.640	**19.785**
Peak flow (m^{3}s^{-1})	309.80	248.20	349.60	277.60	157.60	200.60	226.50	354.40	105.50	273.40	254.10	353.10	**354.40**
Runoff (mm)	65	53	64	43	27	18	16	19	16	30	43	63	**456**
Rainfall (mm)	88	62	84	54	60	65	56	79	63	84	87	100	**882**

Factors affecting runoff: G
Station type: FV

1991 runoff is 99% of previous mean
rainfall 90%

025001 Tees at Broken Scar 1991

Measuring authority: NRA-N
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

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	46.290	44.890	38.050	15.770	6.354	8.470	5.250	4.986	5.748	11.640	30.890	32.200	**20.743**
(m^{3}s^{-1}): Peak	380.70	521.10	300.70	83.75	8.88	41.33	14.51	16.34	37.67	165.80	230.20	565.10	**565.10**
Runoff (mm)	151	133	125	50	21	27	17	16	18	38	98	105	**799**
Rainfall (mm)	140	156	118	72	21	90	49	46	59	114	169	135	**1169**

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1990—incomplete or missing months total 0.1 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	29.540	24.810	23.660	18.250	10.090	6.490	6.772	9.926	10.950	18.030	22.360	28.470	**17.422**
flows 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	**9.382**
(m^{3}s^{-1}) High	57.570	64.770	68.660	60.870	27.020	15.270	25.090	28.520	25.800	53.940	51.580	50.040	**25.160**
Peak flow (m^{3}s^{-1})	590.80	445.20	679.30	350.90	311.50	191.90	380.70	709.80	331.30	525.80	416.30	455.90	**709.80**
Runoff (mm)	97	74	77	58	33	21	22	32	35	59	71	93	**672**
Rainfall (mm)	122	89	96	75	77	74	82	100	95	107	111	124	**1152**

Factors affecting runoff: SRP
Station type: CC

1991 runoff is 119% of previous mean
rainfall 101%

025019 Leven at Easby 1991

Measuring authority: NRA-N
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.273	0.411	0.255	0.144	0.092	0.074	0.056	0.049	0.042	0.053	0.163	0.129	**0.143**
(m^{3}s^{-1}): Peak	1.08	2.96	1.29	0.31	0.16	0.13	0.12	0.15	0.08	0.31	1.10	1.11	**2.96**
Runoff (mm)	49	67	46	25	17	13	10	9	7	10	28	23	**305**
Rainfall (mm)	61	95	42	46	26	56	43	36	37	73	88	46	**649**

Monthly and yearly statistics for previous record (May 1971 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	0.296	0.285	0.287	0.243	0.172	0.126	0.106	0.125	0.115	0.162	0.193	0.270	**0.198**
flows Low	0.082	0.094	0.076	0.066	0.069	0.062	0.044	0.038	0.039	0.049	0.058	0.132	**0.083**
(m^{3}s^{-1}) High	0.630	0.729	0.821	0.771	0.544	0.239	0.188	0.427	0.532	0.556	0.507	0.543	**0.305**
Peak flow (m^{3}s^{-1})	3.56	4.38	5.68	9.36	7.56	1.99	3.14	15.53	12.83	3.50	4.01	7.66	**15.53**
Runoff (mm)	54	47	52	43	31	22	19	23	20	29	34	49	**422**
Rainfall (mm)	78	51	71	56	59	63	61	74	69	78	76	78	**814**

Factors affecting runoff: N
Station type: FV

1991 runoff is 72% of previous mean
rainfall 80%

025020 Skerne at Preston le Skerne 1991

Measuring authority: NRA-N
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	1.326	2.471	1.792	0.373	0.242	0.258	0.189	0.157	0.133	0.145	0.305	0.477	**0.645**
(m^{3}s^{-1}): Peak	7.45	12.83	13.16	0.69	0.67	0.64	0.54	0.65	0.37	1.31	1.56	5.90	**13.16**
Runoff (mm)	24	41	33	7	4	5	3	3	2	3	5	9	**138**
Rainfall (mm)	49	83	58	29	18	57	45	28	31	53	61	46	**558**

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1990—incomplete or missing months total 0.3 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	1.532	1.209	1.294	0.941	0.649	0.435	0.386	0.380	0.324	0.763	0.837	1.353	**0.841**
flows Low	0.337	0.481	0.293	0.162	0.168	0.112	0.121	0.077	0.082	0.099	0.129	0.325	**0.266**
(m^{3}s^{-1}) High	3.376	2.731	4.824	2.734	2.106	1.004	1.125	0.943	0.745	4.290	1.962	4.658	**1.510**
Peak flow (m^{3}s^{-1})	20.08	12.93	26.58	19.20	11.93	16.54	15.92	13.69	9.33	21.71	17.40	24.82	**26.58**
Runoff (mm)	28	20	24	17	12	8	7	7	6	14	15	25	**181**
Rainfall (mm)	59	38	54	43	51	54	48	62	56	60	57	60	**642**

Factors affecting runoff: E
Station type: VA

1991 runoff is 77% of previous mean
rainfall 87%

026003 Foston Beck at Foston Mill 1991

Measuring authority: NRA-Y
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.275	0.533	0.984	0.883	0.637	0.476	0.320	0.238	0.225	0.189	0.169	0.145	**0.422**
(m^3s^{-1}): Peak	0.39	1.26	1.27	1.14	0.78	0.57	0.44	0.37	0.27	0.21	0.20	0.19	**1.27**
Runoff (mm)	13	23	46	40	30	22	15	11	10	9	8	7	**233**
Rainfall (mm)	46	77	42	30	11	63	19	16	22	55	60	33	**474**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	0.814	1.072	1.044	0.954	0.822	0.639	0.501	0.393	0.322	0.309	0.388	0.546	**0.648**
Low	0.113	0.145	0.166	0.150	0.174	0.110	0.112	0.104	0.091	0.077	0.073	0.122	**0.141**
(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	3.30	2.69	2.70	1.95	2.01	1.47	0.99	0.80	1.22	2.49	2.86	**3.30**
Runoff (mm)	38	46	49	43	39	29	23	18	15	14	18	26	**358**
Rainfall (mm)	70	50	57	51	53	53	54	63	56	66	73	76	**722**

Factors affecting runoff: N
Station type: TP

1991 runoff is 65% of previous mean
rainfall 66%

026005 Gypsey Race at Boynton 1991

Measuring authority: NRA-Y
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.023	0.018	0.053	0.093	0.028	0.003	0.000	0.000	0.000	0.000	0.000	0.003	**0.018**
(m^3s^{-1}): Peak	0.08	0.09	0.10	0.16	0.06	0.01	0.00	0.00	0.00	0.00	0.00	0.01	**0.16**
Runoff (mm)	0	0	1	1	0	0	0	0	0	0	0	0	**2**
Rainfall (mm)	47	80	46	31	12	66	25	15	27	65	64	33	**511**

Monthly and yearly statistics for previous record (Feb 1981 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	0.195	0.360	0.387	0.503	0.467	0.285	0.161	0.073	0.034	0.015	0.014	0.037	**0.210**
Low	0.006	0.005	0.006	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.006	**0.004**
(m^3s^{-1}) High	0.475	0.887	0.872	1.585	1.217	0.623	0.351	0.184	0.098	0.055	0.033	0.082	**0.349**
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)	2	4	4	5	5	3	2	1	0	0	0	0	**28**
Rainfall (mm)	66	49	71	51	51	54	52	60	55	64	67	68	**708**

Factors affecting runoff: G I
Station type: FV

1991 runoff is 9% of previous mean
rainfall 72%

027007 Ure at Westwick Lock 1991

Measuring authority: NRA-Y
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	46.090	52.260	37.460	20.660	4.920	8.896	4.686	3.529	4.662	12.380	43.950	26.560	**21.953**
(m^3s^{-1}): Peak	251.30	625.90	170.20	164.80	8.63	46.05	21.19	11.12	39.61	156.70	187.50	191.80	**625.90**
Runoff (mm)	135	138	110	59	14	25	14	10	13	36	125	78	**757**
Rainfall (mm)	129	151	111	81	17	87	37	33	56	103	166	90	**1061**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1990—incomplete or missing months total 0.5 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	33.980	30.250	27.440	20.080	12.540	8.455	7.980	11.520	13.340	21.850	28.120	32.990	**20.676**
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	20.130	31.600	33.030	68.480	65.010	57.370	**27.066**
Peak flow (m^3s^{-1})	537.90	307.70	413.10	263.30	170.80	161.50	153.30	271.90	296.20	266.50	288.80	304.10	**537.90**
Runoff (mm)	100	81	80	57	37	24	23	34	38	64	80	97	**713**
Rainfall (mm)	121	87	96	77	72	71	75	90	93	108	117	126	**1133**

Factors affecting runoff: S P
Station type: B VA

1991 runoff is 106% of previous mean
rainfall 94%

027025 Rother at Woodhouse Mill 1991

Measuring authority: NRA-Y
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	8.999	4.984	5.099	2.730	1.639	1.543	1.577	1.059	1.402	1.367	2.629	3.926	**3.075**
(m^3s^{-1}): Peak	47.14	17.90	11.95	8.54	3.50	6.29	11.11	1.53	11.57	12.02	11.41	41.57	**47.14**
Runoff (mm)	68	34	39	20	12	11	12	8	10	10	19	30	**275**
Rainfall (mm)	75	50	48	56	13	59	51	9	43	54	68	53	**579**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990—incomplete or missing months total 2.5 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	6.896	6.893	6.338	5.240	3.716	2.915	1.965	1.981	2.096	2.863	4.428	6.296	**4.290**
Low	1.287	1.424	1.830	1.400	1.257	1.166	0.934	0.760	0.712	0.693	1.023	2.393	**2.540**
(m^3s^{-1}) High	13.000	22.440	14.330	13.160	10.110	10.840	4.907	3.323	7.786	7.600	8.200	18.140	**6.364**
Peak flow (m^3s^{-1})	60.30	78.80	53.21	78.14	61.40	105.40	45.63	33.55	45.59	41.74	50.55	91.46	**105.40**
Runoff (mm)	52	48	48	39	28	21	15	15	15	22	33	48	**384**
Rainfall (mm)	72	60	67	62	61	65	53	62	60	65	72	77	**776**

Factors affecting runoff: SRPGEI
Station type: VA

1991 runoff is 72% of previous mean
rainfall 75%

027030 Dearne at Adwick 1991

Measuring authority: NRA-Y
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.307	4.319	4.671	2.651	1.736	1.847	1.503	1.105	1.132	1.106	1.590	2.351	**2.435**
(m^3s^{-1}):	Peak	24.98	15.77	9.79	6.68	3.09	8.76	4.36	1.37	3.14	4.10	3.62	15.08	**24.98**
Runoff (mm)		46	34	40	22	15	15	13	10	9	10	13	20	**247**
Rainfall (mm)		67	57	53	50	13	68	45	11	33	39	58	55	**549**

Monthly and yearly statistics for previous record (Nov 1963 to Dec 1990—incomplete or missing months total 0.7 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.941	5.344	4.736	4.204	2.978	2.554	1.888	1.859	1.827	2.429	3.404	4.375	**3.368**
flows	Low	1.678	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	27.40	28.97	26.56	51.52	56.65	**58.42**
Runoff (mm)		43	42	41	35	26	21	16	16	15	21	28	38	**342**
Rainfall (mm)		65	54	60	57	56	58	49	62	55	60	69	69	**714**

Factors affecting runoff: PGEI
Station type: C VA

1991 runoff is 72% of previous mean
rainfall 77%

027042 Dove at Kirkby Mills 1991

Measuring authority: NRA-Y
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): 433

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.663	2.630	1.694	0.740	0.408	0.452	0.253	0.183	0.170	0.254	1.053	0.664	**0.835**
(m^3s^{-1}):	Peak	5.09	41.51	10.72	1.15	0.66	1.22	0.71	0.29	0.31	2.06	9.34	3.74	**41.51**
Runoff (mm)		75	107	77	32	18	20	11	8	7	11	46	30	**445**
Rainfall (mm)		69	100	65	38	19	69	29	26	43	79	113	43	**693**

Monthly and yearly statistics for previous record (Feb 1972 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.662	1.588	1.649	1.198	0.802	0.617	0.514	0.553	0.631	0.990	1.152	1.642	**1.081**
flows	Low	0.589	0.541	0.347	0.376	0.329	0.279	0.211	0.161	0.186	0.251	0.499	0.853	**0.576**
(m^3s^{-1})	High	2.861	3.180	4.701	2.915	1.702	1.099	1.021	1.397	2.743	2.683	2.032	3.237	**1.554**
Peak flow (m^3s^{-1})		37.45	36.68	40.93	27.63	30.01	7.43	19.33	32.36	56.38	24.71	23.85	53.38	**56.38**
Runoff (mm)		75	66	75	52	36	27	23	25	28	45	50	74	**577**
Rainfall (mm)		95	62	86	60	65	65	69	75	81	92	84	96	**930**

Factors affecting runoff: N
Station type: FV

1991 runoff is 77% of previous mean
rainfall 75%

027043 Wharfe at Addingham 1991

Measuring authority: NRA-Y
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	22.490	25.810	17.200	12.830	2.227	6.674	4.360	3.687	3.793	9.729	29.650	21.820	**13.254**
(m^3s^{-1}):	Peak	221.40	391.00	127.10	158.50	3.74	40.72	28.79	19.00	62.41	128.10	225.60	275.60	**391.00**
Runoff (mm)		141	146	108	78	14	41	27	23	23	61	180	137	**979**
Rainfall (mm)		138	169	120	95	20	141	66	63	75	119	225	163	**1394**

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	25.330	18.060	20.550	10.040	6.837	5.011	4.947	8.667	11.940	17.920	20.880	24.290	**14.543**
flows	Low	10.840	5.157	6.391	2.453	1.623	1.722	1.245	1.143	2.359	6.422	8.263	5.972	**10.487**
(m^3s^{-1})	High	33.790	37.770	52.490	21.970	16.100	10.320	12.730	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	100.90	114.70	163.80	273.80	244.90	370.00	400.00	320.30	**552.60**
Runoff (mm)		159	103	129	61	43	30	31	54	72	112	127	152	**1075**
Rainfall (mm)		165	101	133	72	75	82	81	116	125	147	141	171	**1409**

Factors affecting runoff: S P
Station type: C VA

1991 runoff is 91% of previous mean
rainfall 99%

027047 Snaizeholme Beck at Low Houses 1991

Measuring authority: NRA-Y
First year: 1972

Grid reference: 34 (SD) 833 883
Level stn. (m OD): 260.00

Catchment area (sq km): 10.2
Max alt. (m OD): 668

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.838	1.121	0.726	0.520	0.025	0.313	0.153	0.103	0.208	0.603	1.186	0.803	**0.545**
(m^3s^{-1}):	Peak	14.82	15.41	12.71	12.66	0.04	5.11	2.50	1.85	7.93	10.06	16.10	13.33	**16.10**
Runoff (mm)		220	266	191	132	6	80	40	27	53	158	301	211	**1686**
Rainfall (mm)		186	277	177	132	23	153	78	78	103	173	268	191	**1839**

Monthly and yearly statistics for previous record (Aug 1972 to Dec 1990—incomplete or missing months total 1.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.944	0.745	0.730	0.334	0.243	0.203	0.231	0.340	0.503	0.698	0.852	0.983	**0.567**
flows	Low	0.443	0.222	0.224	0.047	0.024	0.029	0.021	0.029	0.049	0.152	0.389	0.376	**0.425**
(m^3s^{-1})	High	1.498	1.774	1.689	0.700	0.724	0.510	0.798	0.738	0.995	1.124	1.365	1.611	**0.644**
Peak flow (m^3s^{-1})		13.69	15.46	14.45	9.06	14.67	11.58	10.47	14.90	15.74	12.22	12.99	14.60	**15.74**
Runoff (mm)		248	179	192	85	64	52	61	89	128	183	217	258	**1755**
Rainfall (mm)		199	130	161	82	90	94	105	140	154	178	207	218	**1758**

Factors affecting runoff: N
Station type: FL

1991 runoff is 96% of previous mean
rainfall 105%

027050 Esk at Sleights 1991

Measuring authority: NRA-Y
First year: 1970

Grid reference: 45 (NZ) 865 081
Level stn. (m OD): 4.90

Catchment area (sq km): 308.0
Max alt. (m OD): 435

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	8.342	12.560	6.718	2.217	1.181	1.195	0.802	0.499	0.446	0.949	5.813	3.476	**3.624**
(m^3s^{-1}):	Peak	42.68	107.20	56.65	5.38	2.11	3.07	2.78	1.01	0.76	9.46	63.61	28.27	**107.20**
Runoff (mm)		73	99	58	19	10	10	7	4	4	8	49	30	**371**
Rainfall (mm)		70	100	61	40	23	70	40	29	37	90	112	48	**720**

Monthly and yearly statistics for previous record (Oct 1970 to Dec 1990—incomplete or missing months total 1.6 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	8.276	7.131	7.623	5.083	3.319	2.239	1.976	2.680	1.725	3.642	5.715	8.589	**4.829**
flows	Low	1.823	1.917	1.497	1.041	1.004	0.827	0.453	0.268	0.497	0.675	1.794	2.539	**2.228**
(m^3s^{-1})	High	13.110	21.220	30.470	19.380	9.565	5.231	6.585	8.766	3.742	11.350	13.140	18.770	**7.574**
Peak flow (m^3s^{-1})		159.30	198.10	358.70	191.70	144.00	106.80	165.70	276.00	89.97	156.80	88.38	350.10	**358.70**
Runoff (mm)		72	57	66	43	29	19	17	23	15	32	48	75	**495**
Rainfall (mm)*		76	60	87	58	49	80	67	89	54	109	79	87	**895**

*(1980-1990)

Factors affecting runoff: N
Station type: VA

1991 runoff is 75% of previous mean
rainfall 80%

027071 Swale at Crakehill 1991

Measuring authority: NRA-Y
First year: 1955

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	44.070	47.040	40.570	15.350	5.802	7.954	4.024	2.997	3.625	7.451	29.990	19.010	**18.812**
(m^3s^{-1}):	Peak	179.00	225.50	146.20	84.08	8.92	35.17	8.37	5.66	14.31	74.56	112.60	113.20	**225.50**
Runoff (mm)		87	84	80	29	11	15	8	6	7	15	57	37	**435**
Rainfall (mm)		86	108	77	54	16	68	31	29	43	79	110	53	**754**

Monthly and yearly statistics for previous record (Nov 1955 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	32.840	28.900	26.260	19.330	13.060	9.477	8.716	12.140	11.570	18.890	23.280	29.360	**19.454**
flows	Low	6.906	5.465	7.465	7.120	4.585	3.739	2.712	1.959	2.082	4.270	7.131	9.007	**11.155**
(m^3s^{-1})	High	56.800	64.050	71.680	46.690	32.370	23.110	21.790	50.310	33.140	53.710	52.200	62.830	**26.045**
Peak flow (m^3s^{-1})		230.70	192.90	255.70	183.30	165.90	129.80	136.50	199.80	175.10	232.70	197.90	207.50	**255.70**
Runoff (mm)		65	52	52	37	26	18	17	24	22	37	44	58	**450**
Rainfall (mm)		85	62	66	56	58	62	67	84	71	75	78	87	**851**

Factors affecting runoff: N
Station type: C VA

1991 runoff is 97% of previous mean
rainfall 89%

028015 Idle at Mattersey 1991

Measuring authority: NRA-ST
First year: 1961

Grid reference: 43 (SK) 690 895
Level stn. (m OD): 3.80

Catchment area (sq km): 529.0
Max alt. (m OD): 195

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.209	3.013	3.175	2.366	2.029	1.682	1.072	0.807	0.990	1.452	1.896	1.697	**2.028**
(m^3s^{-1}):	Peak	10.42	6.86	5.54	3.63	3.00	2.16	1.98	1.18	3.80	2.51	3.84	3.69	**10.42**
Runoff (mm)		21	14	16	12	10	8	5	4	5	7	9	9	**121**
Rainfall (mm)		58	41	32	50	15	55	32	7	54	41	47	30	**462**

Monthly and yearly statistics for previous record (Jun 1965 to Dec 1990—incomplete or missing months total 12.4 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.470	4.819	4.439	4.396	3.762	3.072	2.473	2.574	2.462	2.702	2.965	4.020	**3.506**
flows	Low	2.155	2.556	3.227	2.216	1.465	1.274	1.130	0.859	1.080	1.785	1.900	2.649	**2.251**
(m^3s^{-1})	High	6.417	8.714	7.853	6.351	6.624	5.423	6.123	5.805	4.692	4.209	5.257	8.959	**5.180**
Peak flow (m^3s^{-1})		13.31	15.12	14.89	15.01	15.16	18.52	10.28	11.30	6.17	10.52	13.77	14.11	**18.52**
Runoff (mm)		23	22	22	22	19	15	13	13	12	14	15	20	**209**
Rainfall (mm)		60	41	56	58	64	56	48	53	47	56	64	59	**662**

Factors affecting runoff: SR GE
Station type: EM

1991 runoff is 58% of previous mean
rainfall 70%

028018 Dove at Marston on Dove 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	21.000	11.860	15.460	9.305	5.971	5.660	4.256	3.267	2.775	3.220	10.290	18.450	**9.297**
(m^3s^{-1}):	Peak	93.93	34.52	37.13	18.70	12.47	11.07	7.41	4.18	3.66	7.71	42.77	223.40	**223.40**
Runoff (mm)		64	33	47	27	18	17	13	10	8	10	30	56	**332**
Rainfall (mm)		70	46	61	66	9	88	71	26	41	68	87	102	**735**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	22.400	19.970	17.790	14.550	11.590	8.904	7.438	7.578	8.157	10.830	16.280	21.190	**13.865**
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	32.880	55.910	36.570	24.550	22.480	16.280	15.530	14.630	29.350	22.830	31.070	56.460	**19.411**
Peak flow (m^3s^{-1})		191.40	194.60	129.70	121.00	121.40	73.02	77.10	113.60	113.90	132.10	130.80	202.80	**202.80**
Runoff (mm)		68	55	54	43	35	26	23	23	24	33	48	64	**495**
Rainfall (mm)		92	69	78	66	72	76	65	80	79	83	93	95	**948**

Factors affecting runoff: SRPG
Station type: FVVA

1991 runoff is 67% of previous mean
rainfall 78%

028024 Wreake at Syston Mill 1991

Measuring authority: NRA-ST
First year: 1967

Grid reference: 43 (SK) 615 124
Level stn. (m OD): 47.70

Catchment area (sq km): 413.8
Max alt. (m OD): 230

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.696	4.730	3.508	1.156	0.860	0.794	0.757	0.517	0.684	0.674	1.323	1.484	**1.834**
(m^3s^{-1}):	Peak	28.12	26.50	18.75	2.24	2.77	1.95	4.14	0.78	5.62	2.61	4.27	9.23	**28.12**
Runoff (mm)		37	28	23	7	6	5	5	3	4	4	8	10	**140**
Rainfall (mm)		64	43	31	50	13	70	51	21	80	33	45	29	**530**

Monthly and yearly statistics for previous record (Aug 1967 to Dec 1990—incomplete or missing months total 1.6 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	5.623	6.058	4.807	3.556	2.133	1.151	0.907	0.828	0.757	1.346	2.349	4.280	**2.801**
flows	Low	0.959	0.619	0.494	0.358	0.286	0.222	0.137	0.122	0.254	0.264	0.418	0.745	**0.923**
(m^3s^{-1})	High	10.150	21.740	12.630	8.772	8.117	2.776	4.547	3.230	5.367	6.897	7.087	11.850	**4.396**
Peak flow (m^3s^{-1})		43.11	73.37	99.82	97.07	51.83	39.17	26.88	30.44	21.61	31.68	50.25	52.95	**99.82**
Runoff (mm)		36	36	31	22	14	7	6	5	5	9	15	28	**214**
Rainfall (mm)*		54	46	53	47	51	60	45	59	50	53	50	58	**626**

*(1971-1990)

Factors affecting runoff: GE
Station type: EM

1991 runoff is 65% of previous mean
rainfall 85%

028026 Anker at Polesworth 1991

Measuring authority: NRA-ST
First year: 1966

Grid reference: 43 (SK) 263 034
Level stn. (m OD): 60.40

Catchment area (sq km): 368.0
Max alt. (m OD): 278

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.921	3.519	3.649	2.318	1.552	1.308	1.571	0.913	1.261	1.029	1.982	1.423	**2.283**
(m^3s^{-1}):	Peak	36.65	8.72	9.73	15.27	7.41	4.22	11.83	3.06	11.49	6.48	6.86	3.44	**36.65**
Runoff (mm)		50	23	27	16	11	9	11	7	9	7	14	10	**196**
Rainfall (mm)		68	35	42	68	11	67	84	19	71	45	44	20	**574**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1990—incomplete or missing months total 2.6 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	5.170	5.477	4.236	2.874	2.307	1.796	1.332	1.366	1.234	1.882	2.516	4.156	**2.851**
flows	Low	1.298	0.953	0.650	0.657	0.686	0.484	0.343	0.405	0.711	0.728	0.855	1.175	**1.213**
(m^3s^{-1})	High	9.572	16.200	9.233	6.629	8.389	4.650	5.580	4.173	3.274	4.611	5.537	9.473	**3.724**
Peak flow (m^3s^{-1})		75.63	73.18	56.09	45.84	59.77	52.68	59.34	45.03	31.34	36.25	45.77	74.01	**75.63**
Runoff (mm)		38	36	31	20	17	13	10	10	9	14	18	30	**244**
Rainfall (mm)*		58	53	55	43	51	62	45	56	57	55	51	63	**649**

*(1971-1990)

Factors affecting runoff: GE
Station type: C VA

1991 runoff is 80% of previous mean
rainfall 88%

028031 Manifold at Ilam 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.455	3.265	4.119	2.278	1.114	1.086	0.781	0.574	0.462	0.716	3.728	6.231	**2.484**
(m^3s^{-1}):	Peak	33.41	17.02	12.24	6.00	2.77	3.30	1.15	0.78	0.58	11.67	22.36	160.50	**160.50**
Runoff (mm)		98	53	74	40	20	19	14	10	8	13	65	112	**528**
Rainfall (mm)		78	53	69	71	11	102	75	30	45	84	100	125	**843**

Monthly and yearly statistics for previous record (May 1968 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	6.224	5.197	5.003	3.720	2.406	1.890	1.535	1.810	1.770	3.011	4.898	5.321	**3.558**
flows	Low	2.561	2.489	2.528	1.277	0.812	0.745	0.493	0.386	0.458	0.716	1.555	2.135	**2.241**
(m^3s^{-1})	High	8.522	12.710	9.455	6.200	5.713	5.150	3.505	4.560	4.147	6.697	8.198	9.995	**4.806**
Peak flow (m^3s^{-1})		80.13	74.53	66.72	47.36	52.40	39.58	37.29	137.00	45.69	75.78	91.61	66.25	**137.00**
Runoff (mm)		112	85	90	65	43	33	28	33	31	54	85	96	**756**
Rainfall (mm)*		122	85	98	74	73	82	71	79	84	99	115	112	**1094**

*(1969-1990)

Factors affecting runoff: P E
Station type: C

1991 runoff is 70% of previous mean
rainfall 77%

028039 Rea at Calthorpe Park 1991

Measuring authority: NRA-ST
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): 291

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.533	0.868	1.008	0.819	0.380	0.491	0.776	0.287	0.505	0.483	0.753	0.380	**0.689**
(m^3s^{-1}):	Peak	22.41	3.67	8.35	11.97	1.37	7.63	23.38	4.18	14.36	16.71	11.30	3.52	**23.38**
Runoff (mm)		55	28	36	29	14	17	28	10	18	17	26	14	**294**
Rainfall (mm)		88	39	66	76	12	68	100	21	72	53	65	15	**675**

Monthly and yearly statistics for previous record (May 1967 to Dec 1990—incomplete or missing months total 1.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.183	1.071	1.021	0.801	0.730	0.662	0.519	0.639	0.608	0.683	0.848	1.109	**0.822**
flows	Low	0.483	0.549	0.475	0.316	0.319	0.287	0.257	0.356	0.295	0.320	0.493	0.490	**0.602**
(m^3s^{-1})	High	1.985	2.610	2.101	1.489	1.780	1.324	1.018	1.366	1.423	1.408	1.753	1.934	**1.058**
Peak flow (m^3s^{-1})		36.71	27.44	28.64	25.15	30.37	37.44	46.86	46.38	40.85	24.68	24.97	54.02	**54.02**
Runoff (mm)		43	35	37	28	26	23	19	23	21	25	30	40	**351**
Rainfall (mm)*		77	61	66	56	64	64	55	72	66	64	70	79	**794**

*(1968-1990)

Factors affecting runoff: E
Station type: CVA

1991 runoff is 84% of previous mean
rainfall 85%

028052 Sow at Great Bridgford 1991

Measuring authority: NRA-ST
First year: 1971
Grid reference: 33 (SJ) 883 270
Level stn. (m OD): 77.10
Catchment area (sq km): 163.0
Max alt. (m OD): 168

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.822	0.890	1.305	0.757	0.575	0.555	0.424	0.350	0.277	0.317	0.564	0.771	**0.718**
(m^3s^{-1}):	Peak	7.83	1.94	3.38	2.25	0.98	1.16	0.95	0.61	0.42	0.55	2.05	6.73	**7.83**
Runoff (mm)		30	13	21	12	9	9	7	6	4	5	9	13	**139**
Rainfall (mm)		60	29	54	55	10	78	76	27	41	48	67	54	**599**

Monthly and yearly statistics for previous record (Jun 1971 to Dec 1990—incomplete or missing months total 2.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.871	1.957	1.649	1.269	0.914	0.781	0.605	0.765	0.558	0.851	1.028	1.579	**1.149**
flows	Low	0.753	0.789	0.832	0.520	0.474	0.315	0.174	0.138	0.328	0.334	0.379	0.524	**0.711**
(m^3s^{-1})	High	2.715	4.607	3.448	2.258	1.925	1.426	1.388	3.047	0.818	1.731	2.030	2.561	**1.593**
Peak flow (m^3s^{-1})		11.07	18.82	9.21	9.86	18.05	9.78	10.89	15.11	3.51	9.54	7.20	12.72	**18.82**
Runoff (mm)		31	29	27	20	15	12	10	13	9	14	16	26	**223**
Rainfall (mm)		71	58	64	46	58	63	52	60	72	67	69	72	**752**

Factors affecting runoff: G
Station type: FVVA

1991 runoff is 62% of previous mean
rainfall 80%

028067 Derwent at Church Wilne 1991

Measuring authority: NRA-ST
First year: 1973
Grid reference: 43 (SK) 438 316
Level stn. (m OD): 31.00
Catchment area (sq km): 1177.5
Max alt. (m OD): 636

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	35.270	17.930	22.600	14.960	8.603	7.861	6.586	5.040	5.232	5.158	12.510	23.090	**13.742**
(m^3s^{-1}):	Peak	120.70	47.12	37.83	26.80	17.33	15.97	18.05	7.18	15.09	17.66	27.18	197.30	**197.30**
Runoff (mm)		80	37	51	33	20	17	15	11	12	12	28	53	**368**
Rainfall (mm)		81	57	64	69	12	89	68	25	45	75	100	111	**796**

Monthly and yearly statistics for previous record (May 1973 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	34.080	32.970	29.680	22.360	14.400	11.540	8.891	8.278	8.337	13.760	18.890	27.530	**19.166**
flows	Low	13.270	13.050	10.210	7.891	6.652	5.411	4.445	3.965	4.429	4.933	5.152	9.272	**10.267**
(m^3s^{-1})	High	52.530	81.270	59.290	40.240	28.060	23.060	22.050	16.600	14.200	31.970	35.860	46.890	**25.542**
Peak flow (m^3s^{-1})		194.10	215.70	173.60	158.40	142.20	118.70	156.20	153.60	71.96	146.50	94.65	214.70	**215.70**
Runoff (mm)		78	68	68	49	33	25	20	19	18	31	42	63	**514**
Rainfall (mm)		112	80	94	63	65	77	60	75	80	97	91	110	**1004**

Factors affecting runoff: S P EI
Station type: FV

1991 runoff is 72% of previous mean
rainfall 79%

028080 Tame at Lea Marston Lakes 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	20.780	13.110	15.840	12.870	9.390	10.290	12.070	8.746	10.360	9.352	13.200	9.168	**12.094**
(m^3s^{-1}):	Peak	89.68	31.50	47.84	70.65	22.48	39.26	76.12	21.84	69.45	57.59	53.83	25.03	**89.68**
Runoff (mm)		70	40	53	42	31	33	40	29	34	31	43	31	**477**
Rainfall (mm)		77	34	55	72	12	68	95	21	71	48	58	17	**628**

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	17.710	17.230	15.500	13.880	12.410	11.430	10.310	10.950	11.000	12.060	14.130	16.750	**13.597**
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	26.700	35.140	26.590	22.000	24.690	18.990	17.210	16.970	19.440	25.600	27.880	32.880	**17.355**
Peak flow (m^3s^{-1})		122.20	133.40	86.27	110.80	121.60	159.70	94.78	153.20	92.33	76.24	127.60	219.20	**219.20**
Runoff (mm)		59	53	52	45	42	37	35	37	36	40	46	56	**537**
Rainfall (mm)		66	51	55	53	58	59	55	70	61	61	64	73	**726**

Factors affecting runoff: EI
Station type: C

1991 runoff is 89% of previous mean
rainfall 87%

028082 Soar at Littlethorpe 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.854	1.660	1.555	0.996	0.743	0.580	0.628	0.366	0.419	0.425	0.756	0.554	**0.959**
(m^3s^{-1}):	Peak	16.32	4.49	4.06	5.27	3.07	1.41	3.73	1.07	3.17	2.17	5.56	1.10	**16.32**
Runoff (mm)		42	22	23	14	11	8	9	5	6	6	11	8	**164**
Rainfall (mm)		71	36	37	69	13	70	87	19	72	44	41	19	**578**

Monthly and yearly statistics for previous record (Aug 1971 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.663	2.696	2.307	1.565	1.041	0.937	0.531	0.666	0.541	0.888	1.257	2.317	**1.445**
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})		23.49	24.47	20.78	21.18	14.93	15.78	13.71	20.41	15.94	19.81	16.59	22.46	**24.47**
Runoff (mm)		39	36	34	22	15	13	8	10	8	13	18	34	**248**
Rainfall (mm)*		55	47	52	43	52	64	44	59	50	54	51	64	**635**

*(1972-1990)

Factors affecting runoff: E
Station type: EM

1991 runoff is 66% of previous mean
rainfall 91%

029003 Lud at Louth 1991

Measuring authority: NRA-A
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): 149

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.184	0.213	0.242	0.225	0.205	0.186	0.168	0.155	0.166	0.154	0.152	0.153	**0.183**
(m^3s^{-1}):	Peak													
Runoff (mm)		9	9	12	11	10	9	8	8	8	7	7	7	**105**
Rainfall (mm)		42	52	35	43	12	52	22	6	81	32	53	34	**464**

Monthly and yearly statistics for previous record (Aug 1968 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.624	0.790	0.751	0.692	0.562	0.435	0.336	0.281	0.240	0.248	0.308	0.398	**0.470**
flows	Low	0.139	0.157	0.162	0.150	0.156	0.131	0.112	0.102	0.112	0.127	0.125	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	35	36	33	27	20	16	14	11	12	14	19	**269**
Rainfall (mm)		66	47	63	51	54	58	49	60	52	57	66	65	**688**

Factors affecting runoff: G
Station type: C

1991 runoff is 39% of previous mean
rainfall 67%

030004 Partney Lymn at Partney Mill 1991

Measuring authority: NRA-A
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.428	0.435	0.410	0.220	0.192	0.161	0.115	0.083	0.119	0.134	0.190	0.217	**0.224**
(m^3s^{-1}):	Peak	1.74	2.79	1.09	0.43	0.37	0.25	0.21	0.13	0.92	0.23	0.35	1.00	**2.79**
Runoff (mm)		19	17	18	9	8	7	5	4	5	6	8	9	**115**
Rainfall (mm)		51	41	32	38	13	64	28	7	83	27	52	34	**470**

Monthly and yearly statistics for previous record (Jun 1962 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.838	0.767	0.712	0.612	0.451	0.321	0.270	0.282	0.278	0.386	0.534	0.705	**0.512**
flows	Low	0.351	0.300	0.276	0.222	0.196	0.116	0.088	0.107	0.121	0.157	0.193	0.210	**0.251**
(m^3s^{-1})	High	1.574	1.838	1.538	1.518	0.886	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	11.30	8.13	13.38	7.06	6.64	8.07	10.17	8.48	**13.38**
Runoff (mm)		36	30	31	26	20	14	12	12	12	17	22	31	**262**
Rainfall (mm)		61	47	60	53	56	58	52	65	51	53	68	63	**687**

Factors affecting runoff: P I
Station type: C

1991 runoff is 44% of previous mean
rainfall 68%

030012 Stainfield Beck at Stainfield 1991

Measuring authority: NRA-A
First year: 1970

Grid reference: 53 (TF) 127 739
Level stn. (m OD): 7.70

Catchment area (sq km): 37.4
Max alt. (m OD): 134

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.093	0.178	0.242	0.081	0.047	0.021	0.010	0.004	0.007	0.009	0.018	0.024	**0.061**
(m^3s^{-1}):	Peak	0.40	2.10	0.68	0.15	0.10	0.04	0.03	0.01	0.08	0.03	0.04	0.17	**2.10**
Runoff (mm)		7	12	17	6	3	1	1	0	0	1	1	2	**51**
Rainfall (mm)		40	47	33	36	12	60	22	8	73	32	44	31	**438**

Monthly and yearly statistics for previous record (Dec 1970 to Dec 1990—incomplete or missing months total 0.7 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.580	0.574	0.488	0.280	0.179	0.090	0.073	0.047	0.048	0.137	0.203	0.402	**0.257**
flows	Low	0.163	0.114	0.077	0.050	0.032	0.019	0.006	0.006	0.008	0.011	0.017	0.027	**0.100**
(m^3s^{-1})	High	1.050	1.521	1.078	0.838	0.496	0.202	0.523	0.161	0.197	0.780	0.729	1.084	**0.414**
Peak flow (m^3s^{-1})		21.53	11.04	10.00	12.42	8.58	4.23	17.57	5.91	3.93	12.33	6.41	7.49	**21.53**
Runoff (mm)		42	38	35	19	13	6	5	3	3	10	14	29	**217**
Rainfall (mm)		60	44	59	46	50	54	44	55	47	52	55	58	**624**

Factors affecting runoff: I
Station type: CC

1991 runoff is 24% of previous mean
rainfall 70%

031010 Chater at Fosters Bridge 1991

Measuring authority: NRA-A
First year: 1968

Grid reference: 43 (SK) 961 030
Level stn. (m OD): 38.40

Catchment area (sq km): 68.9
Max alt. (m OD): 230

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.530	0.537	0.544	0.183	0.131	0.107	0.074	0.059	0.086	0.083	0.198	0.165	**0.223**
(m^3s^{-1}):	Peak	5.23	6.11	1.83	0.37	0.33	0.18	0.11	0.10	0.89	0.29	1.21	0.86	**6.11**
Runoff (mm)		21	19	21	7	5	4	3	2	3	3	7	6	**102**
Rainfall (mm)		63	47	32	54	11	72	30	24	86	31	54	24	**528**

Monthly and yearly statistics for previous record (Feb 1968 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.959	0.978	0.851	0.661	0.453	0.291	0.196	0.185	0.174	0.300	0.428	0.728	**0.515**
flows	Low	0.147	0.106	0.090	0.065	0.051	0.033	0.024	0.044	0.061	0.048	0.073	0.097	**0.198**
(m^3s^{-1})	High	1.724	3.094	1.677	1.670	1.471	0.717	0.867	0.818	0.997	1.018	1.208	1.468	**0.828**
Peak flow (m^3s^{-1})		15.99	16.06	15.77	15.07	16.44	11.78	20.64	20.76	4.25	6.83	12.48	11.00	**20.76**
Runoff (mm)		37	35	33	25	18	11	8	7	7	12	16	28	**236**
Rainfall (mm)		58	46	54	51	54	58	52	64	49	52	58	59	**655**

Factors affecting runoff: N
Station type: CC

1991 runoff is 43% of previous mean
rainfall 81%

031021 Welland at Ashley 1991

Measuring authority: NRA-A
First year: 1970

Grid reference: 42 (SP) 819 915
Level stn. (m OD): 55.70

Catchment area (sq km): 250.7
Max alt. (m OD): 210

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.047	1.726	1.526	0.545	0.408	0.316	0.214	0.150	0.182	0.166	0.798	0.457	**0.706**
(m^3s^{-1}):	Peak	19.24	14.59	4.74	5.04	2.22	1.01	0.78	0.59	1.38	1.54	9.31	2.09	**19.24**
Runoff (mm)		22	17	16	6	4	3	2	2	2	2	8	5	**89**
Rainfall (mm)		64	41	32	60	12	81	62	24	74	39	54	22	**565**

Monthly and yearly statistics for previous record (Oct 1970 to Dec 1990—incomplete or missing months total 2.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.481	2.499	2.448	1.656	0.820	0.479	0.330	0.479	0.283	0.513	0.954	2.071	**1.246**
flows	Low	0.370	0.301	0.228	0.174	0.180	0.130	0.095	0.114	0.109	0.151	0.187	0.284	**0.691**
(m^3s^{-1})	High	3.886	5.844	5.431	4.131	2.560	1.330	1.205	3.202	0.707	2.406	3.274	4.472	**2.235**
Peak flow (m^3s^{-1})		23.58	39.61	28.41	39.26	25.50	17.58	15.87	35.82	8.06	23.60	23.77	36.17	**39.61**
Runoff (mm)		27	24	26	17	9	5	4	5	3	5	10	22	**157**
Rainfall (mm)		57	43	54	46	52	61	48	62	49	57	56	60	**645**

Factors affecting runoff: EI
Station type: C VA

1991 runoff is 57% of previous mean
rainfall 88%

032003 Harpers Brook at Old Mill Bridge 1991

Measuring authority: NRA-A
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.334	0.489	0.423	0.155	0.123	0.117	0.089	0.075	0.085	0.074	0.191	0.117	**0.187**
(m^3s^{-1}):	Peak	3.01	7.98	1.66	0.74	0.41	0.35	0.30	0.18	0.44	0.26	2.74	0.28	**7.98**
Runoff (mm)		12	16	15	5	4	4	3	3	3	3	7	4	**80**
Rainfall (mm)		57	50	30	54	11	76	45	19	65	29	63	20	**519**

Monthly and yearly statistics for previous record (Dec 1938 to Dec 1990—incomplete or missing months total 0.6 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.778	0.807	0.708	0.493	0.307	0.198	0.145	0.152	0.142	0.213	0.419	0.582	**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	1.176	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	16.58	11.74	17.90	**22.00**
Runoff (mm)		28	26	26	17	11	7	5	5	5	8	15	21	**174**
Rainfall (mm)		58	42	48	45	51	52	52	62	49	53	60	57	**629**

Factors affecting runoff: N
Station type: CC

1991 runoff is 46% of previous mean
rainfall 83%

033006 Wissey at Northwold 1991

Measuring authority: NRA-A
First year: 1956

Grid reference: 52 (TL) 771 965
Level stn. (m OD): 5.30

Catchment area (sq km): 274.5
Max alt. (m OD): 95

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.969	1.244	1.344	1.014	0.766	0.689	0.499	0.292	0.228	0.242	0.419	0.536	**0.683**
(m^3s^{-1}):	Peak	1.49	2.14	2.08	1.54	1.21	1.71	0.73	0.45	0.57	0.45	1.06	1.29	**2.14**
Runoff (mm)		9	11	13	10	7	7	5	3	2	2	4	5	**79**
Rainfall (mm)		40	42	32	51	10	97	26	26	56	28	60	32	**500**

Monthly and yearly statistics for previous record (Mar 1956 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.959	3.042	2.747	2.457	1.867	1.382	1.118	0.938	0.896	1.100	1.607	2.303	**1.862**
flows	Low	1.260	1.315	1.295	1.188	0.911	0.579	0.319	0.264	0.235	0.277	0.421	0.609	**1.006**
(m^3s^{-1})	High	5.422	5.288	4.702	4.586	3.833	2.592	2.234	2.229	2.481	3.243	4.569	4.768	**2.760**
Peak flow (m^3s^{-1})		9.31	11.29	12.23	8.47	5.81	3.50	3.39	4.00	4.06	7.15	13.30	8.72	**13.30**
Runoff (mm)		29	27	27	23	18	13	11	9	8	11	15	22	**214**
Rainfall (mm)		58	41	47	45	47	56	59	58	54	57	66	62	**650**

Factors affecting runoff: PGEI
Station type: FL

1991 runoff is 37% of previous mean
rainfall 77%

033012 Kym at Meagre Farm 1991

Measuring authority: NRA-A
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.130	0.397	0.417	0.079	0.077	0.075	0.044	0.034	0.037	0.037	0.105	0.058	**0.123**
(m^3s^{-1}):	Peak	0.57	9.45	2.13	0.49	0.44	0.20	0.18	0.18	0.17	0.14	0.71	0.10	**9.45**
Runoff (mm)		3	7	8	1	2	1	1	1	1	1	2	1	**28**
Rainfall (mm)		48	48	33	47	14	76	63	14	61	23	55	14	**496**

Monthly and yearly statistics for previous record (May 1960 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.364	1.392	1.153	0.800	0.360	0.228	0.134	0.101	0.053	0.394	0.614	0.981	**0.628**
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	2.107	1.469	1.489	2.438	1.096	0.158	3.515	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	2.10	25.91	34.71	33.98	**34.71**
Runoff (mm)		27	25	22	15	7	4	3	2	1	8	12	19	**144**
Rainfall (mm)		49	39	46	49	51	57	49	55	46	52	53	56	**602**

Factors affecting runoff: EI
Station type: CB

1991 runoff is 20% of previous mean
rainfall 82%

033024 Cam at Dernford 1991

Measuring authority: NRA-A
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.363	0.486	0.446	0.432	0.403	0.402	0.291	0.248	0.220	0.217	0.271	0.233	**0.333**
(m^3s^{-1}):	Peak	0.62		2.23	1.07	0.76	0.98	0.53	0.44	0.37	0.27		0.30	
Runoff (mm)		5	6	6	6	5	5	4	3	3	3	4	3	**53**
Rainfall (mm)		48	36	34	50	17	85	45	29	42	20	63	13	**482**

Monthly and yearly statistics for previous record (Mar 1949 to Dec 1990—incomplete or missing months total 1.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.446	1.501	1.359	1.201	0.982	0.780	0.631	0.598	0.570	0.746	0.936	1.159	**0.990**
flows	Low	0.449	0.400	0.562	0.465	0.408	0.318	0.184	0.248	0.155	0.313	0.312	0.313	**0.416**
(m^3s^{-1})	High	3.592	2.703	2.608	2.431	2.144	1.338	1.608	1.542	1.965	2.970	2.790	3.492	**1.506**
Peak flow (m^3s^{-1})		13.30	14.09	10.22	9.94	13.63	6.94	5.28	10.70	10.99	12.70	12.50	12.06	**14.09**
Runoff (mm)		20	18	18	16	13	10	9	8	7	10	12	16	**158**
Rainfall (mm)*		50	39	43	41	46	49	53	58	52	54	57	55	**597**

*(1950-1990)

Factors affecting runoff: GEI
Station type: TP

1991 runoff is 34% of previous mean
rainfall 81%

033027 Rhee at Wimpole 1991

Measuring authority: NRA-A
First year: 1965
Grid reference: 52 (TL) 333 485
Level stn. (m OD): 17.90
Catchment area (sq km): 119.1
Max alt. (m OD): 168

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.145	0.180	0.220	0.138	0.137	0.102	0.088	0.073	0.056	0.053	0.097	0.069	**0.113**
(m^3s^{-1}):	Peak	0.30	0.98	0.64	0.36	0.29	0.17	0.13	0.13	0.13	0.12	0.37	0.08	**0.98**
Runoff (mm)		3	4	5	3	3	2	2	2	1	1	2	2	**30**
Rainfall (mm)		41	37	26	48	16	78	56	29	74	20	57	10	**492**

Monthly and yearly statistics for previous record (Jul 1965 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.898	1.002	0.827	0.768	0.556	0.363	0.220	0.188	0.189	0.312	0.422	0.611	**0.527**
flows	Low	0.088	0.092	0.089	0.099	0.067	0.041	0.022	0.014	0.040	0.053	0.058	0.065	**0.079**
(m^3s^{-1})	High	2.687	1.911	2.077	2.074	1.579	0.935	0.434	0.586	1.090	1.751	1.798	1.718	**0.945**
Peak flow (m^3s^{-1})		8.79	6.00	5.29	5.19	8.87	4.55	1.11	5.72	3.00	6.38	7.13	7.11	**8.87**
Runoff (mm)		20	21	19	17	12	8	5	4	4	7	9	14	**140**
Rainfall (mm)		47	35	43	44	50	51	48	52	48	52	52	53	**575**

Factors affecting runoff: GEI
Station type: FL

1991 runoff is 21% of previous mean
rainfall 86%

033032 Heacham at Heacham 1991

Measuring authority: NRA-A
First year: 1965
Grid reference: 53 (TF) 685 375
Level stn. (m OD): 9.40
Catchment area (sq km): 59.0
Max alt. (m OD): 88

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.052	0.082	0.089	0.097	0.090	0.079	0.059	0.044	0.030	0.025	0.022	0.018	**0.057**
(m^3s^{-1}):	Peak	0.08	0.11	0.10	0.13	0.13	0.13	0.07	0.06	0.07	0.04	0.04	0.03	**0.13**
Runoff (mm)		2	3	4	4	4	3	3	2	1	1	1	1	**30**
Rainfall (mm)		52	37	24	50	11	78	20	16	64	31	58	34	**475**

Monthly and yearly statistics for previous record (Nov 1965 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.229	0.314	0.320	0.304	0.266	0.222	0.174	0.144	0.125	0.119	0.121	0.163	**0.208**
flows	Low	0.058	0.067	0.071	0.072	0.068	0.060	0.043	0.034	0.033	0.035	0.039	0.030	**0.063**
(m^3s^{-1})	High	0.435	0.671	0.671	0.776	0.636	0.441	0.300	0.256	0.371	0.399	0.319	0.327	**0.331**
Peak flow (m^3s^{-1})		0.70	0.95	1.04	1.11	0.82	0.90	0.68	1.21	0.52	0.53	0.47	0.45	**1.21**
Runoff (mm)		10	13	15	13	12	10	8	7	6	5	5	7	**111**
Rainfall (mm)		59	43	52	48	58	56	57	63	55	56	72	63	**682**

Factors affecting runoff: G I
Station type: C

1991 runoff is 27% of previous mean
rainfall 70%

034003 Bure at Ingworth 1991

Measuring authority: NRA-A
First year: 1959
Grid reference: 63 (TG) 192 296
Level stn. (m OD): 12.20
Catchment area (sq km): 164.7
Max alt. (m OD): 101

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.129	0.974	0.909	0.747	0.637	0.632	0.545	0.472	0.563	0.649	0.962	0.827	**0.752**
(m^3s^{-1}):	Peak	1.96	1.61	1.24	1.12	0.75	0.90	0.67	0.94	1.80	1.39	2.96	1.76	**2.96**
Runoff (mm)		18	14	15	12	10	10	9	8	9	11	15	13	**144**
Rainfall (mm)		47	31	27	42	7	71	16	33	68	51	76	37	**506**

Monthly and yearly statistics for previous record (Jun 1959 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.549	1.461	1.299	1.217	0.984	0.800	0.780	0.801	0.845	0.998	1.216	1.383	**1.109**
flows	Low	0.844	0.844	0.779	0.688	0.600	0.495	0.493	0.497	0.548	0.670	0.688	0.925	**0.798**
(m^3s^{-1})	High	2.450	2.954	2.115	2.322	1.639	1.168	1.158	1.955	1.823	2.428	2.024	2.560	**1.488**
Peak flow (m^3s^{-1})		8.27	10.65	6.45	18.30	6.07	3.79	3.47	12.82	9.26	10.17	10.05	9.63	**18.30**
Runoff (mm)		25	22	21	19	16	13	13	13	13	16	19	22	**213**
Rainfall (mm)		61	42	50	49	47	50	58	59	55	62	72	66	**671**

Factors affecting runoff: G I
Station type: MIS

1991 runoff is 68% of previous mean
rainfall 75%

034004 Wensum at Costessey Mill 1991

Measuring authority: NRA-A
First year: 1960

Grid reference: 63 (TG) 177 128
Level stn. (m OD): 5.20

Catchment area (sq km): 536.1
Max alt. (m OD): 94

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.752	3.607	3.161	2.301	1.594	1.362	0.786	0.516	0.865	1.210	2.063	1.823	**1.909**
(m^3s^{-1}):	Peak													
Runoff (mm)		19	16	16	11	8	7	4	3	4	6	10	9	**112**
Rainfall (mm)		48	38	28	49	9	83	19	23	59	41	71	35	**503**

Monthly and yearly statistics for previous record (Feb 1960 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	6.794	6.371	5.341	4.689	3.555	2.590	2.287	2.231	2.540	3.331	4.288	5.511	**4.117**
flows	Low	2.416	2.442	2.528	2.062	1.659	1.131	0.793	0.791	1.123	1.615	1.915	2.718	**2.297**
(m^3s^{-1})	High	11.270	15.960	10.740	8.923	6.699	4.219	3.871	6.131	7.690	11.060	9.311	11.150	**5.766**
Peak flow (m^3s^{-1})		34.00	29.20	22.32	21.28	27.20	10.33	7.83	24.00	20.13	21.99	21.74	24.44	**34.00**
Runoff (mm)		34	29	27	23	18	13	11	11	12	17	21	28	**242**
Rainfall (mm)		60	43	50	49	48	53	57	60	56	61	73	64	**674**

Factors affecting runoff: G I
Station type: CB

1991 runoff is 46% of previous mean
rainfall 75%

035008 Gipping at Stowmarket 1991

Measuring authority: NRA-A
First year: 1964

Grid reference: 62 (TM) 058 578
Level stn. (m OD): 25.10

Catchment area (sq km): 128.9
Max alt. (m OD): 98

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.272	0.883	0.402	0.157	0.199	0.151	0.106	0.081	0.088	0.092	0.146	0.144	**0.223**
(m^3s^{-1}):	Peak	0.64	3.42	1.55	0.79	1.44	0.470	1.061	0.41	0.92	0.33	0.90	0.43	**3.42**
Runoff (mm)		6	17	8	3	4	3	2	2	2	2	3	3	**54**
Rainfall (mm)		32	44	26	44	23	81	37	20	47	21	57	26	**458**

Monthly and yearly statistics for previous record (Apr 1964 to Dec 1990—incomplete or missing months total 1.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.486	1.194	0.953	0.671	0.378	0.242	0.148	0.182	0.228	0.397	0.656	0.901	**0.617**
flows	Low	0.161	0.125	0.159	0.156	0.119	0.083	0.072	0.069	0.072	0.095	0.101	0.131	**0.149**
(m^3s^{-1})	High	4.383	3.527	2.626	2.012	1.244	1.616	0.501	1.490	1.880	3.251	3.433	2.033	**1.043**
Peak flow (m^3s^{-1})		28.13	34.39	18.60	19.30	20.18	7.98	6.22	23.77	24.19	24.23	19.74	25.54	**34.39**
Runoff (mm)		31	23	20	14	8	5	3	4	5	8	13	19	**151**
Rainfall (mm)*		52	37	43	41	45	48	47	48	49	54	60	54	**578**

*(1965-1990)

Factors affecting runoff: G I
Station type: CC

1991 runoff is 36% of previous mean
rainfall 79%

037001 Roding at Redbridge 1991

Measuring authority: NRA-T
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.075	2.668	1.918	0.711	0.806	0.859	0.501	0.279	0.448	0.283	0.648	0.392	**0.955**
(m^3s^{-1}):	Peak	12.00	10.40	10.50	5.62	4.42	6.86	4.38	1.13	4.80	0.96	7.09	1.24	**12.00**
Runoff (mm)		18	21	17	6	7	7	4	2	4	3	6	3	**99**
Rainfall (mm)		66	39	34	56	23	96	50	21	53	17	53	16	**524**

Monthly and yearly statistics for previous record (Feb 1950 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.803	3.503	2.744	1.932	1.190	0.833	0.627	0.664	0.816	1.388	2.110	2.872	**1.866**
flows	Low	0.675	0.608	0.537	0.482	0.280	0.226	0.202	0.224	0.197	0.283	0.364	0.412	**0.801**
(m^3s^{-1})	High	10.920	10.670	6.862	6.768	4.045	2.953	1.975	3.925	4.009	7.883	10.340	9.455	**2.809**
Peak flow (m^3s^{-1})		42.00	40.10	38.10	27.70	32.70	21.70	24.50	31.30	25.60	35.60	62.40	36.40	**62.40**
Runoff (mm)		34	28	24	17	11	7	6	6	7	12	18	25	**194**
Rainfall (mm)		53	42	46	43	48	51	52	57	56	57	61	57	**623**

Factors affecting runoff: S EI
Station type: EW

1991 runoff is 51% of previous mean
rainfall 84%

037005 Colne at Lexden 1991

Measuring authority: NRA-A
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.721	1.036	0.746	0.473	0.439	0.452	0.370	0.306	0.242	0.295	0.501	0.399	**0.495**
(m^3s^{-1}):	Peak	1.37	2.38	1.18	1.02	1.10	0.78	0.78	0.76	1.06	0.52	1.94	0.64	**2.38**
Runoff (mm)		8	11	8	5	5	5	4	3	3	3	5	4	**66**
Rainfall (mm)		41	40	25	46	20	85	44	25	52	18	59	17	**472**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.057	1.814	1.653	1.228	0.780	0.496	0.370	0.358	0.388	0.750	1.126	1.484	**1.039**
flows	Low	0.460	0.346	0.380	0.358	0.229	0.146	0.100	0.088	0.175	0.188	0.288	0.352	**0.362**
(m^3s^{-1})	High	6.543	4.684	3.556	3.344	2.353	1.528	0.907	1.558	1.099	4.838	5.521	4.200	**1.732**
Peak flow (m^3s^{-1})		21.13	22.65	20.68	13.34	12.56	8.07	6.41	8.86	10.50	24.80	21.29	20.58	**24.80**
Runoff (mm)		23	19	19	13	9	5	4	4	4	8	12	17	**138**
Rainfall (mm)		49	34	44	43	43	48	47	49	49	54	57	54	**571**

Factors affecting runoff: RP I
Station type: FL

1991 runoff is 48% of previous mean
rainfall 83%

037010 Blackwater at Appleford Bridge 1991

Measuring authority: NRA-A | Grid reference: 52 (TL) 845 158 | Catchment area (sq km): 247.3
First year: 1962 | Level stn. (m OD): 14.60 | Max alt. (m OD): 127

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.327	1.615	1.284	1.580	1.637	1.776	0.996	0.461	0.416	0.674	1.143	1.095	**1.163**
(m^3s^{-1}):	Peak	2.46	3.94	2.20	2.74	2.36	2.30	1.97	1.10	0.86	0.93	2.67	1.58	**3.94**
Runoff (mm)		14	16	14	17	18	19	11	5	4	7	12	12	**148**
Rainfall (mm)		47	37	26	49	19	88	44	27	54	17	59	17	**484**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.142	1.971	1.895	1.472	1.012	0.774	0.567	0.518	0.532	0.821	1.186	1.646	**1.208**
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	7.181	4.889	3.583	3.843	2.860	1.750	1.359	1.738	1.651	4.955	4.676	4.307	**1.659**
Peak flow (m^3s^{-1})		26.80	21.60	20.00	12.31	17.80	7.75	4.10	13.75	15.25	26.08	20.20	21.60	**26.80**
Runoff (mm)		23	19	21	15	11	8	6	6	6	9	12	18	**154**
Rainfall (mm)		49	35	47	44	46	52	46	50	48	50	57	52	**576**

Factors affecting runoff: RP I | 1991 runoff is 96% of previous mean
Station type: FL | rainfall 84%

038018 Upper Lee at Water Hall 1991

Measuring authority: NRA-T | Grid reference: 52 (TL) 299 099 | Catchment area (sq km): 150.0
First year: 1971 | Level stn. (m OD): 43.60 | Max alt. (m OD): 229

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.078	0.879	0.858	0.763	0.700	0.867	0.840	0.649	0.636	0.588	0.779	0.581	**0.767**
(m^3s^{-1}):	Peak	3.34	2.73	1.53	3.11	1.85	2.02	1.98	1.68	2.31	0.89	2.61	1.03	**3.34**
Runoff (mm)		19	14	15	13	13	15	15	12	11	11	13	10	**161**
Rainfall (mm)		70	46	27	68	15	99	68	32	65	26	61	16	**593**

Monthly and yearly statistics for previous record (Oct 1971 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.531	1.645	1.668	1.588	1.420	1.260	0.972	0.886	0.855	1.004	1.094	1.293	**1.266**
flows	Low	0.708	0.667	0.601	0.531	0.452	0.423	0.373	0.289	0.439	0.496	0.496	0.546	**0.611**
(m^3s^{-1})	High	2.747	2.778	2.383	2.951	2.601	1.977	1.400	1.301	1.242	2.387	2.305	2.303	**1.702**
Peak flow (m^3s^{-1})		11.10	11.00	7.97	8.13	15.80	11.30	4.49	4.21	6.79	9.34	12.20	12.60	**15.80**
Runoff (mm)		27	27	30	27	25	22	17	16	15	18	19	23	**266**
Rainfall (mm)		60	44	58	48	54	54	43	50	54	66	57	63	**651**

Factors affecting runoff: GEI | 1991 runoff is 61% of previous mean
Station type: C | rainfall 91%

038021 Turkey Brook at Albany Park 1991

Measuring authority: NRA-T | Grid reference: 51 (TQ) 359 985 | Catchment area (sq km): 42.2
First year: 1971 | Level stn. (m OD): 16.60 | Max alt. (m OD): 128

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.370	0.223	0.145	0.099	0.067	0.082	0.050	0.011	0.016	0.013	0.051	0.022	**0.095**
(m^3s^{-1}):	Peak	2.92	1.62	0.95	2.16	0.66	0.49	0.89	0.11	0.40	0.63	1.16	0.22	**2.92**
Runoff (mm)		24	13	9	6	4	5	3	1	1	1	3	1	**71**
Rainfall (mm)		82	42	31	64	19	106	63	20	47	22	57	15	**568**

Monthly and yearly statistics for previous record (Sep 1971 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.436	0.372	0.351	0.228	0.166	0.091	0.042	0.052	0.055	0.176	0.231	0.323	**0.210**
flows	Low	0.037	0.042	0.024	0.020	0.009	0.021	0.009	0.008	0.008	0.016	0.019	0.082	**0.057**
(m^3s^{-1})	High	1.180	0.988	0.811	0.626	0.626	0.240	0.087	0.171	0.228	0.941	1.158	0.704	**0.339**
Peak flow (m^3s^{-1})		10.50	11.50	7.68	7.72	20.69	15.30	2.38	2.76	7.55	10.70	12.80	10.50	**20.69**
Runoff (mm)		28	22	22	14	11	6	3	3	3	11	14	20	**157**
Rainfall (mm)		62	45	59	47	56	53	44	53	58	64	59	64	**664**

Factors affecting runoff: PG | 1991 runoff is 45% of previous mean
Station type: FV | rainfall 86%

039002 Thames at Days Weir 1991

Measuring authority: NRA-T | Grid reference: 41 (SU) 568 935 | Catchment area (sq km): 3444.7
First year: 1938 | Level stn. (m OD): 46.00 | Max alt. (m OD): 330

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	36.510	20.160	39.380	18.510	11.890	9.793	7.398	4.651	3.142	3.450	18.510	14.110	**15.622**
(m^3s^{-1}):	Peak													
Runoff (mm)		28	14	31	14	9	7	6	4	2	3	14	11	**143**
Rainfall (mm)		77	30	58	62	11	96	81	10	53	45	75	16	**614**

Monthly and yearly statistics for previous record (Oct 1938 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	55.230	57.330	45.720	30.970	20.540	14.450	8.486	7.188	8.500	14.720	30.800	44.440	**28.055**
flows	Low	6.250	5.554	5.620	4.253	2.855	1.502	0.399	0.296	1.741	2.778	3.748	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	41	36	23	16	11	7	6	6	11	23	35	**257**
Rainfall (mm)		66	48	54	46	58	55	53	66	59	64	70	73	**712**

Factors affecting runoff: P EI | 1991 runoff is 56% of previous mean
Station type: MIS | rainfall 86%

039005 Beverley Brook at Wimbledon Common 1991

Measuring authority: NRA-T
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.662	0.624	0.476	0.611	0.494	0.678	0.722	0.421	0.496	0.429	0.552	0.397	**0.546**
(m^3s^{-1}): Peak	4.15	4.20	1.91	5.84	2.77	6.80	10.60	5.85	5.84	2.57	8.45	2.41	**10.60**
Runoff (mm)	41	35	29	36	30	40	44	26	29	26	33	24	**395**
Rainfall (mm)	64	38	24	68	19	97	86	22	52	24	56	13	**563**

Monthly and yearly statistics for previous record (Mar 1935 to Dec 1990—incomplete or missing months total 23.4 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	0.717	0.616	0.569	0.551	0.479	0.478	0.432	0.444	0.490	0.516	0.579	0.639	**0.542**
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	1.237	1.208	1.023	1.538	1.092	0.956	0.920	0.970	1.340	1.321	1.415	1.057	**0.695**
Peak flow (m^3s^{-1})	10.90	14.10	7.51	22.40	14.80	12.90	16.51	17.30	16.50	15.90	10.90	14.00	**22.40**
Runoff (mm)	44	34	35	33	29	28	27	27	29	32	34	39	**392**
Rainfall (mm)	59	39	46	42	50	53	48	55	56	62	62	63	**635**

Factors affecting runoff: GE
Station type: FL

1991 runoff is 101% of previous mean
rainfall 89%

039007 Blackwater at Swallowfield 1991

Measuring authority: NRA-T
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

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	4.572	3.090	3.842	2.523	1.941	2.147	2.049	1.473	1.543	1.548	2.659	1.846	**2.433**
(m^3s^{-1}): Peak	17.40	8.29	13.70	8.69	3.78	4.64	6.67	3.66	8.93	3.70	16.10	3.01	**17.40**
Runoff (mm)	35	21	29	18	15	16	15	11	11	12	19	14	**216**
Rainfall (mm)	89	40	47	55	11	86	80	18	54	37	66	14	**597**

Monthly and yearly statistics for previous record (Oct 1952 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	4.729	4.307	3.902	3.161	2.558	2.023	1.511	1.513	1.797	2.568	3.311	4.000	**2.942**
flows 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	**1.466**
(m^3s^{-1}) High	8.000	11.010	6.898	5.600	5.946	6.472	2.829	2.622	6.609	7.613	8.019	7.022	**3.777**
Peak flow (m^3s^{-1})	25.60	25.90	30.50	23.10	24.40	25.20	11.80	11.20	41.00	24.90	28.60	26.90	**41.00**
Runoff (mm)	36	30	29	23	19	15	11	11	13	19	24	30	**262**
Rainfall (mm)	68	47	54	46	54	52	53	58	63	72	70	74	**711**

Factors affecting runoff: GE
Station type: CC

1991 runoff is 83% of previous mean
rainfall 84%

039014 Ver at Hansteads 1991

Measuring authority: NRA-T
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.231	0.176	0.182	0.137	0.109	0.121	0.111	0.084	0.059	0.078	0.116	0.090	**0.124**
(m^3s^{-1}): Peak	0.58	0.55	0.38	0.44	0.30	0.30	0.35	0.22	0.20	0.24	0.46	0.15	**0.58**
Runoff (mm)	5	3	4	3	2	2	2	2	1	2	2	2	**30**
Rainfall (mm)	82	52	32	71	15	105	80	31	63	30	64	17	**642**

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	0.471	0.540	0.567	0.543	0.477	0.413	0.345	0.303	0.270	0.293	0.343	0.397	**0.413**
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	1.50	2.31	2.64	**2.64**
Runoff (mm)	10	10	11	11	10	8	7	6	5	6	7	8	**99**
Rainfall (mm)	65	48	57	51	54	59	52	57	60	68	65	74	**710**

Factors affecting runoff: G
Station type: CC

1991 runoff is 30% of previous mean
rainfall 90%

039016 Kennet at Theale 1991

Measuring authority: NRA-T
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	9.465	6.778	9.380	7.966	6.556	6.236	5.386	4.023	3.570	3.785	5.059	4.332	**6.042**
(m^3s^{-1}): Peak	28.60	14.10	23.10	13.70	10.10	9.18	7.13	6.95	6.56	5.14	15.80	5.87	**28.60**
Runoff (mm)	25	16	24	20	17	16	14	10	9	10	13	11	**184**
Rainfall (mm)	107	38	65	67	10	106	72	19	47	51	70	18	**670**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	13.080	14.980	14.730	12.680	10.280	8.502	6.417	5.655	5.294	6.057	7.755	10.030	**9.594**
flows Low	4.144	4.401	4.190	3.429	2.739	2.041	1.620	1.377	2.787	3.596	3.943	4.576	**4.056**
(m^3s^{-1}) High	22.680	27.780	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	52.10	44.30	36.90	30.10	70.00	19.00	20.50	33.40	29.60	43.50	47.30	**70.00**
Runoff (mm)	34	35	38	32	27	21	17	15	13	16	19	26	**293**
Rainfall (mm)	75	53	68	50	60	60	48	65	65	68	73	82	**767**

Factors affecting runoff: R G I
Station type: C

1991 runoff is 63% of previous mean
rainfall 87%

039019 Lambourn at Shaw 1991

Measuring authority: NRA-T
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.033	0.986	1.099	1.135	1.091	1.152	1.019	0.864	0.781	0.774	0.825	0.786	**0.962**
(m^3s^{-1}):	Peak	1.50	1.20	1.45	1.45	1.25	1.42	1.24	1.06	1.07	0.94	1.43	1.00	**1.50**
Runoff (mm)		12	10	13	13	12	13	12	10	9	9	9	9	**130**
Rainfall (mm)		104	33	63	64	11	105	69	19	36	43	71	16	**634**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.732	2.232	2.497	2.425	2.144	1.840	1.510	1.282	1.161	1.134	1.209	1.378	**1.709**
flows	Low	0.826	0.796	0.743	0.695	0.639	0.573	0.538	0.485	0.681	0.683	0.757	0.710	**0.739**
(m^3s^{-1})	High	3.410	3.719	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	29	27	25	20	17	15	13	13	13	16	**230**
Rainfall (mm)		68	50	64	48	59	58	49	61	61	63	71	77	**729**

Factors affecting runoff: R G
Station type: C

1991 runoff is 56% of previous mean
rainfall 87%

039021 Cherwell at Enslow Mill 1991

Measuring authority: NRA-T
First year: 1965
Grid reference: 42 (SP) 482 183
Level stn. (m OD): 65.00
Catchment area (sq km): 551.7
Max alt. (m OD): 239

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.919	3.177	4.965	2.381	1.952	1.533	1.314	1.048	0.651	0.786	2.673	1.729	**2.343**
(m^3s^{-1}):	Peak	15.70	5.23	11.40	6.17	7.70	3.30	2.68	3.34	1.75	1.53		3.63	
Runoff (mm)		29	14	24	11	9	7	6	5	3	4	13	8	**134**
Rainfall (mm)		65	30	45	64	11	94	88	9	51	43	67	16	**583**

Monthly and yearly statistics for previous record (Feb 1965 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	7.218	7.255	6.320	4.467	3.303	2.356	1.491	1.390	1.341	2.063	3.150	5.641	**3.818**
flows	Low	0.919	0.905	0.754	0.566	0.445	0.309	0.156	0.132	0.468	0.630	0.730	0.915	**1.370**
(m^3s^{-1})	High	12.040	15.900	12.090	8.710	8.674	6.632	4.997	2.618	4.610	5.780	8.567	13.330	**5.373**
Peak flow (m^3s^{-1})		22.50	23.80	26.70	20.70	19.30	17.60	24.50	10.30	9.80	17.40	22.00	30.20	**30.20**
Runoff (mm)		35	32	31	21	16	11	7	7	6	10	15	27	**218**
Rainfall (mm)		61	47	56	44	58	60	53	63	55	58	57	69	**681**

Factors affecting runoff: P E
Station type: C

1991 runoff is 61% of previous mean
rainfall 86%

039023 Wye at Hedsor 1991

Measuring authority: NRA-T
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.625	0.533	0.561	0.562	0.532	0.601	0.593	0.544	0.496	0.464	0.520	0.471	**0.542**
(m^3s^{-1}):	Peak	1.66	1.58	1.07	1.76	0.65	1.79	2.25	2.23	1.99	1.42	2.19	0.92	**2.25**
Runoff (mm)		12	9	11	11	10	11	12	11	9	9	10	9	**124**
Rainfall (mm)		79	46	46	68	10	109	96	24	54	46	69	20	**667**

Monthly and yearly statistics for previous record (Dec 1964 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.967	1.079	1.171	1.198	1.158	1.116	1.010	0.955	0.868	0.836	0.820	0.864	**1.003**
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	1.518	1.933	1.976	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	2.92	3.21	3.26	3.98	3.51	2.94	4.17	4.43	3.15	2.79	3.19	**4.43**
Runoff (mm)		19	19	23	23	23	21	20	19	16	16	15	17	**231**
Rainfall (mm)		72	52	61	52	62	62	54	65	65	68	68	79	**760**

Factors affecting runoff: G I
Station type: C

1991 runoff is 54% of previous mean
rainfall 88%

039029 Tillingbourne at Shalford 1991

Measuring authority: NRA-T
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.524	0.432	0.443	0.395	0.341	0.347	0.354	0.292	0.280	0.292	0.353	0.319	**0.364**
(m^3s^{-1}):	Peak	1.29	0.73	0.98	0.67	0.48	0.56	0.67	0.60	0.40	0.40	0.90	0.42	**1.29**
Runoff (mm)		24	18	20	17	16	15	16	13	12	13	16	14	**195**
Rainfall (mm)		96	47	48	66	16	99	101	19	43	38	70	18	**661**

Monthly and yearly statistics for previous record (Jun 1968 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.672	0.659	0.634	0.604	0.558	0.510	0.463	0.457	0.476	0.520	0.556	0.605	**0.559**
flows	Low	0.457	0.423	0.398	0.398	0.376	0.353	0.340	0.326	0.349	0.362	0.354	0.392	**0.389**
(m^3s^{-1})	High	0.998	1.072	0.900	0.897	0.819	0.830	0.599	0.619	0.885	0.938	0.883	0.840	**0.686**
Peak flow (m^3s^{-1})		4.54	3.04	3.23	3.00	1.91	2.79	1.65	2.36	6.09	5.09	3.65	3.25	**6.09**
Runoff (mm)		30	27	29	27	25	22	21	21	21	24	24	27	**299**
Rainfall (mm)		87	53	69	54	59	57	50	60	71	80	79	82	**801**

Factors affecting runoff: N G I
Station type: C

1991 runoff is 65% of previous mean
rainfall 83%

039049 Silk Stream at Colindeep Lane 1991

Measuring authority: NRA-T
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): 153

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.383	0.284	0.235	0.217	0.107	0.238	0.248	0.073	0.102	0.069	0.181	0.096	**0.185**
(m^3s^{-1}):	Peak	3.33	2.95	2.06	3.67	1.64	3.41	11.70	0.96	2.59	0.90	6.33	1.47	**11.70**
Runoff (mm)		35	24	22	19	10	21	23	7	9	6	16	9	**202**
Rainfall (mm)		82	47	35	62	16	96	76	16	49	21	60	17	**577**

Monthly and yearly statistics for previous record (Dec 1973 to Dec 1990—incomplete or missing months total 4.4 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.378	0.302	0.337	0.261	0.233	0.196	0.135	0.126	0.124	0.306	0.311	0.322	**0.253**
flows	Low	0.159	0.102	0.104	0.030	0.035	0.061	0.047	0.053	0.057	0.062	0.096	0.106	**0.178**
(m^3s^{-1})	High	0.790	0.742	0.676	0.574	0.602	0.643	0.231	0.204	0.363	0.904	1.086	0.659	**0.314**
Peak flow (m^3s^{-1})		9.00	16.90	8.89	10.26	39.80	32.80	16.50	30.50	27.90	40.50	24.30	36.31	**40.50**
Runoff (mm)		35	25	31	23	22	18	12	12	11	28	28	30	**275**
Rainfall (mm)		63	41	60	48	63	58	48	52	60	74	58	64	**689**

Factors affecting runoff:
Station type: FV

1991 runoff is 73% of previous mean
rainfall 84%

039069 Mole at Kinnersley Manor 1991

Measuring authority: NRA-T
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.679	2.550	2.394	1.697	1.151	2.225	2.819	0.697	0.809	0.755	2.183	1.106	**1.919**
(m^3s^{-1}):	Peak	27.90	15.40	5.71	9.64	3.31	16.10	28.90	2.43	7.37	5.18	16.70	4.15	**28.90**
Runoff (mm)		88	43	45	31	22	41	53	13	15	14	40	21	**426**
Rainfall (mm)		97	46	43	67	20	114	104	14	51	47	70	21	**694**

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1990—incomplete or missing months total 1.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.881	3.193	2.652	1.861	1.399	0.989	0.675	0.797	0.951	1.976	2.250	3.453	**2.003**
flows	Low	1.261	0.829	0.833	0.388	0.305	0.221	0.296	0.169	0.281	0.207	0.260	1.071	**0.950**
(m^3s^{-1})	High	9.375	8.634	4.668	3.666	3.552	1.874	1.709	2.864	5.419	8.486	5.668	5.474	**2.424**
Peak flow (m^3s^{-1})		42.30	46.50	22.30	47.00	32.90	23.30	14.90	29.80	40.70	56.40	56.10	68.50	**68.50**
Runoff (mm)		73	55	50	34	26	18	13	15	17	37	41	65	**445**
Rainfall (mm)		82	57	66	48	55	59	45	57	64	91	76	93	**793**

Factors affecting runoff: E
Station type: MIS

1991 runoff is 96% of previous mean
rainfall 88%

040009 Teise at Stone Bridge 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.729	0.490	0.409	0.410	0.478	1.150	0.746	0.611	1.031	1.081	0.785	0.454	**0.783**
(m^3s^{-1}):	Peak	19.45	6.15	4.85	2.43	1.24	10.00	7.12	2.73	2.57	1.40	8.52	1.12	**19.45**
Runoff (mm)		34	9	8	8	9	22	15	12	20	21	15	9	**181**
Rainfall (mm)		101	37	43	61	22	139	80	20	51	38	94	24	**710**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.448	2.076	1.778	1.426	1.070	0.801	0.603	0.594	0.701	1.050	1.652	1.885	**1.337**
flows	Low	0.463	0.522	0.405	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	1.359	1.132	2.359	4.786	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	35	27	21	15	12	12	13	21	31	37	**310**
Rainfall (mm)		81	56	67	54	55	56	49	58	69	84	87	84	**800**

Factors affecting runoff: RPGE
Station type: B VA

1991 runoff is 59% of previous mean
rainfall 89%

040010 Eden at Penshurst 1991

Measuring authority: NRA-S
First year: 1961

Grid reference: 51 (TQ) 520 437
Level stn. (m OD): 27.80

Catchment area (sq km): 224.3
Max alt. (m OD): 267

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.716	1.518	1.379	0.877	0.805	1.333	2.125	0.451	0.372	0.361	1.376	0.733	**1.170**
(m^3s^{-1}):	Peak	19.02	13.25	3.98	7.56	4.39	16.55	24.70	2.58	3.62	0.91	12.45	2.40	**24.70**
Runoff (mm)		32	16	16	10	10	15	25	5	4	4	16	9	**164**
Rainfall (mm)		91	42	35	71	23	112	96	16	55	38	69	19	**667**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.911	3.390	2.731	1.824	1.312	0.905	0.442	0.524	0.724	1.235	2.366	2.842	**1.843**
flows	Low	0.412	0.629	0.605	0.395	0.283	0.193	0.182	0.201	0.223	0.265	0.314	0.672	**0.810**
(m^3s^{-1})	High	9.957	8.346	6.040	4.373	4.842	4.132	1.231	1.438	5.243	4.276	8.909	7.260	**2.627**
Peak flow (m^3s^{-1})		45.56	64.44	32.28	34.03	39.16	31.85	9.92	17.42	22.02	31.43	55.21	60.00	**64.44**
Runoff (mm)		47	37	33	21	16	10	5	6	8	15	27	34	**259**
Rainfall (mm)		74	50	61	54	56	56	49	57	69	74	78	79	**757**

Factors affecting runoff: S E
Station type: C

1991 runoff is 63% of previous mean
rainfall 88%

040012 Darent at Hawley 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.253	0.231	0.181	0.143	0.209	0.113	0.128	0.075	0.048	0.040	0.053	0.054	**0.127**
(m^3s^{-1}):	Peak	1.17	0.69	0.44	0.46	0.56	0.37	0.34	0.22	0.08	0.08	0.17	0.11	**1.17**
Runoff (mm)		4	3	3	2	3	2	2	1	1	1	1	1	**21**
Rainfall (mm)		86	45	38	75	25	110	73	21	55	32	66	19	**645**

Monthly and yearly statistics for previous record (Dec 1963 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.974	1.029	0.928	0.824	0.619	0.463	0.316	0.280	0.295	0.386	0.533	0.752	**0.614**
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	2.060	2.076	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})		5.79	3.99	4.05	3.09	13.10	3.06	2.35	2.27	10.05	3.77	4.91	4.36	**13.10**
Runoff (mm)		14	13	13	11	9	6	4	4	4	5	7	11	**101**
Rainfall (mm)		71	49	59	53	56	55	53	56	67	67	72	74	**732**

Factors affecting runoff: G
Station type: C

1991 runoff is 21% of previous mean
rainfall 88%

041001 Nunningham Stream at Tilley Bridge 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.502	0.161	0.196	0.069	0.037	0.182	0.151	0.030	0.022	0.023	0.221	0.103	**0.142**
(m^3s^{-1}):	Peak	4.89	1.23	0.83	0.39	0.11	1.89	1.89	0.10	0.08	0.15	1.68	0.50	**4.89**
Runoff (mm)		80	23	31	11	6	28	24	5	3	4	34	16	**264**
Rainfall (mm)		104	40	50	50	19	163	113	8	48	45	125	24	**789**

Monthly and yearly statistics for previous record (Apr 1950 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.430	0.340	0.240	0.144	0.077	0.051	0.033	0.038	0.051	0.125	0.284	0.356	**0.180**
flows	Low	0.062	0.094	0.054	0.034	0.023	0.012	0.010	0.008	0.009	0.013	0.019	0.033	**0.053**
(m^3s^{-1})	High	1.108	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)		68	49	38	22	12	8	5	6	8	20	44	56	**336**
Rainfall (mm)		85	59	60	50	51	55	55	69	73	92	96	94	**839**

Factors affecting runoff: R
Station type: MIS

1991 runoff is 79% of previous mean
rainfall 94%

041005 Ouse at Gold Bridge 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.955	2.425	3.023	1.716	1.137	2.375	2.151	0.803	0.897	0.693	1.972	1.162	**1.856**
(m^3s^{-1}):	Peak	19.52	9.62	7.82	6.66	2.70	17.37	16.07	2.74	2.29	2.61	10.94	2.89	**19.52**
Runoff (mm)		59	32	45	25	17	34	32	12	13	10	28	17	**324**
Rainfall (mm)		98	45	54	64	21	140	99	13	47	54	87	24	**746**

Monthly and yearly statistics for previous record (Mar 1960 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.318	3.729	3.064	2.378	1.669	1.069	0.679	0.744	1.011	1.919	3.141	3.414	**2.254**
flows	Low	0.887	1.240	0.793	0.611	0.450	0.283	0.219	0.157	0.230	0.275	0.384	0.723	**0.934**
(m^3s^{-1})	High	10.330	9.852	6.888	4.318	3.657	3.829	1.903	2.458	4.296	12.660	12.030	7.657	**3.334**
Peak flow (m^3s^{-1})		49.14	71.85	29.86	31.57	26.35	27.91	16.52	33.15	49.01	73.71	86.92	81.06	**86.92**
Runoff (mm)		64	50	45	34	25	15	10	11	14	28	45	51	**393**
Rainfall (mm)		88	58	68	59	58	61	51	63	77	93	97	90	**863**

Factors affecting runoff: SRPGE
Station type: CBVA

1991 runoff is 82% of previous mean
rainfall 86%

041006 Uck at Isfield 1991

Measuring authority: NRA-S
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): 232

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.389	0.968	1.145	0.561	0.362	1.496	1.575	0.249	0.205	0.225	1.177	0.514	**0.906**
(m^3s^{-1}):	Peak	37.12	5.13	6.11	3.09	1.94	37.41	53.64	0.57	0.93	1.21	28.51	2.50	**53.64**
Runoff (mm)		73	27	35	17	11	44	48	8	6	7	35	16	**325**
Rainfall (mm)		104	41	51	56	22	155	102	13	50	52	103	25	**774**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.352	1.892	1.407	1.086	0.724	0.500	0.341	0.344	0.496	0.990	1.555	1.928	**1.131**
flows	Low	0.473	0.627	0.413	0.324	0.252	0.170	0.142	0.106	0.154	0.160	0.211	0.342	**0.480**
(m^3s^{-1})	High	6.355	5.205	3.317	2.183	1.854	1.657	1.489	1.506	2.868	6.692	6.536	4.033	**1.945**
Peak flow (m^3s^{-1})		55.60	75.63	39.12	45.22	28.97	29.59	46.63	33.74	36.40	63.04	64.43	55.58	**75.63**
Runoff (mm)		72	53	43	32	22	15	10	10	15	30	46	59	**407**
Rainfall (mm)		86	60	65	51	53	62	51	61	71	89	89	87	**825**

Factors affecting runoff: E
Station type: C

1991 runoff is 80% of previous mean
rainfall 94%

041012 Adur E Branch at Sakeham 1991

Measuring authority: NRA-S
First year: 1967

Grid reference: 51 (TQ) 219 190
Level stn. (m OD): 3.10

Catchment area (sq km): 93.3
Max alt. (m OD): 248

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.690	1.262	1.745	0.747	0.436	1.075	1.464	0.296	0.254	0.282	1.172	0.535	**0.996**
(m^3s^{-1}):	Peak	18.12	6.61	8.99	3.56	1.39	15.71	19.58	0.87	0.86	2.21	8.61	1.98	**19.58**
Runoff (mm)		77	33	50	21	13	30	42	9	7	8	33	15	**337**
Rainfall (mm)		101	47	61	63	19	135	118	10	42	58	86	20	**760**

Monthly and yearly statistics for previous record (Aug 1967 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.566	1.966	1.509	1.019	0.653	0.457	0.299	0.301	0.500	1.193	1.629	1.959	**1.168**
flows	Low	0.346	0.526	0.379	0.266	0.196	0.141	0.112	0.076	0.144	0.131	0.162	0.398	**0.479**
(m^3s^{-1})	High	5.835	5.803	3.642	2.337	1.567	1.339	1.006	0.882	2.877	7.901	4.596	4.064	**1.716**
Peak flow (m^3s^{-1})		31.50	36.13	23.43	30.65	14.53	24.27	16.71	24.04	31.81	39.35	38.26	44.34	**44.34**
Runoff (mm)		74	51	43	28	19	13	9	9	14	34	45	56	**395**
Rainfall (mm)		93	58	67	52	56	57	46	58	72	93	89	86	**827**

Factors affecting runoff: E
Station type: CC

1991 runoff is 85% of previous mean
rainfall 92%

041019 Arun at Alfoldean 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.379	2.026	2.207	0.914	0.521	1.015	1.274	0.407	0.335	0.317	1.267	0.682	**1.277**
(m^3s^{-1}):	Peak	43.62	9.85	11.00	3.82	1.74	8.32	10.02	3.49	1.74	1.71	8.57	2.65	**43.62**
Runoff (mm)		84	35	43	17	10	19	25	8	6	6	24	13	**290**
Rainfall (mm)		99	47	49	60	17	121	103	17	48	52	67	20	**700**

Monthly and yearly statistics for previous record (May 1970 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.862	2.826	2.337	1.669	1.042	0.687	0.317	0.373	0.610	1.667	2.386	2.913	**1.720**
flows	Low	0.621	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	10.770	9.827	4.413	3.829	3.313	3.055	1.116	1.618	5.443	11.580	10.030	6.152	**2.845**
Peak flow (m^3s^{-1})		68.63	67.53	54.45	76.97	47.48	46.54	7.27	23.86	56.14	71.12	69.14	77.65	**77.65**
Runoff (mm)		74	50	45	31	20	13	6	7	11	32	44	56	**390**
Rainfall (mm)		86	53	69	51	55	57	45	57	67	85	82	86	**793**

Factors affecting runoff: E
Station type: CC

1991 runoff is 74% of previous mean
rainfall 88%

041027 Rother at Princes Marsh 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.727	0.396	0.714	0.391	0.254	0.265	0.214	0.168	0.182	0.186	0.324	0.247	**0.339**
(m^3s^{-1}):	Peak	3.95	1.07	2.91	1.04	0.37	1.96	0.57	0.53	0.82	0.84	1.48	0.68	**3.95**
Runoff (mm)		52	26	51	27	18	18	15	12	13	13	23	18	**288**
Rainfall (mm)		118	55	95	63	11	123	85	25	63	60	67	25	**790**

Monthly and yearly statistics for previous record (Nov 1972 to Dec 1990—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.872	0.785	0.668	0.492	0.373	0.273	0.212	0.217	0.260	0.468	0.565	0.766	**0.495**
flows	Low	0.273	0.320	0.237	0.194	0.158	0.121	0.120	0.106	0.140	0.165	0.167	0.289	**0.288**
(m^3s^{-1})	High	1.485	2.228	1.220	0.694	0.641	0.471	0.300	0.493	0.949	1.088	1.855	1.299	**0.696**
Peak flow (m^3s^{-1})		15.63	17.79	10.71	8.75	7.20	4.68	2.17	4.55	12.97	68.03	16.60	22.19	**68.03**
Runoff (mm)		63	51	48	34	27	19	15	16	18	34	39	55	**420**
Rainfall (mm)		99	66	81	47	59	55	54	60	75	96	83	107	**882**

Factors affecting runoff: GE
Station type: C

1991 runoff is 69% of previous mean
rainfall 90%

042003 Lymington at Brockenhurst Park 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.946	0.843	1.949	0.580	0.221	0.784	0.474	0.057	0.155	0.291	0.871	0.619	**0.733**
(m^3s^{-1}):	Peak	10.01	6.10	7.66	3.05	0.99	9.94	6.73	0.14	4.38	5.35	5.79	3.00	**10.01**
Runoff (mm)		53	21	53	15	6	21	13	2	4	8	23	17	**234**
Rainfall (mm)		111	38	93	50	8	130	72	11	63	74	62	32	**744**

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.845	1.707	1.453	1.012	0.761	0.425	0.230	0.248	0.410	0.976	1.311	1.560	**0.992**
flows	Low	0.330	0.439	0.327	0.168	0.128	0.042	0.013	0.014	0.042	0.128	0.198	0.522	**0.407**
(m^3s^{-1})	High	3.723	3.680	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})		10.13	13.62	10.13	10.13	13.98	7.95	11.38	8.16	8.47	11.28	13.54	14.91	**14.91**
Runoff (mm)		50	42	39	27	21	11	6	7	11	26	34	42	**316**
Rainfall (mm)		89	63	70	52	59	56	43	60	72	89	89	93	**835**

Factors affecting runoff: N
Station type: TP

1991 runoff is 74% of previous mean
rainfall 89%

042004 Test at Broadlands 1991

Measuring authority: NRA-S
First year: 1957

Grid reference: 41 (SU) 354 188
Level stn. (m OD): 10.10

Catchment area (sq km): 1040.0
Max alt. (m OD): 297

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	9.811	8.775	10.280	9.708	8.558	7.705	7.623	6.359	6.081	7.172	8.281	7.651	**8.164**
Peak													
Runoff (mm)	25	20	26	24	22	19	20	16	15	18	21	20	**248**
Rainfall (mm)	113	42	74	62	9	109	90	21	58	61	64	19	**722**

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1990—incomplete or missing months total 0.2 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	14.640	15.920	15.350	13.640	11.650	9.756	7.959	7.420	7.546	8.833	10.320	12.220	**11.247**
Low	7.172	6.932	6.686	6.107	4.861	4.558	3.708	4.263	5.377	5.786	5.304	6.069	**6.597**
High	34.670	32.680	24.430	19.050	16.320	13.540	10.850	10.440	12.810	27.060	33.510	35.180	**18.789**
Peak flow (m^3s^{-1})													
Runoff (mm)	38	37	40	34	30	24	20	19	19	23	26	31	**341**
Rainfall (mm)	85	57	68	50	57	57	47	64	68	80	80	92	**805**

Factors affecting runoff: N
Station type: VA

1991 runoff is 73% of previous mean
rainfall 90%

042006 Meon at Mislingford 1991

Measuring authority: NRA-S
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	0.417	0.482	0.919	1.037	0.683	0.494	0.417	0.317	0.233	0.214	0.277	0.321	**0.484**
Peak	0.64	0.63	1.19	1.26	0.87	0.90	0.66	0.43	0.30	0.33	0.34	0.39	**1.26**
Runoff (mm)	15	16	34	37	25	18	15	12	8	8	10	12	**210**
Rainfall (mm)	106	51	103	51	9	151	103	22	61	66	63	30	**816**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	1.507	1.822	1.651	1.386	1.023	0.737	0.520	0.389	0.341	0.505	0.796	1.075	**0.975**
Low	0.355	0.467	0.427	0.335	0.164	0.120	0.079	0.068	0.102	0.110	0.124	0.179	**0.334**
High	3.470	3.310	2.820	2.024	1.738	1.220	0.827	0.657	0.882	2.309	4.126	3.917	**1.813**
Peak flow (m^3s^{-1})	3.84	4.27	3.26	2.83	2.06	1.50	1.23	1.07	0.96	1.68	2.83	3.77	**4.27**
Runoff (mm)	55	61	61	49	38	26	19	14	12	19	28	40	**423**
Rainfall (mm)	99	64	76	58	63	58	53	69	78	95	97	103	**913**

Factors affecting runoff: G
Station type: FL

1991 runoff is 50% of previous mean
rainfall 89%

042008 Cheriton Stream at Sewards Bridge 1991

Measuring authority: NRA-S
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): 233

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	0.527	0.518	0.659	0.673	0.520	0.421	0.391	0.320	0.274	0.274	0.330	0.339	**0.437**
Peak	0.69	0.69	0.80	0.85	0.66	0.61	0.48	0.49	0.41	0.45	0.55	0.47	**0.85**
Runoff (mm)	19	17	24	23	19	15	14	11	9	10	11	12	**183**
Rainfall (mm)	117	54	98	56	10	143	99	20	62	66	66	27	**818**

Monthly and yearly statistics for previous record (Jul 1970 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	0.802	0.964	0.908	0.837	0.680	0.557	0.458	0.393	0.365	0.413	0.504	0.663	**0.627**
Low	0.393	0.435	0.409	0.320	0.271	0.218	0.183	0.165	0.207	0.215	0.254	0.309	**0.408**
High	1.293	1.562	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	2.06	1.68	1.39	1.26	2.02	1.25	1.28	0.77	0.91	1.23	1.85	**2.06**
Runoff (mm)	29	31	32	29	24	19	16	14	13	15	17	24	**263**
Rainfall (mm)	99	67	78	50	58	58	54	62	71	90	92	102	**881**

Factors affecting runoff: N
Station type: C

1991 runoff is 70% of previous mean
rainfall 93%

043006 Nadder at Wilton Park 1991

Measuring authority: NRA-W
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	3.695	2.511	3.912	3.567	1.926	1.496	1.254	0.938	0.950	1.154	1.468	1.503	**2.029**
Peak	7.87	4.48	9.73	7.20	3.72	5.53	2.91	1.29	3.62	2.18	7.01	5.29	**9.73**
Runoff (mm)	45	28	48	42	23	18	15	11	11	14	17	18	**290**
Rainfall (mm)	115	38	92	74	11	103	79	17	65	81	61	35	**771**

Monthly and yearly statistics for previous record (Jan 1966 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	4.638	5.290	4.393	3.312	2.463	1.916	1.484	1.306	1.305	1.746	2.454	3.711	**2.823**
Low	1.011	1.263	1.358	1.048	0.993	0.839	0.684	0.595	0.801	0.829	0.878	1.219	**1.535**
High	6.773	12.290	6.732	5.936	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	26.61	18.80	14.27	28.13	8.83	13.39	6.61	16.68	10.99	22.90	47.88	**47.88**
Runoff (mm)	56	58	53	39	30	23	18	16	15	21	29	45	**404**
Rainfall (mm)	96	76	78	52	66	60	51	69	74	87	85	104	**898**

Factors affecting runoff: N
Station type: C

1991 runoff is 72% of previous mean
rainfall 86%

043007 Stour at Throop Mill 1991

Measuring authority: NRA-W
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	23.780	11.540	23.210	14.550	8.123	6.003	5.660	3.784	3.360	5.500	12.120	9.920	**10.639**
(m^3s^{-1}):	Peak	76.58	34.22	81.54	36.29	31.42	11.87	9.38	5.85	10.95	13.47	33.82	29.30	**81.54**
Runoff (mm)		59	26	58	35	20	15	14	9	8	14	29	25	**313**
Rainfall (mm)		114	37	93	75	10	106	74	22	77	89	62	34	**793**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	23.960	26.930	20.760	14.270	9.387	6.406	4.384	4.112	4.796	8.470	12.610	21.690	**13.084**
flows	Low	4.319	6.826	7.548	4.483	3.157	2.231	1.614	1.358	1.892	2.716	2.823	6.386	**6.138**
(m^3s^{-1})	High	38.730	69.370	32.620	27.070	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	137.70	110.20	88.24	150.00	180.00	47.60	32.41	90.33	101.90	133.40	280.00	**280.00**
Runoff (mm)		60	61	52	34	23	15	11	10	12	21	30	54	**385**
Rainfall (mm)		90	73	77	44	57	54	49	62	73	87	77	107	**850**

Factors affecting runoff: PGE
Station type: CC

1991 runoff is 81% of previous mean
rainfall 93%

043012 Wylye at Norton Bavant 1991

Measuring authority: NRA-W
First year: 1971
Grid reference: 31 (ST) 909 428
Level stn. (m OD): 96.70
Catchment area (sq km): 112.4
Max alt. (m OD): 288

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.331	1.165	1.438	1.356	0.773	0.680	0.550	0.492	0.454	0.504	0.593	0.590	**0.825**
(m^3s^{-1}):	Peak	2.66	1.69	2.72	2.42	1.19	1.84	1.08	1.24	1.34	2.14	1.58	0.85	**2.72**
Runoff (mm)		32	25	34	31	18	16	13	12	10	12	14	14	**232**
Rainfall (mm)		115	39	93	69	9	129	76	21	63	89	66	33	**802**

Monthly and yearly statistics for previous record (Jul 1971 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.712	2.008	1.654	1.353	0.981	0.756	0.604	0.559	0.562	0.666	0.860	1.339	**1.083**
flows	Low	0.454	0.468	0.503	0.482	0.450	0.335	0.279	0.287	0.405	0.413	0.456	0.523	**0.652**
(m^3s^{-1})	High	2.444	4.465	2.403	2.230	1.454	1.238	0.771	0.694	1.033	1.387	1.731	2.411	**1.362**
Peak flow (m^3s^{-1})		5.90	7.26	5.24	3.84	6.74	2.98	3.44	2.76	4.81	2.88	3.27	6.33	**7.26**
Runoff (mm)		41	44	39	31	23	17	14	13	13	16	20	32	**304**
Rainfall (mm)		100	75	87	53	64	66	56	72	77	87	83	110	**930**

Factors affecting runoff: E
Station type: C

1991 runoff is 76% of previous mean
rainfall 86%

044002 Piddle at Baggs Mill 1991

Measuring authority: NRA-W
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.492	2.176	3.604	3.317	1.932	1.627	1.444	1.023	1.085	1.547	2.093	1.955	**2.023**
(m^3s^{-1}):	Peak	5.72	4.24	6.02	4.61	2.86	3.43	1.87	1.32	6.35	4.50	4.16	2.44	**6.35**
Runoff (mm)		36	29	53	47	28	23	21	15	15	23	30	29	**348**
Rainfall (mm)		129	55	118	67	7	131	62	35	104	107	73	28	**916**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.573	4.481	3.895	2.997	2.171	1.649	1.218	1.059	1.064	1.389	2.024	2.811	**2.350**
flows	Low	1.045	1.020	1.093	0.945	0.757	0.571	0.483	0.433	0.598	0.707	0.721	0.853	**1.328**
(m^3s^{-1})	High	5.959	8.785	6.202	4.782	3.376	2.907	1.755	1.526	2.300	3.106	5.047	5.654	**3.233**
Peak flow (m^3s^{-1})		11.87	10.02	9.37	6.48	8.11	9.23	4.79	4.50	8.18	9.29	9.20	8.62	**11.87**
Runoff (mm)		52	60	57	42	32	23	18	15	15	20	29	41	**405**
Rainfall (mm)		108	84	85	52	65	57	47	62	80	96	102	114	**952**

Factors affecting runoff: G
Station type: FL

1991 runoff is 86% of previous mean
rainfall 96%

044006 Sydling Water at Sydling St Nicholas 1991

Measuring authority: NRA-W
First year: 1969
Grid reference: 30 (SY) 632 997
Level stn. (m OD): 109.70
Catchment area (sq km): 12.4
Max alt. (m OD): 262

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.194	0.128	0.278	0.205	0.155	0.125	0.114	0.092	0.079	0.102	0.138	0.105	**0.143**
(m^3s^{-1}):	Peak	0.32	0.20	0.40	0.28	0.20	0.31	0.16	0.12	0.23	0.15	0.17	0.12	**0.40**
Runoff (mm)		42	25	60	43	33	26	25	20	17	22	29	23	**364**
Rainfall (mm)		143	73	129	82	15	142	68	32	121	111	81	26	**1023**

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.275	0.335	0.291	0.228	0.170	0.140	0.107	0.090	0.086	0.105	0.142	0.212	**0.181**
flows	Low	0.060	0.070	0.092	0.087	0.069	0.060	0.051	0.045	0.052	0.053	0.048	0.057	**0.103**
(m^3s^{-1})	High	0.422	0.599	0.426	0.356	0.244	0.282	0.155	0.121	0.211	0.317	0.329	0.386	**0.225**
Peak flow (m^3s^{-1})		0.93	1.03	0.92	0.47	1.57	1.02	0.37	0.79	0.39	0.64	0.60	1.22	**1.57**
Runoff (mm)		59	66	63	48	37	29	23	19	18	23	30	46	**460**
Rainfall (mm)		127	92	97	55	69	61	50	68	87	94	109	127	**1036**

Factors affecting runoff: N
Station type: C

1991 runoff is 79% of previous mean
rainfall 99%

044009 Wey at Broadwey 1991

Measuring authority: NRA-W
First year: 1975

Grid reference: 30 (SY) 666 839
Level stn. (m OD): 17.80

Catchment area (sq km): 7.0
Max alt. (m OD):

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.191	0.156	0.439	0.420	0.237	0.172	0.154	0.142	0.120	0.193	0.273	0.223	**0.227**
(m^3s^{-1}):	Peak	0.43	0.25	0.70	0.59	0.32	0.37	0.36	0.19	0.65	0.43	0.36	0.30	**0.70**
Runoff (mm)		73	54	168	155	91	64	59	54	45	74	101	85	**1023**
Rainfall (mm)		98	47	120	67	11	107	74	34	100	102	56	30	**846**

Monthly and yearly statistics for previous record (Jul 1975 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.450	0.578	0.548	0.459	0.312	0.252	0.188	0.146	0.123	0.141	0.190	0.318	**0.307**
flows	Low	0.100	0.100	0.126	0.117	0.099	0.093	0.095	0.085	0.076	0.067	0.070	0.076	**0.188**
(m^3s^{-1})	High	0.698	0.970	0.895	0.730	0.486	0.450	0.318	0.211	0.178	0.290	0.390	0.698	**0.410**
Peak flow (m^3s^{-1})		1.46	1.79	2.86	1.22	3.31	3.18	2.29	1.24	0.50	0.70	1.26	2.35	**3.31**
Runoff (mm)		172	202	210	170	119	93	72	56	46	54	70	122	**1385**
Rainfall (mm)		88	89	90	47	55	51	48	57	68	98	80	111	**882**

Factors affecting runoff: N
Station type: FV

1991 runoff is 74% of previous mean
rainfall 96%

Comment: Contributing area exceeds the topographical catchment area

045003 Culm at Wood Mill 1991

Measuring authority: NRA-SW
First year: 1962

Grid reference: 31 (ST) 021 058
Level stn. (m OD): 44.00

Catchment area (sq km): 226.1
Max alt. (m OD): 293

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.230	3.598	5.702	3.155	1.705	1.853	1.597	1.132	1.584	2.819	4.408	2.864	**3.053**
(m^3s^{-1}):	Peak	26.94	26.12	21.12	12.80	3.32	10.23	6.27	1.63	21.32	22.13	12.40	19.16	**26.94**
Runoff (mm)		74	39	68	36	20	21	19	13	18	33	51	34	**426**
Rainfall (mm)		113	51	99	85	10	104	74	22	88	117	85	46	**894**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	6.662	6.573	5.048	3.435	2.748	1.969	1.743	1.577	1.866	2.958	4.323	5.979	**3.728**
flows	Low	1.930	2.251	2.392	1.318	1.085	0.803	0.650	0.569	0.971	0.971	1.287	2.479	**2.277**
(m^3s^{-1})	High	12.870	13.320	9.184	7.445	6.337	4.449	5.200	2.787	7.328	11.430	8.191	11.880	**4.840**
Peak flow (m^3s^{-1})		110.70	100.10	50.11	61.98	33.82	30.58	202.20	58.62	94.16	49.07	134.50	142.80	**202.20**
Runoff (mm)		79	71	60	39	33	23	21	19	21	35	50	71	**520**
Rainfall (mm)		110	85	85	58	67	62	59	66	76	90	95	111	**964**

Factors affecting runoff: PGEI
Station type: FV VA

1991 runoff is 82% of previous mean
rainfall 93%

Comment: minor flow changes expected following station recalibration

045004 Axe at Whitford 1991

Measuring authority: NRA-SW
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	9.903	4.379	9.179	4.781	2.456	3.555	2.289	1.454	2.395	4.838	6.704	2.832	**4.568**
(m^3s^{-1}):	Peak	56.32	32.73	35.14	24.73	6.41	26.97	9.94	5.04	32.50	41.72	31.70	6.87	**56.32**
Runoff (mm)		92	37	85	43	23	32	21	13	22	45	60	26	**499**
Rainfall (mm)		120	50	112	91	17	117	62	29	92	120	79	26	**915**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	9.270	8.665	6.498	4.234	3.562	2.476	1.965	2.086	2.485	4.165	5.620	8.343	**4.933**
flows	Low	1.891	2.448	2.551	1.567	1.176	0.817	0.626	0.554	1.224	1.243	1.714	3.125	**2.669**
(m^3s^{-1})	High	15.740	18.730	11.690	8.346	7.274	4.678	5.312	4.941	9.909	16.440	11.980	14.440	**6.409**
Peak flow (m^3s^{-1})		110.60	114.60	93.02	75.41	173.40	75.04	228.80	128.00	88.95	99.72	148.19	244.00	**244.00**
Runoff (mm)		86	73	60	38	33	22	18	19	22	39	50	77	**540**
Rainfall (mm)		122	90	82	55	69	64	59	70	79	96	94	119	**999**

Factors affecting runoff: PGEI
Station type: CC

1991 runoff is 93% of previous mean
rainfall 92%

Comment: minor flow changes expected following station recalibration

046003 Dart at Austins Bridge 1991

Measuring authority: NRA-SW
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	26.820	11.340	20.590	11.320	3.481	6.241	9.053	3.481	3.648	8.451	15.250	8.229	**10.670**
(m^3s^{-1}):	Peak	237.10	125.50	68.81	52.69	6.60	121.90	33.58	16.24	71.80	92.55	37.52	44.40	**237.10**
Runoff (mm)		290	111	223	118	38	65	98	38	38	91	160	89	**1359**
Rainfall (mm)		273	142	225	154	14	198	153	53	138	193	156	96	**1795**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	19.770	17.710	13.910	9.856	7.026	4.821	3.761	4.621	5.734	10.850	14.680	19.120	**10.963**
flows	Low	5.435	4.270	5.731	3.275	1.942	1.456	0.996	0.713	0.905	1.229	5.048	8.232	**7.304**
(m^3s^{-1})	High	36.680	43.870	33.520	22.720	14.530	14.260	10.930	12.590	26.290	28.000	33.400	35.540	**15.592**
Peak flow (m^3s^{-1})		284.00	309.40	236.10	187.40	98.88	253.00	206.50	222.20	327.60	168.20	317.80	549.70	**549.70**
Runoff (mm)		214	175	151	103	76	50	41	50	60	117	154	207	**1397**
Rainfall (mm)		231	167	164	112	103	93	92	119	135	181	196	233	**1826**

Factors affecting runoff: SR
Station type: VA

1991 runoff is 97% of previous mean
rainfall 98%

046005 East Dart at Bellever 1991

Measuring authority: NRA-SW
First year: 1964

Grid reference: 20 (SX) 657 775
Level stn. (m OD): 309.00

Catchment area (sq km): 21.5
Max alt. (m OD): 604

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	2.677	1.451	1.967	1.346	0.441	0.930	1.188	0.500	0.646	1.203	1.674	0.998	**1.251**
(m^3s^{-1}): Peak	38.69	18.70	8.78	8.22	0.80	15.26	11.64	4.21	20.44	15.57	5.81	8.87	**38.69**
Runoff (mm)	334	163	245	162	55	112	148	62	78	150	202	124	**1835**
Rainfall (mm)	315	180	234	192	19	223	199	71	156	215	198	128	**2130**

Monthly and yearly statistics for previous record (Apr 1964 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	2.094	1.851	1.429	0.938	0.747	0.629	0.525	0.610	0.762	1.269	1.637	2.103	**1.214**
Low	0.719	0.468	0.600	0.348	0.250	0.185	0.126	0.104	0.203	0.176	0.782	0.971	**0.809**
(m^3s^{-1}) High	3.830	5.103	3.639	1.990	1.605	1.589	1.303	1.571	3.306	2.903	3.586	3.756	**1.775**
Peak flow (m^3s^{-1})	47.28	45.63	32.53	26.80	18.89	47.89	59.67	54.01	53.35	32.71	53.76	67.06	**67.06**
Runoff (mm)	261	210	178	113	93	76	65	76	92	158	197	262	**1782**
Rainfall (mm)	256	185	186	113	117	115	109	129	154	200	214	270	**2048**

Factors affecting runoff: N
Station type: VA

1991 runoff is 103% of previous mean
rainfall 104%

047007 Yealm at Puslinch 1991

Measuring authority: NRA-SW
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	3.164	1.437	3.582	1.280	0.451	1.205	1.991	0.764	0.607	1.286	2.126	1.293	**1.603**
(m^3s^{-1}): Peak	24.09	19.84	23.85	3.67	0.91	28.83	8.62	2.51	9.08	19.69	4.43	5.15	**28.83**
Runoff (mm)	154	63	175	60	22	57	97	37	29	63	100	63	**921**
Rainfall (mm)	156	97	192	110	5	211	144	51	111	143	115	79	**1414**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990—incomplete or missing months total 0.2 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	2.988	2.917	2.126	1.361	0.942	0.754	0.549	0.641	0.779	1.393	2.157	2.824	**1.614**
Low	0.563	1.015	0.659	0.450	0.237	0.171	0.095	0.057	0.183	0.121	0.373	1.171	**1.052**
(m^3s^{-1}) High	4.947	6.221	5.290	3.646	1.997	2.377	1.863	1.957	3.630	3.808	4.881	6.108	**2.210**
Peak flow (m^3s^{-1})	27.49	26.77	26.63	24.11	17.53	23.47	25.22	28.32	21.33	26.66	26.62	25.18	**28.32**
Runoff (mm)	146	130	104	64	46	36	27	31	37	68	102	138	**927**
Rainfall (mm)	169	134	129	78	89	90	81	100	112	135	155	170	**1442**

Factors affecting runoff: P I
Station type: FLVA

1991 runoff is 99% of previous mean
rainfall 98%

047008 Thrushel at Tinhay 1991

Measuring authority: NRA-SW
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	4.239	2.711	3.143	1.877	0.500	0.918	0.629	0.858	0.869	1.534	3.520	1.661	**1.866**
(m^3s^{-1}): Peak	26.30	22.25	15.64	17.41	3.18	3.38	7.43	2.27	2.07	14.61	13.12	8.97	**26.30**
Runoff (mm)	101	58	75	43	12	21	15	20	20	36	81	39	**522**
Rainfall (mm)	141	82	104	97	12	104	85	28	67	111	121	50	**1002**

Monthly and yearly statistics for previous record (Nov 1969 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	5.071	4.137	3.104	1.610	1.064	0.675	0.434	0.733	1.004	2.442	3.659	4.658	**2.376**
Low	1.317	0.951	1.150	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	1.417	2.916	6.671	6.878	7.195	8.122	**3.750**
Peak flow (m^3s^{-1})	53.32	61.78	61.46	27.72	38.72	57.13	10.91	33.64	75.12	66.18	57.07	124.40	**124.40**
Runoff (mm)	121	90	74	37	25	16	10	17	23	58	84	111	**665**
Rainfall (mm)*	145	104	101	60	66	74	68	88	93	119	127	139	**1184**

*(1970-1990)

Factors affecting runoff: S H
Station type: CC

1991 runoff is 78% of previous mean
rainfall 85%

048004 Warleggan at Trengoffe 1991

Measuring authority: NRA-SW
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	1.549	0.912	1.507	0.919	0.463	0.434	0.604	0.429	0.321	0.416	1.234	0.681	**0.789**
(m^3s^{-1}): Peak	3.46	2.73	2.61	2.12	0.83	2.41	1.98	0.67	1.14	2.85	2.00	1.00	**3.46**
Runoff (mm)	164	87	160	94	49	44	64	45	33	44	126	72	**983**
Rainfall (mm)	168	109	165	118	12	165	121	47	88	150	159	55	**1357**

Monthly and yearly statistics for previous record (Oct 1969 to Dec 1990—incomplete or missing months total 0.3 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	1.435	1.409	1.030	0.721	0.508	0.408	0.338	0.374	0.445	0.682	1.013	1.318	**0.804**
Low	0.648	0.751	0.585	0.403	0.275	0.208	0.151	0.118	0.177	0.208	0.233	0.843	**0.610**
(m^3s^{-1}) High	2.584	2.906	1.588	1.234	0.978	0.904	0.688	0.950	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)	152	136	109	74	54	42	36	40	46	72	104	140	**1003**
Rainfall (mm)*	184	128	127	71	78	88	88	104	119	149	164	174	**1474**

*(1970-1990)

Factors affecting runoff: N
Station type: CC

1991 runoff is 98% of previous mean
rainfall 92%

048005 Kenwyn at Truro 1991

Measuring authority: NRA-SW
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.172	0.537	0.997	0.445	0.182	0.135	0.120	0.076	0.066	0.117	0.459	0.218	**0.377**
(m^3s^{-1}):	Peak	3.58	1.93	3.08	1.88	0.35	2.34	0.71	0.14	1.15	1.99	1.70	0.44	**3.58**
Runoff (mm)		164	68	140	60	26	18	17	11	9	16	62	31	**622**
Rainfall (mm)		152	90	145	100	6	99	79	28	65	136	101	35	**1036**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.821	0.800	0.547	0.322	0.190	0.135	0.088	0.086	0.108	0.256	0.459	0.733	**0.377**
flows	Low	0.283	0.333	0.228	0.156	0.090	0.070	0.043	0.026	0.037	0.034	0.046	0.436	**0.264**
(m^3s^{-1})	High	1.505	1.638	0.917	0.613	0.418	0.358	0.162	0.179	0.564	0.714	1.093	1.091	**0.544**
Peak flow (m^3s^{-1})		22.50	7.19	5.74	4.07	1.82	3.71	2.79	2.29	4.10	30.37	9.74	13.35	**30.37**
Runoff (mm)		115	102	77	44	27	18	12	12	15	36	62	103	**623**
Rainfall (mm)		146	106	97	56	61	64	56	73	83	113	127	142	**1124**

Factors affecting runoff: N
Station type: CC

1991 runoff is 100% of previous mean
rainfall 92%

048011 Fowey at Restormel 1991

Measuring authority: NRA-SW
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	9.738	4.755	9.462	4.283	1.716	2.001	2.740	1.682	1.332	1.992	6.974	2.947	**4.135**
(m^3s^{-1}):	Peak	24.49	19.16	18.00	9.91	3.40	10.96	8.84	3.02	3.99	16.04	10.99	4.84	**24.49**
Runoff (mm)		154	68	150	66	27	31	43	27	20	32	107	47	**771**
Rainfall (mm)		172	110	179	119	11	158	116	45	87	149	150	54	**1350**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	9.199	8.525	6.098	4.043	2.931	2.121	1.814	1.999	2.510	4.457	6.626	8.917	**4.922**
flows	Low	3.071	3.304	2.727	1.684	1.034	0.693	0.563	0.343	0.673	0.617	0.921	4.401	**3.391**
(m^3s^{-1})	High	17.330	21.780	12.130	7.641	6.447	5.479	4.859	6.044	10.490	11.720	15.450	20.890	**7.440**
Peak flow (m^3s^{-1})		66.89	95.15	45.62	27.02	25.82	38.32	30.58	48.51	70.02	35.07	61.60	126.60	**126.60**
Runoff (mm)		146	123	97	62	46	33	29	32	38	71	102	141	**918**
Rainfall (mm)		181	126	130	79	89	89	92	106	119	143	168	182	**1504**

Factors affecting runoff: SRP
Station type: CC
Comment: minor changes to pre-1991 flows anticipated following re-calibration

1991 runoff is 84% of previous mean
rainfall 90%

049001 Camel at Denby 1991

Measuring authority: NRA-SW
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13.600	7.256	12.210	5.780	3.014	2.610	4.012	2.441	1.568	3.045	10.180	4.184	**5.822**
(m^3s^{-1}):	Peak	40.44	27.08	24.29	14.60	5.83	16.13	19.64	3.67	10.10	26.07	17.01	6.68	**40.44**
Runoff (mm)		174	84	157	72	39	32	51	31	19	39	126	54	**879**
Rainfall (mm)		159	99	155	110	11	137	112	42	95	142	140	50	**1252**

Monthly and yearly statistics for previous record (Sep 1964 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	11.240	10.090	7.101	4.515	3.207	2.355	2.222	2.423	2.872	5.454	7.863	10.810	**5.830**
flows	Low	4.833	4.249	2.835	2.081	0.960	0.888	0.582	0.421	0.798	0.882	1.371	6.135	**4.081**
(m^3s^{-1})	High	19.600	23.260	16.420	9.395	8.491	5.463	7.322	7.858	11.920	16.640	17.990	19.110	**8.165**
Peak flow (m^3s^{-1})		73.18	80.21	94.75	35.42	23.98	45.32	40.59	63.98	125.80	92.14	94.75	227.90	**227.90**
Runoff (mm)		144	118	91	56	41	29	29	31	36	70	98	139	**881**
Rainfall (mm)		169	113	117	72	81	86	91	101	113	140	151	164	**1398**

Factors affecting runoff: SRP E
Station type: VA

1991 runoff is 100% of previous mean
rainfall 90%

049004 Gannel at Gwills 1991

Measuring authority: NRA-SW
First year: 1969
Grid reference: 10 (SW) 829 593
Level stn. (m OD): 8.80
Catchment area (sq km): 41.0
Max alt. (m OD): 212

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.624	0.925	1.559	0.811	0.377	0.302	0.306	0.186	0.155	0.264	0.816	0.494	**0.651**
(m^3s^{-1}):	Peak	6.49	3.09	5.67	3.41	0.77	3.92	1.24	0.27	1.71	4.85	1.74	1.12	**6.49**
Runoff (mm)		106	55	102	51	25	19	20	12	10	17	52	32	**501**
Rainfall (mm)		134	70	130	109	7	116	85	32	70	112	103	33	**1001**

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.417	1.443	0.991	0.623	0.372	0.279	0.186	0.188	0.209	0.475	0.833	1.248	**0.685**
flows	Low	0.534	0.646	0.422	0.338	0.188	0.153	0.092	0.068	0.081	0.077	0.096	0.844	**0.489**
(m^3s^{-1})	High	2.395	2.775	1.650	1.069	0.856	0.625	0.394	0.473	0.740	1.161	2.044	2.211	**0.946**
Peak flow (m^3s^{-1})		16.76	18.30	14.97	8.33	11.44	23.05	3.29	9.00	10.57	26.68	24.46	24.49	**26.68**
Runoff (mm)		93	86	65	39	24	18	12	12	13	31	53	81	**528**
Rainfall (mm)		134	96	91	52	58	64	56	74	82	106	122	126	**1061**

Factors affecting runoff: GEI
Station type: C

1991 runoff is 95% of previous mean
rainfall 94%

050002 Torridge at Torrington 1991

Measuring authority: NRA-SW | Grid reference: 21 (SS) 500 185 | Catchment area (sq km): 663.0
First year: 1962 | Level stn. (m OD): 13.90 | Max alt. (m OD): 621

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	40.096	23.934	23.938	14.642	3.973	3.506	6.327	1.603	1.712	7.064	31.617	11.523	**14.095**
(m^3s^{-1}):	Peak	264.43	194.43	84.17	91.89	22.58	27.28	55.07	3.24	20.75	74.25	94.53	59.70	**264.43**
Runoff (mm)		162	87	97	57	16	14	26	6	7	29	124	47	**672**
Rainfall (mm)		164	92	102	111	12	111	91	28	80	114	133	57	**1095**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	30.350	25.450	18.680	10.810	7.733	4.522	4.284	4.961	6.859	15.990	26.170	31.050	**15.535**
flows	Low	5.018	4.695	5.792	3.082	1.399	1.092	0.443	0.252	0.954	0.668	3.798	10.270	**8.968**
(m^3s^{-1})	High	57.510	63.970	51.280	28.120	31.290	14.960	21.540	19.690	45.910	49.230	55.730	64.530	**21.036**
Peak flow (m^3s^{-1})		284.30	294.40	535.60	153.00	158.44	181.30	231.01	228.50	415.00	276.40	313.19	730.00	**730.00**
Runoff (mm)		123	94	75	42	31	18	17	20	27	65	102	125	**739**
Rainfall (mm)		131	94	98	66	72	74	73	85	97	117	132	133	**1172**

Factors affecting runoff: SRP EI
Station type: VA

1991 runoff is 91% of previous mean
rainfall 93%

Comment: minor changes to pre-1991 flows anticipated following re-calibration

052007 Parrett at Chiselborough 1991

Measuring authority: NRA-W | Grid reference: 31 (ST) 461 144 | Catchment area (sq km): 74.8
First year: 1966 | Level stn. (m OD): 20.70 | Max alt. (m OD): 219

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.020	1.383	2.504	1.112	0.438	0.361	0.244	0.194	0.481	0.588	1.520	0.438	**1.022**
(m^3s^{-1}):	Peak	22.30	12.31	15.92	8.57	1.08	1.67	0.61	0.97	7.85	9.49	9.69	0.80	**22.30**
Runoff (mm)		108	45	90	39	16	13	9	7	17	21	53	16	**431**
Rainfall (mm)		120	50	94	86	15	96	54	36	94	95	71	18	**829**

Monthly and yearly statistics for previous record (Aug 1966 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.424	2.085	1.545	0.840	0.710	0.484	0.348	0.345	0.424	0.948	1.258	2.077	**1.121**
flows	Low	0.258	0.593	0.523	0.285	0.206	0.130	0.106	0.090	0.145	0.186	0.218	0.409	**0.564**
(m^3s^{-1})	High	4.914	6.120	3.055	1.867	2.048	1.053	0.921	0.988	2.225	4.819	3.789	4.219	**1.534**
Peak flow (m^3s^{-1})		36.38	30.70	27.46	21.20	57.21	12.81	16.14	23.88	15.29	27.22	29.12	44.94	**57.21**
Runoff (mm)		87	68	55	29	25	17	12	12	15	34	44	74	**473**
Rainfall (mm)		106	78	80	46	68	63	54	67	73	88	83	106	**912**

Factors affecting runoff: E
Station type: C

1991 runoff is 91% of previous mean
rainfall 91%

052010 Brue at Lovington 1991

Measuring authority: NRA-W | Grid reference: 31 (ST) 590 318 | Catchment area (sq km): 135.2
First year: 1964 | Level stn. (m OD): 19.80 | Max alt. (m OD): 260

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.819	1.412	3.096	1.464	0.678	0.947	0.915	0.382	0.318	0.630	1.754	1.523	**1.415**
(m^3s^{-1}):	Peak	18.52	4.64	23.20	7.54	2.16	8.14	16.61	0.79	2.10	4.61	14.43	7.03	**23.20**
Runoff (mm)		76	25	61	28	13	18	18	8	6	12	34	30	**330**
Rainfall (mm)		86	35	83	80	10	128	81	30	65	84	57	40	**779**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.526	3.375	2.568	1.553	1.171	0.776	0.821	0.761	0.780	1.367	2.164	3.441	**1.853**
flows	Low	0.743	0.910	0.844	0.526	0.313	0.217	0.150	0.130	0.217	0.190	0.407	1.034	**1.153**
(m^3s^{-1})	High	5.752	6.961	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	53.57	43.49	27.19	95.48	35.46	83.00	48.42	69.42	61.06	74.62	61.06	**95.48**
Runoff (mm)		70	61	51	30	23	15	16	15	15	27	41	68	**432**
Rainfall (mm)		88	69	74	52	66	66	69	73	75	77	84	95	**888**

Factors affecting runoff: N
Station type: C VA

1991 runoff is 76% of previous mean
rainfall 88%

053004 Chew at Compton Dando 1991

Measuring authority: NRA-W | Grid reference: 31 (ST) 648 647 | Catchment area (sq km): 129.5
First year: 1958 | Level stn. (m OD): 16.80 | Max alt. (m OD): 305

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.511	0.927	1.301	0.948	0.605	0.512	0.442	0.384	0.399	0.439	1.011	0.701	**0.849**
(m^3s^{-1}):	Peak	19.59	4.80	4.34	3.14	0.88	0.97	0.91	0.47	0.64	1.71	2.60	2.34	**19.59**
Runoff (mm)		52	17	27	19	13	10	9	8	8	9	20	15	**207**
Rainfall (mm)		134	48	86	87	11	105	75	20	65	93	103	42	**869**

Monthly and yearly statistics for previous record (Mar 1958 to Dec 1990—incomplete or missing months total 1.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.868	1.767	1.410	1.007	0.820	0.596	0.461	0.457	0.564	0.806	1.203	1.721	**1.054**
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})		39.43	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	33	29	20	17	12	10	9	11	17	24	36	**257**
Rainfall (mm)		102	72	80	60	70	70	69	83	90	93	100	113	**1002**

Factors affecting runoff: S P
Station type: FL

1991 runoff is 81% of previous mean
rainfall 87%

053006 Frome(Bristol) at Frenchay 1991

Measuring authority: NRA-W
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

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.640	1.839	2.678	1.023	0.453	0.877	0.617	0.263	0.249	0.322	1.867	0.808	**1.217**
(m^3s^{-1}):	Peak	16.31	13.00	11.32	3.22	1.29	5.70	6.06	1.03	2.93	3.13	7.86	2.51	**16.31**
Runoff (mm)		65	30	48	18	8	15	11	5	4	6	33	15	**258**
Rainfall (mm)		100	43	65	60	10	112	81	15	56	58	94	25	**719**

Monthly and yearly statistics for previous record (Sep 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.360	2.936	2.362	1.397	1.146	0.765	0.599	0.533	0.711	1.216	2.145	3.068	**1.682**
flows	Low	0.670	0.613	0.636	0.476	0.228	0.220	0.122	0.139	0.208	0.162	0.211	0.820	**0.804**
(m^3s^{-1})	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	**2.255**
Peak flow (m^3s^{-1})		35.05	41.09	33.84	29.63	49.00	29.01	70.79	12.75	29.73	42.93	39.90	66.55	**70.79**
Runoff (mm)		60	48	42	24	21	13	11	10	12	22	37	55	**356**
Rainfall (mm)		76	56	65	49	63	63	54	69	72	72	74	86	**799**

Factors affecting runoff: N
Station type: FL

1991 runoff is 72% of previous mean
rainfall 90%

053007 Frome(Somerset) at Tellisford 1991

Measuring authority: NRA-W
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	7.028	3.186	6.564	3.410	1.386	1.659	1.232	0.693	0.639	1.175	3.475	2.330	**2.732**
(m^3s^{-1}):	Peak	28.03	12.33	39.16	10.02	3.22	6.37	5.76	1.73	4.13	8.42	18.35	9.73	**39.16**
Runoff (mm)		72	29	67	34	14	16	13	7	6	12	34	24	**329**
Rainfall (mm)		114	44	94	79	10	117	74	28	67	91	77	36	**831**

Monthly and yearly statistics for previous record (Sep 1961 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	6.862	6.529	5.504	3.662	2.650	1.794	1.385	1.414	1.689	2.739	4.435	6.378	**3.742**
flows	Low	1.684	2.072	1.938	1.510	0.843	0.518	0.329	0.291	0.522	0.612	0.962	2.627	**2.334**
(m^3s^{-1})	High	12.340	13.710	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	108.10	82.49	71.03	59.90	84.58	83.64	**108.10**
Runoff (mm)		70	61	56	36	27	18	14	14	17	28	44	65	**451**
Rainfall (mm)		97	72	85	60	72	66	64	78	85	85	93	105	**962**

Factors affecting runoff: PG
Station type: FL

1991 runoff is 73% of previous mean
rainfall 86%

054012 Tern at Walcot 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13.260	5.995	10.100	4.792	3.091	1.024	0.925	2.104	2.060	2.423	3.711	3.347	**4.406**
(m^3s^{-1}):	Peak	41.04	10.65	32.54	9.99	8.08	1.44	7.16	4.76	3.96	4.50	7.96	7.37	**41.04**
Runoff (mm)		42	17	32	15	10	3	3	7	6	8	11	11	**163**
Rainfall (mm)		62	31	59	53	10	63	79	23	34	47	61	26	**548**

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	11.190	10.390	8.892	7.377	6.344	4.544	3.843	3.862	3.911	5.520	7.825	10.600	**7.011**
flows	Low	4.018	4.002	4.800	3.557	2.904	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	**10.266**
Peak flow (m^3s^{-1})		60.05	45.98	40.53	40.73	40.35	27.00	48.71	38.53	32.17	37.59	44.54	55.82	**60.05**
Runoff (mm)		35	30	28	22	20	14	12	12	12	17	24	33	**260**
Rainfall (mm)		61	47	54	50	61	57	53	63	61	61	70	68	**706**

Factors affecting runoff: GEI
Station type: FV

1991 runoff is 63% of previous mean
rainfall 78%

Comment: May–Sept. flows are overestimated due to the effect of weedgrowth; reprocessing anticipated

054019 Avon at Stareton 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.192	2.594	3.085	1.440	1.137	0.971	1.185	0.680	0.671	0.699	1.391	1.007	**1.585**
(m^3s^{-1}):	Peak	22.31	5.70	7.61	7.54	7.37	2.30	7.30	3.96	3.22	2.33	4.48	2.07	**22.31**
Runoff (mm)		32	18	24	11	9	7	9	5	5	5	10	8	**144**
Rainfall (mm)		62	32	37	62	13	77	91	16	75	42	46	20	**573**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.480	4.559	4.193	2.856	2.055	1.387	0.993	1.031	0.984	1.527	2.314	3.935	**2.518**
flows	Low	0.798	0.777	0.545	0.485	0.474	0.368	0.247	0.356	0.414	0.507	0.549	0.667	**1.094**
(m^3s^{-1})	High	9.678	12.890	8.577	6.356	6.149	4.862	5.379	3.332	2.858	5.274	5.587	10.400	**3.588**
Peak flow (m^3s^{-1})		55.83	59.60	55.89	42.67	39.05	42.89	71.36	26.08	16.59	32.89	34.11	56.28	**71.36**
Runoff (mm)		35	32	32	21	16	10	8	8	7	12	17	30	**229**
Rainfall (mm)		55	46	55	49	56	60	54	68	52	54	57	62	**668**

Factors affecting runoff: S EI
Station type: CVA

1991 runoff is 63% of previous mean
rainfall 86%

054020 Perry at Yeaton 1991

Measuring authority: NRA-ST
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	3.321	1.698	3.101	1.220	0.882	0.579	0.475	0.408	0.350	0.465	0.935	0.725	**1.180**
(m^3s^{-1}): Peak	11.78	6.91	12.94	3.23	2.18	0.74	0.86	0.76	0.60	0.70	4.54	1.38	**12.94**
Runoff (mm)	49	23	46	18	13	8	7	6	5	7	13	11	**206**
Rainfall (mm)	79	45	75	57	15	57	78	18	40	57	82	26	**629**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	2.889	2.789	2.353	1.761	1.380	0.935	0.719	0.698	0.702	1.103	1.719	2.587	**1.631**
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	4.870	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})	14.26	17.66	11.12	10.83	10.41	8.49	7.87	5.49	7.32	7.52	10.02	12.57	**17.66**
Runoff (mm)	43	38	35	25	20	13	11	10	10	16	25	38	**285**
Rainfall (mm)	69	55	62	49	62	57	56	62	64	66	78	80	**760**

Factors affecting runoff: GEI
Station type: C

1991 runoff is 72% of previous mean
rainfall 83%

054022 Severn at Plynlimon flume 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.727	0.674	0.606	0.638	0.127	0.261	0.288	0.547	0.291	0.554	1.052	0.621	**0.531**
(m^3s^{-1}): Peak	10.77	16.99	6.46	6.34	0.55	1.46	2.59	5.97	3.73	3.17	8.30	14.45	**16.99**
Runoff (mm)	224	188	187	190	39	78	89	168	87	171	313	191	**1924**
Rainfall (mm)	242	192	166	234	19	149	129	203	166	209	347	195	**2251**

Monthly and yearly statistics for previous record (Oct 1953 to Dec 1990—incomplete or missing months total 10.4 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	0.773	0.599	0.616	0.334	0.232	0.220	0.280	0.391	0.505	0.640	0.772	0.770	**0.511**
Low	0.363	0.136	0.171	0.046	0.046	0.045	0.043	0.032	0.073	0.059	0.268	0.174	**0.317**
(m^3s^{-1}) High	1.567	1.249	1.566	0.878	0.818	0.638	0.754	0.935	1.092	1.464	1.420	1.313	**0.646**
Peak flow (m^3s^{-1})	14.49	13.90	14.53	11.64	9.86	10.66	·8.83	32.22	15.38	18.85	17.77	17.11	**32.22**
Runoff (mm)	238	168	190	100	72	66	86	120	151	197	230	237	**1854**
Rainfall (mm)	291	190	215	128	128	136	149	184	222	251	275	284	**2453**

Factors affecting runoff: N
Station type: FL

1991 runoff is 104% of previous mean
rainfall 92%

054024 Worfe at Burcote 1991

Measuring authority: NRA-ST
First year: 1969
Grid reference: 32 (SO) 747 953
Level stn. (m OD): 33.20
Catchment area (sq km): 258.0
Max alt. (m OD): 120

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	1.852	1.039	1.476	0.973	0.704	0.574	0.503	0.421	0.322	0.422	0.599	0.508	**0.783**
(m^3s^{-1}): Peak	5.83	1.80	4.11	2.89	1.99	1.04	1.70	1.12	0.84	0.57	1.00	0.75	**5.83**
Runoff (mm)	19	10	15	10	7	6	5	4	3	4	6	5	**96**
Rainfall (mm)	71	31	51	69	9	61	86	24	43	42	52	17	**556**

Monthly and yearly statistics for previous record (Apr 1969 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	1.903	1.904	1.681	1.470	1.202	0.865	0.602	0.659	0.662	0.833	1.116	1.534	**1.199**
Low	0.616	0.669	0.772	0.547	0.426	0.256	0.101	0.094	0.345	0.423	0.499	0.532	**0.687**
(m^3s^{-1}) High	3.144	3.802	3.171	2.491	4.490	1.527	1.293	1.111	0.887	1.535	2.235	2.551	**1.519**
Peak flow (m^3s^{-1})	10.84	10.56	6.86	7.73	16.09	5.65	4.06	4.32	5.10	3.87	5.88	16.00	**16.09**
Runoff (mm)	20	18	17	15	12	9	6	7	7	9	11	16	**147**
Rainfall (mm)	66	52	56	47	60	55	45	62	62	54	65	64	**688**

Factors affecting runoff: PGEI
Station type: C

1991 runoff is 65% of previous mean
rainfall 81%

054034 Dowles Brook at Dowles 1991

Measuring authority: NRA-ST
First year: 1971
Grid reference: 32 (SO) 768 764
Level stn. (m OD): 24.20
Catchment area (sq km): 40.8
Max alt. (m OD): 230

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.900	0.389	0.986	0.275	0.174	0.083	0.073	0.045	0.034	0.044	0.156	0.098	**0.272**
(m^3s^{-1}): Peak	9.45	1.20	14.96	2.29	1.13	0.23	0.88	0.15	0.24	0.38	0.88	0.30	**14.96**
Runoff (mm)	59	23	65	17	11	5	5	3	2	3	10	6	**210**
Rainfall (mm)	88	35	81	64	8	74	89	26	50	51	55	20	**641**

Monthly and yearly statistics for previous record (Oct 1971 to Dec 1990—incomplete or missing months total 3.2 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	0.811	0.812	0.686	0.458	0.303	0.193	0.087	0.065	0.124	0.209	0.283	0.657	**0.389**
Low	0.097	0.220	0.278	0.116	0.073	0.033	0.017	0.019	0.020	0.036	0.046	0.072	**0.240**
(m^3s^{-1}) High	1.617	1.738	1.637	1.090	1.016	0.691	0.254	0.130	0.880	1.047	0.765	1.414	**0.508**
Peak flow (m^3s^{-1})	16.57	9.67	12.43	12.90	12.14	16.28	4.73	2.69	19.35	5.09	7.72	18.90	**19.35**
Runoff (mm)	53	49	45	29	20	12	6	4	8	14	18	43	**301**
Rainfall (mm)	71	56	64	50	54	58	52	58	64	64	55	79	**725**

Factors affecting runoff: N
Station type: FVVA

1991 runoff is 70% of previous mean
rainfall 88%

054038 Tanat at Llanyblodwel 1991

Measuring authority: NRA-ST
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	16.550	8.708	11.020	5.510	2.043	2.131	1.377	0.715	0.542	2.974	11.300		
(m^3s^{-1}):	Peak	123.10	101.20	45.38	24.40	5.71	9.09	4.52	1.85	7.71	22.29	36.98		**123.10**
Runoff (mm)		194	92	129	62	24	24	16	8	6	35	128	0	
Rainfall (mm)		151	103	127	104	11	111	84	33	67	115	142	91	**1139**

Monthly and yearly statistics for previous record (Jun 1973 to Dec 1990—incomplete or missing months total 0.4 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	11.670	10.270	8.951	5.317	3.204	2.182	1.332	2.415	3.278	6.944	9.484	11.830	**6.392**
flows	Low	5.037	3.707	2.693	1.392	0.867	0.699	0.348	0.190	0.520	1.701	2.895	5.738	**4.185**
(m^3s^{-1})	High	19.220	21.460	17.800	9.686	10.250	4.660	2.589	7.609	9.885	15.020	17.370	21.410	**7.510**
Peak flow (m^3s^{-1})		93.99	76.47	85.77	39.85	31.27	56.87	15.68	118.20	69.56	82.17	76.12	87.99	**118.20**
Runoff (mm)		137	110	105	60	37	25	16	28	37	81	107	138	**881**
Rainfall (mm)		137	102	111	65	74	69	61	89	105	122	130	151	**1216**

Factors affecting runoff: N EI
Station type: FVVA

1991 runoff is % of previous mean
rainfall 94%

055008 Wye at Cefn Brwyn 1991

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): 740

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.895	0.852	0.671	0.782	0.138	0.368	0.420	0.699	0.417	0.656	1.284	0.756	**0.659**
(m^3s^{-1}):	Peak	10.73	21.10	8.48	9.18	0.67	2.49	3.95	11.20	7.81	4.79	13.18	21.84	**21.84**
Runoff (mm)		227	195	170	192	35	90	107	178	103	167	315	192	**1971**
Rainfall (mm)		223	205	173	245	26	162	144	211	177	206	316	206	**2294**

Monthly and yearly statistics for previous record (Aug 1951 to Dec 1990—incomplete or missing months total 2.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.969	0.754	0.696	0.511	0.378	0.344	0.431	0.563	0.668	0.826	1.020	1.108	**0.689**
flows	Low	0.492	0.136	0.206	0.064	0.054	0.074	0.053	0.036	0.050	0.091	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	1.761	2.655	**0.994**
Peak flow (m^3s^{-1})		23.47	19.20	23.37	19.12	17.89	25.49	19.11	48.87	22.64	27.68	29.15	32.00	**48.87**
Runoff (mm)		246	174	177	126	96	84	109	143	164	210	251	281	**2061**
Rainfall (mm)		265	174	201	145	132	140	160	195	205	246	267	307	**2437**

Factors affecting runoff: N
Station type: CC

1991 runoff is 96% of previous mean
rainfall 94%

055013 Arrow at Titley Mill 1991

Measuring authority: NRA-WEL
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.017	2.617	4.643	1.981	1.341	0.516	0.386	0.295	0.269	1.282	3.078	1.872	**2.026**
(m^3s^{-1}):	Peak	37.00	10.60	18.00	6.30	3.50	0.86	1.30	0.57	3.00	7.90	8.40	8.60	**37.00**
Runoff (mm)		128	50	98	41	28	11	8	6	6	27	63	40	**506**
Rainfall (mm)		120	68	102	93	13	86	78	31	86	108	81	60	**926**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.759	4.219	3.528	2.239	1.687	1.080	0.703	0.610	0.825	1.956	3.021	4.266	**2.401**
flows	Low	1.528	1.912	1.629	0.632	0.355	0.256	0.210	0.154	0.135	0.255	0.662	1.366	**1.309**
(m^3s^{-1})	High	9.003	8.763	8.933	5.028	5.001	2.559	3.842	1.546	2.459	6.916	6.625	8.464	**3.418**
Peak flow (m^3s^{-1})		101.10	42.40	57.85	37.95	32.49	13.09	30.68	24.79	18.85	36.45	28.98	63.34	**101.10**
Runoff (mm)		101	81	75	46	36	22	15	13	17	41	62	90	**599**
Rainfall (mm)		111	85	87	58	72	65	54	74	88	97	97	112	**1000**

Factors affecting runoff: N
Station type: VA

1991 runoff is 84% of previous mean
rainfall 93%

055014 Lugg at Byton 1991

Measuring authority: NRA-WEL
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	10.370	4.316	8.408	3.925	2.334	1.243	1.078	0.870	0.701	1.517	4.713	3.503	**3.586**
(m^3s^{-1}):	Peak	31.80	11.00	23.00	7.30	4.30	1.40	1.80	1.10	2.00	4.80	7.50	10.60	**31.80**
Runoff (mm)		137	51	111	50	31	16	14	11	9	20	60	46	**556**
Rainfall (mm)		132	64	109	102	9	86	85	26	73	110	90	59	**945**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	7.479	7.159	5.911	4.127	3.058	1.972	1.386	1.137	1.284	2.673	4.357	6.437	**3.901**
flows	Low	2.604	2.630	2.947	1.626	1.054	0.772	0.557	0.414	0.420	0.657	1.219	2.443	**2.321**
(m^3s^{-1})	High	11.940	16.530	13.980	8.648	7.994	4.113	5.253	1.997	3.079	7.962	8.774	11.560	**4.954**
Peak flow (m^3s^{-1})		54.27	37.53	33.24	30.08	45.56	14.18	26.16	13.32	12.46	28.51	27.22	37.49	**54.27**
Runoff (mm)		99	86	78	53	40	25	18	15	16	35	56	85	**606**
Rainfall (mm)		117	87	90	63	76	64	56	74	87	96	98	114	**1022**

Factors affecting runoff:
Station type: FVVA

1991 runoff is 92% of previous mean
rainfall 92%

055018 Frome at Yarkhill 1991

Measuring authority: NRA-WEL
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.864	1.050	2.527	0.738	0.567	0.304	0.202	0.195	0.177	0.205	0.572	0.353	**0.730**
(m^3s^{-1}):	Peak	19.30	4.30	19.00	1.90	1.10	0.70	0.98	0.63	1.07	0.65	3.70	0.58	**19.30**
Runoff (mm)		35	18	47	13	11	5	4	4	3	4	10	7	**160**
Rainfall (mm)		95	36	83	62	5	74	82	17	61	54	64	15	**648**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	2.666	2.560	2.085	1.311	1.060	0.617	0.350	0.317	0.300	0.467	0.947	1.959	**1.214**
flows	Low	0.214	0.389	0.560	0.359	0.274	0.146	0.091	0.063	0.096	0.142	0.119	0.210	**0.672**
(m^3s^{-1})	High	4.668	5.456	5.176	3.299	3.972	1.349	0.630	0.759	0.970	2.405	2.266	4.230	**1.628**
Peak flow (m^3s^{-1})		24.04	24.99	24.28	24.57	25.89	16.99	5.96	9.61	15.68	10.34	18.51	25.14	**25.89**
Runoff (mm)		50	43	39	24	20	11	7	6	5	9	17	36	**266**
Rainfall (mm)		74	54	61	46	58	57	46	64	58	60	62	74	**714**

Factors affecting runoff: E
Station type: VA

1991 runoff is 60% of previous mean
rainfall 91%

055023 Wye at Redbrook 1991

Measuring authority: NRA-WEL
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	191.700	93.570	153.000	82.380	37.010	24.090	22.780	22.300	18.350	51.280	130.000	75.660	**75.151**
(m^3s^{-1}):	Peak	569.00	455.00	368.00	262.50	185.00	58.00	44.80	66.70	141.60	205.00	269.00	428.90	**569.00**
Runoff (mm)		128	56	102	53	25	16	15	15	12	34	84	51	**591**
Rainfall (mm)		141	71	106	101	9	91	84	36	78	106	110	56	**989**

Monthly and yearly statistics for previous record (Oct 1936 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	132.500	124.400	93.330	64.720	43.800	33.960	24.210	27.890	39.490	59.860	100.400	123.800	**72.115**
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	333.900	325.400	143.600	125.000	131.600	95.830	83.680	174.000	174.700	252.400	246.000	**113.382**
Peak flow (m^3s^{-1})		748.00	700.40	905.40	493.30	387.90	467.20	368.30	347.80	531.70	472.90	600.30	812.70	**905.40**
Runoff (mm)		89	76	62	42	29	22	16	19	26	40	65	83	**567**
Rainfall (mm)		112	80	77	63	73	63	67	82	86	97	110	114	**1024**

Factors affecting runoff: S P E
Station type: VA

1991 runoff is 104% of previous mean
rainfall 97%

056013 Yscir at Pontaryscir 1991

Measuring authority: NRA-WEL
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.549	2.600	3.047	2.228	0.746	0.579	0.790	0.426	0.428	1.903	3.544	2.173	**1.915**
(m^3s^{-1}):	Peak	27.29	25.21	11.47	11.87	2.25	2.92	7.52	1.87	6.33	29.16	19.46	22.52	**29.16**
Runoff (mm)		194	100	130	92	32	24	34	18	18	81	146	93	**961**
Rainfall (mm)		203	114	144	151	12	116	105	48	103	152	139	92	**1379**

Monthly and yearly statistics for previous record (May 1972 to Dec 1990—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	3.505	2.835	2.618	1.439	0.989	0.716	0.507	0.678	1.088	2.160	2.976	3.580	**1.921**
flows	Low	1.146	0.998	0.852	0.431	0.269	0.214	0.150	0.104	0.251	0.214	0.941	1.540	**1.286**
(m^3s^{-1})	High	5.795	5.914	6.303	3.211	3.041	1.788	1.758	2.964	3.947	4.279	5.291	6.324	**2.465**
Peak flow (m^3s^{-1})		36.98	34.71	40.55	13.74	14.81	74.33	11.06	30.69	21.44	85.01	34.02	59.93	**85.01**
Runoff (mm)		149	110	112	59	42	30	22	29	45	92	123	153	**965**
Rainfall (mm)*		167	115	135	71	83	75	75	98	129	150	152	185	**1435**

*(1973-1990)

Factors affecting runoff: N
Station type: C

1991 runoff is 100% of previous mean
rainfall 96%

057008 Rhymney at Llanedeyrn 1991

Measuring authority: NRA-WEL
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	12.380	6.071	9.749	5.570	1.736	2.775	2.193	1.093	1.235	4.911	9.421	3.441	**5.043**
(m^3s^{-1}):	Peak	104.00	81.80	59.10	29.90	4.54	14.17	13.41	3.13	22.69	62.17	38.11	15.44	**104.00**
Runoff (mm)		186	82	146	81	26	40	33	16	18	74	137	52	**890**
Rainfall (mm)		198	108	161	135	5	150	102	42	104	180	161	61	**1407**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	9.713	8.817	7.248	4.179	2.910	1.977	1.546	2.416	3.407	5.981	7.688	9.199	**5.410**
flows	Low	3.313	3.199	2.889	1.204	0.611	0.873	0.602	0.453	0.569	0.748	2.355	3.218	**2.903**
(m^3s^{-1})	High	17.500	22.510	20.960	9.695	8.340	4.604	4.235	10.450	11.500	13.700	16.560	15.730	**7.153**
Peak flow (m^3s^{-1})		108.30	156.70	110.50	41.55	31.31	54.30	27.39	87.41	101.60	118.50	113.50	147.30	**156.70**
Runoff (mm)		146	120	109	61	44	29	23	36	49	90	112	138	**955**
Rainfall (mm)		165	124	129	68	79	72	71	101	133	152	143	170	**1407**

Factors affecting runoff: S PGE
Station type: FVVA

1991 runoff is 93% of previous mean
rainfall 100%

058009 Ewenny at Keepers Lodge 1991

Measuring authority: NRA-WEL
First year: 1971
Grid reference: 21 (SS) 920 782
Level stn. (m OD): 8.30
Catchment area (sq km): 62.5
Max alt. (m OD): 300

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	3.222	2.056	3.348	2.141	0.964	1.322	1.515	0.841	0.960	2.382	2.984	1.637	**1.948**
(m^3s^{-1}): Peak	23.48	17.38	51.23	27.50	2.17	10.09	23.60	2.27	19.46	36.60	18.39	6.97	**51.23**
Runoff (mm)	138	80	143	89	41	55	65	36	40	102	124	70	**983**
Rainfall (mm)	155	88	134	136	6	159	103	47	111	170	119	53	**1281**

Monthly and yearly statistics for previous record (Nov 1971 to Dec 1990—incomplete or missing months total 0.2 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	2.910	2.634	2.308	1.448	1.086	0.898	0.794	0.972	1.221	2.081	2.585	2.822	**1.810**
flows Low	1.268	1.224	1.011	0.654	0.500	0.431	0.302	0.220	0.458	0.409	1.082	1.323	**1.037**
(m^3s^{-1}) High	5.921	4.745	6.004	2.683	2.515	1.756	2.196	3.879	3.604	4.391	4.842	4.744	**2.344**
Peak flow (m^3s^{-1})	56.47	30.15	44.94	21.84	20.44	17.24	28.97	57.64	42.60	59.45	50.79	40.63	**59.45**
Runoff (mm)	125	103	99	60	47	37	34	42	51	89	107	121	**914**
Rainfall (mm)	145	105	115	66	79	88	78	109	129	146	142	145	**1347**

Factors affecting runoff:
Station type: FVVA

1991 runoff is 108% of previous mean
rainfall 95%

060002 Cothi at Felin Mynachdy 1991

Measuring authority: NRA-WEL
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	25.600	13.990	18.100	11.970	3.462	5.090	5.575	4.347	1.908	12.560	19.250	5.749	**10.618**
(m^3s^{-1}): Peak	219.10	110.60	89.01	78.50	9.35	24.95	36.26	23.56	10.35	123.90	72.96	14.10	**219.10**
Runoff (mm)	230	114	163	104	31	44	50	39	17	113	168	52	**1124**
Rainfall (mm)	223	138	164	166	18	144	134	65	96	214	156	60	**1578**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1990—incomplete or missing months total 2.0 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	18.550	14.860	13.050	8.563	6.326	4.158	3.537	6.072	7.702	15.230	18.040	20.170	**11.349**
flows Low	2.990	3.708	2.821	1.444	0.835	0.824	0.418	0.362	1.500	1.610	7.211	6.723	**7.174**
(m^3s^{-1}) High	37.580	40.210	40.710	20.380	14.820	13.070	11.810	23.350	23.920	37.940	36.270	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	283.70	194.50	274.70	**283.70**
Runoff (mm)	167	122	117	75	57	36	32	55	67	137	157	181	**1203**
Rainfall (mm)	178	122	136	94	99	96	97	123	144	184	174	191	**1638**

Factors affecting runoff: N
Station type: VA

1991 runoff is 93% of previous mean
rainfall 96%

060003 Taf at Clog-y-Fran 1991

Measuring authority: NRA-WEL
First year: 1965
Grid reference: 22 (SN) 238 160
Level stn. (m OD): 7.00
Catchment area (sq km): 217.3
Max alt. (m OD): 395

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.		7.467	15.220	7.195	2.242	1.680	2.507	2.391	1.851	9.366	14.850	3.899	
(m^3s^{-1}): Peak	65.60	39.70	59.92	25.54	4.10	7.39	20.37	12.75	17.74	82.47	41.35	6.21	**82.47**
Runoff (mm)		83	188	86	28	20	31	29	22	115	177	48	
Rainfall (mm)	165	104	160	135	13	118	127	59	102	202	136	37	**1358**

Monthly and yearly statistics for previous record (Oct 1965 to Dec 1990—incomplete or missing months total 1.2 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	13.280	11.040	8.782	5.586	3.655	2.484	1.860	2.856	3.679	9.143	11.630	13.720	**7.298**
flows Low	4.835	3.858	3.796	1.735	1.017	0.781	0.375	0.363	0.687	1.018	3.757	5.075	**4.672**
(m^3s^{-1}) High	25.900	27.200	26.610	11.800	8.412	8.820	6.335	10.760	15.340	22.310	22.730	25.520	**9.662**
Peak flow (m^3s^{-1})	73.43	81.15	85.73	60.03	35.85	45.11	38.25	101.00	58.02	86.49	80.82	77.74	**101.00**
Runoff (mm)	164	124	108	67	45	30	23	35	44	113	139	169	**1060**
Rainfall (mm)	161	110	118	80	81	80	73	104	121	165	154	176	**1423**

Factors affecting runoff: N
Station type: VA

1991 runoff is % of previous mean
rainfall 95%

060010 Tywi at Nantgaredig 1991

Measuring authority: NRA-WEL
First year: 1958
Grid reference: 22 (SN) 485 206
Level stn. (m OD): 7.80
Catchment area (sq km): 1090.4
Max alt. (m OD): 792

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	73.570	44.410	60.440	40.640	13.390	14.350	16.180	14.250	6.908	41.990	65.210	24.820	**34.632**
(m^3s^{-1}): Peak	225.40	219.20	167.00	143.50	40.04	56.88	70.70	45.03	45.53	198.00	153.90	70.01	**225.40**
Runoff (mm)	181	99	148	97	33	34	40	35	16	103	155	61	**1002**
Rainfall (mm)	215	123	156	155	14	136	122	67	92	193	162	70	**1505**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1990—incomplete or missing months total 2.1 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	67.370	49.990	41.480	31.260	22.180	14.750	12.820	19.680	26.520	48.590	60.100	65.770	**38.346**
flows Low	9.473	12.210	9.657	6.201	4.503	3.736	2.752	2.699	1.523	8.708	23.910	19.470	**22.516**
(m^3s^{-1}) High	120.600	109.300	137.800	64.470	51.420	39.400	42.120	78.470	76.440	128.700	122.600	128.300	**54.099**
Peak flow (m^3s^{-1})	507.40	578.80	702.30	215.30	180.10	256.80	295.90	312.50	322.80	1200E	461.10	526.70	**1200E**
Runoff (mm)	165	112	102	74	54	35	31	48	63	119	143	162	**1110**
Rainfall (mm)	183	124	106	106	98	94	105	121	127	160	163	179	**1566**

Factors affecting runoff: RP
Station type: FVVA

1991 runoff is 90% of previous mean
rainfall 96%

Comment: The period of record peak flow estimate may be subject to future review

063001 Ystwyth at Pont Llolwyn 1991

Measuring authority: NRA-WEL
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	9.677	7.452	6.353	6.653	1.935	1.979	2.498	3.379	2.094	5.620	12.220	5.066	**5.390**
(m^3s^{-1}): Peak	59.70	69.35	22.61	41.01	6.92	13.28	18.17	34.07	31.86	45.09	48.96	65.41	**69.35**
Runoff (mm)	153	106	100	102	31	30	39	53	32	89	187	80	**1002**
Rainfall (mm)	140	118	109	156	21	114	116	94	107	162	197	91	**1425**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990—incomplete or missing months total 0.4 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	9.395	7.083	6.237	4.279	3.113	2.459	2.603	3.322	4.359	7.327	9.263	10.770	**5.850**
flows Low	2.268	2.283	2.761	0.960	0.577	0.625	0.422	0.180	0.882	0.558	3.757	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	76.84	147.40	128.10	210.40	**210.40**
Runoff (mm)	148	102	99	65	49	38	41	52	67	116	142	170	**1088**
Rainfall (mm)	156	104	120	84	89	91	97	112	130	155	166	181	**1485**

Factors affecting runoff:
Station type: VA

1991 runoff is 92% of previous mean
rainfall 96%

064001 Dyfi at Dyfi Bridge 1991

Measuring authority: NRA-WEL
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): 907

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	37.150	28.520	26.200	27.620	6.275	11.400	11.330	19.850	6.839	19.370	40.020	27.050	**21.750**
(m^3s^{-1}): Peak	333.10	342.20	151.50	288.10	21.96	44.15	59.33	189.60	32.25	90.22	272.30	317.30	**342.20**
Runoff (mm)	211	146	149	152	36	63	64	113	38	110	220	154	**1455**
Rainfall (mm)	144	159	139	189	17	152	135	139	110	157	226	154	**1721**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1990—incomplete or missing months total 9.8 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	35.250	25.190	28.030	16.850	10.700	10.190	8.894	12.910	17.820	30.770	34.250	41.680	**22.725**
flows Low	6.245	5.174	5.789	2.626	1.295	1.618	0.822	1.819	5.966	10.770	14.530	7.501	**18.343**
(m^3s^{-1}) High	68.810	55.560	75.790	42.490	23.600	21.770	18.780	40.440	36.260	76.960	70.470	88.280	**26.520**
Peak flow (m^3s^{-1})	350.20	340.00	360.70	271.30	337.20	402.10	162.00	210.00	329.80	344.00	375.50	580.50	**580.50**
Runoff (mm)	200	130	159	93	61	56	51	73	98	175	188	237	**1521**
Rainfall (mm)	207	138	168	107	107	110	109	147	167	208	202	245	**1915**

Factors affecting runoff: N
Station type: VA

1991 runoff is 96% of previous mean
rainfall 90%

064002 Dysynni at Pont-y-Garth 1991

Measuring authority: NRA-WEL
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	7.295	4.492	6.024	5.573	1.721	2.682	3.167	6.119	2.377	5.596	10.890	5.202	**5.097**
(m^3s^{-1}): Peak	55.99	36.39	30.74	48.57	5.59	13.49	12.76	56.75	13.89	23.77	37.90	37.96	**56.75**
Runoff (mm)	260	145	215	192	61	93	113	218	82	200	376	186	**2140**
Rainfall (mm)													

Monthly and yearly statistics for previous record (Jan 1966 to Dec 1990—incomplete or missing months total 1.8 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	6.199	4.968	5.021	3.427	2.351	2.282	2.679	3.230	4.093	5.858	6.791	7.097	**4.500**
flows Low	3.371	1.548	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	11.830	10.330	14.780	7.209	7.602	5.921	5.407	8.899	7.285	12.350	12.680	12.580	**5.434**
Peak flow (m^3s^{-1})	61.40	41.34	98.71	36.85	76.32	48.42	53.35	51.62	70.14	107.70	121.30	84.70	**121.30**
Runoff (mm)	221	161	179	118	84	79	96	115	141	209	234	253	**1891**
Rainfall (mm)													

Factors affecting runoff: N
Station type: VA
Comment: Raingauge network is inadequate for the accurate assessment of areal rainfall

1991 runoff is 113% of previous mean
rainfall

065005 Erch at Pencaenewydd 1991

Measuring authority: NRA-WEL
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	0.804	0.519	0.923	0.605	0.255	0.202	0.176	0.235	0.164	0.546	0.808	0.365	**0.467**
(m^3s^{-1}): Peak	7.83	4.28	5.87	4.29	0.73	2.15	0.48	2.16	0.92	5.08	5.40	2.92	**7.83**
Runoff (mm)	119	69	137	87	38	29	26	35	24	81	116	54	**813**
Rainfall (mm)	98	100	131	134	27	114	99	71	84	172	162	41	**1233**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	1.009	0.824	0.756	0.467	0.316	0.209	0.182	0.300	0.393	0.764	1.000	1.077	**0.607**
flows Low	0.629	0.365	0.311	0.177	0.120	0.089	0.081	0.061	0.103	0.236	0.264	0.600	**0.430**
(m^3s^{-1}) High	1.673	1.869	1.804	0.892	0.728	0.539	0.427	1.113	0.919	1.736	1.816	1.764	**0.739**
Peak flow (m^3s^{-1})	10.41	15.45	19.78	11.00	4.68	6.99	5.52	9.22	7.42	25.01	16.91	15.49	**25.01**
Runoff (mm)	149	111	112	67	47	30	27	44	56	113	143	159	**1059**
Rainfall (mm)	152	100	128	71	74	72	79	118	125	162	160	168	**1409**

Factors affecting runoff: N
Station type: C

1991 runoff is 77% of previous mean
rainfall 88%

066006 Elwy at Pont-y-Gwyddel 1991

Measuring authority: NRA-WEL | Grid reference: 23 (SH) 952 718 | Catchment area (sq km): 194.0
First year: 1973 | Level stn. (m OD): 87.90 | Max alt. (m OD): 518

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	8.336	5.669	6.167	3.397	1.839	0.855	0.441	0.249	0.310	1.573	7.289	4.085	**3.336**
(m^3s^{-1}): Peak	56.45	56.29	22.49	22.32	20.72	2.22	0.79	0.37	0.60	14.83	47.58	27.74	**56.45**
Runoff (mm)	115	71	85	45	25	11	6	3	4	22	97	56	**542**
Rainfall (mm)	119	86	94	90	45	88	47	30	65	130	139	83	**1016**

Monthly and yearly statistics for previous record (Dec 1973 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	8.085	6.440	5.354	3.063	1.662	1.222	0.687	1.211	2.346	5.147	7.192	7.882	**4.182**
flows Low	3.115	2.650	1.539	0.823	0.479	0.359	0.278	0.242	0.249	1.360	2.263	4.644	**2.908**
(m^3s^{-1}) High	13.060	15.070	11.950	6.939	5.918	3.300	1.402	4.351	7.450	11.530	11.850	14.450	**5.094**
Peak flow (m^3s^{-1})	100.40	58.00	76.59	50.76	21.66	18.00	27.05	38.13	58.57	143.00	101.60	75.42	**143.00**
Runoff (mm)	112	81	74	41	23	16	9	17	31	71	96	109	**680**
Rainfall (mm)	133	92	104	61	71	74	66	89	117	133	140	143	**1223**

Factors affecting runoff: SRP | 1991 runoff is 80% of previous mean
Station type: VA | rainfall 83%

067008 Alyn at Pont-y-Capel 1991

Measuring authority: NRA-WEL | Grid reference: 33 (SJ) 336 541 | Catchment area (sq km): 227.1
First year: 1965 | Level stn. (m OD): 37.30 | Max alt. (m OD): 562

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	4.659	2.270	4.149	1.412	1.101	0.658	0.615	0.438	0.390	0.569	2.931	1.773	**1.747**
(m^3s^{-1}): Peak	16.32	6.88	19.03	6.91	3.22	1.00	2.26	0.69	0.82	4.27	9.78	14.40	**19.03**
Runoff (mm)	55	24	49	16	13	8	7	5	4	7	33	21	**243**
Rainfall (mm)	75	51	80	68	18	67	67	18	50	96	99	53	**742**

Monthly and yearly statistics for previous record (Jun 1965 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	4.304	3.906	3.209	2.582	1.728	1.155	0.856	0.878	0.955	1.921	2.998	4.241	**2.388**
flows Low	1.328	1.553	1.448	1.023	0.677	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	6.474	5.657	2.873	2.098	2.456	3.906	6.896	6.168	9.480	**3.027**
Peak flow (m^3s^{-1})	27.53	28.52	26.11	25.28	26.86	18.34	23.23	20.81	59.11	26.46	28.21	35.92	**59.11**
Runoff (mm)	51	42	38	29	20	13	10	10	11	23	34	50	**332**
Rainfall (mm)	86	66	74	61	69	65	59	72	80	87	103	97	**919**

Factors affecting runoff: S EI | 1991 runoff is 73% of previous mean
Station type: CC | rainfall 81%

068004 Wistaston Brook at Marshfield Bridge 1991

Measuring authority: NRA-NW | Grid reference: 33 (SJ) 674 552 | Catchment area (sq km): 92.7
First year: 1957 | Level stn. (m OD): 30.10 | Max alt. (m OD): 221

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	1.403	0.607	0.766	0.461	0.317	0.339	0.286	0.194	0.225	0.284	0.487	0.836	**0.518**
(m^3s^{-1}): Peak	7.91	1.17	2.49	1.87	1.02	1.69	2.64	0.78	4.12	2.27	2.32	14.47	**14.47**
Runoff (mm)	41	16	22	13	9	9	8	6	6	8	14	24	**176**
Rainfall (mm)	51	24	45	40	9	69	68	19	40	61	60	53	**539**

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1990—incomplete or missing months total 4.2 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	1.674	1.485	1.127	1.086	0.865	0.729	0.648	0.663	0.724	0.963	1.304	1.555	**1.067**
flows Low	0.538	0.603	0.638	0.464	0.355	0.330	0.235	0.227	0.221	0.277	0.522	0.650	**0.655**
(m^3s^{-1}) High	3.143	3.679	2.131	1.901	3.381	1.410	2.419	1.578	1.973	1.902	2.555	4.701	**1.681**
Peak flow (m^3s^{-1})	16.21	13.14	13.31	12.48	15.06	11.63	13.02	21.45	10.73	12.95	13.25	13.44	**21.45**
Runoff (mm)	48	39	33	30	25	20	19	19	20	28	36	45	**363**
Rainfall (mm)	67	47	51	54	61	62	60	68	69	70	73	67	**749**

Factors affecting runoff: PGEI | 1991 runoff is 49% of previous mean
Station type: VA | rainfall 72%

069006 Bollin at Dunham Massey 1991

Measuring authority: NRA-NW | Grid reference: 33 (SJ) 727 875 | Catchment area (sq km): 256.0
First year: 1955 | Level stn. (m OD): 12.80 | Max alt. (m OD): 483

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	7.030	3.622	4.333	2.332	1.850	2.846	2.759	2.320	2.222	2.303	3.983	5.758	**3.452**
(m^3s^{-1}): Peak	20.99	9.39	11.35	7.97	2.70	7.28	7.76	3.67	9.44	12.07	11.38	43.69	**43.69**
Runoff (mm)	74	34	45	24	19	29	29	24	23	24	40	60	**425**
Rainfall (mm)	54	33	49	40	12	92	62	30	47	70	73	79	**641**

Monthly and yearly statistics for previous record (Oct 1955 to Dec 1990—incomplete or missing months total 1.1 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	6.427	5.392	4.555	3.700	2.890	2.533	2.367	2.921	3.095	4.076	5.407	6.405	**4.143**
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	10.960	12.880	11.470	8.732	5.781	9.203	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	42.37	41.50	44.04	35.05	41.18	44.35	46.33	**63.02**
Runoff (mm)	67	51	48	37	30	26	25	31	31	43	55	67	**511**
Rainfall (mm)	80	55	64	56	64	72	75	88	82	83	83	88	**890**

Factors affecting runoff: S PGEI | 1991 runoff is 83% of previous mean
Station type: VA | rainfall 72%

069007 Mersey at Ashton Weir 1991

Measuring authority: NRA-NW | Grid reference: 33 (SJ) 772 936 | Catchment area (sq km): 660.0
First year: 1958 | Level stn. (m OD): 14.90 | Max alt. (m OD): 636

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	12.960	9.297	9.128	5.712	3.479	6.203	4.906	3.757	3.395	4.403	11.760	29.370	**8.714**
(m^3s^{-1}):	Peak	44.24	59.04	23.87	27.43	8.55	27.75	22.72	15.03	14.47	26.67	48.85	563.40	**563.40**
Runoff (mm)		53	34	37	22	14	24	20	15	13	18	46	119	**416**
Rainfall (mm)		67	61	66	58	19	115	70	53	62	83	118	126	**898**

Monthly and yearly statistics for previous record (Jan 1981 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	20.190	12.760	16.070	10.780	6.273	6.807	4.715	6.513	7.235	11.670	14.840	18.120	**11.336**
flows	Low	8.297	7.399	5.544	4.698	3.585	3.847	2.447	2.760	2.574	5.978	7.300	8.686	**8.438**
(m^3s^{-1})	High	29.220	23.100	36.210	17.190	11.420	18.090	7.866	12.560	11.110	25.500	25.190	36.810	**15.876**
Peak flow (m^3s^{-1})		188.80	125.00	176.70	113.00	56.25	157.50	49.21	216.70	87.70	202.50	303.70	502.90	**502.90**
Runoff (mm)		82	47	65	42	25	27	19	26	28	47	58	74	**542**
Rainfall (mm)		124	65	114	75	64	87	64	100	92	128	116	122	**1151**

Factors affecting runoff: S PGEI | 1991 runoff is 77% of previous mean
Station type: CB | rainfall 78%

069035 Irwell at Bury Bridge 1991

Measuring authority: NRA-NW | Grid reference: 34 (SD) 797 109 | Catchment area (sq km): 155.0
First year: 1953 | Level stn. (m OD): 75.00 | Max alt. (m OD): 473

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	7.378	6.937	6.010	3.377	0.622	2.152	1.082	0.819	0.930	2.603	11.500	12.070	**4.606**
(m^3s^{-1}):	Peak	269.40	144.80	92.63	71.70	1.79	12.38	4.47	5.36	7.58	37.96	245.20	285.90	**285.90**
Runoff (mm)		127	108	104	56	11	36	19	14	16	45	192	209	**937**
Rainfall (mm)		96	100	102	82	16	126	68	66	73	103	193	154	**1179**

Monthly and yearly statistics for previous record (Jan 1977 to Dec 1990—incomplete or missing months total 4.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	10.170	6.104	7.494	3.830	2.864	2.387	1.496	3.265	3.718	6.951	9.067	10.620	**5.670**
flows	Low	4.855	1.071	1.678	0.445	0.072	0.713	0.295	0.421	1.256	2.961	3.323	5.006	**4.031**
(m^3s^{-1})	High	14.620	12.150	20.260	6.043	6.797	4.626	3.211	5.915	7.908	16.280	13.540	17.450	**8.405**
Peak flow (m^3s^{-1})		187.50	189.10	219.90	120.00	58.91	125.20	31.42	171.80	131.70	185.50	218.30	227.70	**227.70**
Runoff (mm)		176	96	129	64	49	40	26	56	62	120	152	184	**1154**
Rainfall (mm)*		140	76	137	75	81	93	56	115	132	127	152	160	**1344**

*(1977-1985)

Factors affecting runoff: S PGEI | 1991 runoff is 81% of previous mean
Station type: VA | rainfall 88%

070003 Douglas at Central Park Wigan 1991

Measuring authority: NRA-NW | Grid reference: 34 (SD) 587 061 | Catchment area (sq km): 55.3
First year: 1973 | Level stn. (m OD): 31.70 | Max alt. (m OD): 457

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.454	1.184	1.141	0.736	0.380	0.488	0.512	0.480	0.542	0.768	1.735	1.271	**0.889**
(m^3s^{-1}):	Peak	9.35	9.19	5.47	4.77	0.72	2.98	4.30	2.35	3.35	7.45	12.30	12.68	**12.68**
Runoff (mm)		70	52	55	35	18	23	25	23	25	37	81	62	**507**
Rainfall (mm)		71	71	78	62	14	94	80	62	62	103	139	86	**922**

Monthly and yearly statistics for previous record (Jan 1977 to Dec 1990—incomplete or missing months total 5.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.945	1.469	1.305	1.097	0.747	0.758	0.743	0.835	0.875	1.381	1.628	1.814	**1.216**
flows	Low	0.976	0.642	0.739	0.417	0.384	0.513	0.425	0.321	0.353	0.729	1.111	0.917	**0.875**
(m^3s^{-1})	High	2.890	2.226	2.099	1.828	1.519	1.107	1.199	1.451	1.291	2.252	2.910	3.312	**1.476**
Peak flow (m^3s^{-1})		16.47	14.00	12.05	15.83	9.07	11.38	10.99	21.81	16.04	17.86	19.30	29.67	**29.67**
Runoff (mm)		94	65	63	51	36	36	36	40	41	67	76	88	**694**
Rainfall (mm)														

Factors affecting runoff: SRP EI | 1991 runoff is 73% of previous mean
Station type: VA

071001 Ribble at Samlesbury 1991

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

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	40.830	45.380	33.150	26.650	5.890	15.320	11.330	15.230	12.020	21.340	82.500	61.840	**30.803**
(m^3s^{-1}):	Peak	438.00	463.80	209.20	350.20	9.59	76.09	35.78	112.10	94.85	254.10	505.70	739.70	**739.70**
Runoff (mm)		96	96	78	60	14	35	27	36	27	50	187	145	**848**
Rainfall (mm)		95	120	105	78	20	121	67	83	84	107	223	162	**1265**

Monthly and yearly statistics for previous record (May 1960 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	51.910	38.040	34.770	25.610	17.760	14.150	16.410	23.850	29.320	42.170	51.230	55.510	**33.395**
flows	Low	10.610	9.565	11.790	5.601	4.048	5.031	2.638	2.958	4.263	5.716	20.770	15.190	**22.045**
(m^3s^{-1})	High	82.510	80.890	104.700	54.820	46.460	33.520	40.500	68.920	65.820	118.400	88.610	120.200	**45.022**
Peak flow (m^3s^{-1})		754.60	513.10	643.30	466.60	319.10	494.80	399.80	520.80	619.30	810.00	613.20	891.30	**891.30**
Runoff (mm)		121	81	81	58	42	32	38	56	66	99	116	130	**920**
Rainfall (mm)*		136	88	107	79	81	90	91	118	129	143	139	149	**1350**

*(1961-1990)

Factors affecting runoff: S E | 1991 runoff is 92% of previous mean
Station type: MIS | rainfall 94%

071004 Calder at Whalley Weir — 1991

Measuring authority: NRA-NW
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	11.060	10.740	8.433	6.996	2.499	4.601	2.730	3.232	3.097	4.922	19.730	15.680	**7.777**
Peak	121.40	114.40	65.60	74.68	5.11	27.01	7.46	17.33	17.22	64.96	132.50	199.50	**199.50**
Runoff (mm)	94	82	71	57	21	38	23	27	25	42	162	133	**776**
Rainfall (mm)	91	91	77	75	20	113	60	67	72	92	199	155	**1112**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990—incomplete or missing months total 2.6 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	13.320	9.704	9.196	6.544	5.012	4.308	3.921	5.873	7.188	11.000	12.580	13.490	**8.511**
Low	5.766	3.320	3.989	2.272	2.053	1.888	1.773	1.564	1.921	2.397	5.625	4.886	**6.225**
High	20.590	17.170	25.320	13.010	9.916	7.609	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	171.60	206.00	229.50	148.60	194.30	**230.60**
Runoff (mm)	113	75	78	54	42	35	33	50	59	93	103	114	**850**
Rainfall (mm)	126	80	103	71	76	87	81	108	115	133	127	130	**1237**

Factors affecting runoff: EI
Station type: FV

1991 runoff is 91% of previous mean
rainfall 90%

073005 Kent at Sedgwick — 1991

Measuring authority: NRA-NW
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	14.240	11.080	13.610	8.196	1.394	4.079	3.805	3.381	3.162	10.810	19.030	14.280	**8.908**
Peak	166.40	122.40	108.90	59.53	2.10	18.68	20.19	19.08	17.44	71.57	133.50	139.90	**166.40**
Runoff (mm)	183	128	174	102	18	51	49	43	39	139	236	183	**1344**
Rainfall (mm)	163	164	185	143	14	165	84	87	104	210	254	203	**1776**

Monthly and yearly statistics for previous record (Nov 1968 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	13.160	10.640	9.926	6.400	4.145	3.661	3.926	5.615	7.864	10.850	13.400	13.240	**8.562**
Low	5.998	3.094	3.348	2.038	1.222	0.872	0.658	0.740	1.753	1.396	5.484	5.466	**5.995**
High	20.950	27.410	23.030	12.620	11.580	13.010	10.570	18.810	15.680	18.110	21.490	23.210	**10.316**
Peak flow (m^3s^{-1})	230.90	167.80	194.60	111.10	53.44	72.86	95.90	94.26	120.70	131.70	177.80	276.40	**276.40**
Runoff (mm)	169	124	127	79	53	45	50	72	98	139	166	170	**1293**
Rainfall (mm)	198	124	157	88	87	101	111	133	167	188	200	196	**1750**

Factors affecting runoff: N I
Station type: CBVA

1991 runoff is 104% of previous mean
rainfall 101%

074005 Ehen at Braystones — 1991

Measuring authority: NRA-NW
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	6.493	5.605	6.735	4.449	1.251	1.663	2.539	3.205	1.644	6.147	10.480	6.182	**4.694**
Peak	69.54	37.24	52.67	19.26	1.79	5.43	5.75	17.28	3.62	42.85	54.46	68.30	**69.54**
Runoff (mm)	139	108	144	92	27	34	54	68	34	131	217	132	**1179**
Rainfall (mm)	133	153	207	94	33	138	85	119	95	223	253	150	**1683**

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	7.857	6.051	5.753	3.374	2.018	1.940	2.331	3.903	5.255	8.081	7.653	7.794	**5.168**
Low	2.220	1.856	2.225	0.993	0.771	0.779	0.789	0.661	1.694	3.640	3.121	2.448	**3.963**
High	16.030	15.890	10.300	7.046	6.877	4.371	5.602	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	38.25	56.92	74.32	76.40	115.90	64.49	91.47	**115.90**
Runoff (mm)	168	118	123	70	43	40	50	83	109	172	158	166	**1299**
Rainfall (mm)	204	122	175	87	79	97	125	153	183	227	190	205	**1847**

Factors affecting runoff: S P
Station type: VA

1991 runoff is 91% of previous mean
rainfall 91%

075002 Derwent at Camerton — 1991

Measuring authority: NRA-NW
First year: 1960
Grid reference: 35 (NY) 038 305
Level stn. (m OD): 16.70
Catchment area (sq km): 663.0
Max alt. (m OD): 950

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1}): Avg.	47.900	28.070	42.040	29.390	4.133	8.946	8.176	8.566	6.724	26.610	72.000	38.510	**26.717**
Peak	214.20	138.20	179.20	79.22	5.55	16.89	10.86	21.93	15.30	99.19	226.40	234.80	**234.80**
Runoff (mm)	194	102	170	115	17	35	33	35	26	108	282	156	**1271**
Rainfall (mm)	187	156	216	129	31	137	82	104	99	241	300	183	**1865**

Monthly and yearly statistics for previous record (Sep 1960 to Dec 1990—incomplete or missing months total 0.3 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1}) Avg.	38.850	30.100	26.280	19.730	12.450	9.976	11.480	18.080	25.100	35.860	39.940	40.800	**25.710**
Low	9.587	4.837	7.466	4.359	2.753	2.041	2.503	2.384	2.885	2.755	14.570	14.740	**14.823**
High	84.550	84.850	66.470	38.940	36.280	34.800	23.140	55.940	62.980	107.800	76.340	75.840	**34.235**
Peak flow (m^3s^{-1})	219.20	165.70	215.50	145.50	102.90	135.80	114.50	216.20	189.20	264.70	211.30	199.00	**264.70**
Runoff (mm)	157	111	106	77	50	39	46	73	98	145	156	165	**1224**
Rainfall (mm)*	186	115	147	95	99	107	116	148	178	204	188	192	**1775**

*(1961-1990)

Factors affecting runoff: S P
Station type: VA

1991 runoff is 104% of previous mean
rainfall 105%

076005 Eden at Temple Sowerby 1991

Measuring authority: NRA-NW
First year: 1964

Grid reference: 35 (NY) 605 283
Level stn. (m OD): 92.40

Catchment area (sq km): 616.4
Max alt. (m OD): 950

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	34.160	29.430	25.710	12.060	2.348	4.619	1.937	1.784	2.038	7.685	30.300	18.920	**14.146**
(m^3s^{-1}): Peak	277.50	314.90	166.50	115.80	3.23	20.49	5.93	7.46	19.16	127.70	209.40	236.00	**314.90**
Runoff (mm)	148	116	112	51	10	19	8	8	9	33	127	82	**724**
Rainfall (mm)	142	138	128	80	15	91	41	43	59	124	179	104	**1144**

Monthly and yearly statistics for previous record (Nov 1964 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	23.970	19.770	16.760	10.560	7.210	5.289	5.506	7.919	11.200	16.750	21.200	25.460	**14.282**
flows Low	10.870	5.577	6.338	2.923	2.196	1.879	1.176	1.613	1.593	1.975	7.764	9.403	**8.669**
(m^3s^{-1}) High	42.280	62.620	43.560	19.500	17.000	13.780	16.690	22.070	30.440	55.960	38.740	49.530	**18.912**
Peak flow (m^3s^{-1})	283.30	307.20	346.30	165.80	150.40	139.40	230.50	204.00	280.20	271.00	279.30	323.20	**346.30**
Runoff (mm)	104	78	73	44	31	22	24	34	47	73	89	111	**731**
Rainfall (mm)	126	87	98	61	70	70	78	95	106	118	123	132	**1164**

Factors affecting runoff:
Station type: VA

1991 runoff is 99% of previous mean
rainfall 98%

076010 Petteril at Harraby Green 1991

Measuring authority: NRA-NW
First year: 1970

Grid reference: 35 (NY) 412 545
Level stn. (m OD): 20.10

Catchment area (sq km): 160.0
Max alt. (m OD): 366

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	6.266	3.499	4.355	2.302	0.521	0.450	0.328	0.325	0.293	0.919	5.599	3.851	**2.386**
(m^3s^{-1}): Peak	33.60	26.52	21.44	10.89	0.71	1.25	0.96	1.96	0.63	11.42	21.29	27.22	**33.60**
Runoff (mm)	105	53	73	37	9	7	5	5	5	15	91	64	**470**
Rainfall (mm)	116	82	98	74	17	80	48	48	54	122	158	96	**993**

Monthly and yearly statistics for previous record (Jan 1970 to Dec 1990—incomplete or missing months total 5.8 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	4.493	3.444	2.424	1.487	0.926	0.644	0.646	0.834	1.155	2.172	3.307	3.737	**2.101**
flows Low	1.826	1.148	1.040	0.667	0.413	0.286	0.279	0.251	0.303	0.277	1.162	1.260	**1.065**
(m^3s^{-1}) High	7.125	9.440	4.286	3.007	3.898	1.469	1.944	2.699	4.975	5.669	7.146	6.439	**2.672**
Peak flow (m^3s^{-1})	38.27	38.88	47.18	15.71	18.64	9.80	22.39	24.04	42.15	29.77	47.03	44.86	**47.18**
Runoff (mm)	75	53	41	24	16	10	11	14	19	36	54	63	**414**
Rainfall (mm)	105	62	70	46	58	61	79	78	84	95	97	92	**927**

Factors affecting runoff: N
Station type: MIS

1991 runoff is 113% of previous mean
rainfall 107%

077003 Liddel Water at Rowanburnfoot 1991

Measuring authority: SRPB
First year: 1973

Grid reference: 35 (NY) 415 759
Level stn. (m OD): 27.10

Catchment area (sq km): 319.0
Max alt. (m OD): 608

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	21.580	17.730	14.810	8.008	1.416	4.928	4.357	2.530	2.657	9.269	17.510	13.910	**9.828**
(m^3s^{-1}): Peak	404.40	218.00	166.60	66.64	1.98	41.42	59.77	19.97	28.63	86.00	212.20	181.50	**404.40**
Runoff (mm)	181	134	123	65	12	40	37	21	22	78	142	117	**972**
Rainfall (mm)	164	160	138	94	18	136	85	63	78	148	183	150	**1417**

Monthly and yearly statistics for previous record (Oct 1973 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	16.650	12.980	13.260	6.301	4.883	4.224	5.172	6.314	8.919	12.410	14.310	16.350	**10.145**
flows Low	8.344	5.633	5.710	1.538	1.118	1.083	0.879	0.869	1.757	4.057	3.421	4.819	**7.515**
(m^3s^{-1}) High	30.750	32.020	23.150	14.230	16.720	12.940	22.800	23.360	24.390	19.120	26.200	26.460	**13.058**
Peak flow (m^3s^{-1})	315.00	349.10	345.30	171.00	241.00	131.00	309.40	178.80	354.90	334.30	281.00	393.20	**393.20**
Runoff (mm)	140	99	111	51	41	34	43	53	72	104	116	137	**1004**
Rainfall (mm)	151	99	130	68	84	87	106	120	125	145	135	159	**1409**

Factors affecting runoff:
Station type: VA

1991 runoff is 97% of previous mean
rainfall 101%

078003 Annan at Brydekirk 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	59.010	36.710	51.810	38.840	5.210	7.407	9.804	7.006	5.967	32.280	65.780	44.740	**30.338**
(m^3s^{-1}): Peak	332.30	235.50	279.60	145.20	9.78	21.07	33.89	47.16	45.97	268.10	231.20	235.00	**332.30**
Runoff (mm)	171	96	150	109	15	21	28	20	17	93	184	130	**1034**
Rainfall (mm)	153	115	147	134	14	116	81	66	79	183	182	138	**1408**

Monthly and yearly statistics for previous record (Oct 1967 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	46.590	37.500	32.950	19.920	14.880	11.680	11.340	17.880	25.010	37.600	40.870	43.950	**28.322**
flows Low	17.820	12.820	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	105.700	63.910	40.600	53.160	32.150	34.940	76.390	76.320	86.820	77.930	87.020	**36.424**
Peak flow (m^3s^{-1})	405.40	305.00	293.30	213.30	172.50	171.30	253.10	378.90	446.60	499.10	325.00	355.40	**499.10**
Runoff (mm)	135	99	95	56	43	33	33	52	70	109	115	127	**966**
Rainfall (mm)	146	100	119	67	86	83	95	111	131	149	132	143	**1362**

Factors affecting runoff: N
Station type: VA

1991 runoff is 107% of previous mean
rainfall 103%

078004 Kinnel Water at Redhall 1991

Measuring authority: SRPB | Grid reference: 35 (NY) 077 868 | Catchment area (sq km): 76.1
First year: 1963 | Level stn. (m OD): 53.70 | Max alt. (m OD): 697

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	5.325	3.287	4.322	3.518	0.172	0.599	0.957	0.695	0.630	4.563	6.472	4.417	**2.911**
(m^3s^{-1}): Peak	95.89	44.18	101.20	27.26	0.30	4.40	9.24	14.39	12.36	96.20	57.13	65.64	**101.20**
Runoff (mm)	187	104	152	120	6	20	34	24	21	161	220	155	**1206**
Rainfall (mm)	166	123	164	155	14	123	87	73	85	203	198	154	**1545**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990—incomplete or missing months total 1.0 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	4.279	3.230	2.913	1.620	1.501	1.088	1.045	1.687	2.694	3.659	3.851	4.133	**2.641**
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	9.214	9.298	6.263	4.161	5.496	3.282	3.435	7.513	6.689	7.288	7.535	8.490	**3.517**
Peak flow (m^3s^{-1})	80.89	90.99	59.19	66.70	51.79	36.09	60.14	65.25	91.37	110.90	86.69	103.60	**110.90**
Runoff (mm)	151	104	103	55	53	37	37	59	92	129	131	145	**1095**
Rainfall (mm)	154	105	126	75	97	90	96	119	146	158	145	157	**1468**

Factors affecting runoff:
Station type: VA

1991 runoff is 110% of previous mean
rainfall 105%

080001 Urr at Dalbeattie 1991

Measuring authority: SRPB | Grid reference: 25 (NX) 822 610 | Catchment area (sq km): 199.0
First year: 1963 | Level stn. (m OD): 4.00 | Max alt. (m OD): 432

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	11.610	5.876	9.617	8.509	0.591	0.904	0.971	0.711	0.789	4.948	12.790	9.712	**5.581**
(m^3s^{-1}): Peak	118.20	49.98	74.46	69.39	1.64	8.31	4.22	6.35	9.22	49.69	62.74	79.62	**118.20**
Runoff (mm)	156	71	129	111	8	12	13	10	10	67	167	131	**884**
Rainfall (mm)	143	99	142	145	9	108	69	69	78	159	168	128	**1317**

Monthly and yearly statistics for previous record (Nov 1963 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	9.810	8.056	6.460	3.607	2.953	2.016	1.476	2.943	5.196	8.306	9.227	9.801	**5.813**
Low	3.534	1.419	2.094	0.753	0.308	0.246	0.137	0.149	0.319	0.522	1.711	3.369	**3.109**
(m^3s^{-1}) High	19.080	19.340	11.990	7.485	10.880	6.833	5.081	13.310	17.160	19.400	19.420	18.590	**8.358**
Peak flow (m^3s^{-1})	133.70	100.10	95.03	61.69	65.95	59.18	68.42	104.60	114.10	162.20	129.70	164.30	**164.30**
Runoff (mm)	132	99	87	47	40	26	20	40	68	112	120	132	**922**
Rainfall (mm)	139	98	113	68	82	78	80	104	131	149	138	142	**1322**

Factors affecting runoff:
Station type: VA

1991 runoff is 96% of previous mean
rainfall 100%

081002 Cree at Newton Stewart 1991

Measuring authority: SRPB | Grid reference: 25 (NX) 412 653 | Catchment area (sq km): 368.0
First year: 1963 | Level stn. (m OD): 4.80 | Max alt. (m OD): 843

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	21.080	14.530	21.200	23.820	2.269	9.559	6.807	6.376	3.909	15.720	41.310	31.650	**16.501**
(m^3s^{-1}): Peak	161.60	113.30	217.20	150.50	9.68	66.93	22.46	66.54	45.09	197.10	196.30	322.30	**322.30**
Runoff (mm)	153	96	154	168	17	67	50	46	28	114	291	230	**1414**
Rainfall (mm)	176	119	191	193	35	167	98	103	96	195	308	255	**1936**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	24.110	17.690	16.280	9.665	7.793	6.637	7.750	10.830	16.630	22.070	22.850	23.310	**15.468**
Low	9.633	2.569	4.039	1.319	0.426	1.176	0.969	0.684	1.063	6.495	7.292	5.775	**9.965**
(m^3s^{-1}) High	45.820	42.490	28.180	20.820	22.960	15.620	19.710	36.030	43.310	36.720	43.910	48.050	**18.979**
Peak flow (m^3s^{-1})	272.50	253.10	217.10	192.30	119.40	195.10	223.10	230.90	312.70	318.00	199.10	303.90	**318.00**
Runoff (mm)	175	117	118	68	57	47	56	79	117	161	161	170	**1327**
Rainfall (mm)	198	127	155	93	98	101	110	138	171	200	197	191	**1779**

Factors affecting runoff:
Station type: VA

1991 runoff is 107% of previous mean
rainfall 109%

081003 Luce at Airyhemming 1991

Measuring authority: SRPB | Grid reference: 25 (NX) 180 599 | Catchment area (sq km): 171.0
First year: 1967 | Level stn. (m OD): 19.00 | Max alt. (m OD): 438

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	6.453	6.677	9.328	9.522	0.917	3.046	1.208	1.373	1.357	9.019	15.550	10.740	**6.250**
(m^3s^{-1}): Peak	43.59	79.31	216.70	89.60	13.17	51.30	9.31	16.76	21.24	138.50	191.00	188.50	**216.70**
Runoff (mm)	101	94	146	144	14	46	19	22	21	141	236	168	**1153**
Rainfall (mm)	105	104	169	171	35	130	73	75	83	202	257	191	**1595**

Monthly and yearly statistics for previous record (Jan 1967 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows Avg.	10.250	7.229	6.389	3.602	2.427	1.999	2.282	3.688	6.132	9.065	9.585	8.952	**5.964**
Low	4.540	0.789	1.359	0.454	0.260	0.225	0.191	0.277	0.365	1.689	3.857	2.445	**3.891**
(m^3s^{-1}) High	15.600	14.810	12.310	8.289	7.597	5.360	6.445	14.290	17.660	16.750	15.940	17.090	**7.787**
Peak flow (m^3s^{-1})	177.10	146.10	197.30	197.60	87.38	190.30	156.80	283.60	192.40	231.80	168.40	204.00	**283.60**
Runoff (mm)	161	103	100	55	38	30	36	58	93	142	145	140	**1101**
Rainfall (mm)	168	103	121	78	77	85	96	119	146	168	160	149	**1470**

Factors affecting runoff: S P
Station type: VA

1991 runoff is 105% of previous mean
rainfall 109%

082002 Doon at Auchendrane 1991

Measuring authority: CRPB
First year: 1974

Grid reference: 26 (NS) 338 160
Level stn. (m OD): 22.20

Catchment area (sq km): 323.8
Max alt. (m OD): 844

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	10.330	6.875	6.826	10.520	2.519	3.484	3.608	3.211	3.825	7.488	16.330	12.300	**7.266**
(m^3s^{-1}):	Peak	38.06	35.52	32.89	61.06	4.99	13.94	12.79	7.19	11.79	63.81	83.78	75.80	**83.78**
Runoff (mm)		85	51	56	84	21	28	30	27	31	62	131	102	**708**
Rainfall (mm)		178	99	144	193	30	127	93	74	106	175	289	233	**1741**

Monthly and yearly statistics for previous record (Jul 1974 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	10.960	8.352	8.589	4.882	4.068	3.761	4.085	5.363	7.764	10.140	10.190	10.670	**7.404**
flows	Low	5.203	3.685	4.270	3.157	2.390	2.265	2.397	2.557	4.101	4.732	4.785	6.247	**5.559**
(m^3s^{-1})	High	15.120	18.360	13.320	6.740	8.006	4.981	6.945	10.930	17.680	14.610	17.290	20.680	**8.698**
Peak flow (m^3s^{-1})		85.15	63.08	69.51	33.84	42.45	19.62	61.38	46.34	103.20	121.50	72.14	84.49	**121.50**
Runoff (mm)		91	63	71	39	34	30	34	44	62	84	82	88	**722**
Rainfall (mm)		205	119	136	62	73	79	89	114	194	198	189	181	**1639**

Factors affecting runoff: S
Station type: VA

1991 runoff is 98% of previous mean
rainfall 106%

083003 Ayr at Catrine 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	8.093	5.016	4.793	6.629	0.812	2.360	1.812	1.391	2.839	5.191	11.690	11.110	**5.138**
(m^3s^{-1}):	Peak	53.35	53.75	61.04	57.27	1.16	26.69	38.51	24.84	39.80	77.57	121.70	170.50	**170.50**
Runoff (mm)		130	73	77	103	13	37	29	22	44	84	182	179	**974**
Rainfall (mm)		144	87	97	129	29	110	86	66	111	136	200	192	**1387**

Monthly and yearly statistics for previous record (Sep 1970 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	8.818	5.916	5.975	2.929	2.005	1.940	2.041	3.282	5.209	6.754	7.740	7.536	**5.011**
flows	Low	3.182	1.534	1.480	0.733	0.593	0.639	0.417	0.410	0.597	0.631	2.147	3.312	**3.613**
(m^3s^{-1})	High	14.120	13.830	10.780	7.056	5.714	4.179	7.720	9.970	14.680	10.900	13.630	14.490	**6.758**
Peak flow (m^3s^{-1})		178.50	96.54	102.90	67.02	75.55	70.32	73.43	72.00	157.40	162.60	105.60	119.20	**178.50**
Runoff (mm)		142	87	96	46	32	30	33	53	81	109	121	121	**951**
Rainfall (mm)		148	90	116	65	69	81	86	103	128	148	143	137	**1314**

Factors affecting runoff: H
Station type: VA

1991 runoff is 102% of previous mean
rainfall 106%

083005 Irvine at Shewalton 1991

Measuring authority: CRPB
First year: 1972

Grid reference: 26 (NS) 345 369
Level stn. (m OD): 4.80

Catchment area (sq km): 380.7
Max alt. (m OD): 484

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	19.560	10.840	9.268	13.480	0.866	3.787	2.217	2.362	4.574	9.244	23.100	19.970	**9.917**
(m^3s^{-1}):	Peak	130.50	84.97	161.70	105.90	1.53	23.99	38.51	34.52	47.79	121.60	164.70	194.50	**194.50**
Runoff (mm)		138	69	65	92	6	26	35	17	31	65	157	140	**822**
Rainfall (mm)		126	70	93	122	25	106	83	65	109	110	182	178	**1269**

Monthly and yearly statistics for previous record (Feb 1972 to Nov 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	17.070	10.600	11.310	5.390	3.439	3.011	3.317	6.110	11.710	13.210	15.290	14.280	**9.562**
flows	Low	4.527	1.874	3.182	1.138	0.789	0.706	0.367	0.328	1.608	4.298	3.754	3.829	**6.694**
(m^3s^{-1})	High	28.890	26.480	23.440	16.980	11.530	10.870	12.060	20.070	33.750	23.910	27.770	27.660	**11.287**
Peak flow (m^3s^{-1})		341.20	190.90	207.50	108.50	131.80	139.30	278.70	228.20	303.60	272.30	194.30	226.10	**341.20**
Runoff (mm)		120	68	80	37	24	21	23	43	80	93	104	100	**793**
Rainfall (mm)		133	77	111	59	64	76	85	105	140	135	134	130	**1249**

Factors affecting runoff: E
Station type: VA

1991 runoff is 104% of previous mean
rainfall 102%

084012 White Cart Water at Hawkhead 1991

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): 376

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	14.850	6.263	7.434	11.120	1.024	1.740	2.758	1.180	4.625	6.780	14.050	12.350	**7.011**
(m^3s^{-1}):	Peak	114.40	80.94	107.70	78.94	1.97	11.99	17.44	13.29	56.59	44.69	104.00	111.50	**114.40**
Runoff (mm)		175	67	88	127	12	20	33	14	53	80	160	146	**973**
Rainfall (mm)		166	78	105	142	18	106	94	59	134	114	191	180	**1387**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	11.050	8.016	7.662	4.046	3.241	2.424	2.328	3.837	6.976	9.342	10.790	10.310	**6.665**
flows	Low	4.692	2.341	1.676	1.112	0.824	0.827	0.562	0.629	1.141	1.212	3.014	3.211	**4.419**
(m^3s^{-1})	High	21.190	20.180	18.430	8.523	9.188	6.542	7.863	12.640	21.990	21.620	19.470	19.610	**9.153**
Peak flow (m^3s^{-1})		186.10	139.20	117.60	82.46	115.10	65.13	86.31	111.30	132.90	151.10	134.00	187.10	**187.10**
Runoff (mm)		130	86	90	46	38	28	27	45	80	110	123	122	**926**
Rainfall (mm)		131	86	112	63	78	74	78	102	134	145	141	132	**1276**

Factors affecting runoff: S
Station type: VA

1991 runoff is 105% of previous mean
rainfall 109%

084016 Luggie Water at Condorrat 1991

Measuring authority: CRPB
First year: 1966
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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	1.728	1.137	1.257	1.029	0.222	0.339	0.446	0.354	0.513	0.863	1.490	1.791	**0.930**
(m^3s^{-1}): Peak	17.58	10.22	21.25	12.52	0.63	1.68	3.10	1.70	6.61	5.65	8.08	30.13	**30.13**
Runoff (mm)	136	81	99	79	18	26	35	28	39	68	114	142	**865**
Rainfall (mm)	133	85	92	96	14	109	95	51	104	107	121	144	**1151**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1990—incomplete or missing months total 0.5 years)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	1.492	1.086	1.028	0.572	0.456	0.307	0.309	0.497	0.784	1.097	1.314	1.354	**0.858**
flows Low	0.680	0.415	0.370	0.287	0.166	0.138	0.147	0.123	0.125	0.129	0.367	0.592	**0.539**
(m^3s^{-1}) High	3.104	2.378	1.846	1.030	1.199	0.692	1.751	1.606	3.386	2.121	2.362	2.669	**1.121**
Peak flow (m^3s^{-1})	30.25	19.34	28.11	10.80	14.54	7.00	27.14	22.06	44.46	34.20	30.68	36.04	**44.46**
Runoff (mm)	118	78	81	44	36	23	24	39	60	87	100	107	**798**
Rainfall (mm)	111	76	95	52	68	67	73	92	111	120	113	108	**1086**

Factors affecting runoff:
Station type: VA

1991 runoff is 108% of previous mean
rainfall 106%

085001 Leven at Linnbrane 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	91.670	23.620	59.510	73.990	12.290	12.540	21.600	12.210	24.230	58.610	76.660	62.200	**44.232**
(m^3s^{-1}): Peak	133.80	57.32	84.49	112.40	16.73	16.99	48.68	17.99	65.59	79.56	102.40	96.34	**133.80**
Runoff (mm)	313	73	203	245	42	41	74	42	80	200	253	212	**1779**
Rainfall (mm)	255	101	195	237	28	160	129	83	197	237	294	228	**2144**

Monthly and yearly statistics for previous record (Jul 1963 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	64.550	57.400	49.550	33.970	24.660	19.860	18.900	24.090	36.430	55.200	60.160	60.700	**42.057**
flows Low	27.910	18.610	16.630	10.540	10.620	9.716	7.303	4.556	8.736	10.830	24.540	17.580	**30.712**
(m^3s^{-1}) High	119.100	134.600	138.200	55.940	73.120	51.860	44.640	85.740	91.360	90.150	115.000	125.500	**54.061**
Peak flow (m^3s^{-1})	150.50	163.60	196.80	91.85	92.02	78.48	116.50	115.30	121.60	138.50	145.70	148.50	**196.80**
Runoff (mm)	220	179	169	112	84	66	65	82	120	189	199	207	**1692**
Rainfall (mm)	241	158	192	100	119	113	122	151	212	234	224	225	**2091**

Factors affecting runoff: S
Station type: VA

1991 runoff is 105% of previous mean
rainfall 103%

090003 Nevis at Claggan 1991

Measuring authority: HRPB
First year: 1982
Grid reference: 27 (NN) 116 742
Level stn. (m OD): 3.60
Catchment area (sq km): 76.8
Max alt. (m OD):

Hydrometric statistics for 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	8.691	3.491	7.946	10.030	2.286	3.077	4.337	3.608	7.488	7.192	12.870	7.993	**6.590**
(m^3s^{-1}): Peak	90.94	47.56	100.10	101.70	17.62	43.76	42.51	29.56	158.70	86.01	80.60	114.60	**158.70**
Runoff (mm)	303	110	277	339	80	104	151	126	253	251	434	279	**2706**
Rainfall (mm)	348	147	271	329	71	157	210	164	332	337	504	396	**3266**

Monthly and yearly statistics for previous record (Sep 1982 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	9.537	7.351	9.617	4.984	4.051	2.150	3.752	5.475	7.871	9.716	7.003	10.360	**6.832**
flows Low	2.517	0.690	2.188	3.017	1.123	0.970	0.907	1.116	2.909	6.446	3.755	2.831	**5.186**
(m^3s^{-1}) High	17.790	17.990	25.920	6.953	12.600	3.211	8.608	10.580	11.010	16.380	15.360	15.480	**9.050**
Peak flow (m^3s^{-1})	195.60	156.30	143.10	46.28	67.50	69.35	105.00	130.50	219.00	146.50	110.30	189.00	**219.00**
Runoff (mm)	333	233	335	168	141	73	131	191	266	339	236	361	**2807**
Rainfall (mm)*	428	358	488	114	138	89	189	245	275	381	258	382	**3345**

*(1986-1990)

Factors affecting runoff:
Station type: VA

1991 runoff is 96% of previous mean
rainfall 98%

094001 Ewe at Poolewe 1991

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 1991

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows Avg.	45.990	13.130	23.150	35.700	14.720	12.170	14.470	15.270	27.640	39.240	57.760	32.290	**27.684**
(m^3s^{-1}): Peak	84.52	24.62	43.02	68.07	20.74	22.60	22.53	23.10	80.68	69.63	93.86	51.40	**93.86**
Runoff (mm)	279	72	141	210	89	72	88	93	162	238	339	196	**1979**
Rainfall (mm)	268	86	193	196	102	122	131	112	279	265	469	244	**2467**

Monthly and yearly statistics for previous record (Nov 1970 to Dec 1990)

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean Avg.	42.650	33.550	31.990	22.840	15.330	12.870	14.140	18.110	32.350	36.540	45.080	45.440	**29.218**
flows Low	13.820	10.660	8.842	4.537	3.862	3.725	7.884	6.240	8.046	13.160	21.020	15.740	**19.389**
(m^3s^{-1}) High	81.130	83.670	97.870	38.270	36.280	27.180	26.180	37.000	57.270	66.220	78.300	81.840	**39.738**
Peak flow (m^3s^{-1})	177.10	247.70	156.20	73.59	65.63	64.43	45.08	85.46	109.20	125.50	136.10	179.80	**247.70**
Runoff (mm)	259	185	194	134	93	76	86	110	190	222	265	276	**2090**
Rainfall (mm)	278	193	240	125	111	119	138	164	251	289	309	308	**2525**

Factors affecting runoff: N
Station type: VA

1991 runoff is 95% of previous mean
rainfall 98%

095001 Inver at Little Assynt 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	10.200	3.040	5.541	7.874	5.616	4.477	6.011	4.257	6.162	12.000	14.950	6.793	**7.266**
(m^3s^{-1}):	Peak	20.68	5.88	13.11	15.36	10.72	10.92	11.40	6.39	16.72	22.64	39.13	13.41	**39.13**
Runoff (mm)		199	53	108	148	109	84	117	83	116	234	282	132	**1666**
Rainfall (mm)		177	68	146	123	124	120	140	108	218	226	367	166	**1983**

Monthly and yearly statistics for previous record (Aug 1977 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	10.860	9.053	10.530	5.703	3.889	3.448	4.968	6.537	10.490	12.990	12.820	11.060	**8.530**
flows	Low	4.082	2.397	4.179	3.453	1.660	1.812	2.432	3.394	5.263	6.227	6.572	4.631	**6.956**
(m^3s^{-1})	High	19.950	21.150	23.090	7.552	7.131	6.689	10.340	10.050	16.390	21.180	23.960	17.580	**10.896**
Peak flow (m^3s^{-1})		55.24	63.64	62.82	14.93	20.92	19.72	15.19	26.47	56.50	57.51	50.06	46.65	**63.64**
Runoff (mm)		212	161	205	108	76	65	97	127	198	253	242	215	**1958**
Rainfall (mm)*		241	152	235	96	81	110	133	169	249	258	267	252	**2243**

*(1978-1990)

Factors affecting runoff: N
Station type: VA

1991 runoff is 85% of previous mean
rainfall 88%

096001 Halladale at Halladale 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.685	2.649	5.696	1.939	1.601	3.111	2.630	0.406	1.672	5.822	12.570	3.627	**4.037**
(m^3s^{-1}):	Peak	70.55	25.95	89.74	10.82	26.84	38.91	38.56	1.70	13.14	46.55	148.20	68.70	**148.20**
Runoff (mm)		88	31	75	25	21	39	34	5	21	76	159	47	**622**
Rainfall (mm)		71	40	91	46	58	91	67	43	77	107	182	71	**944**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	8.324	6.781	6.154	2.832	1.957	1.832	1.942	2.928	4.777	7.012	8.654	7.692	**5.067**
flows	Low	4.478	1.555	2.907	0.624	0.279	0.271	0.215	0.186	0.447	1.351	2.510	3.004	**3.326**
(m^3s^{-1})	High	11.900	10.940	9.753	6.442	5.434	4.128	5.064	9.193	7.886	16.560	14.730	12.390	**6.418**
Peak flow (m^3s^{-1})		98.96	86.24	122.60	69.28	108.00	140.80	129.10	172.00	189.10	169.10	163.20	162.00	**189.10**
Runoff (mm)		109	81	81	36	26	23	25	38	61	92	110	101	**782**
Rainfall (mm)		131	80	108	64	59	66	67	83	117	128	136	121	**1160**

Factors affecting runoff: N
Station type: VA

1991 runoff is 80% of previous mean
rainfall 81%

101002 Medina at Upper Shide 1991

Measuring authority: NRA-S
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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.410	0.197	0.344	0.156	0.109	0.128	0.156	0.113	0.109	0.093	0.199	0.171	**0.182**
(m^3s^{-1}):	Peak	2.11	0.71	1.45	0.45	0.17	0.45	0.54	0.18	0.36	0.31	0.83	0.95	**2.11**
Runoff (mm)		37	16	31	14	10	11	14	10	10	8	17	15	**193**
Rainfall (mm)		113	41	76	47	8	116	73	10	54	75	84	46	**743**

Monthly and yearly statistics for previous record (Oct 1965 to Dec 1990—incomplete or missing months total 6.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.442	0.422	0.335	0.262	0.199	0.141	0.124	0.114	0.151	0.229	0.317	0.372	**0.258**
flows	Low	0.150	0.162	0.121	0.104	0.094	0.068	0.073	0.044	0.077	0.110	0.088	0.116	**0.122**
(m^3s^{-1})	High	0.928	0.795	0.903	0.522	0.356	0.212	0.199	0.181	0.365	0.555	0.769	0.663	**0.335**
Peak flow (m^3s^{-1})		6.47	6.35	7.28	73.33	7.00	1.79	3.72	1.74	3.74	4.73	8.64	6.30	**73.33**
Runoff (mm)		40	35	30	23	18	12	11	10	13	21	28	33	**274**
Rainfall (mm)*		93	73	89	48	56	49	47	56	59	108	77	104	**859**

*(1966-1990)

Factors affecting runoff: G I
Station type: FL

1991 runoff is 71% of previous mean
rainfall 86%

201007 Burn Dennet at Burndennet Bridge 1991

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 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.418	14.140	7.639	4.813	2.982	4.635	3.915	2.561	1.857	9.979	6.525	7.404	**5.514**
(m^3s^{-1}):	Peak	47.56	9.15	25.69	18.39	4.03	11.99	28.47	5.58	14.63	55.78	29.21	66.99	**66.99**
Runoff (mm)		8	235	141	86	55	83	72	47	33	184	116	136	**1197**
Rainfall (mm)		128	60	125	125	25	119	66	57	66	103	160	138	**1172**

Monthly and yearly statistics for previous record (Jun 1975 to Dec 1990—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	6.400	5.442	4.996	3.136	2.412	1.895	1.972	2.529	3.339	5.046	5.006	5.492	**3.968**
flows	Low	3.410	2.244	2.441	1.687	0.925	0.843	0.832	0.579	0.664	2.596	2.130	3.203	**2.634**
(m^3s^{-1})	High	9.542	14.320	7.811	6.115	5.024	3.649	3.990	7.213	8.151	9.913	7.351	8.156	**6.211**
Peak flow (m^3s^{-1})		70.02	53.00	47.48	36.85	25.51	29.50	50.79	55.46	67.37	110.80	64.52	59.53	**110.80**
Runoff (mm)		118	92	92	56	44	34	36	47	60	93	89	101	**862**
Rainfall (mm)		133	83	110	61	68	73	86	93	105	135	107	113	**1167**

Factors affecting runoff: E
Station type: VA

1991 runoff is 139% of previous mean
rainfall 100%

201008 Derg at Castlederg 1991

Measuring authority: DOEN
First year: 1976

Grid reference: *23* (IH) 265 842
Level stn. (m OD): 43.00

Catchment area (sq km): 337.3
Max alt. (m OD): 543

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	30.610	11.300	19.460	18.890	3.022	5.233	8.132	6.910	7.528	14.470	32.450	29.380	**15.650**
(m^3s^{-1}):	Peak	173.08	71.70	158.06	116.80	8.74	30.33	64.74	31.13	75.64	120.54	150.29	222.21	**222.21**
Runoff (mm)		243	81	155	145	24	40	65	55	58	115	249	233	**1463**
Rainfall (mm)		206	78	170	174	23	138	103	78	119	151	245	255	**1740**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	22.970	16.540	17.430	7.816	6.409	5.034	5.871	9.473	13.920	18.930	20.000	20.540	**13.745**
flows	Low	12.090	2.356	8.844	1.862	0.534	1.048	1.142	0.258	1.703	9.480	7.358	8.234	**11.403**
(m^3s^{-1})	High	33.100	35.460	28.480	15.360	17.200	11.230	11.710	30.260	30.630	32.270	35.830	32.690	**16.941**
Peak flow (m^3s^{-1})		202.60	187.30	159.50	135.60	163.50	87.33	161.00	176.90	232.90	223.20	205.20	187.30	**232.90**
Runoff (mm)		182	120	138	60	51	39	47	75	107	150	154	163	**1286**
Rainfall (mm)*		205	132	167	87	86	85	110	155	139	208	132	187	**1693**

*(1983-1990)

Factors affecting runoff: E
Station type: VA

1991 runoff is 114% of previous mean
rainfall 103%

203012 Ballinderry at Ballinderry Bridge 1991

Measuring authority: DOEN
First year: 1970

Grid reference: *23* (IH) 926 799
Level stn. (m OD): 16.00

Catchment area (sq km): 419.5
Max alt. (m OD): 476

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	16.300	6.889	13.930	9.928	3.255	2.892	2.736	1.441	1.236	3.865	11.490	15.780	**7.495**
(m^3s^{-1}):	Peak	108.22	17.83	95.08	49.90	7.76	10.26	22.92	1.77	3.07	62.55	41.31	134.53	**134.53**
Runoff (mm)		104	40	89	61	21	18	17	9	8	25	71	101	**563**
Rainfall (mm)		113	52	123	114	5	102	62	25	60	101	132	131	**1020**

Monthly and yearly statistics for previous record (Jul 1970 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	16.200	12.890	10.880	6.693	5.214	3.728	2.906	4.888	5.880	9.454	12.020	13.940	**8.711**
flows	Low	9.339	4.805	5.502	3.515	2.454	1.627	1.518	1.060	1.965	2.331	5.122	4.946	**5.251**
(m^3s^{-1})	High	24.690	25.040	17.260	13.140	12.740	7.524	7.496	17.640	21.020	17.200	21.860	21.490	**11.532**
Peak flow (m^3s^{-1})		183.20	139.90	98.37	106.70	109.20	61.60	127.20	140.10	141.00	194.80	122.90	138.00	**194.80**
Runoff (mm)		103	75	69	41	33	23	19	31	36	60	74	89	**655**
Rainfall (mm)*		128	87	107	66	62	72	69	115	85	129	84	108	**1112**

*(1983-1990)

Factors affecting runoff: N
Station type: VA

1991 runoff is 86% of previous mean
rainfall 92%

203020 Moyola at Moyola New Bridge 1991

Measuring authority: DOEN
First year: 1971

Grid reference: *23* (IH) 955 905
Level stn. (m OD): 13.00

Catchment area (sq km): 306.5
Max alt. (m OD): 554

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	16.870	7.187	15.040	12.070	3.509	4.424	3.514	1.985	2.256	6.760	15.260	13.350	**8.529**
(m^3s^{-1}):	Peak	90.40	21.57	90.99	54.76	8.66	15.12	20.87	40.01	11.03	98.26	54.92	116.27	**116.27**
Runoff (mm)		147	57	131	102	31	37	31	17	19	59	129	117	**878**
Rainfall (mm)		126	58	135	127	10	115	71	28	66	118	165	135	**1154**

Monthly and yearly statistics for previous record (Feb 1971 to Dec 1990)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	15.070	11.950	10.270	5.956	4.617	3.537	2.867	4.421	5.765	9.490	11.150	13.000	**8.163**
flows	Low	7.707	3.696	3.776	2.238	1.335	1.015	0.952	0.748	1.366	2.000	4.562	5.088	**4.961**
(m^3s^{-1})	High	23.280	25.940	17.150	13.280	12.360	7.159	6.512	15.310	19.100	16.790	20.770	22.170	**10.653**
Peak flow (m^3s^{-1})		152.20	121.90	86.93	102.80	114.10	67.84	83.33	111.00	112.70	134.80	117.20	154.60	**154.60**
Runoff (mm)		132	95	90	50	40	30	25	39	49	83	94	114	**841**
Rainfall (mm)*		152	102	125	75	71	78	78	120	98	150	102	123	**1274**

*(1983-1990)

Factors affecting runoff: S PG I
Station type: VA

1991 runoff is 104% of previous mean
rainfall 91%

205004 Lagan at Newforge 1991

Measuring authority: DOEN
First year: 1972

Grid reference: *33* (IJ) 329 693
Level stn. (m OD): 2.00

Catchment area (sq km): 490.4
Max alt. (m OD): 532

Hydrometric statistics for 1991

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	14.740	9.886	17.150	12.590	2.940	1.962	1.406	0.685	0.849	2.638	17.350	16.310	**8.220**
(m^3s^{-1}):	Peak	47.15	20.98	40.66	56.53	11.41	5.80	2.99	1.96	4.11	36.22	68.10	97.74	**97.74**
Runoff (mm)		81	49	94	67	16	10	8	4	4	14	92	89	**527**
Rainfall (mm)		72	54	95	102	6	66	35	29	54	97	111	88	**809**

Monthly and yearly statistics for previous record (Aug 1972 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	17.210	11.940	11.010	6.914	4.597	3.327	2.558	4.528	6.016	10.950	11.720	16.100	**8.903**
flows	Low	8.508	5.311	2.820	2.064	1.208	0.944	0.789	0.615	0.902	1.075	3.059	3.843	**4.810**
(m^3s^{-1})	High	26.460	22.330	18.740	19.170	16.600	11.230	8.018	19.470	18.090	27.600	27.690	43.090	**12.235**
Peak flow (m^3s^{-1})		84.30	66.22	69.56	112.20	55.15	62.72	24.30	76.10	70.53	121.00	91.08	128.40	**128.40**
Runoff (mm)		94	60	60	37	25	18	14	25	32	60	62	88	**573**
Rainfall (mm)*		96	63	86	47	58	53	47	87	106	71	68	100	**882**

*(1983-1985)

Factors affecting runoff: GEI
Station type: VA

1991 runoff is 92% of previous mean
rainfall 92%

THE NATIONAL RIVER FLOW ARCHIVE DATA RETRIEVAL SERVICE

The National River Flow Archive comprises some 29,000 station-years of daily river flows and incorporates data from over 1400 gauging stations throughout the United Kingdom. In addition to gauged flow data, naturalised data (see page 30) 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 can also be found, together with examples of the computer output in the national River Flow Archive Data Retrieval Service Handbook which is available free from the address below. 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 140 to 146, be consulted, and that, where continuity of record is important, the availability of suitable data sets are checked by referring to the Summary of Archived Data in the Handbook. As an aid to data selection and to the interpretation of hydrological analyses the 1986-90 Hydrometric Register and Statistics (see page 174) is recommended as a source of indispensable reference material.

In response to user requirements the data retrieval facilities are being continually updated and 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, magnetic tape or IBM PC compatible disk, 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:

The National Water Archive Office
Institute of Hydrology
Maclean Building
WALLINGFORD
OXFORDSHIRE OX10 8BB
UK

Telephone: Wallingford (0491) 38800
Fax: (0491) 32256

The National Water Archive

As of April 1992, the River Flow Archive was incorporated into the National Water Archive (NWA) - the most recently established of NERC's five Designated Data Centres. These Centres, located at NERC Institute sites, exist to hold data and provide information and advisory services to a wide range of users.

The national River Flow and national Groundwater Level Archives form the kernel of the National Water Archive but a very broad range of hydrological - and related - data sets are being assimilated into the co-ordinated management that the NWA provides. Data holdings range from the catchment scale (e.g. detailed climatological and hydrological data for a network of experimental catchments) to national (flood event data) and international coverage (world floods archive). The utility of the archived time series data is enhanced by the availability of complementary spatial information (for example the digitised river network and UK soils hydrology map) and by the manipulative potential provided by modern data handling systems and analytical packages.

Staff at the NWA maintain close contacts with measuring authorities and keep under review developments in the field of network design, instrumentation and information technology. A continuing dialogue with both data suppliers and an active community of users ensures that the databases and retrieval facilities are reviewed continuously to provide an effective and responsive service across a broad range of applications.

Data sets of particular hydrological interest include an archive of flood peaks from over 600 catchments, a flood event archive comprising rainfall and river flows at short time intervals for over 4000 individual events and extensive hydrometeorological data sets for a variety of UK experimental catchments. Data may be retrieved from these sources in a variety of formats. Equivalent European data also exists as part of the FRIEND project of the International Hydrological Programme.

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.
	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 monthly and annual 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 (where 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 (where 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. Includes summary statistics. Rainfall and runoff totals are in millimetres.

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, units 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 an A4 sheet: a) daily mean flow hydrograph for a selected year b) monthly mean flow hydrograph for the selected year. The maximum and minimum monthly flows, together with the 30-day running mean for the preceding period of record may be included c) flow duration curve for the specified year. A flow duration curve for the period of record may be included.
Gauging station summary sheet	Includes a daily flow hydrograph (with period of record extreme values) and flow duration curve together with summary statistics relating to river flow, catchment runoff and catchment rainfall. A description of the gauging station and catchment is also provided together with selected catchment characteristics and a concise summary of the archived data.

Concise Register of Gauging Stations

Station number	River and station name	Grid reference	Authority	Area (sq km)
002001	Helmsdale at Kilphedir	2997 9181	HRPB	551.4
003001	* Shin at Lairg	2581 9062	SE	494.6
003002	Carron at Sgodachail	2490 8921	HRPB	241.1
003003	Oykel at Easter Turnaig	2403 9001	HRPB	330.7
003004	Cassley at Rosehall	2472 9022	HRPB	187.5
003005	Shin at Inveran	2574 8974	HRPB	575.0
004001	Conon at Moy Bridge	2482 8547	HRPB	961.8
004003	Alness at Alness	2654 8695	HRPB	201.0
004004	Blackwater at Contin	2455 8563	HRPB	336.7
004005	Meig at Glenmeannie	2286 8528	HRPB	120.5
004006	Bran at Dosmucheran	2205 8602	HRPB	116.1
005001	* Beauly at Erchless	2426 8405	SE	849.5
005002	Farrar at Struy	2390 8405	HRPB	311.3
005003	Glass at Kerrow Wood	2354 8321	HRPB	481.8
005004	Glass at Fasnakyle	2315 8288	HRPB	277.5
006001	* Ness at Ness Castle Farm	2639 8410	SE	1792.3
006003	* Moriston at Invermoriston	2416 8169	SE	391.0
006006	* Allt Bhlaraidh at Invermoriston	2377 8168	SE	27.5
006007	Ness at Ness Side	2645 8427	HRPB	1839.1
006008	Enrick at Mill of Tore	2450 8300	HRPB	105.9
007001	Findhorn at Shenachie	2826 8337	HRPB	415.6
007002	Findhorn at Forres	3018 8583	HRPB	781.9
007003	Lossie at Sheriffmills	3194 8626	NERPB	216.0
007004	Nairn at Firhall	2882 8551	HRPB	313.0
007005	Divie at Dunphail	3005 8480	HRPB	165.0
007006	Lossie at Torwinny	3135 8489	NERPB	20.0
008001	* Spey at Aberlour	3278 8439	NERPB	2654.7
008002	Spey at Kinrara	2881 8082	NERPB	1011.7
008003	* Spey at Ruthven Bridge	2759 7996	NERPB	533.8
008004	Avon at Delnashaugh	3186 8352	NERPB	542.8
008005	Spey at Boat of Garten	2946 8191	NERPB	1267.8
008006	Spey at Boat o Brig	3318 8518	NERPB	2861.2
008007	Spey at Invertruim	2687 7962	NERPB	400.4
008008	Tromie at Tromie Bridge	2789 7995	NERPB	130.3
008009	Dulnain at Balnaan Bridge	2977 8247	NERPB	272.2
008010	Spey at Grantown	3033 8268	NERPB	1748.8
008011	Livet at Minmore	3201 8291	NERPB	104.0
009001	Deveron at Avochie	3532 8464	NERPB	441.6
009002	Deveron at Muiresk	3705 8498	NERPB	954.9
009003	Isla at Grange	3494 8506	NERPB	176.1
009004	Bogie at Redcraig	3519 8373	NERPB	179.0
009005	Allt Deveron at Cabrach	3378 8291	GRWD	67.0
010002	Ugie at Inverugie	4101 8485	NERPB	325.0
010003	Ythan at Ellon	3947 8303	NERPB	523.0
011001	Don at Parkhill	3887 8141	NERPB	1273.0
011002	Don at Haughton	3756 8201	NERPB	787.0
011003	Don at Bridge of Alford	3566 8170	NERPB	499.0
011004	Urie at Pitcaple	3721 8260	NERPB	198.0
011005	Don at Mill of Newe	3371 8121	NERPB	187.0
012001	Dee at Woodend	3635 7956	NERPB	1370.0
012002	Dee at Park	3798 7983	NERPB	1844.0
012003	Dee at Polhollick	3344 7965	NERPB	690.0
012004	* Girnock Burn at Littlemill	3324 7956	NERPB	30.3
012005	Muick at Invermuick	3364 7947	NERPB	110.0
012006	Gairn at Invergairn	3353 7971	NERPB	150.0
012007	Dee at Mar Lodge	3098 7895	NERPB	289.0
012008	Feugh at Heugh Head	3687 7928	NERPB	229.0
012009	Water of Dye at Charr	3624 7834	NERPB	41.7
013001	Bervie at Inverbervie	3826 7733	NERPB	123.0
013002	Luther Water at Luther Bridge	3660 7668	TRPB	138.0
013003	* South Esk at Stannochy Bridge	3583 7593	TRPB	487.0
013004	Prosen Water at Prosen Bridge	3396 7586	TRPB	104.0
013005	Lunan Water at Kirkton Mill	3655 7494	TRPB	124.0
013007	North Esk at Logie Mill	3699 7640	TRPB	730.0
013008	South Esk at Brechin	3600 7596	TRPB	490.0
013009	West Water at Dalhousie Bridge	3592 7680	TRPB	127.2
013010	Brothock Water at Brothock Bridge	3639 7418	TRPB	50.0
013012	South Esk at Gella Bridge	3372 7653	TRPB	130.0
014001	Eden at Kemback	3415 7158	TRPB	307.4
014002	Dighty Water at Balmossie Mill	3477 7324	TRPB	126.9
014005	Motray Water at St Michaels	3441 7224	TRPB	52.0
014006	Monikie Burn at Panbride	3574 7361	TRPB	16.0
014007	Craigmill Burn at Craigmill	3575 7360	TRPB	29.0
014009	Eden at Strathmiglo	3226 7102	TRPB	26.0
014010	Motray Water at Kilmany	3387 7217	TRPB	57.0
015001	* Isla at Forter	3187 7647	TRWS	70.7
015002	* Newton Burn at Newton	3230 7605	TRWS	15.4
015003	Tay at Caputh	3082 7395	TRPB	3211.0
015004	* Inzion at Loch of Lintrathen	3280 7559	TRWS	24.7
015005	* Melgan at Loch of Lintrathen	3275 7558	TRWS	40.9
015006	Tay at Ballathie	3147 7367	TRPB	4587.1
015007	Tay at Pitnacree	2924 7534	TRPB	1149.4
015008	Dean Water at Cookston	3340 7479	TRPB	177.1
015010	Isla at Wester Cardean	3295 7466	TRPB	366.5
015011	Lyon at Comrie Bridge	2786 7486	TRPB	391.1
015012	Tummel at Port-na-craig	2940 7577	TRPB	1649.0
015013	Almond at Almondbank	3067 7258	TRPB	174.8
015014	Ardle at Kindrogan	3056 7631	TRPB	103.0
015015	Almond at Newton Bridge	2888 7316	TRPB	84.0
015016	Tay at Kenmore	2782 7467	TRPB	600.9
015017	* Braan at Ballinloan	2979 7406	TRPB	197.0
015018	* Lyon at Moar	2534 7448	SE	161.4
015021	Lunan Burn at Mill Bank	3182 7400	TRPB	94.0
015023	Braan at Hermitage	3014 7422	TRPB	210.0
015024	Dochart at Killin	2567 7320	TRPB	239.0
015025	Ericht at Craighall	3174 7472	TRPB	432.0
015027	Garry Burn at Loakmill	3075 7339	TRPB	20.0
015028	Ordie Burn at Luncarty	3093 7306	TRPB	54.0
015029	Alyth Burn at Pitcrocknie	3257 7485	TRPB	32.0
015030	Dean Water at Dean Bridge	3293 7458	TRPB	230.0
015032	Ordie Burn at Jackstone	3073 7337	TRPB	20.0
015034	Garry at Killiecrankie	2901 7637	TRPB	745.0
015035	Tummel at Kinloch Rannoch	2663 7588	TRPB	647.0
016001	Earn at Kinkell Bridge	2933 7167	TRPB	590.5
016002	* Earn at Aberuchill	2754 7216	TRPB	176.9
016003	Ruchill Water at Cultybraggan	2764 7204	TRPB	99.5
016004	Earn at Forteviot Bridge	3043 7184	TRPB	782.2
016006	Dunning Burn at Granco	3019 7147	TRPB	1208.0
016007	Ruthven Water at Aberuthven	2975 7154	TRPB	49.0
017001	Carron at Headswood	2832 6820	FRPB	122.3
017002	Leven at Leven	3369 7006	FRPB	424.0
017003	Bonny Water at Bonnybridge	2824 6804	FRPB	50.5
017004	Ore at Balfour Mains	3330 6997	FRPB	162.0
017005	Avon at Polmonthill	2952 6797	FRPB	195.3
017008	South Queich at Kinross	3122 7015	FRPB	33.7
017012	Red Burn at Castlecary	2788 6780	FRPB	22.0
017016	Lochty Burn at Whinnyhall	3221 6987	FRPB	14.0
017017	* Greens Burn at Killyford Bridge	3150 7053	FRPB	7.9
018001	Allan Water at Kinbuck	2792 7053	FRPB	161.0
018002	Devon at Glenochil	2858 6960	FRPB	181.0
018003	Teith at Bridge of Teith	2725 7011	FRPB	518.0
018005	Allan Water at Bridge of Allan	2786 6980	FRPB	210.0
018007	Devon at Fossoway Bridge	3011 7018	FRPB	69.5
018008	Leny at Anie	2585 7096	FRPB	190.0
018010	Forth at Gargunnock	2714 6953	FRPB	397.0
018011	Forth at Craigforth	2775 6955	FRPB	1036.0
018012	* Ardoch Burn at Doune Castle	2729 7008	FRPB	48.0
018013	Black Devon at Fauld Mill	2914 6924	FRPB	67.0
018014	Bannockburn at Bannock Burn	2812 6908	FRPB	23.7
018016	Kelty Water at Clashmore	2468 6968	FRPB	2.8
018017	Monachyle Burn at Balquhidder	2475 7230	IH	7.7
018018	Kirkton Burn at Balquhidder	2532 7219	IH	6.9
018019	* Comer Burn at Comer	2387 7042	FRPB	0.9
019001	Almond at Craigiehall	3165 6752	FRPB	369.0
019002	Almond at Almond Weir	3004 6652	FRPB	43.8
019003	* Breich Water at Breich Weir	3014 6639	FRPB	51.8
019004	North Esk at Dalmore Weir	3252 6616	FRPB	81.6
019005	Almond at Almondell	3086 6686	FRPB	229.0
019006	Water of Leith at Murrayfield	3228 6732	FRPB	107.0
019007	Esk at Musselburgh	3339 6723	FRPB	330.0
019008	South Esk at Prestonholm	3325 6623	FRPB	112.0
019010	Braid Burn at Liberton	3273 6707	FRPB	16.2
019011	North Esk at Dalkeith Palace	3333 6678	FRPB	137.0
019012	Water of Leith at Colinton	3212 6688	FRPB	72.0
019014	* Brox Burn at Newliston	3114 6732	FRPB	34.1
019017	Gogar Burn at Turnhouse	3161 6733	FRPB	38.8
020001	Tyne at East Linton	3591 6768	FRPB	307.0
020002	West Peffer Burn at Luffness	3489 6811	FRPB	26.2
020003	Tyne at Spilmersford	3456 6689	FRPB	161.0
020004	East Peffer Burn at Lochhouses	3610 6824	FRPB	31.1
020005	Birns Water at Saltoun Hall	3457 6688	FRPB	93.0
020006	Biel Water at Belton House	3645 6768	FRPB	51.8
020007	Gifford Water at Lennoxlove	3511 6717	FRPB	64.0
020008	Brox Burn at Broxmouth	3697 6776	FRPB	19.7
021001	* Fruid Water at Fruid	3088 6205	LRWD	23.7
021002	* Whiteadder Water at Hungry Snout	3663 6633	LRWD	45.6
021003	Tweed at Peebles	3257 6400	TWRP	694.0
021004	* Watch Water at Watch Water Reservoir	3664 6566	BRWD	10.7
021005	Tweed at Lyne Ford	3206 6397	TWRP	373.0
021006	Tweed at Boleside	3498 6334	TWRP	1500.0
021007	Ettrick Water at Lindean	3486 6315	TWRP	499.0
021008	Teviot at Ormiston Mill	3702 6280	TWRP	1110.0
021009	Tweed at Norham	3898 6477	TWRP	4390.0
021010	* Tweed at Dryburgh	3588 6320	TWRP	2080.0
021011	Yarrow Water at Philiphaugh	3439 6277	TWRP	231.0
021012	Teviot at Hawick	3522 6159	TWRP	323.0
021013	Gala Water at Galashiels	3479 6374	TWRP	207.0
021014	Tweed at Kingledores	3109 6285	TWRP	139.0
021015	Leader Water at Earlston	3565 6388	TWRP	239.0
021016	Eye Water at Eyemouth Mill	3942 6635	TWRP	119.0
021017	Ettrick Water at Brockhoperig	3234 6132	TWRP	37.5
021018	Lyne Water at Lyne Station	3209 6401	TWRP	175.0
021019	Manor Water at Cademuir	3217 6369	TWRP	61.6
021020	Yarrow Water at Gordon Arms	3309 6247	TWRP	155.0
021021	Tweed at Sprouston	3752 6354	TWRP	3330.0
021022	Whiteadder Water at Hutton Castle	3881 6550	TWRP	503.0
021023	Leet Water at Coldstream	3839 6396	TWRP	113.0
021024	Jed Water at Jedburgh	3655 6214	TWRP	139.0
021025	Ale Water at Ancrum	3634 6244	TWRP	174.0
021026	Tima Water at Deephope	3278 6138	TWRP	31.0
021027	Blackadder Water at Mouth Bridge	3826 6530	TWRP	159.0
021030	Megget Water at Henderland	3231 6232	TWRP	56.2
021031	* Till at Etal	3927 6396	NRA-N	648.0
021032	Glen at Kirknewton	3919 6310	NRA-N	198.9
021034	Yarrow Water at Craig Douglas	3288 6244	TWRP	116.0
022001	Coquet at Morwick	4234 6044	NRA-N	569.8
022002	* Coquet at Bygate	3870 6083	NRA-N	59.5
022003	* Usway Burn at Shillmoor	3886 6077	NRA-N	21.4
022004	* Aln at Hawkhill	4211 6129	NRA-N	205.0
022006	Blyth at Hartford Bridge	4243 5800	NRA-N	269.4
022007	Wansbeck at Mitford	4175 5858	NRA-N	287.3
022008	* Alwin at Clennell	3925 6063	NRA-N	27.7
022009	Coquet at Rothbury	4067 6016	NRA-N	346.0
023001	Tyne at Bywell	4038 5617	NRA-N	2175.6
023002	Derwent at Eddys Bridge	4041 5508	NRA-N	118.0
023003	North Tyne at Reaverhill	3906 5732	NRA-N	1007.5
023004	South Tyne at Haydon Bridge	3856 5647	NRA-N	751.1
023005	* North Tyne at Tarset	3776 5861	NRA-N	284.9
023006	South Tyne at Featherstone	3672 5611	NRA-N	321.9
023007	Derwent at Rowlands Gill	4168 5581	NRA-N	242.1
023008	Rede at Rede Bridge	3868 5832	NRA-N	343.8
023009	* South Tyne at Alston	3716 5465	NRA-N	118.5
023010	* Tarset Burn at Greenhaugh	3789 5879	NRA-N	96.0
023011	Kielder Burn at Kielder	3644 5946	NRA-N	58.8
023012	* East Allen at Wide Eals	3802 5583	NRA-N	88.0
023013	* West Allen at Hindley Wrae	3791 5583	NRA-N	75.1
023014	* North Tyne at Kielder temporary	3631 5931	NRA-N	27.0
023015	* North Tyne at Barrasford	3924 5721	NGWC	1043.8
023016	Ouse Burn at Crag Hall	4254 5674	NRA-N	55.0
023017	Team at Team Valley	4249 5585	NRA-N	
023022	North Tyne at Uglydub	3712 5875	NRA-N	241.5
023023	Tyne at Riding Mill	4026 5619	NRA-N	2174.5
024001	Wear at Sunderland Bridge	4264 5376	NRA-N	657.8
024002	* Gaunless at Bishop Auckland	4215 5306	NRA-N	93.0
024003	Wear at Stanhope	3984 5391	NRA-N	171.9
024004	Bedburn Beck at Bedburn	4118 5322	NRA-N	74.9

Station number	River and station name	Grid reference	Auth-ority	Area (sq km)
024005	Browney at Burn Hall	4259 5387	NRA-N	178.5
024006 *	Rookhope Burn at Eastgate	3952 5390	NRA-N	36.5
024007 *	Browney at Lanchester	4165 5462	NRA-N	44.6
024008	Wear at Witton Park	4174 5309	NRA-N	455.0
024009	Wear at Chester le Street	4283 5512	NRA-N	1008.3
024011	Wear at Burnhope Reservoir	4855 5395	NRA-N	
025001	Tees at Broken Scar	4259 5137	NRA-N	818.4
025002 *	Tees at Dent Bank	3932 5260	NRA-N	217.3
025003 *	Trout Beck at Moor House	3759 5336	NRA-N	11.4
025004	Skerne at South Park	4284 5129	NRA-N	250.1
025005	Leven at Leven Bridge	4445 5122	NRA-N	196.3
025006	Greta at Rutherford Bridge	4034 5122	NRA-N	86.1
025007 *	Clow Beck at Croft	4282 5101	NRA-N	78.2
025008	Tees at Barnard Castle	4047 5166	NRA-N	509.2
025009	Tees at Low Moor	4364 5105	NRA-N	1264.0
025010 *	Baydale Beck at Mowden Bridge	4260 5156	NRA-N	31.1
025011 *	Langdon Beck at Langdon	3852 5309	NRA-N	13.0
025012	Harwood Beck at Harwood	3849 5309	NRA-N	25.1
025013 *	Billingham Beck at Thorpe Thewles	4408 5237	NRA-N	81.4
025014 *	Mordon Stell at Mordon School	4323 5274	NRA-N	2.5
025015 *	Woodham Burn at South Farm	4285 5263	NRA-N	29.1
025018	Tees at Middleton in Teesdale	3950 5250	NRA-N	242.1
025019	Leven at Easby	4585 5087	NRA-N	14.8
025020	Skerne at Preston le Skerne	4292 5238	NRA-N	147.0
025021	Skerne at Bradbury	4318 5285	NRA-N	70.1
025022 *	Balder at Balderhead Reservoir	3931 5182	NRA-N	20.4
025024 *	Chapel Beck at Guisborough	4599 5163	NRA-N	13.4
026001 *	West Beck at Wansford Bridge	5064 4560	YW	192.0
026002	Hull at Hempholme Lock	5080 4498	NRA-Y	378.1
026003	Foston Beck at Foston Mill	5093 4548	NRA-Y	57.2
026004 *	Gypsey Race at Bridlington	5165 4675	NRA-Y	253.8
026005	Gypsey Race at Boynton	5137 4677	NRA-Y	240.0
026006	Elmswell Beck at Little Driffield	5009 4575	NRA-Y	138.0
026007 *	Catchwater at Withernwick	5171 4403	NRA-Y	15.5
026008	Mires Beck at North Cave	4890 4316	NRA-Y	
026009	West Beck at Snakeholme Lock	5066 4555	NRA-Y	
026010	Driffield Canal at Snakeholme Lock	5066 4555	NRA-Y	
027001	Nidd at Hunsingore Weir	4428 4530	NRA-Y	484.3
027002	Wharfe at Flint Mill Weir	4422 4473	NRA-Y	758.9
027003	Aire at Beal Weir	4534 4255	NRA-Y	1932.1
027004 *	Calder at Newlands	4365 4220	NRA-Y	899.0
027006	Don at Hadfields Weir	4390 3910	NRA-Y	373.0
027007	Ure at Westwick Lock	4356 4671	NRA-Y	914.6
027008 *	Swale at Leckby Grange	4415 4748	NRA-Y	1345.6
027009	Ouse at Skelton	4568 4554	NRA-Y	3315.0
027010 *	Hodge Beck at Bransdale Weir	4627 4944	NRA-Y	18.9
027012 *	Hebden Water at High Greenwood	3973 4309	NRA-Y	36.0
027013 *	Ewden Beck at More Hall Reservoir	4289 3957	NRA-Y	26.4
027014 *	Rye at Little Habton	4743 4771	NRA-Y	679.0
027015 *	Derwent at Stamford Bridge	4714 4557	NRA-Y	1634.3
027018 *	Ryburn at Ryburn Reservoir	4025 4187	NRA-Y	10.7
027019 *	Booth Dean Clough at Booth Wood Mill	4033 4166	NRA-Y	15.9
027021 *	Don at Doncaster	4569 4040	NRA-Y	1256.2
027022 *	Don at Rotherham Weir	4427 3928	NRA-Y	826.0
027023	Dearne at Barnsley Weir	4350 4073	NRA-Y	118.9
027024 *	Swale at Richmond	4146 5006	NRA-Y	381.0
027025	Rother at Woodhouse Mill	4432 3857	NRA-Y	352.2
027026	Rother at Whittington	4394 3744	NRA-Y	165.0
027027 *	Wharfe at Ilkley	4112 4481	NRA-Y	443.0
027028	Aire at Armley	4281 4340	NRA-Y	691.5
027029	Calder at Elland	4124 4219	NRA-Y	341.9
027030	Dearne at Adwick	4477 4020	NRA-Y	310.8
027031	Colne at Colne Bridge	4174 4199	NRA-Y	245.0
027032	Hebden Beck at Hebden	4025 4643	NRA-Y	22.2
027033	Sea Cut at Scarborough	5028 4908	NRA-Y	33.2
027034	Ure at Kilgram Bridge	4190 4860	NRA-Y	510.2
027035	Aire at Kildwick Bridge	4013 4457	NRA-Y	282.3
027036 *	Derwent at Malton	4789 4715	NRA-Y	1421.0
027038	Costa Beck at Gatehouses	4774 4836	NRA-Y	7.8
027040	Doe Lea at Staveley	4443 3746	NRA-Y	67.9
027041	Derwent at Buttercrambe	4731 4587	NRA-Y	1586.0
027042	Dove at Kirkby Mills	4705 4855	NRA-Y	59.2
027043	Wharfe at Addingham	4092 4494	NRA-Y	427.0
027044	Blackfoss Beck at Sandhills Bridge	4725 4475	NRA-Y	47.0
027047	Snaizeholme Beck at Low Houses	3833 4883	NRA-Y	10.2
027048	Derwent at West Ayton	4989 4850	NRA-Y	127.0
027049	Rye at Ness	4696 4791	NRA-Y	238.7
027050	Esk at Sleights	4865 5081	NRA-Y	308.0
027051	Crimple at Burn Bridge	4284 4519	NRA-Y	8.1
027052	Whitting at Sheepbridge	4376 3747	NRA-Y	50.2
027053	Nidd at Birstwith	4230 4603	NRA-Y	217.6
027054	Hodge Beck at Cherry Farm	4652 4902	NRA-Y	37.1
027055	Rye at Broadway Foot	4560 4883	NRA-Y	131.7
027056	Pickering Beck at Ings Bridge	4791 4819	NRA-Y	68.6
027057	Seven at Normanby	4736 4821	NRA-Y	121.6
027058	Riccal at Crook House Farm	4661 4810	NRA-Y	57.6
027059	Laver at Ripon	4301 4710	NRA-Y	87.5
027060	Kyle at Newton On Ouse	4509 4602	NRA-Y	167.6
027061	Colne at Longroyd Bridge	4136 4161	NRA-Y	72.3
027062	Nidd at Skip Bridge	4482 4561	NRA-Y	516.0
027064	Went at Walden Stubbs	4551 4163	NRA-Y	63.7
027065	Holme at Queens Mill	4142 4157	NRA-Y	97.4
027066	Blackburn Brook at Ashlowes	4393 3914	NRA-Y	42.8
027067	Sheaf at Highfield Road	4357 3863	NRA-Y	49.1
027068	Ryburn at Ripponden	4035 4188	NRA-Y	33.0
027069	Wiske at Kirby Wiske	4375 4844	NRA-Y	215.5
027070	Eller Beck at Skipton	3984 4502	NRA-Y	35.3
027071	Swale at Crakehill	4425 4734	NRA-Y	1363.0
027072	Worth at Keighley	4064 4408	NRA-Y	71.7
027073	Brompton Beck at Snainton Ings	4936 4794	NRA-Y	12.9
027074	Spen Beck at Northorpe	4225 4210	NRA-Y	46.3
027075	Bedale Beck at Leeming	4306 4902	NRA-Y	160.3
027076	Bielby Beck at Thornton Lock	4760 4444	NRA-Y	103.1
027077	Bradford Beck at Shipley	4151 4375	NRA-Y	58.0
027080	Aire at Fleet Weir	4381 4285	NRA-Y	865.0
027081	Oulton Beck at Farrer Lane	4365 4281	NRA-Y	
027082	Cundall Beck at Bat Bridge	4419 4724	NRA-Y	
027083	Foss at Huntington	4612 4543	NRA-Y	
027084	Eastburn Beck at Crosshills	4021 4452	NRA-Y	43.4
027085	Cod Beck at Dalton Bridge	4422 4766	NRA-Y	209.3
027086	Skell at Alma Weir	4316 4709	NRA-Y	
028001	Derwent at Yorkshire Bridge	4198 3851	NRA-ST	126.0
028002 *	Blithe at Hamstall Ridware	4109 3192	NRA-ST	163.0
028003 *	Tame at Water Orton	4169 2915	NRA-ST	408.0
028004 *	Tame at Lea Marston	4206 2935	NRA-ST	795.0
028005 *	Tame at Elford	4173 3105	NRA-ST	1475.0
028006 *	Trent at Great Haywood	3994 3231	NRA-ST	325.0
028007	Trent at Shardlow	4448 3299	NRA-ST	4400.0
028008	Dove at Rocester Weir	4112 3397	NRA-ST	399.0
028009	Trent at Colwick	4620 3399	NRA-ST	7486.0
028010 *	Derwent at Longbridge Weir/St.Mary's Bridge	4356 3363	NRA-ST	1054.0
028011	Derwent at Matlock Bath	4296 3586	NRA-ST	690.0
028012	Trent at Yoxall	4131 3177	NRA-ST	1229.0
028013 *	Soar at Zouch	4498 3240	NRA-ST	1289.8
028014 *	Sow at Milford	3975 3215	NRA-ST	591.0
028015	Idle at Mattersey	4690 3895	NRA-ST	529.0
028016 *	Ryton at Serlby Park	4641 3897	NRA-ST	231.0
028017 *	Devon at Cotham	4787 3476	NRA-ST	284.0
028018	Dove at Marston on Dove	4235 3288	NRA-ST	883.2
028019	Trent at Drakelow Park	4239 3204	NRA-ST	3072.0
028020 *	Churnet at Rocester	4103 3389	NRA-ST	236.0
028021 *	Derwent at Draycott	4443 3327	NRA-ST	1175.0
028022 *	Trent at North Muskham	4801 3601	NRA-ST	8231.0
028023 *	Wye at Ashford	4182 3696	NRA-ST	154.0
028024	Wreake at Syston Mill	4615 3124	NRA-ST	413.8
028025 *	Sence at Ratcliffe Culey	4321 2996	NRA-ST	169.4
028026	Anker at Polesworth	4263 3034	NRA-ST	368.0
028027 *	Erewash at Stapleford	4482 3364	NRA-ST	182.2
028029 *	Kingston Brook at Kingston Hall	4503 3277	NRA-ST	57.0
028030 *	Black Brook at Onebarrow	4466 3171	NRA-ST	8.4
028031	Manifold at Ilam	4140 3507	NRA-ST	148.5
028032 *	Meden at Church Warsop	4558 3680	NRA-ST	62.8
028033 *	Dove at Hollinsclough	4063 3668	NRA-ST	8.0
028035 *	Leen at Nottingham	4549 3392	NRA-ST	111.0
028036 *	Poulter at Twyford Bridge	4700 3752	NRA-ST	128.2
028038 *	Manifold at Hulme End	4106 3595	NRA-ST	46.0
028039	Rea at Calthorpe Park	4071 2847	NRA-ST	74.0
028040	Trent at Stoke on Trent	3892 3467	NRA-ST	53.2
028041 *	Hamps at Waterhouses	4082 3502	NRA-ST	35.1
028043	Derwent at Chatsworth	4261 3683	NRA-ST	335.0
028044 *	Poulter at Cuckney	4570 3713	NRA-ST	32.2
028045 *	Meden/Maun at Bothamsall/Haughton	4681 3732	NRA-ST	262.6
028046	Dove at Izaak Walton	4146 3509	NRA-ST	83.0
028047 *	Oldcotes Dyke at Blyth	4615 3876	NRA-ST	85.2
028048	Amber at Wingfield Park	4376 3520	NRA-ST	139.0
028049 *	Ryton at Worksop	4575 3794	NRA-ST	77.0
028050 *	Torne at Auckley	4646 4012	NRA-ST	135.5
028052	Sow at Great Bridgford	3883 3270	NRA-ST	163.0
028053 *	Penk at Penkridge	3923 3144	NRA-ST	272.0
028054 *	Sence at Blaby	4566 2985	NRA-ST	133.0
028055 *	Ecclesbourne at Duffield	4320 3447	NRA-ST	50.4
028056	Rothley Brook at Rothley	4580 3121	NRA-ST	94.0
028058 *	Henmore Brook at Ashbourne	4176 3463	NRA-ST	42.0
028059 *	Maun at Mansfield	4548 3623	NRA-ST	28.8
028060 *	Dover Beck at Lowdham	4653 3479	NRA-ST	69.0
028061	Churnet at Basford Bridge	3983 3520	NRA-ST	139.0
028062 *	Trent at Fledborough	4815 3715	NRA-ST	8433.0
028065 *	Trent at Torksey	4827 3780	NRA-ST	8547.0
028066	Cole at Coleshill	4183 2874	NRA-ST	130.0
028067	Derwent at Church Wilne	4438 3316	NRA-ST	1177.5
028070 *	Burbage Brook at Burbage	4259 3804	NRA-ST	9.1
028072 *	Greet at Southwell	4711 3541	NRA-ST	46.2
028073 *	Ashop at Ashop diversion	4171 3896	NRA-ST	42.0
028075 *	Derwent at Slippery Stones	4169 3951	NRA-ST	17.0
028079	Meece at Shallowford	3874 3291	NRA-ST	86.3
028080	Tame at Lea Marston Lakes	4207 2937	NRA-ST	799.0
028081	Tame at Bescot	4012 2958	NRA-ST	169.0
028082	Soar at Littlethorpe	4542 2973	NRA-ST	183.9
028083	Trent at Darlaston	3885 3355	NRA-ST	195.2
028085	Derwent at St. Marys Bridge	4355 3368	NRA-ST	1054.0
028086	Sence at South Wigston	4588 2977	NRA-ST	113.0
028091	Ryton at Blyth	4631 3871	NRA-ST	231.0
028093	Soar at Pillings Lock	4565 3182	NRA-ST	1108.4
028094	Blythe at Castle Farm	4213 2888	NRA-ST	183.8
028095	Tame at Hopwas Bridge	4182 3052	NRA-ST	1421.7
028101	Tame at Sheepwash	3974 2918	NRA-ST	27.9
028102	Blythe at Whitacre	4212 2911	NRA-ST	194.3
029001	Waithe Beck at Brigsley	5253 4016	NRA-A	108.3
029002	Great Eau at Claythorpe Mill	5416 3793	NRA-A	77.4
029003	Lud at Louth	5337 3879	NRA-A	55.2
029004	Ancholme at Bishopbridge	5032 3911	NRA-A	54.7
029005	Rase at Bishopbridge	5032 3912	NRA-A	66.6
029009	Ancholme at Toft Newton	5033 3877	NRA-A	27.2
030001	Witham at Claypole Mill	4842 3480	NRA-A	297.9
030002 *	Barlings Eau at Langworth Bridge	5066 3766	NRA-A	210.1
030003	Bain at Fulsby Lock	5241 3611	NRA-A	197.1
030004	Partney Lymn at Partney Mill	5402 3676	NRA-A	61.6
030005 *	Witham at Saltersford total	4927 3335	NRA-A	126.1
030006	Slea at Leasingham Mill	5088 3485	NRA-A	48.4
030011	Bain at Goulceby Bridge	5246 3795	NRA-A	62.5
030012	Stainfield Beck at Stainfield	5127 3739	NRA-A	37.4
030013	Heighington Beck at Heighington	5042 3696	NRA-A	21.2
030014	Pointon Lode at Pointon	5128 3313	NRA-A	11.9
030015	Cringle Brook at Stoke Rochford	4925 3297	NRA-A	50.5
030017	Witham at Colsterworth	4929 3246	NRA-A	51.3
031001	Eye Brook at Eye Brook Reservoir	4853 2941	CDWC	60.1
031002	Glen at Kates Brdg and King St Brdg	5106 3149	NRA-A	341.9
031005	Welland at Tixover	4970 2997	NRA-A	417.0
031006	Gwash at Belmesthorpe	5038 3097	NRA-A	150.0
031007	Welland at Barrowden	4948 2999	NRA-A	411.6
031010	Chater at Fosters Bridge	4961 3030	NRA-A	68.9
031012 *	Tham at Little Bytham	5016 3179	NRA-A	24.9
031016	North Brook at Empingham	4957 3089	NRA-A	36.5
031021	Welland at Ashley	4819 2915	NRA-A	250.7
031023	West Glen at Easton Wood	4965 3258	NRA-A	4.4
031025	Gwash South Arm at Manton	4875 3051	NRA-A	24.5
031026	Egleton Brook at Egleton	4878 3073	NRA-A	2.5
031028	Gwash at Church Bridge	4951 3082	NRA-A	76.5
032001	Nene at Orton	5166 2972	NRA-A	1634.3
032002	Willow Brook at Fotheringhay	5067 2933	NRA-A	89.6
032003	Harpers Brook at Old Mill Bridge	4983 2799	NRA-A	74.3
032004	Ise Brook at Harrowden Old Mill	4898 2715	NRA-A	194.0
032006	Nene/Kislingbury at Upton	4721 2592	NRA-A	223.0
032007	Nene Brampton at St Andrews	4747 2617	NRA-A	232.8
032008	Nene/Kislingbury at Dodford	4627 2607	NRA-A	107.0
032029 *	Flore at Experimental Catchment	4655 2604	NRA-A	7.0
032031	Wootton Brook at Wootton Park	4726 2577	NRA-A	73.9
033001 *	Bedford Ouse at Brownshill Staunch	5369 2727	NRA-A	3030.0
033002	Bedford Ouse at Bedford	5055 2495	NRA-A	1460.0

Station number	River and station name	Grid reference	Authority	Area (sq km)
033003 *	Cam at Bottisham	5508 2657	NRA-A	803.0
033004 *	Lark at Isleham	5648 2760	NRA-A	466.2
033005	Bedford Ouse at Thornborough Mill	4736 2353	NRA-A	388.5
033006	Wissey at Northwold	5771 2965	NRA-A	274.5
033007	Nar at Marham	5723 3119	NRA-A	153.3
033008 *	Little Ouse at Thetford No1 Staunch	5860 2832	NRA-A	699.0
033009	Bedford Ouse at Harrold Mill	4951 2565	NRA-A	1320.0
033011	Little Ouse at County Bridge Euston	5892 2801	NRA-A	128.7
033012	Kym at Meagre Farm	5155 2631	NRA-A	137.5
033013	Sapiston at Rectory Bridge	5896 2791	NRA-A	205.9
033014	Lark at Temple	5758 2730	NRA-A	272.0
033015	Ouzel at Willen	4882 2408	NRA-A	277.1
033016 *	Cam at Jesus Lock	5450 2593	NRA-A	761.5
033018	Tove at Cappenham Bridge	4714 2488	NRA-A	138.1
033019	Thet at Melford Bridge	5880 2830	NRA-A	316.0
033020	Alconbury Brook at Brampton	5208 2717	NRA-A	201.5
033021	Rhee at Burnt Mill	5415 2523	NRA-A	303.0
033022	Ivel at Blunham	5153 2509	NRA-A	541.3
033023	Lea Brook at Beck Bridge	5662 2733	NRA-A	101.8
033024	Cam at Dernford	5466 2506	NRA-A	198.0
033025 *	Babingly at West Newton Mill	5696 3256	NRA-A	39.6
033026	Bedford Ouse at Offord	5216 2669	NRA-A	2570.0
033027	Rhee at Wimpole	5333 2485	NRA-A	119.1
033028	Flit at Shefford	5143 2393	NRA-A	119.6
033029	Stringside at White Bridge	5716 3006	NRA-A	98.8
033030 *	Clipstone Brook at Clipstone	4933 2255	NRA-A	40.2
033031	Broughton Brook at Broughton	4889 2408	NRA-A	66.6
033032	Heacham at Heacham	5685 3375	NRA-A	59.0
033033	Hiz at Arlesey	5190 2379	NRA-A	108.0
033034	Little Ouse at Abbey Heath	5851 2844	NRA-A	699.3
033035	Ely Ouse at Denver Complex	5588 3010	NRA-A	3430.0
033037	Bedford Ouse at Newp't Pagnell Wr	4877 2443	NRA-A	800.0
033039	Bedford Ouse at Roxton	5160 2535	NRA-A	1660.0
033040	Rhee at Ashwell	5267 2401	NRA-A	
033044	Thet at Bridgham	5957 2855	NRA-A	277.8
033045	Wittle at Quidenham	6027 2878	NRA-A	28.3
033046	Thet at Red Bridge	5996 2923	NRA-A	145.3
033048	Larling Brook at Stonebridge	5928 2907	NRA-A	21.4
033049 *	Stanford Water at Buckenham Tofts	5834 2953	NRA-A	43.5
033050	Snail at Fordham	5631 2703	NRA-A	60.6
033051	Cam at Chesterford	5505 2426	NRA-A	141.0
033052	Swaffham Lode at Swaffham Bulbeck	5553 2628	NRA-A	36.4
033053 *	Granta at Stapleford	5471 2515	NRA-A	114.0
033054	Babingley at Castle Rising	5680 3252	NRA-A	47.7
033055	Granta at Babraham	5510 2504	NRA-A	98.7
033056	Quy Water at Lode	5531 2627	NRA-A	76.4
033057	Ouzel at Leighton Buzzard	4917 2241	NRA-A	119.0
033058	Ouzel at Bletchley	4883 2322	NRA-A	215.0
033059	Cut-off Channel at Tolgate	5729 2757	NRA-A	
033060	Kings Dike at Stanground	5208 2973	NRA-A	
033062	Guilden Brook at Fowlmere two	5403 2457	NRA-A	
033063	Little Ouse at Knettishall	5955 2807	NRA-A	101.0
033064	Whaddon Brook at Whaddon	5359 2466	NRA-A	16.0
033065	Hiz at Hitchin	5185 2290	NRA-A	6.8
033066	Granta at Linton	5570 2464	NRA-A	59.8
033067	New River at Burwell	5608 2696	NRA-A	19.6
033068	Cheney Water at Gatley End	5296 2411	NRA-A	5.0
034001	Yare at Colney	6182 3082	NRA-A	231.8
034002	Tas at Shotesham	6226 2994	NRA-A	146.5
034003	Bure at Ingworth	6192 3296	NRA-A	164.7
034004	Wensum at Costessey Mill	6177 3128	NRA-A	536.1
034005	Tud at Costessey Park	6170 3113	NRA-A	73.2
034006	Waveney at Needham Mill	6229 2811	NRA-A	370.0
034007	Dove at Oakley Park	6174 2772	NRA-A	133.9
034008	Ant at Honing Lock	6331 3270	NRA-A	49.3
034010	Waveney at Billingford Bridge	6168 2782	NRA-A	149.4
034011	Wensum at Fakenham	5919 3294	NRA-A	127.1
034012	Burn at Burnham Overy	5842 3428	NRA-A	80.0
034013	Waveney at Ellingham Mill	6364 2917	NRA-A	670.0
034014	Wensum at Swanton Morley Total	6020 3184	NRA-A	363.0
034018	Stiffkey at Warham All Saints	5944 3414	NRA-A	77.1
034019	Bure at Horstead Mill	6267 3194	NRA-A	313.0
035001 *	Gipping at Constantine Weir	6154 2441	NRA-A	310.8
035002	Deben at Naunton Hall	6322 2534	NRA-A	163.1
035003	Alde at Farnham	6360 2601	NRA-A	63.9
035004	Ore at Beversham Bridge	6359 2583	NRA-A	54.9
035008	Gipping at Stowmarket	6058 2578	NRA-A	128.9
035010	Gipping at Bramford	6127 2465	NRA-A	298.0
035013	Blyth at Holton	6406 2769	NRA-A	92.9
036001	Stour at Stratford St Mary	6042 2340	EWC	844.3
036002	Glem at Glemsford	5846 2472	NRA-A	87.3
036003	Box at Polstead	5985 2378	NRA-A	53.9
036004	Chad Brook at Long Melford	5868 2459	NRA-A	47.4
036005	Brett at Hadleigh	6025 2429	NRA-A	156.0
036006	Stour at Langham	6020 2344	NRA-A	578.0
036007	Belchamp Brook at Bardfield Bridge	5848 2421	NRA-A	58.6
036008	Stour at Westmill	5827 2463	NRA-A	224.5
036009	Brett at Cockfield	5914 2525	NRA-A	25.7
036010	Bumpstead Brook at Broad Green	5689 2418	NRA-A	28.3
036011	Stour Brook at Sturmer	5696 2441	NRA-A	34.5
036012	Stour at Kedington	5708 2450	NRA-A	76.2
036013	Brett at Higham	6032 2354	NRA-A	195.0
036015	Stour at Lamarsh	5897 2358	NRA-A	480.7
036016 *	Ramsey at Great Oakley	6206 2288	NRA-A	13.9
036017 *	Ely Ouse Outfall at Kirtling Green	5681 2559	NRA-A	
037001	Roding at Redbridge	5415 1884	NRA-T	303.3
037002	Chelmer at Rushes Lock	5794 2090	NRA-A	533.9
037003	Ter at Crabbs Bridge	5786 2107	NRA-A	77.8
037004 *	Blackwater at Langford	5836 2092	NRA-A	337.0
037005	Colne at Lexden	5962 2261	NRA-A	238.2
037006	Can at Beach's Mill	5690 2072	NRA-A	228.4
037007	Wid at Writtle	5686 2060	NRA-A	136.3
037008	Chelmer at Springfield	5713 2071	NRA-A	190.3
037009	Brain at Guithavon Valley	5818 2147	NRA-A	60.7
037010	Blackwater at Appleford Bridge	5845 2158	NRA-A	247.3
037011	Chelmer at Churchend	5629 2233	NRA-A	72.6
037012	Colne at Poolstreet	5771 2364	NRA-A	65.1
037013	Sandon Brook at Sandon Bridge	5755 2055	NRA-A	60.6
037014	Roding at High Ongar	5561 2040	NRA-T	95.1
037015	Cripsey Brook at Chipping Ongar	5548 2035	NRA-T	62.2
037016	Pant at Copford Hall	5668 2313	NRA-A	62.5
037017	Blackwater at Stisted	5793 2243	NRA-A	139.2
037018	Ingrebourne at Gaynes Park	5553 1862	NRA-T	47.9
037019	Beam at Bretons Farm	5515 1853	NRA-T	49.7
037020	Chelmer at Felsted	5670 2193	NRA-A	132.1

Station number	River and station name	Grid reference	Authority	Area (sq km)
037021	Roman at Bounstead Bridge	5985 2205	NRA-A	52.6
037022	Holland Brook at Thorpe le Soken	6179 2212	NRA-A	54.9
037024	Colne at Earls Colne	5855 2298	NRA-A	154.2
037025 *	Bourne Brook at Perces Bridge	5822 2276	NRA-A	32.1
037026 *	Tenpenny Brook at Tenpenny Bridge	6079 2207	NRA-A	29.0
037027 *	Sixpenny Brook at Ship House Bridge	6054 2214	NRA-A	5.1
037028 *	Bentley Brook at Saltwater Bridge	6109 2193	NRA-A	12.1
037029 *	St Osyth Brook at Main Road Bridge	6134 2159	NRA-A	8.0
037030 *	Holland Brook at Cradle Bridge	6171 2217	NRA-A	48.6
037031 *	Crouch at Wickford	5748 1934	NRA-A	71.8
037033	Eastwood Brook at Eastwood	5859 1888	NRA-A	10.4
037034	Mardyke at Stifford	5596 1806	NRA-A	90.7
037036	Ely Ouse Outfall at Great Sampford	5646 2351	NRA-A	
037037	Toppesfield Brook at Cornish Hall End	5675 2377	NRA-A	1.3
037038 *	Wid at Margaretting	5672 2000	NRA-A	98.6
037039	Blackwater at Langford (low flows)	5835 2090	NRA-A	337.0
038001	Lee at Feildes Weir	5390 2092	NRA-T	1036.0
038002	Ash at Mardock	5393 2148	NRA-T	78.7
038003	Mimram at Panshanger Park	5282 2133	NRA-T	133.9
038004	Rib at Wadesmill	5360 2174	NRA-T	136.5
038005 *	Ash at Easneye	5380 2138	NRA-T	85.2
038006 *	Rib at Herts Training School	5335 2158	NRA-T	148.1
038007	Canons Brook at Elizabeth Way	5431 2104	NRA-T	21.4
038011 *	Mimram at Fulling Mill	5225 2169	NRA-T	98.7
038012	Stevenage Brook at Bragbury Park	5274 2211	NRA-T	36.0
038013	Upper Lee at Luton Hoo	5118 2185	NRA-T	70.7
038014	Salmon Brook at Edmonton	5343 1937	NRA-T	20.5
038015 *	Intercepting Drain at Enfield	5355 1932	NRA-T	7.4
038016	Stanstead Springs at Mountfitchet	5500 2246	NRA-T	20.5
038017	Mimram at Whitwell	5184 2212	NRA-T	39.1
038018	Upper Lee at Water Hall	5299 2099	NRA-T	150.0
038020	Cobbins Brook at Sewardstone Road	5387 1999	NRA-T	38.4
038021	Turkey Brook at Albany Park	5359 1985	NRA-T	42.2
038022	Pymmes Brook at Edmonton Silver Street	5340 1925	NRA-T	42.6
038024	Small River Lee at Ordnance Road	5370 1988	NRA-T	41.5
038026	Pincey Brook at Sheering Hall	5495 2126	NRA-T	54.6
038027	Stort at Glen Faba	5393 2093	NRA-T	280.2
038028	Stansted Brook at Gypsy Lane	5506 2241	NRA-T	25.9
038029	Quin at Griggs Bridge	5392 2248	NRA-T	50.4
038030	Beane at Hartham	5325 2131	NRA-T	175.1
039001	Thames at Kingston	5177 1698	NRA-T	9948.0
039002	Thames at Days Weir	4568 1935	NRA-T	3444.7
039003	Wandle at Connollys Mill	5265 1705	NRA-T	176.1
039004	Wandle at Beddington Park	5296 1655	NRA-T	122.0
039005	Beverley Brook at Wimbledon Common	5216 1717	NRA-T	43.6
039006	Windrush at Newbridge	4402 2019	NRA-T	362.6
039007	Blackwater at Swallowfield	4731 1648	NRA-T	354.8
039008	Thames at Eynsham	4445 2087	NRA-T	1616.2
039010	Colne at Denham	5052 1864	NRA-T	743.0
039011	Wey at Tilford	4874 1433	NRA-T	396.3
039012	Hogsmill at Kingston upon Thames	5182 1688	NRA-T	69.1
039013	Colne at Berrygrove	5123 1982	NRA-T	352.2
039014	Ver at Hansteads	5151 2016	NRA-T	132.0
039015	Whitewater at Lodge Farm	4731 1523	NRA-T	44.5
039016	Kennet at Theale	4649 1708	NRA-T	1033.4
039017	Ray at Grendon Underwood	4680 2211	NRA-T	18.6
039019	Lambourn at Shaw	4470 1682	NRA-T	234.1
039020	Coln at Bibury	4122 2062	NRA-T	106.7
039021	Cherwell at Enslow Mill	4482 2183	NRA-T	551.7
039022	Loddon at Sheepbridge	4720 1652	NRA-T	164.5
039023	Wye at Hedsor	4896 1867	NRA-T	137.3
039025	Enborne at Brimpton	4568 1648	NRA-T	147.6
039026	Cherwell at Banbury	4458 2411	NRA-T	199.4
039027	Pang at Pangbourne	4634 1766	NRA-T	170.9
039028	Dun at Hungerford	4321 1685	NRA-T	101.3
039029	Tillingbourne at Shalford	5000 1478	NRA-T	59.0
039030	Gade at Croxley Green	5082 1952	NRA-T	184.0
039031 *	Lambourn at Welford	4411 1731	NRA-T	176.0
039032 *	Lambourn at East Shefford	4390 1745	NRA-T	154.0
039033	Winterbourne St at Bagnor	4453 1694	NRA-T	49.2
039034	Evenlode at Cassington Mill	4448 2099	NRA-T	430.0
039035	Churn at Cerney Wick	4076 1963	NRA-T	124.3
039036	Law Brook at Albury	5045 1468	NRA-T	16.0
039037	Kennet at Marlborough	4187 1686	NRA-T	142.0
039038	Thame at Shabbington	4670 2055	NRA-T	443.0
039040	Thames at West Mill Cricklade	4094 1942	NRA-T	185.0
039042	Leach at Priory Mill Lechlade	4227 1994	NRA-T	76.9
039043	Kennet at Knighton	4295 1710	NRA-T	295.0
039044	Hart at Bramshill House	4755 1593	NRA-T	84.0
039046	Thames at Sutton Courtenay	4516 1946	NRA-T	3414.0
039049	Silk Stream at Colindeep Lane	5217 1895	NRA-T	29.0
039051 *	Sor Brook at Adderbury	4475 2346	NRA-T	106.4
039052	The Cut at Binfield	4853 1713	NRA-T	50.2
039053	Mole at Horley	5271 1434	NRA-T	89.9
039054	Mole at Gatwick Airport	5260 1399	NRA-T	31.8
039055	Yeading Bk West at Yeading West	5083 1846	NRA-T	17.6
039056	Ravensbourne at Catford Hill	5372 1732	NRA-T	67.6
039057	Crane at Cranford Park	5103 1778	NRA-T	61.7
039058	Pool at Winsford Road	5371 1725	NRA-T	38.3
039061	Letcombe Brook at Letcombe Bassett	4375 1853	NRA-T	2.7
039065	Ewelme Brook at Ewelme	4642 1916	NRA-T	13.4
039068	Mole at Castle Mill	5179 1502	NRA-T	316.0
039069	Mole at Kinnersley Manor	5262 1462	NRA-T	142.0
039071	Thames at Ewen	4007 1973	NRA-T	63.7
039072	Thames at Royal Windsor Park	4982 1773	NRA-T	7046.0
039073	Churn at Cirencester	4020 2028	NRA-T	84.0
039074	Ampney Brook at Sheepen Bridge	4105 1950	NRA-T	74.4
039075	Marston Meysey Bk at Whetstone Bridge	4128 1964	NRA-T	25.0
039076	Windrush at Worsham	4299 2107	NRA-T	296.0
039077	Og at Marlborough Poulton Fm	4194 1697	NRA-T	59.2
039078	Wey(north) at Farnham	4838 1462	NRA-T	191.1
039079	Wey at Weybridge	5068 1648	NRA-T	1008.0
039081	Ock at Allott Gardens	4481 1966	NRA-T	234.0
039085 *	Wandle at Wandle Park	5266 1703	NRA-T	176.1
039086	Gatwick Stream at Gatwick Link	5285 1417	NRA-T	33.6
039087	Ray at Water Eaton	4121 1935	NRA-T	84.1
039088	Chess at Rickmansworth	5066 1947	NRA-T	105.0
039089	Gade at Bury Mill	5053 2077	NRA-T	48.2
039090	Cole at Inglesham	4208 1970	NRA-T	140.0
039091 *	Misbourne at Quarrendon Mill	4975 1963	NRA-T	66.3
039092	Dollis Brook at Hendon Lane Bridge	5240 1895	NRA-T	25.1
039093	Brent at Monks Park	5202 1850	NRA-T	117.6
039094	Crane at Marsh Farm	5154 1734	NRA-T	81.0
039095	Quaggy at Manor House Gardens	5394 1748	NRA-T	
039096	Wealdstone Brook at Wembley	5192 1862	NRA-T	21.7
039097	Thames at Buscot	4230 1981	NRA-T	997.0
039098	Pinn at Uxbridge	5062 1826	NRA-T	33.3

Station number	River and station name	Grid reference	Authority	Area (sq km)
039099	Ampney Brook at Ampney St. Peter	4076 2013	NRA-T	45.3
039100	Swill Brook at Oaksey	3997 1927	NRA-T	53.3
039101	Aldbourne at Ramsbury	4288 1717	NRA-T	53.1
039102	Misbourne at Denham Lodge	5046 1866	NRA-T	136.0
039103	Kennet at Newbury	4472 1672	NRA-T	548.1
039104	Mole at Esher	5130 1653	NRA-T	469.6
039105	Thame at Wheatley	4612 2050	NRA-T	533.8
039106	Mole at Leatherhead	5161 1564	NRA-T	371.4
039107	Hogsmill at Ewell	5216 1633	NRA-T	33.7
039108	Churn at Perrott's Brook	4022 2057	NRA-T	59.0
039109	Coln at Fossebridge	4080 2112	NRA-T	82.0
039110	Coln at Fairford	4151 2012	NRA-T	130.0
039111	Thames at Staines	5034 1713	NRA-T	8120.0
039112	Letcombe Brook at Arabellas Lake	4374 1852	NRA-T	
039113	Manor Farm Brook at Letcombe Regis	4383 1861	NRA-T	
039114	Pang at Frilsham	4537 1730	NRA-T	
039115	Pang at Bucklebury	4556 1710	NRA-T	
039116	Sulham Brook at Sulham	4642 1741	NRA-T	
039117	Colnbrook at Hythe End	5019 1723	NRA-T	
039118	Wey at Alton	4717 1395	NRA-T	
039119	Wey at Kings Pond (Alton)	4724 1395	NRA-T	
039120	Caker Stream at Alton	4729 1388	NRA-T	
039121	Thames at Walton		NRA-T	
040001 *	Medway at Weir Wood Reservoir	5407 1353	SW	26.9
040002 *	Darwell at Darwell Reservoir	5722 1213	SW	9.6
040003	Medway at Teston	5708 1530	NRA-S	1256.1
040004	Rother at Udiam	5773 1245	NRA-S	206.0
040005	Beult at Stile Bridge	5758 1478	NRA-S	277.1
040006	Bourne at Hadlow	5632 1497	NRA-S	50.3
040007	Medway at Chafford Weir	5517 1405	NRA-S	255.1
040008	Great Stour at Wye	6049 1470	NRA-S	230.0
040009	Teise at Stone Bridge	5718 1399	NRA-S	136.2
040010	Eden at Penshurst	5520 1437	NRA-S	224.3
040011	Great Stour at Horton	6116 1554	NRA-S	345.0
040012	Darent at Hawley	5551 1718	NRA-S	191.4
040013	Darent at Otford	5525 1584	NRA-S	100.5
040014	Wingham at Durlock	6276 1576	NRA-S	37.7
040015	White Drain at Fairbrook Farm	6055 1606	NRA-S	31.8
040016	Cray at Crayford	5511 1746	NRA-S	119.7
040017	Dudwell at Burwash	5679 1240	NRA-S	27.5
040018	Darent at Lullingstone	5530 1643	NRA-S	118.4
040020	Eridge Stream at Hendal Bridge	5522 1367	NRA-S	53.7
040021	Hexden Channel at Hopemill Br Sandhurst	5813 1290	NRA-S	32.4
040023	East Stour at South Willesborough	6015 1407	NRA-S	58.8
040024 *	Bartley Mill St at Bartley Mill	5633 1357	NRA-S	25.1
040027	Sarre Penn at Calcott	6174 1625	NRA-S	19.4
040029	Len at Lenside		NRA-S	
040033	Dover at Crabble Mill	6300 1430	NRA-S	
041001	Nunningham Stream at Tilley Bridge	5662 1129	NRA-S	16.9
041002	Ash Bourne at Hammer Wood Bridge	5684 1141	NRA-S	18.4
041003	Cuckmere at Sherman Bridge	5533 1051	NRA-S	134.7
041004	Ouse at Barcombe Mills	5433 1148	NRA-S	395.7
041005	Ouse at Gold Bridge	5429 1214	NRA-S	180.9
041006	Uck at Isfield	5459 1190	NRA-S	87.8
041009 *	Rother at Hardham	5034 1178	NRA-S	345.8
041010	Adur W Branch at Hatterell Bridge	5178 1197	NRA-S	109.1
041011	Rother at Iping Mill	4852 1229	NRA-S	154.0
041012	Adur E Branch at Sakeham	5219 1190	NRA-S	93.3
041013	Huggletts Stream at Henley Bridge	5671 1138	NRA-S	14.2
041014	Arun at Pallingham Quay	5047 1229	NRA-S	379.0
041015	Ems at Westbourne	4755 1074	NRA-S	58.3
041016	Cuckmere at Cowbeech	5611 1150	NRA-S	18.7
041017	Combehaven at Crowhurst	5765 1102	NRA-S	30.5
041018	Kird at Tanyards	5044 1256	NRA-S	66.8
041019	Arun at Alfoldean	5117 1331	NRA-S	139.0
041020	Bevern Stream at Clappers Bridge	5423 1161	NRA-S	34.6
041021	Clayhill Stream at Old Ship	5448 1153	NRA-S	7.1
041022	Lod at Halfway Bridge	4931 1223	NRA-S	52.0
041023	Lavant at Graylingwell	4871 1064	NRA-S	87.2
041024	Shell Brook at Shell Brook P S	5335 1286	NRA-S	22.6
041025	Loxwood Stream at Drungewick	5060 1309	NRA-S	91.6
041026	Cockhaise Brook at Holywell	5376 1262	NRA-S	36.1
041027	Rother at Princes Marsh	4772 1270	NRA-S	37.2
041028	Chess Stream at Chess Bridge	5217 1173	NRA-S	24.0
041029	Bull at Leelands	5575 1131	NRA-S	40.8
041031	Fulking Stream at Fulking	5247 1113	NRA-S	
041033	Costers Brook at Cocking	4880 1174	NRA-S	
041034 *	Ems at Walderton	4786 1104	NRA-S	
041035	North River at Brookhurst	5130 1325	NRA-S	
041037	Winterbourne Stream at Lewes	5403 1096	NRA-S	
042001	Wallington at North Fareham	4587 1075	NRA-S	111.0
042003	Lymington at Brockenhurst Park	4318 1019	NRA-S	98.9
042004	Test at Broadlands	4354 1188	NRA-S	1040.0
042005	Wallop Brook at Broughton	4311 1330	NRA-S	53.6
042006	Meon at Mislingford	4589 1141	NRA-S	72.8
042007	Alre at Drove Lane Alresford	4574 1326	NRA-S	57.0
042008	Cheriton Stream at Sewards Bridge	4574 1323	NRA-S	75.1
042009	Candover Stream at Borough Bridge	4568 1323	NRA-S	71.2
042010	Itchen at Highbridge+Allbrook	4467 1213	NRA-S	360.0
042011	Hamble at Frog Mill	4523 1149	NRA-S	56.6
042012	Anton at Fullerton	4379 1393	NRA-S	185.0
042014	Blackwater at Ower	4328 1174	NRA-S	104.7
042015	Dever at Weston Colley	4496 1394	NRA-S	52.7
042016	Itchen at Easton	4512 1325	NRA-S	236.8
042017	Hermitage at Havant	4711 1067	NRA-S	17.0
042018	Monks Brook at Eastleigh	4443 1179	NRA-S	43.3
042020	Tadburn Lake at Romsey	4362 1212	NRA-S	19.0
042021 *	Branch of Test at Nursling	4356 1159	NRA-S	1050.0
042023	Itchen at Riverside Park	4445 1154	NRA-S	415.0
042024	Test at Chilbolton (Total)	4386 1394	NRA-S	453.0
042025	Lavant Stream at Leigh Park	4721 1072	NRA-S	54.5
043001 *	Avon at Ringwood	4142 1054	NRA-W	1649.8
043003	Avon at East Mills	4158 1144	NRA-W	1477.8
043004	Bourne at Laverstock Mill	4157 1304	NRA-W	163.6
043005	Avon at Amesbury	4151 1413	NRA-W	323.7
043006	Nadder at Wilton Park	4098 1308	NRA-W	220.6
043007	Stour at Throop Mill	4113 0958	NRA-W	1073.0
043008	Wylye at South Newton	4086 1343	NRA-W	445.4
043009	Stour at Hammoon	3820 1147	NRA-W	523.1
043010	Allen at Loverley Mill	4006 1085	NRA-W	94.0
043011 *	Ebble at Bodenham	4162 1263	NRA-W	109.0
043012	Wylye at Norton Bavant	3909 1428	NRA-W	112.4
043013 *	Mude at Somerford	4184 0936	NRA-W	12.4
043014	East Avon at Upavon	4133 1559	NRA-W	86.2
043015 *	Wylye at Longbridge Deverill	3868 1413	NRA-W	69.0
043017	West Avon at Upavon	4133 1559	NRA-W	76.0
043018	Allen at Walford Mill	4008 1007	NRA-W	176.5
043019	Shreen Water at Colesbrook	3807 1278	NRA-W	29.1
043021	Avon at Knapp Mill	4155 0943	NRA-W	1706.0
044001	Frome at East Stoke total	3866 0867	NRA-W	414.4
044002	Piddle at Baggs Mill	3913 0876	NRA-W	183.1
044003 *	Asker at Bridport	3470 0928	NRA-W	49.1
044004	Frome at Dorchester total	3708 0903	NRA-W	206.0
044006	Sydling Water at Sydling St Nicholas	3632 0997	NRA-W	12.4
044008 *	Sth Winterbourne at W'bourne Steepleton	3629 0897	NRA-W	19.9
044009	Wey at Broadwey	3666 0839	NRA-W	7.0
045001	Exe at Thorverton	2936 1016	NRA-SW	600.9
045002	Exe at Stoodleigh	2943 1178	NRA-SW	421.7
045003	Culm at Wood Mill	3021 1058	NRA-SW	226.1
045004	Axe at Whitford	3262 0953	NRA-SW	288.5
045005	Otter at Dotton	3087 0885	NRA-SW	202.5
045006 *	Quarme at Enterwell	2919 1356	NRA-SW	20.4
045008	Otter at Fenny Bridges	3115 0986	NRA-SW	104.2
045009	Exe at Pixton	2935 1260	NRA-SW	147.6
045010 *	Haddeo at Hartford	2952 1294	NRA-SW	50.0
045011 *	Barle at Brushford	2927 1258	NRA-SW	128.0
045012 *	Creedy at Cowley	2901 0967	NRA-SW	261.6
045013 *	Tale at Fairmile	3088 0972	NRA-SW	34.4
046002	Teign at Preston	2856 0746	NRA-SW	380.0
046003	Dart at Austins Bridge	2751 0659	NRA-SW	247.6
046005	East Dart at Bellever	2657 0775	NRA-SW	21.5
046006	Erme at Ermington	2642 0532	NRA-SW	43.5
046007 *	West Dart at Dunnabridge	2643 0742	NRA-SW	47.9
046008 *	Avon at Loddiswell	2719 0476	NRA-SW	102.3
047001	Tamar at Gunnislake	2426 0725	NRA-SW	916.9
047003 *	Tavy at Lopwell	2475 0652	NRA-SW	205.9
047004	Lynher at Pillaton Mill	2369 0626	NRA-SW	135.5
047005 *	Ottery at Werrington Park	2336 0866	NRA-SW	120.7
047006 *	Lyd at Lifton Park	2388 0842	NRA-SW	218.1
047007	Yealm at Puslinch	2574 0511	NRA-SW	54.9
047008	Thrushel at Tinhay	2398 0856	NRA-SW	112.7
047009	Tiddy at Tideford	2343 0595	NRA-SW	37.2
047010	Tamar at Crowford Bridge	2290 0991	NRA-SW	76.7
047011 *	Plym at Carn Wood	2522 0613	NRA-SW	79.2
047013	Withey Brook at Bastreet	2244 0763	NRA-SW	16.2
047014	Walkham at Horrabridge	2513 0699	NRA-SW	43.2
047015 *	Tavy at Denham / Ludbrook	2476 0681	NRA-SW	197.3
047016 *	Lumburn at Lumburn Bridge	2459 0731	NRA-SW	20.5
047017 *	Wolf at Combe Park Farm	2419 0898	NRA-SW	31.1
048001	Fowey at Trekeivesteps	2227 0698	NRA-SW	36.8
048002 *	Fowey at Restormel one	2108 0613	NRA-SW	171.2
048003	Fal at Tregony	1921 0448	NRA-SW	87.0
048004	Warleggan at Trengoffe	2159 0674	NRA-SW	25.3
048005	Kenwyn at Truro	1820 0450	NRA-SW	19.1
048006	Cober at Helston	1654 0273	NRA-SW	40.1
048007	Kennall at Ponsanooth	1762 0377	NRA-SW	26.6
048009 *	St Neot at Craigshill Wood	2184 0662	NRA-SW	22.7
048010	Seaton at Trebrownbridge	2299 0596	NRA-SW	38.1
048011	Fowey at Restormel	2098 0624	NRA-SW	169.1
049001	Camel at Denby	2017 0682	NRA-SW	208.8
049002	Hayle at St Erth	1549 0342	NRA-SW	48.9
049003	De Lank at De Lank	2132 0765	NRA-SW	21.7
049004	Gannel at Gwills	1829 0593	NRA-SW	41.0
050001	Taw at Umberleigh	2608 1237	NRA-SW	826.2
050002	Torridge at Torrington	2500 1185	NRA-SW	663.0
050004 *	Hole Water at Muxworthy	2705 1373	NRA-SW	5.4
050005	West Okement at Vellake	2557 0903	NRA-SW	13.3
050006	Mole at Woodleigh	2660 1211	NRA-SW	327.5
050007 *	Taw at Taw Bridge	2673 1068	NRA-SW	71.4
050011 *	Okement at Jacobstowe	2592 1019	NRA-SW	82.1
050012 *	Yeo at Veraby	2775 1267	NRA-SW	53.7
050013	Bray at Leehamford Bridge	2677 1399	NRA-SW	17.6
051001	Doniford Stream at Swill Bridge	3088 1428	NRA-W	75.8
051002	Horner Water at West Luccombe	2898 1458	NRA-W	20.8
051003	Washford at Beggearn Huish	3040 1395	NRA-W	36.3
052001 *	Axe at Wookey	3527 1458	NRA-W	18.2
052002 *	Yeo at Sutton Bingham Res.	3556 1116	NRA-W	30.3
052003	Halse Water at Bishops Hull	3206 1253	NRA-W	87.8
052004	Isle at Ashford Mill	3361 1188	NRA-W	90.1
052005	Tone at Bishops Hull	3206 1250	NRA-W	202.0
052006	Yeo at Pen Mill	3573 1162	NRA-W	213.1
052007	Parrett at Chiselborough	3461 1144	NRA-W	74.8
052008 *	Tone at Clatworthy Reservoir	3044 1313	NRA-W	18.1
052009	Sheppey at Fenny Castle	3498 1439	NRA-W	59.6
052010	Brue at Lovington	3590 1318	NRA-W	135.2
052011	Cary at Somerton	3498 1291	NRA-W	82.4
052014	Tone at Greenham	3078 1202	NRA-W	57.2
052015	Land Yeo at Wraxall Bridge	3483 1716	NRA-W	23.3
052016	Currypool Stream at Currypool Farm	3221 1382	NRA-W	15.7
052017	Congresbury Yeo at Iwood	3452 1631	NRA-W	66.6
052020 *	Gallica Stream at Gallica Bridge	3571 1100	NRA-W	16.4
053001 *	Avon at Melksham	3903 1641	NRA-W	665.6
053002	Semington Brook at Semington	3907 1605	NRA-W	157.7
053003 *	Avon at Bath St James	3753 1645	NRA-W	1595.0
053004	Chew at Compton Dando	3648 1647	NRA-W	129.5
053005	Midford Brook at Midford	3763 1611	NRA-W	147.4
053006	Frome(Bristol) at Frenchay	3637 1772	NRA-W	148.9
053007	Frome(Somerset) at Tellisford	3805 1564	NRA-W	261.6
053008	Avon at Great Somerford	3966 1832	NRA-W	303.0
053009	Wellow Brook at Wellow	3741 1581	NRA-W	72.6
053013	Marden at Stanley	3955 1729	NRA-W	99.2
053017	Boyd at Bitton	3681 1698	NRA-W	48.0
053018	Avon at Bathford	3786 1671	NRA-W	1552.0
053019	Woodbridge Brook at Crab Mill	3949 1866	NRA-W	46.6
053020	Gauze Brook at Rodbourne	3937 1840	NRA-W	28.2
053022 *	Avon at Bath ultrasonic	3738 1651	NRA-W	1605.0
053023	Sherston Avon at Fosseway	3891 1870	NRA-W	89.7
053024	Tetbury Avon at Brokenborough	3914 1893	NRA-W	73.6
053025	Mells at Vallis	3757 1491	NRA-W	119.0
053026	Frome(Bristol) at Frampton Cotterell	3667 1822	NRA-W	78.5
053028	By Brook at Middlehill	3815 1688	NRA-W	102.0
053029	Biss at Trowbridge	3854 1579	NRA-W	
054001	Severn at Bewdley	3782 2762	NRA-ST	4325.0

Station number	River and station name	Grid reference	Authority	Area (sq km)
054002	Avon at Evesham	4040 2438	NRA-ST	2210.0
054004	Sowe at Stoneleigh	4332 2731	NRA-ST	262.0
054005	Severn at Montford	3412 3144	NRA-ST	2025.0
054006	Stour at Kidderminster	3829 2768	NRA-ST	324.0
054007	Arrow at Broom	4086 2536	NRA-ST	319.0
054008	Teme at Tenbury	3597 2686	NRA-ST	1134.4
054010 *	Stour at Alscot Park	4208 2507	NRA-ST	319.0
054011 *	Salwarpe at Harford Mill	3868 2618	NRA-ST	184.0
054012	Tern at Walcot	3592 3123	NRA-ST	852.0
054013 *	Clywedog at Cribynau	2944 2855	NRA-ST	57.0
054014	Severn at Abermule	3164 2958	NRA-ST	580.0
054015 *	Bow Brook at Besford Bridge	3927 2463	NRA-ST	156.0
054016	Roden at Rodington	3589 3141	NRA-ST	259.0
054017 *	Leadon at Wedderburn Bridge	3777 2234	NRA-ST	293.0
054018	Rea Brook at Hookagate	3466 3092	NRA-ST	178.0
054019	Avon at Stareton	4333 2715	NRA-ST	347.0
054020	Perry at Yeaton	3434 3192	NRA-ST	180.8
054022	Severn at Plynlimon flume	2853 2872	IH	8.7
054023 *	Badsey Brook at Offenham	4063 2449	NRA-ST	95.8
054024	Worfe at Burcote	3747 2953	NRA-ST	258.0
054025	Dulas at Rhos-y-pentref	2950 2824	NRA-ST	52.7
054026 *	Chelt at Slate Mill	3892 2264	NRA-ST	34.5
054027 *	Frome at Ebley Mill	3831 2047	NRA-ST	198.0
054028	Vyrnwy at Llanymynech	3252 3195	NRA-ST	778.0
054029	Teme at Knightsford Bridge	3735 2557	NRA-ST	1480.0
054032	Severn at Saxons Lode	3863 2390	NRA-ST	6850.0
054034	Dowles Brook at Dowles	3768 2764	NRA-ST	40.8
054036	Isbourne at Hinton on the Green	4023 2408	NRA-ST	90.7
054038	Tanat at Llanyblodwel	3252 3225	NRA-ST	229.0
054040	Meese at Tibberton	3680 3205	NRA-ST	167.8
054041	Tern at Eaton On Tern	3649 3230	NRA-ST	192.0
054042 *	Clywedog at Clywedog Dm Lower Weir	2914 2867	NRA-ST	49.0
054043 *	Severn at Upton On Severn	3863 2399	NRA-ST	6850.0
054044	Tern at Ternhill	3629 3316	NRA-ST	92.6
054045 *	Perry at Perry Farm	3347 3303	NRA-ST	49.1
054046	Worfe at Cosford	3781 3046	NRA-ST	54.9
054047 *	Perry at Ruyton Bridge	3403 3223	NRA-ST	155.0
054048	Dene at Wellesbourne	4273 2556	NRA-ST	102.0
054049	Leam at Princes Drive Weir	4307 2654	NRA-ST	362.0
054050	Leam at Eathorpe	4388 2688	NRA-ST	300.0
054052 *	Bailey Brook at Ternhill	3629 3316	NRA-ST	34.4
054055 *	Rea at Neen Sollars	3664 2724	NRA-ST	129.0
054056 *	Clun at Clungunford	3393 2786	NRA-ST	195.0
054057	Severn at Haw Bridge	3844 2279	NRA-ST	9895.0
054058 *	Stoke Park Brook at Stoke Park	3644 3260	NRA-ST	14.3
054059 *	Allford Brook at Allford	3654 3223	NRA-ST	10.2
054060 *	Potford Brook at Potford	3634 3220	NRA-ST	25.0
054061 *	Hodnet Brook at Hodnet	3628 3288	NRA-ST	5.1
054062 *	Stoke Brook at Stoke	3637 3280	NRA-ST	13.7
054063 *	Stour at Prestwood Hospital	3865 2858	NRA-ST	89.9
054065 *	Roden at Stanton	3565 3241	NRA-ST	210.0
054066 *	Platt Brook at Platt	3628 3229	NRA-ST	15.7
054067 *	Smestow Brook at Swindon	3861 2906	NRA-ST	81.3
054068 *	Tetchill Brook at Hordley	3379 3288	NRA-ST	21.2
054069 *	Springs Brook at Lower Hordley	3387 3297	NRA-ST	10.4
054070 *	War Brook at Walford	3432 3198	NRA-ST	22.5
054080 *	Severn at Dolwen	2996 2851	NRA-ST	187.0
054081	Clywedog at Bryntail	2913 2868	NRA-ST	49.0
054083 *	Crow Brook at Horton	3678 3141	NRA-ST	16.7
054084 *	Cannop Brook at Parkend	3616 2075	NRA-ST	31.5
054085 *	Cannop Brook at Cannop Cross	3609 2115	NRA-ST	10.4
054086	Cownwy Diversion at Cownwy Weir	2999 3179	NRA-ST	13.2
054087 *	Allford Brook at Childs Ercall	3667 3228	NRA-ST	4.7
054088	Little Avon at Berkeley Kennels	3683 1988	NRA-W	134.0
054089	Avon at Bredon	3921 2374	NRA-ST	2674.0
054090	Tanllwyth at Tanllwyth Flume	2843 2876	IH	0.9
054091	Severn at Hafren Flume	2843 2878	IH	3.6
054092	Hore at Hore Flume	2846 2873	IH	3.2
054094	Strine at Crudgington	3640 3175	NRA-ST	134.0
054095	Severn at Buildwas	3644 3044	NRA-ST	3717.0
054096	Hadly Brook at Wards Bridge	3870 2631	NRA-ST	53.4
055002	Wye at Belmont	3485 2388	NRA-WEL	1895.9
055003 *	Lugg at Lugwardine	3548 2405	NRA-WEL	885.8
055004 *	Irfon at Abernant	2892 2460	NRA-WEL	72.8
055005 *	Wye at Rhayader	2969 2676	NRA-WEL	166.8
055006 *	Elan at Caban Coch Reservoir	2926 2645	NRA-WEL	184.0
055007	Wye at Erwood	3076 2445	NRA-WEL	1282.1
055008	Wye at Cefn Brwyn	2829 2838	IH	10.6
055009 *	Monnow at Kentchurch	3419 2251	NRA-WEL	357.4
055010 *	Wye at Pant Mawr	2843 2825	NRA-WEL	27.2
055011 *	Ithon at Llandewi	3105 2683	NRA-WEL	111.4
055012	Irfon at Cilmery	2995 2507	NRA-WEL	244.2
055013	Arrow at Titley Mill	3328 2585	NRA-WEL	126.4
055014	Lugg at Byton	3364 2647	NRA-WEL	203.3
055015 *	Honddu at Tafolog	3277 2294	NRA-WEL	25.1
055016	Ithon at Disserth	3024 2578	NRA-WEL	358.0
055017 *	Chwefru at Carreg-y-wen	2998 2531	NRA-WEL	29.0
055018	Frome at Yarkhill	3615 2428	NRA-WEL	144.0
055021	Lugg at Butts Bridge	3502 2589	NRA-WEL	371.0
055022 *	Trothy at Mitchel Troy	3503 2112	NRA-WEL	142.0
055023	Wye at Redbrook	3528 2110	NRA-WEL	4010.0
055025	Llynfi at Three Cocks	3166 2373	NRA-WEL	132.0
055026	Wye at Ddol Farm	2976 2676	NRA-WEL	174.0
055027 *	Rudhall Brook at Sandford Bridge	3641 2257	NRA-WEL	13.2
055028	Frome at Bishops Frome	3667 2489	NRA-WEL	77.7
055029	Monnow at Grosmont	3415 2249	NRA-WEL	354.0
055030 *	Claerwen at Dol-y-mynach	2910 2620	NRA-WEL	95.3
055031	Yazor Brook at Three Elms	3492 2415	NRA-WEL	42.3
055032	Elan at Elan Village	2934 2653	NRA-WEL	184.0
055033	Wye at Gwy flume	2824 2853	IH	3.9
055034	Cyff at Cyff flume	2824 2842	IH	3.1
055035 *	Iago at Iago flume	2826 2854	IH	1.1
056001	Usk at Chain Bridge	3345 2056	NRA-WEL	911.7
056002	Ebbw at Rhiwderyn	3259 1889	NRA-WEL	216.5
056003 *	Honddu at The Forge Brecon	3051 2297	NRA-WEL	62.1
056004 *	Usk at Llandetty	3127 2203	NRA-WEL	543.9
056005	Lwyd at Ponthir	3330 1924	NRA-WEL	98.1
056006 *	Usk at Trallong	2947 2295	NRA-WEL	183.8
056007	Senni at Pont Hen Hafod	2928 2255	NRA-WEL	19.9
056008 *	Monks Ditch at Llanwern	3372 1885	NRA-WEL	15.4
056010 *	Usk at Trostrey Weir	3358 2042	NRA-WEL	927.2
056011 *	Sirhowy at Wattsville	3206 1912	NRA-WEL	76.1
056012 *	Grwyne at Millbrook	3241 2176	NRA-WEL	82.2
056013	Yscir at Pontaryscir	3003 2304	NRA-WEL	62.8
056014 *	Usk at Usk Reservoir	2840 2290	NRA-WEL	17.0
056015 *	Olway Brook at Olway Inn	3384 2010	NRA-WEL	105.1
056016 *	Caerfanell Outfall at Talybont Reservoir	3104 2206	NRA-WEL	32.4

Station number	River and station name	Grid reference	Authority	Area (sq km)
057001 *	Taf Fechan at Taf Fechan Reservoir	3060 2117	NRA-WEL	33.7
057002 *	Taf Fawr at Llwynon Reservoir	3012 2111	NRA-WEL	43.0
057003 *	Taff at Tongwynlais	3132 1818	NRA-WEL	486.9
057004	Cynon at Abercynon	3079 1956	NRA-WEL	106.0
057005	Taff at Pontypridd	3079 1897	NRA-WEL	454.8
057006	Rhondda at Trehafod	3054 1909	NRA-WEL	100.5
057007	Taff at Fiddlers Elbow	3089 1951	NRA-WEL	194.5
057008	Rhymney at Llanedeyrn	3225 1821	NRA-WEL	178.7
057009	Ely at St Fagans	3121 1770	NRA-WEL	145.0
057010	Ely at Lanelay	3034 1827	NRA-WEL	39.4
057011 *	Blaen Taf Fawr at Beacons Reservoir	2987 2193	NRA-WEL	5.1
057012 *	Garwnant at Llwynon Reservoir	3004 2129	NRA-WEL	4.3
057015	Taff at Merthyr Tydfil	3043 2068	NRA-WEL	104.1
057016	Taf Fechan at Pontsticill	3060 2115	NRA-WEL	33.8
058001	Ogmore at Bridgend	2904 1794	NRA-WEL	158.0
058002	Neath at Resolven	2815 2017	NRA-WEL	190.9
058003 *	Ewenny at Ewenny Priory	2914 1780	NRA-WEL	62.9
058005	Ogmore at Brynmenyn	2904 1844	NRA-WEL	74.3
058006	Mellte at Pontneddfechan	2915 2082	NRA-WEL	65.8
058007	Llynfi at Coytrahen	2891 1855	NRA-WEL	50.2
058008	Dulais at Cilfrew	2778 2008	NRA-WEL	43.0
058009	Ewenny at Keepers Lodge	2920 1782	NRA-WEL	62.5
058010 *	Hepste at Esgair Carnau	2969 2134	NRA-WEL	11.0
058011	Thaw at Gigman Bridge	3017 1716	NRA-WEL	49.2
058012	Afan at Marcroft Weir	2771 1910	NRA-WEL	87.8
059001	Tawe at Ynystanglws	2685 1998	NRA-WEL	227.7
059002	Loughor at Tir-y-dail	2623 2127	NRA-WEL	46.4
060002	Cothi at Felin Mynachdy	2508 2225	NRA-WEL	297.8
060003	Taf at Clog-y-fran	2238 2160	NRA-WEL	217.3
060004 *	Dewi Fawr at Glasfryn Ford	2290 2175	NRA-WEL	40.1
060005	Bran at Llandovery	2771 2343	NRA-WEL	66.8
060006	Gwili at Glangwili	2431 2220	NRA-WEL	129.5
060007	Tywi at Dolau Hirion	2762 2362	NRA-WEL	231.8
060008	Tywi at Ystradffin	2786 2472	NRA-WEL	89.8
060009 *	Sawdde at Felin-y-cwm	2712 2266	NRA-WEL	81.1
060010	Tywi at Nantgaredig	2485 2206	NRA-WEL	1090.4
060012 *	Twrch at Ddol Las	2650 2440	NRA-WEL	20.7
060013 *	Cothi at Pont Ynys Brechfa	2537 2301	NRA-WEL	261.6
061001 *	Western Cleddau at Prendergast Mill	1954 2177	NRA-WEL	197.6
061002	Eastern Cleddau at Canaston Bridge	2072 2153	NRA-WEL	183.1
061003	Gwaun at Cilrhedyn Bridge	2005 2349	NRA-WEL	31.3
061004	Western Cleddau at Redhill	1942 2184	NRA-WEL	197.6
062001	Teifi at Glan Teifi	2244 2416	NRA-WEL	893.6
062002 *	Teifi at Llanfair	2433 2406	NRA-WEL	510.0
063001	Ystwyth at Pont Llolwyn	2591 2774	NRA-WEL	169.6
063002 *	Rheidol at Llanbadarn Fawr	2601 2804	NRA-WEL	182.1
063003 *	Wyre at Llanrhystyd	2542 2698	NRA-WEL	40.6
063004	Ystwyth at Cwm Ystwyth	2791 2737	NRA-WEL	32.1
063005	Maesnant at Nant-y-Moch C	2778 2877	IH	0.6
063006	Maesnant Fach at Nant-y-Moch E	2765 2865	IH	0.8
064001	Dyfi at Dyfi Bridge	2745 3019	NRA-WEL	471.3
064002	Dysynni at Pont-y-garth	2632 3066	NRA-WEL	75.1
064006	Leri at Dolybont	2635 2882	NRA-WEL	47.2
064007	Delyn at Llanbrynmair	2899 3062	IH	1.1
064008	Cwm at Llanbrynmair E	2916 3087	IH	3.0
065001	Glaslyn at Beddgelert	2592 3478	NRA-WEL	68.6
065002 *	Dwyryd at Maentwrog	2670 3415	NRA-WEL	78.2
065004	Gwyrfai at Bontnewydd	2484 3599	NRA-WEL	47.9
065005	Erch at Pencaenewydd	2400 3404	NRA-WEL	18.1
065006	Seiont at Peblig Mill	2493 3623	NRA-WEL	74.4
065007	Dwyfawr at Garndolbenmaen	2499 3429	NRA-WEL	52.4
066001	Clwyd at Pont-y-cambwll	3069 3709	NRA-WEL	404.0
066002 *	Elwy at Pant yr Onen	3021 3704	NRA-WEL	220.0
066003	Aled at Bryn Aled	2957 3703	NRA-WEL	70.0
066004 *	Wheeler at Bodfari	3105 3714	NRA-WEL	62.9
066005 *	Clwyd at Ruthin Weir	3122 3592	NRA-WEL	95.3
066006	Elwy at Pont-y-gwyddel	2952 3718	NRA-WEL	194.0
066008	Aled at Aled Isaf Reservoir	2915 3598	NRA-WEL	11.6
066011	Conwy at Cwm Llanerch	2802 3581	NRA-WEL	344.5
067001	Dee at Bala	2942 3357	NRA-WEL	261.6
067002 *	Dee at Erbistock Rectory	3357 3413	NRA-WEL	1040.0
067003	Brenig at Llyn Brenig outflow	2974 3539	NRA-WEL	20.2
067005 *	Ceiriog at Brynkinalt Weir	3295 3373	NRA-WEL	113.7
067006	Alwen at Druid	3042 3436	NRA-WEL	184.7
067008	Alyn at Pont-y-capel	3336 3541	NRA-WEL	227.1
067009	Alyn at Rhydymwyn	3206 3667	NRA-WEL	77.8
067010 *	Gelyn at Cynefail	2843 3420	NRA-WEL	13.1
067011 *	Nant Aberderfel at Nant Aberderfel	2851 3392	NRA-WEL	3.7
067012 *	Tryweryn at Upper Tryweryn	2838 3398	NRA-WEL	27.2
067013 *	Hirnant at Plas Rhiwedog	2946 3349	NRA-WEL	33.9
067015	Dee at Manley Hall	3348 3415	NRA-WEL	1019.3
067016 *	Worthenbury Brook at Worthenbury	3418 3464	NRA-WEL	142.1
067017	Tryweryn at Llyn Celyn outflow	2880 3399	NRA-WEL	59.9
067018	Dee at New Inn	2874 3308	NRA-WEL	53.9
067025 *	Clywedog at Bowling Bank	3396 3483	NRA-WEL	98.6
067026 *	Dee at Eccleston Ferry	3415 3612	NRA-WEL	1816.8
067028 *	Ceidiog at Llandrillo	3034 3371	NRA-WEL	36.5
067029 *	Trystion at Pen-y-felin Fawr	3066 3405	NRA-WEL	12.3
068001	Weaver at Ashbrook	3670 3633	NRA-NW	622.0
068002 *	Gowy at Picton	3443 3714	NRA-NW	156.2
068003	Dane at Rudheath	3668 3718	NRA-NW	407.1
068004	Wistaston Brook at Marshfield Bridge	3674 3552	NRA-NW	92.7
068005	Weaver at Audlem	3653 3431	NRA-NW	207.0
068006 *	Dane at Hulme Walfield	3845 3644	NRA-NW	150.0
068007	Wincham Brook at Lostock Gralam	3697 3757	NRA-NW	148.0
068010 *	Fender at Ford	3281 3880	NRA-NW	18.4
068015	Gowy at Huxley	3497 3624	NRA-NW	49.0
068018 *	Dane at Congleton Park	3861 3632	NRA-NW	145.0
068020	Gowy at Bridge Trafford	3448 3711	NRA-NW	156.0
069001 *	Mersey at Irlam Weir	3728 3936	NRA-NW	679.0
069002	Irwell at Adelphi Weir	3824 3987	NRA-NW	559.4
069003	Irk at Scotland Weir	3841 3992	NRA-NW	72.5
069004 *	Etherow at Bottoms Reservoir	4023 3971	NRA-NW	78.2
069005 *	Glaze Brook at Little Woolden Hall	3685 3939	NRA-NW	152.0
069006	Bollin at Dunham Massey	3727 3875	NRA-NW	256.0
069007	Mersey at Ashton Weir	3772 3936	NRA-NW	660.0
069008	Dean at Stanneylands	3846 3830	NRA-NW	51.8

Station number	River and station name	Grid reference	Auth-ority	Area (sq km)
069011	Micker Brook at Cheadle	3855 3889	NRA-NW	67.3
069012	Bollin at Wilmslow	3850 3815	NRA-NW	72.5
069013	Sinderland Brook at Partington	3726 3905	NRA-NW	44.8
069015	Etherow at Compstall	3962 3908	NRA-NW	156.0
069017	Goyt at Marple Bridge	3964 3898	NRA-NW	183.0
069018 *	Newton Brook at Newton Le Willows	3585 3933	NRA-NW	32.8
069019 *	Worsley Brook at Eccles	3753 3980	NRA-NW	24.9
069020	Medlock at London Road	3849 3975	NRA-NW	57.5
069023	Roch at Blackford Bridge	3807 4077	NRA-NW	186.0
069024	Croal at Farnworth Weir	3743 4068	NRA-NW	145.0
069027	Tame at Portwood	3906 3918	NRA-NW	150.0
069030	Sankey Brook at Causey Bridge	3588 3922	NRA-NW	154.0
069031	Ditton Brook at Greens Bridge	3457 3865	NRA-NW	47.9
069032	Alt at Kirkby	3392 3983	NRA-NW	90.1
069034 *	Musbury Brook at Helmshore	3775 4213	NRA-NW	3.1
069035	Irwell at Bury Bridge	3797 4109	NRA-NW	155.0
069037	Mersey at Westy	3617 3877	NRA-NW	2030.0
069040	Irwell at Stubbins	3793 4188	NRA-NW	105.0
069041	Tame at Broomstair Bridge	3938 3953	NRA-NW	113.0
070002	Douglas at Wanes Blades Bridge	3476 4126	NRA-NW	198.0
070003	Douglas at Central Park Wigan	3587 4061	NRA-NW	55.3
070004	Yarrow at Croston Mill	3498 4180	NRA-NW	74.4
070005	Lostock at Littlewood Bridge	3497 4197	NRA-NW	56.0
071001	Ribble at Samlesbury	3589 4304	NRA-NW	1145.0
071003 *	Croasdale at Croasdale flume	3706 4546	NWW	10.4
071004	Calder at Whalley Weir	3729 4360	NRA-NW	316.0
071005 *	Bottoms Beck at Bottoms Beck flume	3745 4565	NWW	10.6
071006	Ribble at Henthorn	3722 4392	NRA-NW	456.0
071007 *	Ribble at Hodderfoot	3709 4379	NRA-NW	720.0
071008	Hodder at Hodder Place	3704 4399	NRA-NW	261.0
071009	Ribble at Jumbles Rock	3702 4376	NRA-NW	1053.0
071010	Pendle Water at Barden Lane	3837 4351	NRA-NW	108.0
071011	Ribble at Arnford	3839 4556	NRA-NW	204.0
071013	Darwen at Ewood Bridge	3677 4262	NRA-NW	39.5
071014	Darwen at Blue Bridge	3565 4278	NRA-NW	128.0
072001 *	Lune at Halton	3503 4647	NRA-NW	994.6
072002	Wyre at St Michaels	3463 4411	NRA-NW	275.0
072004	Lune at Caton	3529 4653	NRA-NW	983.0
072005	Lune at Killington New Bridge	3622 4907	NRA-NW	219.0
072006	Lune at Kirkby Lonsdale	3615 4778	NRA-NW	507.1
072007	Brock at U/S A6	3512 4405	NRA-NW	32.0
072008	Wyre at Garstang	3488 4447	NRA-NW	114.0
072009	Wenning at Wennington Road Bridge	3615 4701	NRA-NW	142.0
072011	Rawthey at Brigg Flatts	3639 4911	NRA-NW	200.0
072014	Conder at Galgate	3481 4554	NRA-NW	28.5
072015	Lune at Lunes Bridge	3612 5029	NRA-NW	141.5
072016	Wyre at Scorton Weir	3501 4500	NRA-NW	88.8
073001 *	Leven at Newby Bridge	3371 4863	NRA-NW	241.0
073002	Crake at Low Nibthwaite	3294 4882	NRA-NW	73.0
073003 *	Kent at Burneside	3507 4956	NRA-NW	73.6
073005	Kent at Sedgwick	3509 4874	NRA-NW	209.0
073006	Cunsey Beck at Eel House Bridge	3369 4940	NRA-NW	18.7
073008	Bela at Beetham	3496 4806	NRA-NW	131.0
073009	Sprint at Sprint Mill	3514 4961	NRA-NW	34.6
073010	Leven at Newby Bridge	3367 4863	NRA-NW	247.0
073011	Mint at Mint Bridge	3524 4944	NRA-NW	65.8
073013	Rothay at Miller Bridge House	3371 5042	NRA-NW	64.0
073014	Brathay at Jeffy Knotts	3360 5034	NRA-NW	57.4
074001	Duddon at Duddon Hall	3196 4896	NRA-NW	85.7
074002	Irt at Galesyke	3136 5038	NRA-NW	44.2
074003	Ehen at Ennerdale Weir	3084 5154	NRA-NW	44.2
074005	Ehen at Braystones	3009 5061	NRA-NW	125.5
074006	Calder at Calder Hall	3035 5045	NRA-NW	44.8
074007	Esk at Cropple How	3131 4978	NRA-NW	70.2
074008	Duddon at Ulpha	3209 4947	NRA-NW	47.9
075001	St Johns Beck at Thirlmere Reservoir	3313 5195	NRA-NW	42.1
075002	Derwent at Camerton	3038 5305	NRA-NW	663.0
075003	Derwent at Ouse Bridge	3199 5321	NRA-NW	363.0
075004	Cocker at Southwaite Bridge	3131 5281	NRA-NW	116.6
075005	Derwent at Portinscale	3251 5239	NRA-NW	235.0
075006 *	Newlands Beck at Braithwaite	3240 5239	NRA-NW	33.9
075007 *	Glenderamackin at Threlkeld	3323 5248	NRA-NW	64.5
075009	Greta at Low Briery	3286 5242	NRA-NW	145.6
075016	Cocker at Scalehill	3149 5214	NRA-NW	64.0
075017	Ellen at Bullgill	3096 5384	NRA-NW	96.0
076001	Haweswater Beck at Burnbanks	3508 5159	NRA-NW	33.0
076002	Eden at Warwick Bridge	3470 5567	NRA-NW	1366.7
076003	Eamont at Udford	3578 5306	NRA-NW	396.2
076004	Lowther at Eamont Bridge	3527 5287	NRA-NW	158.5
076005	Eden at Temple Sowerby	3605 5283	NRA-NW	616.4
076007	Eden at Sheepmount	3390 5571	NRA-NW	2286.5
076008	Irthing at Greenholme	3486 5581	NRA-NW	334.6
076009	Caldew at Holm Hill	3378 5469	NRA-NW	147.2
076010	Petteril at Harraby Green	3412 5545	NRA-NW	160.0
076011	Coal Burn at Coalburn	3693 5777	IH	1.5
076014	Eden at Kirkby Stephen	3773 5097	NRA-NW	69.4
076015	Eamont at Pooley Bridge	3472 5249	NRA-NW	145.0
077001	Esk at Netherby	3390 5718	NRA-NW	841.7
077002	Esk at Canonbie	3397 5751	SRPB	495.0
077003	Liddel Water at Rowanburnfoot	3415 5759	SRPB	319.0
077004	Kirtle Water at Mossknowe	3285 5693	SRPB	72.0
077005	Lyne at Cliff Bridge	3412 5662	NRA-NW	191.0
078001 *	Annan at St Mungos Manse	3125 5755	SRPB	730.3
078002 *	Ae at Elshieshields	3068 5852	SRPB	143.2
078003	Annan at Brydekirk	3191 5704	SRPB	925.0
078004	Kinnel Water at Redhall	3077 5868	SRPB	76.1
078005	Kinnel Water at Bridgemuir	3091 5845	SRPB	229.0
078006	Annan at Woodfoot	3099 6010	SRPB	217.0
079001 *	Afton Water at Afton Reservoir	2631 6050	SRPB	8.5
079002	Nith at Friars Carse	2923 5851	SRPB	799.0
079003	Nith at Hall Bridge	2684 6129	SRPB	155.0
079004	Scar Water at Capenoch	2845 5940	SRPB	142.0
079005	Cluden Water at Fiddlers Ford	2928 5795	SRPB	238.0
079006	Nith at Drumlanrig	2858 5994	SRPB	471.0
080001	Urr at Dalbeattie	2822 5610	SRPB	199.0
080002	Dee at Glenlochar	2733 5641	SRPB	809.0
080003	White Laggan Burn at Loch Dee	2468 5781	SRPB	5.7
080004	Greenburn at Loch Dee	2481 5791	SRPB	2.6
080005	Dargall Lane at Loch Dee	2451 5787	SRPB	2.1
080006	Blackwater at Loch Dee	2478 5797	SRPB	15.6
081001 *	Penwhirn Burn at Penwhirn Reservoir	2128 5694	DGRW	18.2
081002	Cree at Newton Stewart	2412 5653	SRPB	368.0
081003	Luce at Airyhemming	2180 5599	SRPB	171.0
081004	Bladnoch at Low Malzie	2382 5545	SRPB	334.0
081005	Piltanton Burn at Barsolus	2107 5564	SRPB	34.2
081006	Water of Minnoch at Minnoch Bridge	2363 5746	SRPB	141.0
081007	Water of Fleet at Rusko	2592 5590	SRPB	
082001	Girvan at Robstone	2217 5997	CRPB	245.5
082002	Doon at Auchendrane	2338 6160	CRPB	323.8
082003	Stinchar at Balnowlart	2108 5832	CRPB	341.0
083001 *	Caaf Water at Knockendon Reservoir	2245 6514	SRCW	6.0
083002 *	Garnock at Dalry	2293 6488	CRPB	88.8
083003	Ayr at Catrine	2525 6259	CRPB	166.3
083004	Lugar at Langholm	2508 6217	CRPB	181.0
083005	Irvine at Shewalton	2345 6369	CRPB	380.7
083006	Ayr at Mainholm	2361 6216	CRPB	574.0
083007	Lugton Water at Eglinton	2315 6420	CRPB	54.6
083008	Annick Water at Dreghorn	2352 6384	CRPB	95.3
083009	Garnock at Kilwinning	2307 6424	CRPB	183.8
083010	Irvine at Newmilns	2532 6372	CRPB	72.8
084001	Kelvin at Killermont	2558 6705	CRPB	335.1
084002 *	Calder at Muirshiel	2309 6638	SRCW	12.4
084003	Clyde at Hazelbank	2835 6452	CRPB	1092.9
084004	Clyde at Sills	2927 6424	CRPB	741.8
084005	Clyde at Blairston	2704 6579	CRPB	1704.2
084006 *	Kelvin at Bridgend	2672 6749	CRPB	63.7
084007	South Calder Wtr at Forgewood	2751 6585	CRPB	93.0
084008	Rotten Calder Wtr at Redlees	2679 6604	CRPB	51.3
084009	Nethan at Kirkmuirhill	2809 6429	CRPB	66.0
084011	Gryfe at Craigend	2415 6664	CRPB	71.0
084012	White Cart Water at Hawkhead	2499 6629	CRPB	227.2
084013	Clyde at Daldowie	2672 6616	CRPB	1903.1
084014	Avon Water at Fairholm	2755 6518	CRPB	265.5
084015	Kelvin at Dryfield	2638 6739	CRPB	235.4
084016	Luggie Water at Condorrat	2739 6725	CRPB	33.9
084017	Black Cart Water at Milliken Park	2411 6620	CRPB	103.1
084018	Clyde at Tulliford Mill	2891 6404	CRPB	932.6
084019	North Calder Wtr at Calderpark	2681 6625	CRPB	129.8
084020	Glazert Water at Milton of Campsie	2656 6763	CRPB	51.9
084021 *	White Cart Water at Netherlee	2587 6597	CRPB	91.6
084022	Duneaton at Maidencots	2929 6259	CRPB	110.3
084023	Bothlin Burn at Auchengeich	2680 6717	CRPB	35.7
084024	North Calder Wtr at Hillend	2828 6678	CRPB	19.9
084025	Luggie Water at Oxgang	2666 6734	CRPB	87.7
084026	Allander Water at Milngavie	2558 6738	CRPB	32.8
084027	North Calder Wtr at Calderbank	2765 6624	CRPB	60.6
084028	Monkland Canal at Woodhall	2765 6626	CRPB	60.6
084029	Cander Water at Candermill	2765 6471	CRPB	24.5
084030	White Cart Water at Overlee	2579 6575	CRPB	111.8
085001	Leven at Linnbrane	2394 6803	CRPB	784.3
085002	Endrick Water at Gaidrew	2485 6866	CRPB	219.9
085003	Falloch at Glen Falloch	2321 7197	CRPB	80.3
085004	Luss Water at Luss	2356 6929	CRPB	35.3
086001	Little Eachaig at Dalinlongart	2143 6821	CRPB	30.8
086002	Eachaig at Eckford	2140 6843	CRPB	139.9
089008	Eas Daimh at Eas Daimh	2239 7276	CRPB	4.5
089009	Eas ÀGhaill at Succoth	2209 7265	CRPB	9.7
090003	Nevis at Claggan	2116 7742	HRPB	76.8
091002	Lochy at Camisky	2145 7805	HRPB	1252.0
093001	Carron at New Kelso	1942 8429	HRPB	137.8
094001	Ewe at Poolewe	1859 8803	HRPB	441.1
095001	Inver at Little Assynt	2147 9250	HRPB	137.5
095002	Broom at Inverbroom	2184 8842	HRPB	141.4
096001	Halladale at Halladale	2891 9561	HRPB	204.6
096002	Naver at Apigill	2713 9568	HRPB	477.0
096003	Strathy at Strathy Bridge	2836 9652	HRPB	111.8
096004	Allnabad at Strathmore	2453 9429	HRPB	105.0
097001 *	Calder Burn at Achavarn	3085 9596	HRCW	24.5
097002	Thurso at Halkirk	3131 9595	HRPB	412.8
101001 *	Eastern Yar at Alverstone Mill	4577 0857	NRA-S	57.5
101002	Medina at Upper Shide	4503 0874	NRA-S	29.8
101003	Lukely Brook at Newport	4491 0886	NRA-S	16.2
101004	Eastern Yar at Burnt House	4583 0853	NRA-S	59.6
101005	Eastern Yar at Budbridge	4531 0835	NRA-S	22.5
101006	Wroxall Stream at Waightshale	4536 0839	NRA-S	15.8
101007	Scotchells Brook at Burnt House	4583 0852	NRA-S	9.2
102001	Cefni at Bodffordd	2429 3770	NRA-WEL	25.0
201002	Fairy Water at Dudgeon Bridge	*2406 3758*	DOEN	161.2
201005	Camowen at Camowen Terrace	*2460 3730*	DOEN	274.6
201006	Drumragh at Campsie Bridge	*2458 3722*	DOEN	324.6
201007	Burn Dennet at Burndennet Bridge	*2372 4047*	DOEN	145.3
201008	Derg at Castlederg	*2265 3842*	DOEN	337.3
201009	Owenkillew at Crosh	*2418 3866*	DOEN	442.4
201010	Mourne at Drumnabuoy House	*2347 3960*	DOEN	1844.5
202001	Roe at Ardnargle	*2674 4247*	DOEN	365.6
202002	Faughan at Drumahoe	*2464 4151*	DOEN	272.3
203010	Blackwater at Maydown Bridge	*2820 3519*	DOEN	951.4
203011 *	Main at Dromona	*3052 4086*	DOEN	228.8
203012	Ballinderry at Ballinderry Bridge	*2926 3799*	DOEN	419.5
203013	Main at Andraid	*3092 3973*	DOEN	646.8
203017	Upper Bann at Dynes Bridge	*3043 3509*	DOEN	335.6
203018	Six Mile Water at Antrim	*3146 3867*	DOEN	277.3
203019	Claudy at Glenone Bridge	*2962 4037*	DOEN	130.1
203020	Moyola at Moyola New Bridge	*2955 3905*	DOEN	306.5
203021	Kells Water at Currys Bridge	*3106 3971*	DOEN	127.0
203023	Torrent at The Moor Bridge	*2858 3649*	DOEN	59.9
203024	Cusher at Gambles Bridge	*3048 3471*	DOEN	176.7
203025	Callan at Callan New Bridge	*2893 3524*	DOEN	164.1

Station number	River and station name	Grid reference	Authority	Area (sq km)
203026	Glenavy at Glenavy	*3149 3725*	DOEN	44.6
203027	Braid at Ballee	*3097 4014*	DOEN	177.2
203028	Agivey at White Hill	*2883 4193*	DOEN	98.9
203029	Six Mile Water at Ballyclare	*3282 3902*	DOEN	58.4
203033	Upper Bann at Bannfield	*3233 3341*	DOEN	100.9
203038	Rocky at Rocky Mountain	*3243 3265*	DOEN	6.7
203040	Lower Bann at Movanagher	*2931 4154*	DOEN	5209.8
203042	Crumlin at Cidercourt Bridge	*3135 3765*	DOEN	
203092	Main at Dunminning Lower	*3051 4111*	DOEN	211.7
203093	Main at Shane's Viaduct	*3086 3896*	DOEN	704.2
204001	Bush at Seneirl	*2942 4362*	DOEN	306.1
205003 *	Lagan at Dunmurry	*3299 3679*	DOEN	444.7
205004	Lagan at Newforge	*3329 3693*	DOEN	490.4
205005	Ravernet at Ravernet	*3267 3613*	DOEN	69.5
205006 *	Lagan at Blaris	*3259 3628*	DOEN	315.9
205008	Lagan at Drummiller	*3236 3525*	DOEN	85.2
205010	Lagan at Banoge	*3123 3540*	DOEN	189.8
205020	Enler at Comber	*3459 3697*	DOEN	59.8
206001 *	Clanrye at Mount Mill Bridge	*3086 3309*	DOEN	132.7
206002	Jerretspass at Jerretspass	*3064 3332*	DOEN	41.6
236005	Colebrooke at Ballindarragh Bridge	*2331 3359*	DOEN	309.1
236007	Sillees at Drumrainy Bridge	*2205 3400*	DOEN	167.6

† Irish Grid references are italicised.

* – closed, or no data for post-1988 have been received.

Refer to pages 172 and 173 for key to measuring authorities.

GROUNDWATER LEVEL DATA

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, this 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 13, 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, whilst occasional sources sufficient for large supplies may be developed, they tend to be important only locally. The outcrop areas of the major aquifers are shown in Figure 13; throughout Wales, Scotland and Northern Ireland, aquifers are less extensively developed and tend to be only of relatively local importance.

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.

Only the largest artificial reservoirs in the United Kingdom have sufficient capacity 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 1975/76, a dry summer succeeds a notably dry winter, or as in 1988–91 in eastern England, recharge is significantly below average over two or three successive winters.

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: 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 to 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 existing national archive, 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 page 156).

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, although instruments may be accurate to 1 mm.

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

TABLE 13 GENERALISED LIST OF AQUIFERS IN THE UNITED KINGDOM

Era	System	Subsystem	Aquifer	Importance
	Quaternary	Holocene	Superficial deposits	*
		Pleistocene	Upper and Middle Pleistocene	*
			Crag	**
	Tertiary	Pliocene	Coralline Crag	**
		Oligocene		
		Eocene	Bagshot Beds	
			Lower London Tertiaries	
			Blackheath & Oldhaven Beds	
			Woolwich & Reading Beds	*
			Thanet Beds	**
	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	*
	Triassic	Keuper	Permo-Triassic sandstones	
		Bunter		
	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

UPPER PALAEOZOIC MESOZOIC CAINOZOIC

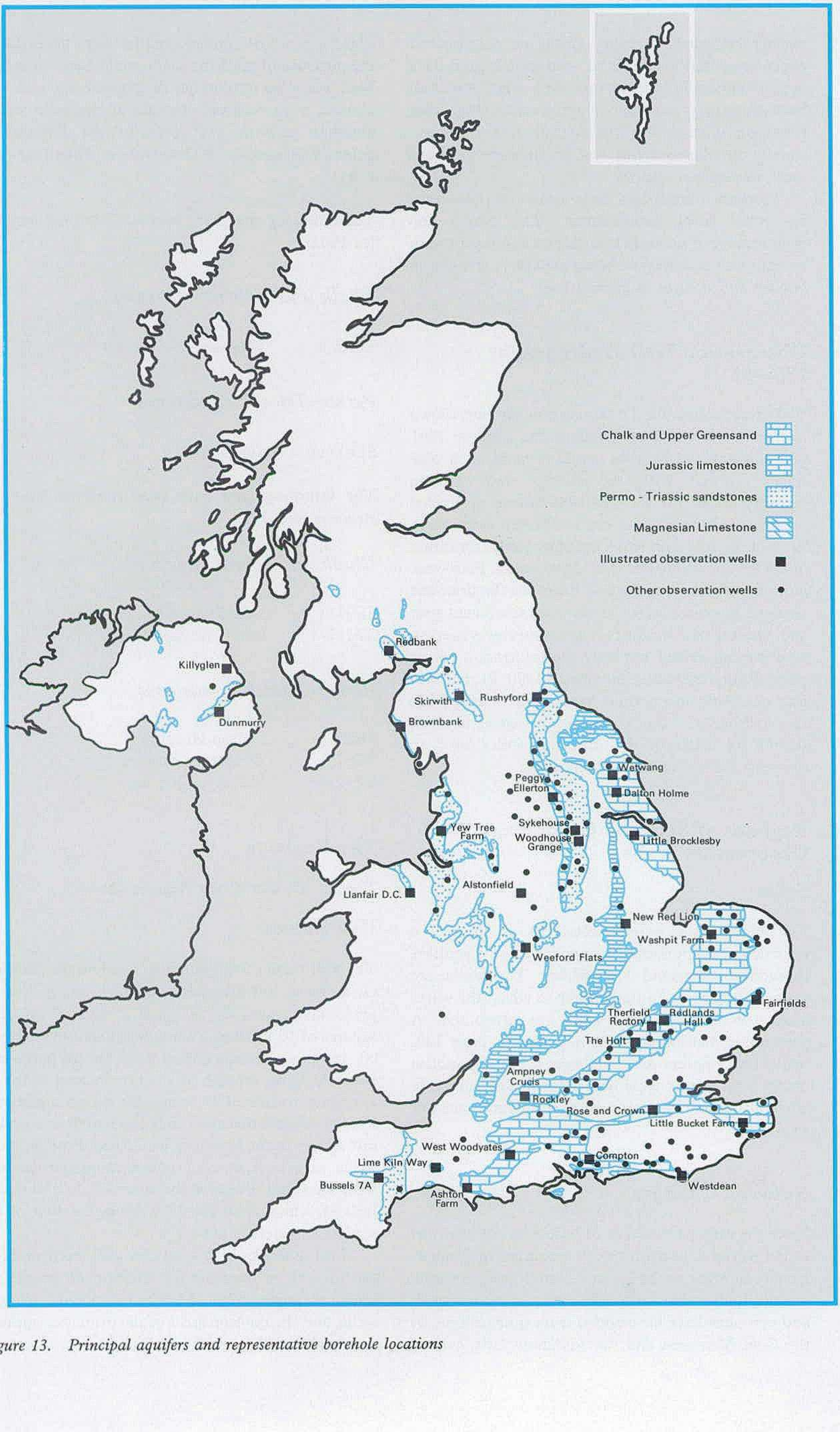


Figure 13. Principal aquifers and representative borehole locations

usually recorded on paper charts or on punched paper tapes, but a number of solid state loggers have been deployed in recent years. At a relatively small but increasing number of observation boreholes provision is made for the routine transmission - usually by telephone line - of groundwater levels to local, or regional, centres.

Pressure transducers have also been considered for water level measurement. The design and performance of pressure transducers has improved in recent years and they are being used more frequently but are still not yet in general use.

Observation Well Hydrographs 1988–91

Well hydrographs for 32 observation sites are shown in Figure 14. For each borehole the 1988 to 1991 groundwater hydrographs are illustrated, as a blue trace, together with the average and extreme monthly levels for the pre-1988 record (provided sufficient historical data are available). A break in the well hydrograph trace indicates an interruption in the record of greater than eight weeks. Four-year plots have been used both to illustrate the dramatic changes in groundwater levels over the recent past and because the volume of groundwater stored in aquifers can reflect not only the infiltration taking place during the winter months of 1990/91, but also that occurring in previous years. When comparing the hydrographs for a number of sites, account should be taken of the differing scales used to illustrate the water-table fluctuations.

Register of Selected Groundwater Observation Wells

Scope

The listed sites were selected so as to give a reasonably representative cover for aquifers through-out 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 on page 148, 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 selected wells. At some locations, observations could no longer be continued, and new sites have been added from time to time. 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. Details of the wells in the national network are given in the Register of Selected Groundwater Observation Wells (see page 156).

The following sites have been added to the Register for 1991:

Chalk and Upper Greensand

SE95/6	Wetwang

Permo-Triassic sandstones

SE61/11	Sykehouse

The following sites have been removed from the Register for 1991:

Chalk and Upper Greensand

SE93/4	Dale Plantation
TM17/1	Old Parsonage House

Permo-Triassic sandstones

SE55/4	Clifton Hospital
SE64/1	Wheldrake Station
ST12/48	Milverton Bypass

The Register

The six 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 in 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 152 to 155. The location of the index wells, and the outcrop areas of the principal aquifers, are shown on Figure 13.

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; the corresponding two-letter code appears as the prefix characters in the Well Number. The Irish Grid References are italicised.

Site

The name by which the well or borehole is normally referenced. The location of all the sites listed in the Register are shown on Figure 13.

Measuring Authority

An abbreviation referencing the organisation responsible for groundwater level measurement. A full list of codes, together with the corresponding names and addresses appears on pages 172 and 173.

Records Commence

The first year for which records are held on the Groundwater Level Archive.

Indicated % Annual Recharge

The difference between the level measured at the end of the summer recession of groundwater levels and that measured at the beginning of the summer recession of the following year reflects the amount of recharge received in that period. This method, detailed in the *Hydrometric Register and Statistics 1981-5* volume, is most suited to circumstances when a single peak is readily identifiable in each recharge season. Where recharge follows an uneven pattern resulting in poorly defined or multiple peaks, the percentage of the mean annual recharge is often unrepresentative. Consequently, the original method has been modified to produce more realistic values of recharge and to allow more accurate comparison between sites. First, the recharge period has been arbitrarily defined as the first day of August to the end of the following July. Next, the water level at each site was estimated, by extrapolation where necessary, for the last day of each month. Finally, all the rises in successive months were summed over each recharge period. The use of end-of-month levels was dictated to a large extent by the existence of end-of-month data alone for the longest pre-1991 records. However, where some sites are measured at close time intervals (weekly or daily), the summed cumulative rises give a significant larger total than the rise determined by end-of-monthly levels alone. To compare sites with differing intervals between measurements, it is thus necessary to resort to a common base.

The summed rise for each year is called the 'annual fluctuation', and the mean of the annual fluctuations over the period of record is termed the 'mean annual recharge' (MAR). This also assumes that the natural discharge (via, for instance, springs and seepages) is constant; while this is not the case in view of the large differences of head that are recorded in some observation wells, there is insufficient information currently available to permit corrective factors to be detemined. It is considered that for most wells the errors caused by this assumption will be small.

The annual infiltration is then expressed as a percentage of the MAR and thus represents the percentage of the mean annual recharge received for that year. It is this figure that appears in the last column of the Register. Exceptionally low percentage recharge values are conventionally presented as '<10'. Where data for the year are inadequate for the purpose of calculating the annual percentage recharge, no value is given.

References

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.

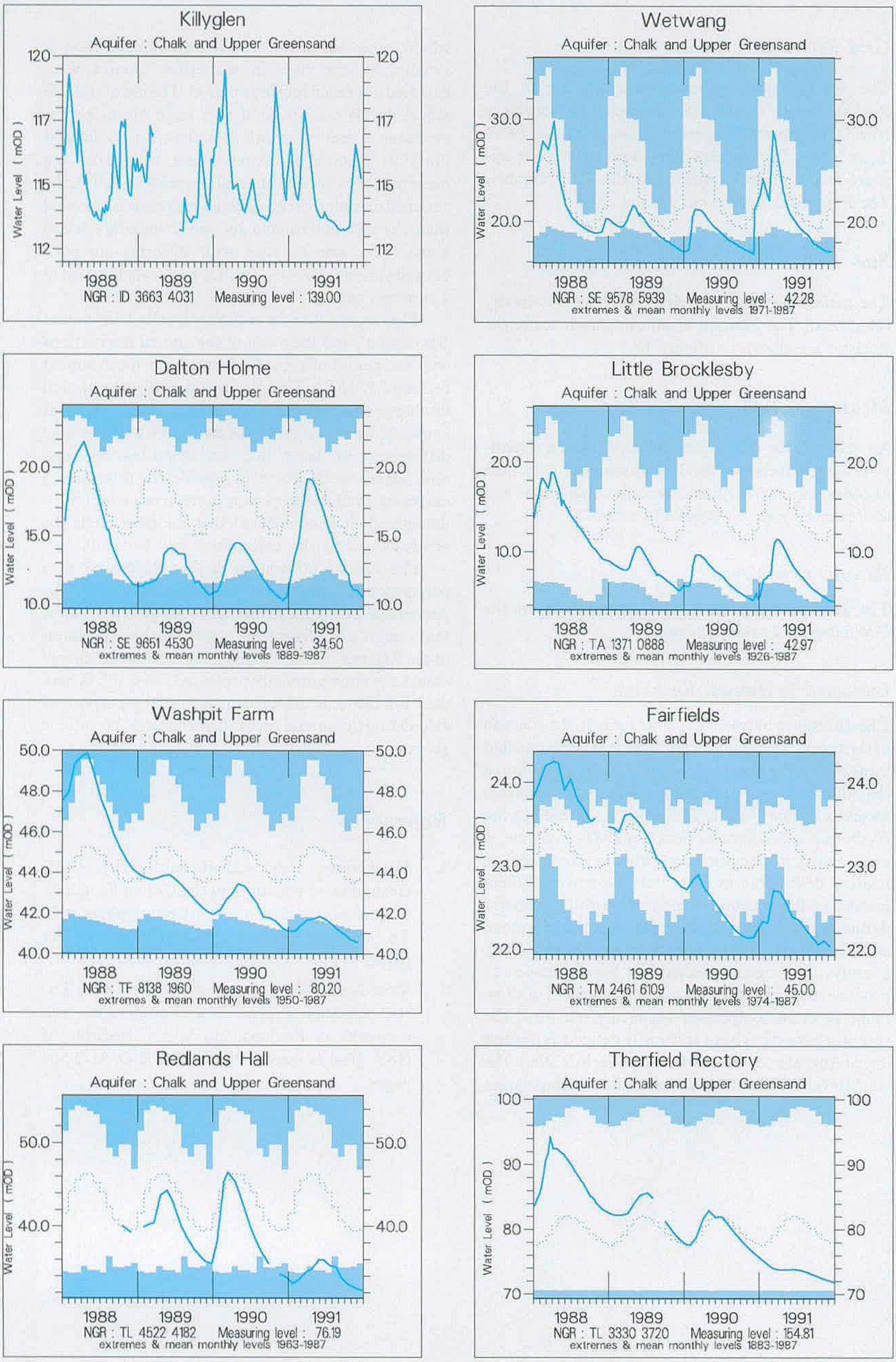
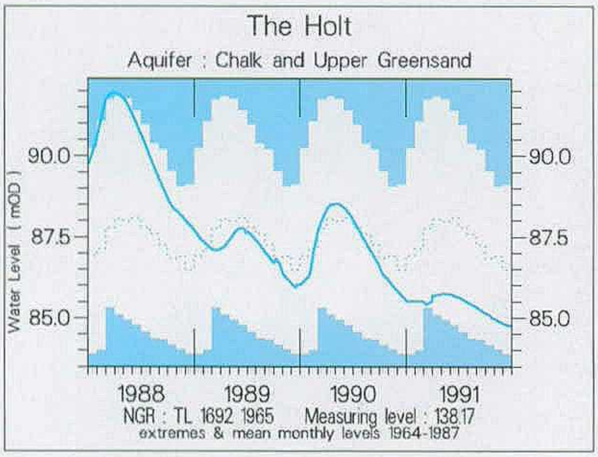
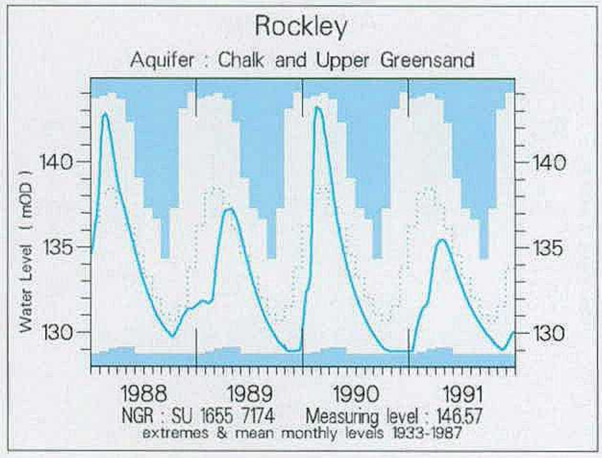
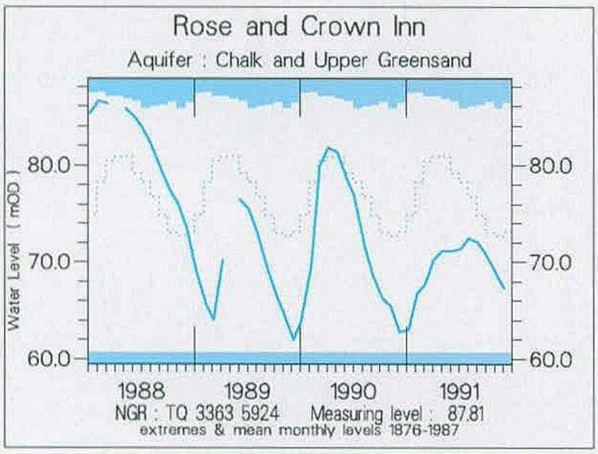
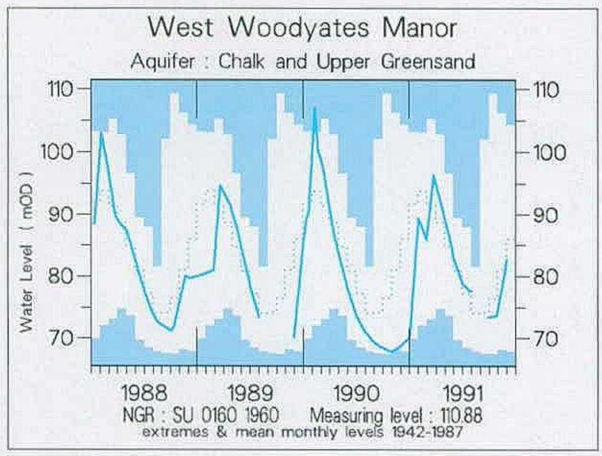


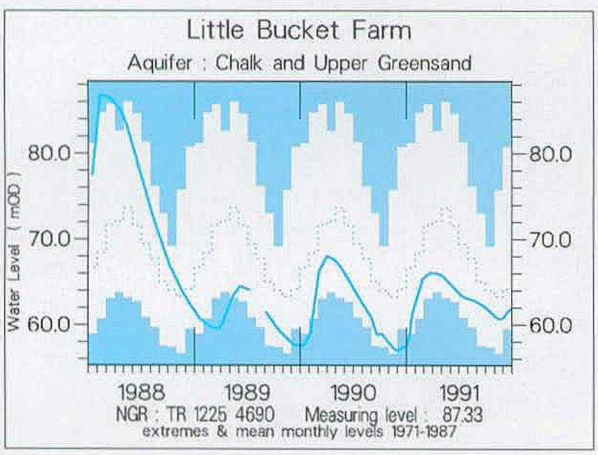
Figure 14. Hydrographs of groundwater level fluctuations 1988–91

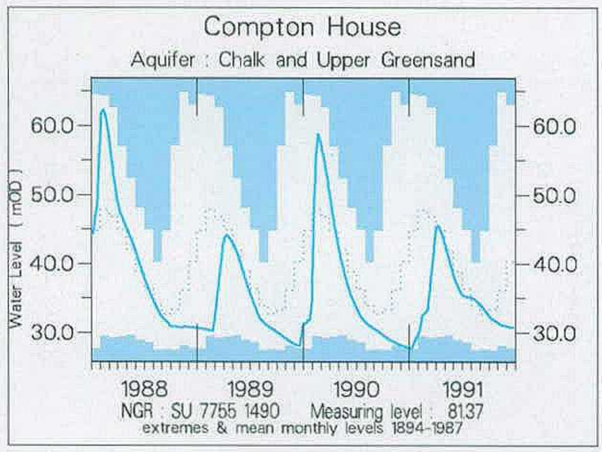


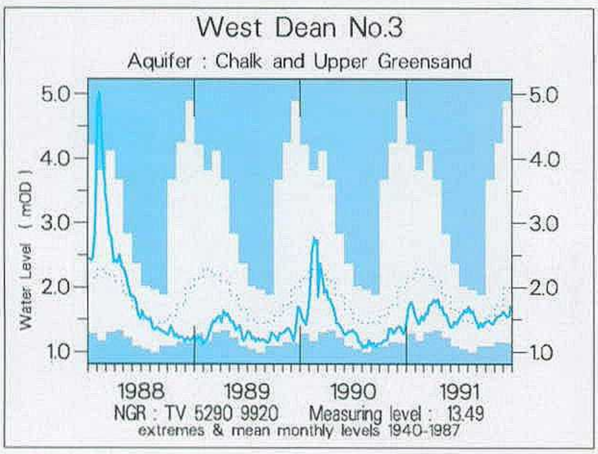












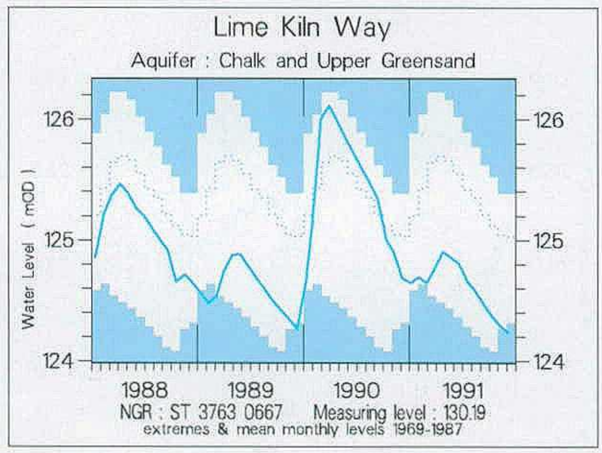


Figure 14—(continued)

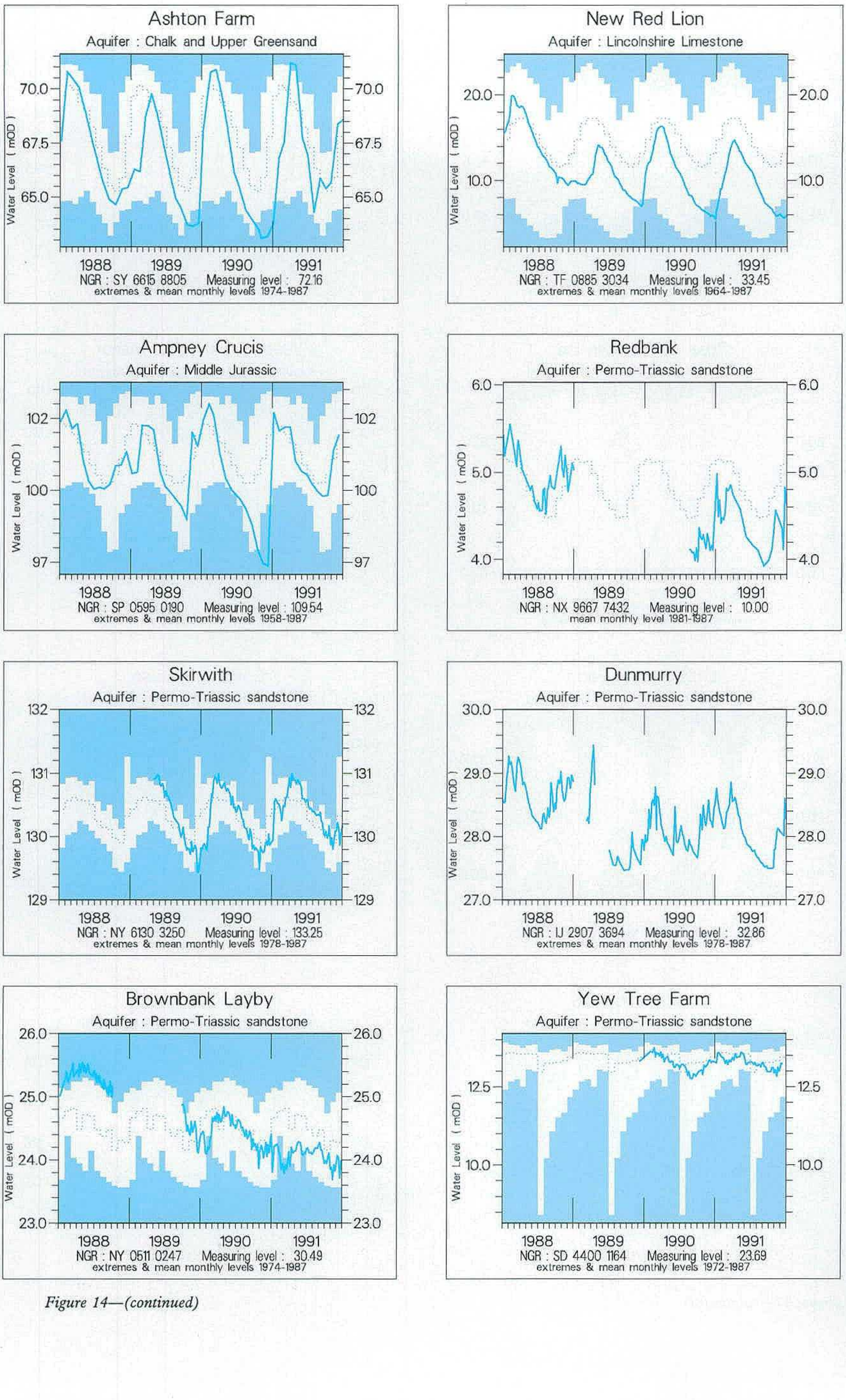


Figure 14—(continued)

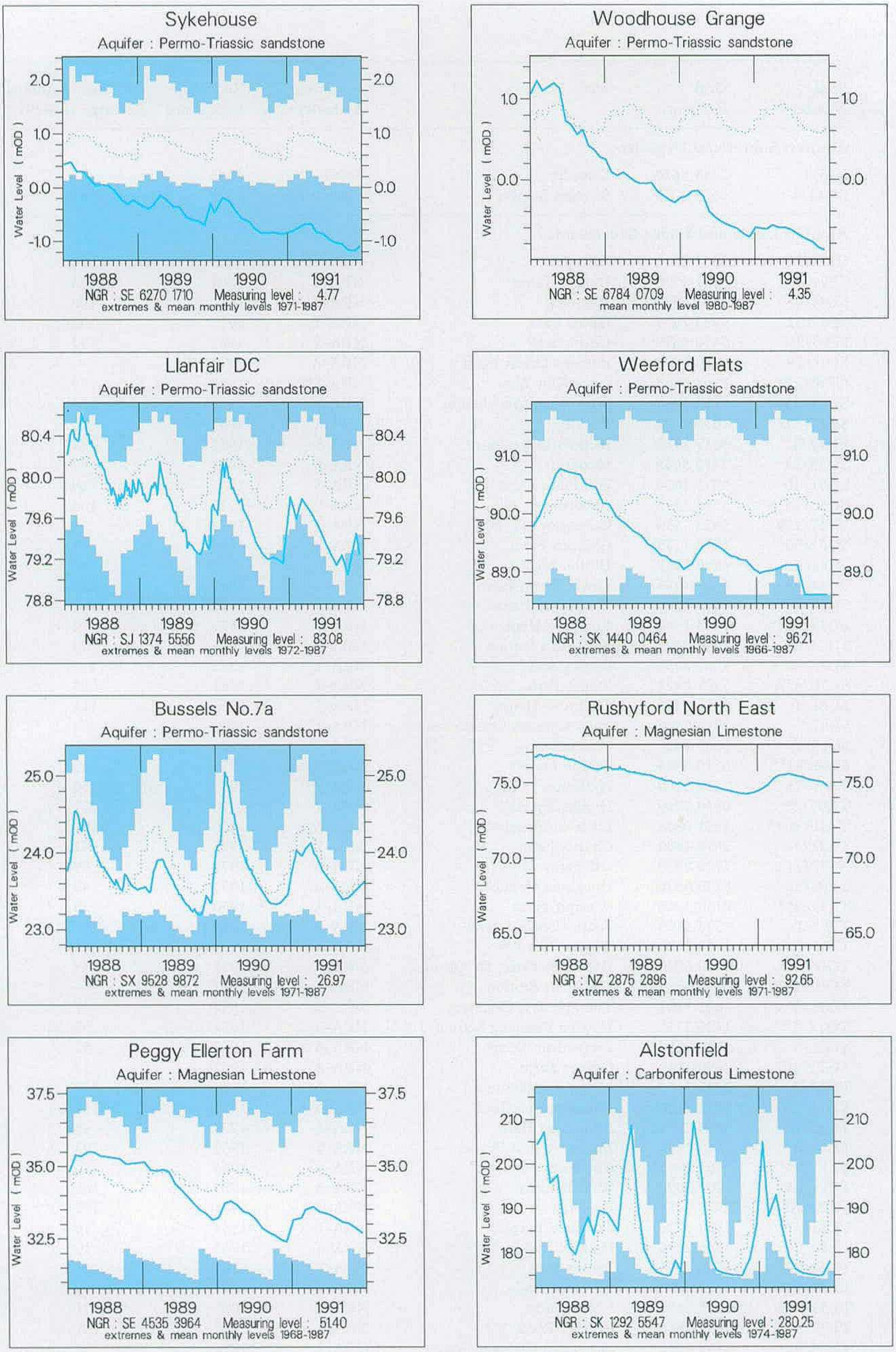


Figure 14—(continued)

Well Number	Grid Reference	Site	Measuring Authority	Records Commence	Indicated % Annual Recharge 1990/91
Aquifer: Superficial Deposits					
IJ28/1	2248 8620	Dunadry	GSNI	1985	73
SO44/4	4683 4253	Stretton Sugwas	NRA-WEL	1973	43
Aquifer: Chalk and Upper Greensand					
ID30/1**	3663 0310	Killyglen	GSNI	1985	93
SE94/5**	9651 4530	Dalton Holme	NRA-Y	1889	138
SE95/6**	9578 5939	Wetwang	NRA-Y	1971	106
SE97/31	9345 7079	Green Lane	NRA-Y	1971	132
SP90/26	9470 0875	Champneys	NRA-T	1962	31
SP91/59	9380 1570	Pitstone Green Farm	NRA-A	1970	---
ST30/7**	3763 0667	Lime Kiln Way	NRA-SW	1969	39
SU01/5B**	0160 1960	West Woodyates Manor	NRA-W	1942	124
SU17/57**	1655 7174	Rockley	NRA-T	1933	66
SU32/3	3817 2743	Bailey's Down Farm	NRA-S	1964	59
SU35/14	3315 5645	Woodside	NRA-S	1963	62
SU51/10	5875 1655	Hill Place Farm	NRA-S	1965	148
SU53/94	5586 3498	Abbotstone	NRA-S	1976	106
SU57/159	5628 7530	Calversleys Farm	NRA-T	1974	19
SU61/32	6578 1775	Chidden Farm	NRA-S	1958	85
SU61/46	6890 1532	Hinton Manor	NRS-S	1953	48
SU64/28	6360 4049	Lower Wield Farm	NRA-S	1962	123
SU68/49	6442 8525	Well Place Farm	NRA-T	1976	---
SU71/23**	7755 1490	Compton House	NRA-S	1894	79
SU73/8	7048 3491	Faringdon Station	NRA-T	1966	72
SU76/46	7367 6251	Riseley Mill	NRA-T	1975	---
SU78/45A	7419 8924	Stonor Park	NRA-T	1961	27
SU81/1	8356 1440	Chilgrove House	NRA-S	1836	111
SU87/1	8336 7885	Folly Cottage, Coldharbour	NRA-T	1950	68
SU89/7	8103 9417	Piddington	NRA-T	1966	46
SY68/34**	6615 8805	Ashton Farm	NRA-W	1974	145
TA06/16	0490 6120	Nafferton	NRA-Y	1964	150
TA07/28	0940 7740	Hunmanby Hall	NRA-Y	1976	171
TA10/40**	1371 0888	Little Brocklesby	NRA-A	1926	101
TA21/14	2670 1890	Church Farm	NRA-Y	1971	62
TF72/11	7710 2330	Off Farm	NRA-A	1971	49
TF80/33	8730 0526	Houghton Common	NRA-A	1971	42
TF81/2**	8138 1960	Washpit Farm	NRA-A	1950	25
TF83/1	8578 3606	South Creake School	NRA-A	1952	75
TF92/5	9869 2183	Tower Hills P.S.	NRA-A	1974	86
TG00/92	0440 0020	High Elm Farm, Deopham	NRA-A	1971	39
TG03/25B	0382.3583	The Hall, Brinton	NRA-A	1952	---
TG11/5	1691 1101	The Spinney, Costessey	NRA-A	1952	69
TG12/7	1126 2722	Heydon Pumping Station	NRA-A	1974	55
TG21/9	2400 1657	Frettenham Depot	NRA-A	1952	82
TG21/10	2699 1140	Grange Farm	NRA-A	1952	12
TG23/21	2932 3101	Melbourne House	NRA-A	1974	129
TG31/20	3365 1606	Woodbastwick Hall	NRA-A	1974	131
TG32/16	3700 2682	Brumstead Hall	NRA-A	1978	48
TL11/4	1560 1555	Mackerye End House	NRA-T	1963	93
TL11/9**	1692 1965	The Holt	NRA-T	1964	16
TL13/24	1200 3026	West Hitchin	NRA-A	1970	101
TL22/10	2978 2433	Box Hall	NRA-T	1964	150
TL33/4**	3330 3720	Therfield Rectory	NRA-T	1883	< 10
TL42/6	4536 2676	Hixham Hall	NRA-T	1964	< 10
TL42/8	4669 2955	Berden Hall	NRA-T	1964	47
TL44/12**	4522 4182	Redlands Hall	NRA-A	1963	35
TL55/109	5925 5605	Lower Farm	NRA-A	1983	21
TL72/54	7982 2516	Rectory Road	NRA-A	1968	101
TL84/6	8465 4106	Smeetham Cottages, Bulmer	NRA-A	1963	30
TL86/110	8850 6470	Cattishall Farm	NRA-A	1969	58

Well Number	Grid Reference	Site	Measuring Authority	Records Commence	Indicated % Annual Recharge 1990/91
TL89/37	8131 9001	Grimes Graves	NRA-A	1971	50
TL92/1	9657 2562	Lexden Pumping Station	NRA-A	1961	---
TM15/112	1201 5618	Dial Farm	NRA-A	1968	84
TM26/46**	2461 6109	Fairfields	NRA-A	1974	26
TM26/95	2786 6397	Strawberry Hill	NRA-A	1974	---
TQ01/133	0850 1170	Chantry Post, Sullington	NRA-S	1977	76
TQ21/11	2850 1289	Old Rectory, Pyecombe	NRA-S	1958	87
TQ28/119B	2996 8051	Trafalgar Square	NRA-T	1901	---
TQ31/50	3220 1180	North Bottom	NRA-S	1979	61
TQ35/5**	3363 5924	Rose & Crown	NRA-T	1974	83
TQ38/9	3509 8536	Hackney Public Baths	NRA-T	1953	---
TQ50/7	5592 0380	Old Rectory, Folkington	NRA-S	1965	108
TQ56/19	5648 6124	West Kingsdown	NRA-T	1961	---
TQ57/118	5880 7943	Thurrock A13	NRA-A	1979	80
TQ58/2B	5622 8408	Bush Pit Farm	NRA-T	1967	86
TQ86/44	8595 6092	Little Pett Farm	NRA-S	1982	40
TQ99/11	9470 9710	Burnham-on-Crouch	NRA-A	1975	56
TR14/9**	1225 4690	Little Bucket Farm	NRA-S	1971	78
TR14/50	1265 4167	Glebe Cottage	NRA-S	1970	< 10
TR24/26	2787 4003	Church House	NRA-S	1971	38
TR35/49	3330 5090	Cross Manor Cottages	NRA-S	1971	---
TR36/62	3208 6634	Alland Grange	NRA-S	1969	104
TV59/7C**	5290 9920	Westdean 3	NRA-S	1940	63
Aquifer : Lower Greensand					
SU82/57	8888 2505	Madam's Farm	NRA-S	1984	59
SU84/8A	8716 4087	Tilford Pumping Station	NRA-T	1971	72
TL45/19	4110 5204	River Farm	NRA-A	1973	130
TQ41/82	4370 1320	Lower Barn Cottages	NRA-S	1975	113
TR13/21	1132 3881	Ashley House	NRA-S	1972	147
TR23/32	2075 3650	Morehall Depot	NRA-S	1972	61
Aquifer : Hastings Beds					
TQ22/1	2348 2770	The Bungalow	NRA-S	1964	188
TQ42/80A	4725 2990	Kingstanding	NRA-S	1979	160
TQ61/44	6658 1803	Dallington Herrings	NRA-S	1964	127
TQ62/99	6199 2282	Whiteoaks	NRA-S	1978	72
TQ71/123	7969 1659	Red House	NRA-S	1974	129
Aquifer : Upper Jurassic					
SE68/16	6890 8590	Kirkbymoorside	NRA-Y	1975	95
SE77/76	7690 7300	Broughton	NRA-Y	1975	99
SE98/8	9910 8540	Seavegate Farm	NRA-Y	1971	136
SU49/40B	4117 9307	East Hanney	NRA-T	1978	64
Aquifer : Middle Jurassic					
SP00/62**	0595 0190	Ampney Crucis	NRA-T	1958	131
SP20/113	2721 0634	Alvescot Road	NRA-T	1983	167
ST51/57	5931 1691	Over Compton	NRA-W	1971	77
ST88/62A	8275 8743	Didmarton 1	NRA-W	1977	122
Aquifer : Lincolnshire Limestone					
SK97/25	9800 7817	Grange de Lings	NRA-A	1975	67
TF03/37**	0885 3034	New Red Lion	NRA-A	1964	111
TF04/14	0429 4273	Silk Willoughby	NRA-A	1972	119
Aquifer : Permo-Triassic sandstones					
IJ26/1**	2907 6943	Dunmurry	GSNI	1985	72
NX97/1**	9667 7432	Redbank	SRPB	1981	86
NY00/328**	0511 0247	Brownbank Layby	NRA-NW	1974	137
NY45/16	4947 5667	Corby Hill	NRA-NW	1977	100

Well Number	Grid Reference	Site	Measuring Authority	Records Commence	Indicated % Annual Recharge 1990/91
NY63/2**	6130 3250	Skirwith	NRA-NW	1978	161
NZ41/34	4861 1835	Northern Dairies	NRA-N	1974	67
SD27/8	2172 7171	Furness Abbey	NRA-NW	1972	128
SD41/32**	4400 1164	Yew Tree Farm	NRA-NW	1973	181
SD44/15	4396 4928	Moss Edge Farm	NRA-NW	1961	137
SE36/47	3945 6575	Kelly's Cafe	NRA-Y	1977	79
SE39/20B	3004 9244	Scruton Village	NRA-Y	1969	36
SE45/3	4470 5580	Cattal Maltings	NRA-Y	1969	122
SE52/4	5473 2363	Southfield Lane	NRA-Y	1955	---
SE54/32A	5532 4646	Bilborough	NRA-Y	1984	26
SE60/76**	6784 0709	Woodhouse Grange	NRA-ST	1980	---
SE61/11**	6270 1710	Sykehouse	NRA-Y	1971	33
SE72/3B	7047 2149	Rawcliffe Bridge	NRA-Y	1971	54
SE83/9	8040 3640	Holme on Spalding Moor	NRA-Y	1972	92
SJ15/15**	1374 5556	Llanfair D.C.	NRA-WEL	1972	88
SJ33/39	3814 3831	Eastwick Farm	NRA-WEL	1974	71
SJ56/45E	5042 6953	Ashton 4	NRA-NW	1969	109
SJ83/1A	8969 3474	Stone	NRA-ST	1974	41
SJ87/32	8969 7598	Dale Brow	NRA-NW	1973	21
SJ88/93	8611 8645	Bruntwood Hall	NRA-NW	1972	63
SK00/41	0670 0120	Nuttal's Farm	NRA-ST	1974	12
SK10/9**	1440 0464	Weeford Flats	NRA-ST	1966	18
SK21/111	2731 1419	Grange Wood	NRA-ST	1967	73
SK24/22	2539 4431	Burtonshuts Farm	NRA-ST	1972	46
SK56/53	5632 6440	Peafield Lane	NRA-ST	1969	---
SK67/17	6448 7257	Morris Dancers	NRA-ST	1969	---
SK68/21	6100 8374	Crossley Hill	NRA-ST	1969	---
SK73/50	7693 3228	Woodland Farm	NRA-ST	1980	60
SO71/18	7170 1970	Stores Cottage	NRA-ST	1973	115
SO87/28	8160 7970	Hillfields	NRA-ST	1961	---
SX99/37B**	9528 9872	Bussels 7A	NRA-SW	1971	73
SY09/21A	0666 9235	Heathlands	NRA-SW	1951	167
Aquifer : Magnesian Limestone					
NZ22/22**	2875 2896	Rushyford NE	NRA-N	1967	---
NZ32/19	3575 2650	Heley House	NRA-N	1969	103
NZ33/20	3349 3501	Garmondsway	NRA-N	1974	149
SE28/28	2460 8520	Bedale	NRA-Y	1972	106
SE35/4	3830 5830	Castle Farm	NRA-Y	1970	176
SE43/9**	4535 3964	Peggy Ellerton Farm	NRA-Y	1968	95
SE43/14	4660 3550	Coldhill Farm 35	NRA-Y	1971	166
SE51/2	5210 1530	Westfield Farm	NRA-Y	1971	12
SK46/71	4800 6030	Stanton Hill	NRA-ST	1973	68
SK58/43	5248 8018	Southards Lane	NRA-ST	1973	---
Aquifer : Coal Measures					
SE23/4	2850 3414	Trident House	NRA-Y	1971	72
Aquifer : Millstone Grit					
SE02/46	0771 2528	Thrum Hall	NRA-Y	1977	69
SE04/7	0295 4792	Lower Heights Farm	NRA-Y	1971	102
SE24/2B	2067 4053	Green Lane Dyeworks	NRA-Y	1971	---
SE27/8	2120 7380	Kirkby Moor Farm	NRA-Y	1971	22
Aquifer : Carboniferous Limestone					
NT95/21	9695 5055	Middle Ord	NRA-N	1974	64
SE06/1	0241 6183	Jerry Laithe Farm	NRA-Y	1971	96
SK15/16**	1292 5547	Alstonfield	NRA-ST	1974	66
SK17/13	1778 7762	Hucklow South	NRA-ST	1969	105
ST64/33	6560 4790	Oakhill 1	NRA-W	1974	193

Sites marked '**' are indicator wells; well hydrographs are shown in Figure 14. Where the annual percentage recharge cannot be estimated, the entry '---' is substituted.

THE NATIONAL GROUNDWATER LEVEL ARCHIVE DATA RETRIEVAL SERVICE

The national Groundwater Level Archive includes water level data for around 170 representative wells and boreholes in the United Kingdom; the average length of record is about 20 years. This archive is supplemented by historical (up to 1974 generally) water level data for approximately 3000 additional monitoring sites.

A suite of retrieval programs has been written in order to facilitate data usage. Retrievals using the options described below are available for all 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 overleaf. 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 measuring authority, or by any combination of these parameters. Data for the observation boreholes in the national network are stored on a database system which allows for a range of user-defined queries to be processed. Users having requirements not catered for in the standard options described below should contact the British Geological Survey to discuss their particular needs.

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
WALLINGFORD
OXFORDSHIRE OX10 8BB

Telephone: (0491) 38800 Fax: (0491) 25338

The National Well Record Archive

The British Geological Survey also maintains the National Well Record Archive (NWRA) for England and Wales. Currently this archive includes hydrogeological details and reference information for over 150,000 shafts, boreholes and some springs - predominantly constructed or used for water supply or the monitoring of groundwater levels or quality. The archive is organised into paper files based upon the 10 kilometre squares of the National Grid. Each file includes a register which details the accession number, the depth, the national grid reference and certain other details. This material is an essential component in the hydrogeological enquiry service operated by BGS and the register details are in the process of being transferred to a digital format.

The Archive is located at the Wallingford Office of BGS (address above) and all the non-confidential records are open to inspection by the general public. Those wishing to avail themselves of this facility should contact the BGS Records Section in advance to discuss access procedures and costs.

National Geosciences Information Centre

The NWRA is associated with the National Geosciences Information Service (NGIS), one of a number of computer-based data centres established at NERC Institutes (see page 137). The NGIS is located at the BGS Headquarters, Keyworth, near Nottingham (Telephone: 06077 6111) and provides access to a broad range of geological information (for example, geophysical and hydrogeological logs, core samples and chemical analyses).

LIST OF GROUNDWATER 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 and minimum groundwater levels in metres above Ordnance Datum levels 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 groundwater levels 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 period 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.

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 including the estimation of river-borne inputs of selected contaminants (e.g. nutrients) to the sea. 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 in July 1975. In Scotland responsibility for the collection and analysis of the samples rests with the seven River Purification Boards; data acquisition is co-ordinated by the Scottish Office Environment Department. In England and Wales responsibility passed, on the 1st September 1989, from the former regional Water Authorities to the newly-created National Rivers Authority.

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 but typically only 25 are measured at any given site. A number of determinands are measured as standard but a larger proportion are monitored only where it is considered necessary to do so.

Currently no data for Northern Ireland are held on the Harmonised Monitoring Archive. Water quality data are, however, routinely collected and archived by the Environmental Protection Division of the Department of the Environment (NI); data for two Northern Ireland monitoring sites are included in this publication.

The measuring authorities maintain major programmes of chemical and biological sampling of rivers for their own purposes. From the 31st July 1985, the former Water Authorities were 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. Following the enactment of the Water Bill 1989 this obligation passed to the National Rivers Authority. These registers are maintained at the regional headquarters of the NRA and are open for inspection by the public – free of charge. Persons wishing to consult the registers are advised to first contact the individual regional headquarters; a list of addresses is given on pages 172 and 173.

Data Retrieval

A 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 those data. Requests for data, and guidance concerning its availability, should be addressed to:

Department of the Environment
HMIP, Room 504
Romney House
43 Marsham Street
London SW1P 3PY

Telephone: 071 276 8245

Data listings for monitoring sites in Northern Ireland may be obtained from the Environmental Protection Division of the DOE (NI) – see page 173.

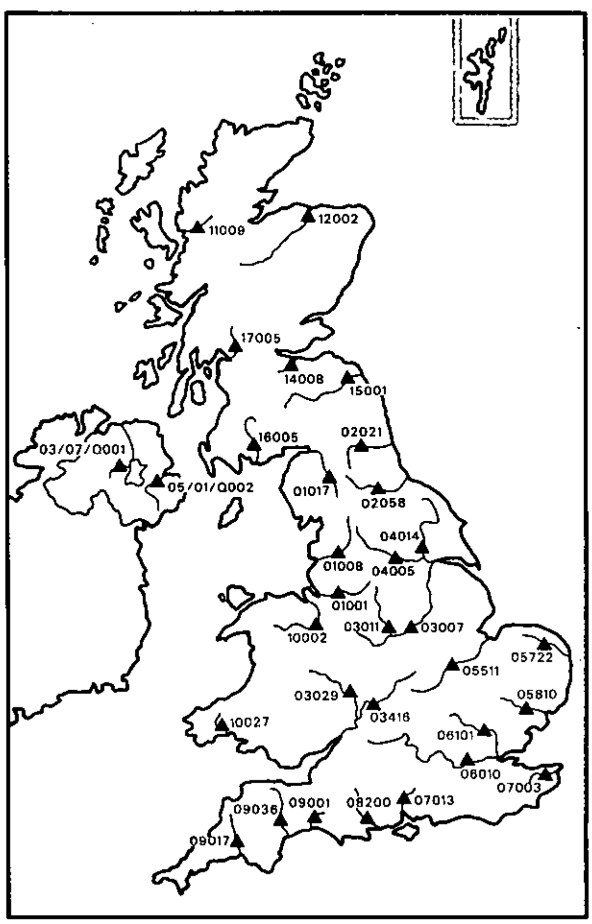


Figure 15. Water quality monitoring station location map

Scope of the Water Quality Data Tabulations

River water quality data are presented for 32 monitoring sites on rivers throughout the United Kingdom. The location of each monitoring site is given on Figure 15 (previous page). For each site 1991, and period of record, data are given for a range of determinands; the 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 reference number which serves as the primary identifier of the station. For stations on the Harmonised Monitoring Archive, the first two digits refer to the measuring authority, the remainder refer to individual sites within each measuring authority. For the Northern Ireland stations, the Department of the Environment (NI) reference code is given.

Measuring Authority

An abbreviation referencing the organisation responsible for the operation of the monitoring site. See pages 172 and 173 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 or Irish Grid square (see page 30); the standard six-figure map reference follows.

Associated Flow Measurement Station

For monitoring sites in Great Britain, the reference number, name, catchment area and grid reference of the gauging station which provides the discharge data stored on the Harmonised Monitoring Archive. At 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.

For the Northern Ireland monitoring sites, reference details of the co-located gauging stations are given; the flow data for these stations are held on the River Flow Archive at Wallingford.

1991 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 1991 are, however, included at the head of the water quality listing.

Determinands

Inadequate or unrepresentative sampling frequencies, or the presence of a 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 number of significant figures given for each determinand corresponds to the way the data are stored on the Harmonised Monitoring or DOE (NI) Archives and reflects the uncertainty associated with the relevant analytical procedures.

1991 Data

Samples

The number of samples taken for each determinand during 1991. Where a proportion of analytical results were below the limit of detection, the number of samples in this category is given in parentheses. Normally determinands are not featured when the number of samples in the year is less than about nine or when more than half the analytical results are below the limit of detection. Exclusion may also result from a very uneven sampling pattern through the year.

Mean

The average* of all the sample values for each determinand in 1991. 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 1991 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.

Different limits of detection may apply throughout the year at certain monitoring sites, for further details contact the address given on page 161.

Period of Record Data

For half of the featured sites, the pre-1991 summary statistics are presented for the seventeen-year period beginning in 1974; where individual stations were not incorporated into the Harmonised Monitoring network until after 1974, the appropriate first 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; in particular the first year of data will normally be incomplete.

Where the pre-1991 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-1974 data, at least for certain determinands, may be stored on local, or regional, archives maintained by the measuring authorities. Also, for the period 1974–90, 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 pre-1991 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.

Mersey at Flixton 1991

Harmonised monitoring station number : 01 001
Measuring authority : NRA-NW NGR : 33 (SJ) 742 938

Flow measurement station : 069007 - Ashton Weir
C.A.(km²) : 660.0 NGR : 33 (SJ) 772 936

		1991						Period of record: 1975 - 1990							
									Percentiles			Quarterly averages			
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	5%	50%	95%	J-M	A-J	J-S	O-D
Temperature	°C	49	10.8	20.0	30/07	1.0	12/02	10.8	4.0	10.0	19.5	5.8	12.5	16.4	8.8
pH	pH units	49	7.3	7.9	05/11	6.9	03/01	7.3	6.9	7.3	7.6	7.3	7.3	7.3	7.3
Conductivity	µS/cm	49	484	1171	12/02	290	03/01	491	285	472	750	462	507	525	461
Suspended solids	mg/l	49	21.3	158.0	05/11	7.0	12/03	41.1	9.3	20.8	112.7	46.0	30.9	27.7	56.3
Dissolved oxygen	mg/l O	49	7.61	11.76	05/02	2.70	24/09	8.0	4.5	7.9	11.2	9.8	7.2	6.1	8.6
BOD (inhibited)	mg/l O	48 (1)	4.8	29.0	24/09	1.0	29/10	6.6	3.1	5.5	13.0	6.7	6.8	5.5	6.7
Ammoniacal nitrogen	mg/l N	49	1.552	3.980	12/02	0.240	20/08	1.99	0.40	1.77	4.30	2.02	2.42	1.87	1.64
Nitrite	mg/l N	48	0.298	0.700	10/09	0.060	03/01	0.26	0.06	0.20	0.68	0.09	0.32	0.48	0.18
Nitrate	mg/l N	48	5.43	9.60	04/06	2.75	05/11	3.9	2.0	3.7	6.8	3.0	4.3	5.1	3.6
Chloride	mg/l Cl	48	67.7	790.0	12/02	30.0	03/01	52.7	27.9	50.0	85.9	56.8	51.6	53.8	47.7
Total alkalinity	mg/l $CaCO_3$	46	83.2	149.0	24/09	47.0	05/11	93.5	54.0	91.9	135.0	85.6	100.2	98.9	87.6
Orthophosphate	mg/l P	49	1.370	2.420	10/09	0.260	03/01	1.15	0.20	1.05	2.65	0.67	1.35	1.70	0.93
Silica	mg/l SiO_2	49	7.84	17.30	13/08	0.960	14/05	8.01	5.10	8.10	10.14	7.80	6.89	8.71	8.43
Calcium	mg/l Ca	49	34.2	43.5	12/02	26.0	05/11	32.9	25.5	33.0	38.5	32.4	33.8	33.6	31.7
Magnesium	mg/l Mg	49	9.07	66.50	18/06	4.60	05/11	7.0	4.7	7.0	9.0	6.6	7.1	7.6	6.7

Ribble at Samlesbury 1991

Harmonised monitoring station number : 01 008
Measuring authority : NRA-NW NGR : 34 (SD) 590 305

Flow measurement station : 071001 - Samlesbury
C.A.(km²) : 1145.0 NGR : 34 (SD) 589 304

		1991						Period of record: 1974 - 1990							
									Percentiles			Quarterly averages			
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	5%	50%	95%	J-M	A-J	J-S	O-D
Temperature	°C	46 (1)	10.9	19.0	11/07	0.0	07/02	9.8	1.0	10.0	17.5	4.1	11.7	15.0	7.7
pH	pH units	46	7.9	8.9	05/09	7.5	10/01	7.7	7.0	7.8	8.6	7.5	7.9	7.9	7.6
Conductivity	µS/cm	46	425	883	14/02	218	07/11	416	234	410	630	407	455	434	367
Suspended solids	mg/l	46 (2)	11.2	143.0	07/11	1.0	25/04	20.1	2.9	8.1	69.0	21.8	14.4	17.4	25.8
Dissolved oxygen	mg/l O	45	9.56	13.19	07/02	3.16	29/08	10.2	7.3	10.2	12.8	11.6	9.8	8.8	10.7
BOD (inhibited)	mg/l O	46	2.2	4.6	07/11	1.1	21/11	2.9	1.1	2.5	6.3	2.8	3.3	2.7	2.8
Ammoniacal nitrogen	mg/l N	46 (3)	0.346	2.300	14/02	0.010	02/05	0.26	0.05	0.16	0.80	0.50	0.18	0.14	0.25
Nitrite	mg/l N	46	0.068	0.290	08/08	0.020	04/04	0.08	0.02	0.06	0.20	0.06	0.12	0.09	0.06
Nitrate	mg/l N	46	4.71	14.30	05/09	1.60	10/01	4.1	1.3	3.3	9.7	3.3	5.2	4.7	3.1
Chloride	mg/l Cl	45	38.1	163.0	14/02	20.0	07/11	33.1	14.9	30.0	56.1	37.5	36.2	32.7	28.3
Total alkalinity	mg/l $CaCO_3$	46	125.9	153.0	12/12	82.0	10/01	114.5	65.0	118.9	153.0	108.3	120.9	118.9	108.8
Orthophosphate	mg/l P	46	0.538	1.600	12/09	0.080	03/01	0.43	0.10	0.30	1.20	0.24	0.58	0.59	0.29
Silica	mg/l SiO_2	46 (3)	2.87	6.49	12/12	0.100	18/04	3.32	0.20	3.60	5.80	4.22	1.90	2.61	4.65
Calcium	mg/l Ca	46	49.4	67.9	31/01	25.3	27/06	51.2	34.0	51.1	64.0	50.3	52.3	51.1	49.9
Magnesium	mg/l Mg	46	5.03	7.44	12/12	0.65	01/08	5.2	2.7	5.0	7.6	4.9	5.7	5.3	4.7
Potassium	mg/l K	46	4.38	8.15	23/05	1.89	03/01	4.0	2.0	3.7	7.0	3.4	4.6	4.5	3.4
Sodium	mg/l Na	46	34.4	109.1	14/02	8.1	07/11	30.5	9.5	25.8	63.3	28.0	35.7	34.0	21.2

Eden at Temple Sowerby 1991

Harmonised monitoring station number : 01 017
Measuring authority : NRA-NW NGR : 35 (NY) 604 281

Flow measurement station : 076005 - Temple Sowerby
C.A.(km²) : 616.4 NGR : 35 (NY) 605 283

		1991						Period of record: 1975 - 1990							
									Percentiles			Quarterly averages			
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	5%	50%	95%	J-M	A-J	J-S	O-D
Temperature	°C	11	9.9	19.5	10/07	0.2	11/12	10.2	3.0	9.5	18.5	4.7	12.2	15.7	7.7
pH	pH units	11	8.2	8.8	15/05	7.8	12/06	8.1	7.4	8.0	8.7	7.9	8.2	8.2	8.0
Conductivity	µS/cm	11	393	533	13/02	278	12/06	356	225	378	475	331	365	383	345
Suspended solids	mg/l	11 (1)	4.7	11.0	12/06	1.0	11/09	7.6	1.0	4.0	28.0	7.8	7.9	5.0	9.8
Dissolved oxygen	mg/l O	11	10.97	14.77	13/02	8.90	14/08	11.3	8.9	11.2	13.8	12.3	11.6	10.6	11.0
BOD (inhibited)	mg/l O	11	1.7	2.5	12/06	0.6	11/12	1.9	0.8	1.7	3.3	1.7	2.0	2.0	1.6
Ammoniacal nitrogen	mg/l N	11 (2)	0.074	0.200	17/01	0.010	15/05	0.06	0.01	0.04	0.18	0.07	0.04	0.06	0.06
Nitrite	mg/l N	11	0.021	0.060	15/05	0.010	13/03	0.02	0.01	0.02	0.06	0.02	0.03	0.02	0.02
Nitrate	mg/l N	11	1.84	2.71	13/02	0.64	11/09	1.4	0.2	1.2	2.8	1.9	1.4	1.0	1.5
Chloride	mg/l Cl	11	23.6	59.0	13/02	13.0	12/06	19.0	11.0	18.0	29.0	19.1	20.3	21.7	15.9
Total alkalinity	mg/l $CaCO_3$	11	154.6	177.0	15/05	123.0	13/11	148.6	85.0	156.0	191.0	143.3	155.8	149.8	147.8
Orthophosphate	mg/l P	11	0.088	0.230	11/09	0.020	12/06	0.14	0.02	0.10	0.39	0.08	0.18	0.20	0.10
Silica	mg/l SiO_2	11	2.64	4.20	11/12	0.120	15/05	2.45	0.39	2.50	4.20	3.08	1.42	2.18	3.04
Calcium	mg/l Ca	11	57.3	72.0	17/01	37.6	13/11	56.4	35.0	57.6	74.1	55.9	57.6	58.3	55.5
Magnesium	mg/l Mg	11	10.07	14.48	11/09	4.26	13/11	9.1	4.1	8.7	14.5	8.1	10.4	10.4	7.7
Potassium	mg/l K	11	3.01	6.32	11/12	1.85	14/08	2.8	1.6	2.5	4.9	2.2	3.0	3.6	2.4
Sodium	mg/l Na	11	13.6	33.1	13/02	6.7	13/11	9.9	5.0	9.0	16.5	9.3	10.7	11.6	7.9

South Tyne at Warden Bridge 1991

Harmonised monitoring station number : 02 021
Measuring authority : NRA-N NGR : 35 (NY) 910 660

Flow measurement station : 023004 - Haydon Bridge
C.A.(km²) : 751.1 NGR : 35 (NY) 856 647

		1991						Period of record: 1975 - 1990							
									Percentiles			Quarterly averages			
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	5%	50%	95%	J-M	A-J	J-S	O-D
Temperature	°C	11	8.1	18.1	22/08	0.6	12/12	9.3	2.0	8.4	19.0	4.0	11.3	15.2	6.6
pH	pH units	12	7.3	8.6	23/05	3.6	14/02	7.8	7.3	7.8	8.5	7.7	8.0	8.0	7.7
Conductivity	µS/cm	11	227	380	14/02	74	29/01	251	128	244	410	256	265	275	204
Suspended solids	mg/l	12 (1)	14.9	92.0	17/07	1.0	12/12	10.8	1.1	4.1	21.9	10.2	11.9	11.2	9.8
Dissolved oxygen	mg/l O	11	11.78	14.30	14/02	8.30	17/07	11.3	9.0	11.4	13.7	12.3	10.9	10.0	11.6
BOD (inhibited)	mg/l O	11	1.6	2.9	14/02	0.4	10/04	1.7	0.6	1.5	3.2	1.5	1.9	1.9	1.6
Ammoniacal nitrogen	mg/l N	12 (4)	0.120	0.400	22/08	0.010	10/04	0.06	0.01	0.03	0.18	0.07	0.04	0.10	0.05
Nitrite	mg/l N	12 (4)	0.025	0.080	17/07	0.010	18/09	0.01	0.01	0.01	0.02	0.01	0.02	0.01	0.01
Nitrate	mg/l N	12	0.93	2.95	23/05	0.04	18/09	0.6	0.1	0.5	1.4	1.0	0.6	0.3	0.6
Chloride	mg/l Cl	12 (1)	18.3	41.0	14/02	9.5	17/07	13.6	7.5	13.0	23.0	16.2	14.0	12.1	12.1

Tees at Broken Scar 1991

Harmonised monitoring station number : 02 058
Measuring authority : NRA-N NGR : 45 (NZ) 265 131

Flow measurement station : 025001 - Broken Scar
C.A.(km²) : 818.4 NGR : 45 (NZ) 259 137

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	19	9.6	17.0	09/07	1.0	10/12	9.1	1.5	8.0	18.1	3.6	11.8	15.3	6.2
pH	pH units	20	7.4	8.0	19/06	6.6	21/10	7.6	6.9	7.7	8.2	7.6	7.7	7.6	7.5
Conductivity	µS/cm	19	285	1500	25/06	108	28/08	192	114	185	286	225	202	167	177
Suspended solids	mg/l	20	13.9	125.0	08/10	1.0	12/12	14.0	1.1	6.0	48.9	15.2	7.7	15.3	17.4
Dissolved oxygen	mg/l O	19	11.10	15.00	12/12	9.18	08/10	11.0	8.2	11.0	13.3	12.5	10.5	9.3	11.5
BOD (inhibited)	mg/l O	18(1)	1.9	3.9	09/07	0.4	09/04	1.8	0.8	1.7	3.2	1.9	1.8	1.9	1.7
Ammoniacal nitrogen	mg/l N	18(3)	0.210	0.510	21/10	0.020	26/06	0.11	0.01	0.06	0.32	0.12	0.10	0.09	0.13
Nitrite	mg/l N	19(3)	0.057	0.500	12/12	0.020	08/01	0.02	0.01	0.02	0.04	0.02	0.02	0.02	0.02
Nitrate	mg/l N	19(1)	1.77	6.65	09/07	0.10	08/10	1.3	0.3	1.0	3.0	1.8	1.3	0.6	1.5
Chloride	mg/l Cl	17(3)	14.0	29.0	21/02	9.0	09/04	15.4	6.0	14.1	26.0	19.2	14.5	11.9	16.4
Total alkalinity	mg/l $CaCO_3$	19(1)	56.8	100.0	28/08	10.0	14/05	65.6	33.9	60.0	95.1	77.5	69.1	58.8	58.0
Orthophosphate	mg/l P	16(3)	0.054	0.150	21/02	0.020	01/10	0.05	0.01	0.03	0.13	0.04	0.04	0.06	0.05

Trent at Nottingham 1991

Harmonised monitoring station number : 03 007
Measuring authority : NRA-ST NGR 43 (SK) 581 383

Flow measurement station : 028009 - Colwick
C.A.(km²) : 7486.0 NGR : 43 (SK) 620 399

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1974 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	33	9.4	20.0	09/07	1.0	16/01	12.9	6.0	13.0	21.1	7.8	15.2	18.8	11.0
pH	pH units	34	7.9	8.3	16/04	7.7	16/01	7.7	7.3	7.8	8.2	7.7	7.8	7.9	7.7
Conductivity	µS/cm	34	936	1250	13/02	510	26/03	883	610	900	1120	801	905	958	875
Suspended solids	mg/l	34	11.9	27.0	27/11	5.0	13/02	25.2	7.1	16.0	76.0	28.8	22.1	19.7	28.8
Dissolved oxygen	mg/l O	32	11.15	13.40	17/01	8.10	11/03	9.8	7.7	9.9	11.8	10.7	9.6	8.9	9.9
BOD (inhibited)	mg/l O	34	2.8	4.5	17/04	1.5	17/01	3.6	1.8	3.4	6.0	3.2	4.0	3.8	3.3
Tot. diss. org. carbon*	mg/l O	24	6.7	8.4	25/06	5.5	16/01	8.1	4.4	6.5	18.6	7.1	8.4	9.0	8.3
Ammoniacal nitrogen	mg/l N	34(1)	0.266	1.550	13/02	0.040	17/04	0.40	0.02	0.30	0.94	0.63	0.29	0.22	0.37
Nitrate	mg/l N	34	9.82	11.80	16/12	6.80	09/07	8.5	6.1	8.6	11.1	8.4	8.7	8.4	8.6
Chloride	mg/l Cl	34	117.0	210.0	13/02	75.0	24/01	97.6	55.0	99.0	147.0	84.6	98.2	116.8	95.0
Total alkalinity	mg/l $CaCO_3$	34	161.1	179.0	17/04	119.0	02/10	159.5	120.0	163.1	187.0	157.2	165.5	161.6	154.3
Orthophosphate	mg/l P	24	1.702	2.950	24/09	0.670	16/01	1.54	0.52	1.50	2.80	0.97	1.64	2.08	1.56
Silica	mg/l SiO_2	12	8.22	12.00	16/12	2.200	17/04	7.11	2.60	7.30	11.00	8.40	4.47	6.50	8.08
Sulphate	mg/l SO_4	12	207.00	300.00	15/06	158.0	17/01	167.7	110.0	170.0	222.0	152.4	173.7	174.0	165.0
Calcium	mg/l Ca	11	102.5	113.0	21/05	94.0	16/07	107.9	74.0	100.0	113.1	95.4	109.5	90.0	93.3
Magnesium	mg/l Mg	10	26.79	30.00	13/02	22.50	18/03	21.3	13.9	21.9	28.0	21.1	22.1	21.2	19.0
Potassium	mg/l K	12	13.04	24.60	21/05	8.20	15/06	9.7	6.5	9.7	15.2	7.5	9.7	11.8	10.4
Sodium	mg/l Na	12	103.3	162.0	13/02	48.0	17/01	71.9	34.3	74.8	120.0	57.6	71.6	85.6	71.3

*Total dissolved organic carbon is converted to mg/l of oxygen when entered on the Harmonised Monitoring Archive.

Derwent at Wilne 1991

Harmonised monitoring station number : 03 011
Measuring authority : NRA-ST NGR : 43 (SK) 452 315

Flow measurement station : 028067 - Church Wilne
C.A.(km²) : 1177.5 NGR : 43 (SK) 438 316

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	40	11.9	22.0	31/07	0.0	16/01	12.0	4.0	11.8	21.0	6.4	14.2	17.9	9.4
pH	pH units	42	7.9	8.6	26/04	7.5	23/09	7.8	7.4	7.8	8.2	7.8	7.9	7.9	7.7
Conductivity	µS/cm	42	701	950	16/02	500	20/03	660	430	660	930	549	672	771	647
Suspended solids	mg/l	42(1)	7.8	28.0	01/11	2.0	05/07	15.3	2.1	8.5	51.0	22.4	10.0	10.4	19.1
Dissolved oxygen	mg/l O	39	10.49	15.00	15/01	5.30	05/09	10.0	7.0	10.1	12.8	11.6	10.0	8.5	10.3
BOD (inhibited)	mg/l O	41(1)	2.7	5.5	01/11	0.9	19/02	2.6	1.0	2.5	4.3	2.3	2.6	2.6	2.6
Tot. diss. org. carbon	mg/l O	42	4.8	9.6	26/04	2.8	16/01	4.9	2.2	4.3	9.6	3.8	5.0	5.8	5.2
Ammoniacal nitrogen	mg/l N	41	0.340	0.770	16/02	0.050	14/08	0.31	0.05	0.26	0.72	0.38	0.29	0.24	0.34
Nitrate	mg/l N	42	4.94	6.10	23/09	3.50	30/09	4.3	3.1	4.4	5.7	4.2	4.3	4.4	4.3
Chloride	mg/l Cl	42	80.7	167.0	16/02	42.0	15/01	66.9	34.0	65.0	110.0	54.1	66.4	84.6	64.4
Total alkalinity	mg/l $CaCO_3$	30	158.7	240.0	31/07	117.0	08/01	155.8	109.9	160.0	190.0	138.4	162.5	174.0	149.9
Orthophosphate	mg/l P	17	1.016	1.900	31/07	0.230	15/01	0.89	0.22	0.85	1.95	0.50	0.94	1.36	0.82
Silica	mg/l SiO_2	8	4.82	7.00	19/02	0.220	26/04	5.23	0.50	5.60	8.10	5.98	3.60	4.27	6.54
Sulphate	mg/l SO_4	8	112.88	157.00	25/09	66.00	15/01	102.8	60.0	99.0	169.1	79.2	110.2	125.8	96.5
Calcium	mg/l Ca	6	70.5	78.0	13/09	66.0	15/01	73.4	55.0	75.0	87.0	68.0	77.2	77.8	68.0
Magnesium	mg/l Mg	6	24.92	55.00	25/09	13.00	15/01	16.3	9.0	15.8	24.0	13.3	18.0	19.1	15.4
Potassium	mg/l K	8	5.90	8.00	21/08	3.00	11/03	5.2	3.1	5.0	7.0	4.6	5.2	6.1	5.0
Sodium	mg/l Na	8	67.0	100.0	21/08	9.0	26/04	49.6	22.0	47.4	77.0	35.0	53.2	65.8	45.0

Teme at Powick 1991

Harmonised monitoring station number : 03 029
Measuring authority : NRA-ST NGR : 32 (SO) 836 525

Flow measurement station : 054029 - Knightsford Br.
C.A.(km²) : 1480.0 NGR : 32 (SO) 735 557

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	25	11.0	19.0	29/08	1.0	05/02	10.5	3.0	10.0	19.5	5.3	12.7	16.5	7.6
pH	pH units	24	8.1	8.6	16/05	7.7	07/01	8.0	7.4	8.0	8.5	7.8	8.1	8.2	7.8
Conductivity	µS/cm	24	379	490	12/02	260	08/03	430	270	415	521	366	426	447	407
Suspended solids	mg/l	26	30.6	530.0	08/03	2.0	08/05	41.1	2.9	12.0	189.0	70.2	36.8	12.8	46.5
Dissolved oxygen	mg/l O	25	11.79	14.40	07/01	9.60	12/07	10.6	8.0	11.0	13.2	11.8	10.8	9.8	11.1
BOD (inhibited)	mg/l O	23(4)	1.5	2.0	08/03	1.0	15/08	1.9	0.7	1.6	4.3	1.7	2.2	1.9	1.8
Tot. diss. org. carbon	mg/l O	23	3.6	8.9	08/03	1.2	24/10	5.1	1.9	3.5	14.1	4.7	5.4	4.9	5.4
Ammoniacal nitrogen	mg/l N	26(12)	0.072	0.230	07/01	0.040	22/04	0.12	0.01	0.05	0.22	0.10	0.24	0.07	0.08
Nitrate	mg/l N	26	4.66	7.90	07/01	2.70	15/10	4.3	2.2	4.2	6.4	5.3	4.4	3.3	4.1
Chloride	mg/l Cl	26	27.1	37.0	12/02	19.0	15/10	23.0	15.0	22.0	31.0	22.4	22.1	25.2	22.4
Total alkalinity	mg/l $CaCO_3$	25	124.1	167.0	13/09	61.0	08/03	139.3	76.1	141.0	190.0	117.5	150.7	167.0	124.1
Orthophosphate	mg/l P	22	0.196	0.460	24/10	0.080	16/05	0.20	0.03	0.15	0.40	0.12	0.14	0.25	0.27

Avon at Evesham Road Bridge 1991

Harmonised monitoring station number : 03 416
Measuring authority : NRA-ST NGR : 42 (SP) 034 431

Flow measurement station : 054002 - Evesham
C.A.(km²) : 2210.0 NGR : 42 (SP) 040 438

Determinand	Units	1991						Period of record: 1977 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	44	12.0	21.0	19/07	2.0	06/02	11.2	3.5	11.0	20.0	5.2	13.2	17.0	8.7
pH	pH units	44	8.0	8.8	15/05	6.5	24/09	8.0	7.6	7.9	8.6	7.9	8.2	8.0	7.8
Conductivity	µS/cm	44	993	1340	10/09	630	10/01	931	620	952	1210	831	907	1041	948
Suspended solids	mg/l	44	18.7	288.0	10/01	4.0	24/09	27.8	6.9	17.1	78.1	43.8	27.3	17.7	22.2
Dissolved oxygen	mg/l O	44	11.12	15.00	24/04	8.00	25/07	10.5	7.7	10.6	13.2	11.8	10.6	8.9	10.7
BOD (inhibited)	mg/l O	42	3.3	8.5	10/01	1.0	19/07	3.2	1.4	2.8	6.7	2.8	4.5	3.0	2.4
Tot. diss. org. carbon	mg/l O	22	7.2	9.4	09/07	5.1	04/04	9.1	5.2	7.3	19.2	9.0	9.2	9.2	9.2
Ammoniacal nitrogen	mg/l N	44 (9)	0.181	0.600	16/01	0.030	13/06	0.26	0.01	0.19	0.75	0.48	0.15	0.13	0.28
Nitrate	mg/l N	44	12.73	19.00	16/01	5.80	02/10	10.4	7.4	10.3	13.6	11.1	9.7	9.9	11.0
Chloride	mg/l Cl	44	108.5	185.0	10/09	58.0	14/03	76.5	40.0	74.0	113.0	65.0	68.3	92.8	80.8
Total alkalinity	mg/l $CaCO_3$	31	183.5	210.0	16/09	108.0	02/10	197.0	150.0	200.0	231.0	193.7	202.3	197.8	194.2
Orthophosphate	mg/l P	23	1.914	4.300	24/09	0.750	16/01	1.81	0.50	1.60	4.00	1.07	1.53	2.59	2.10
Silica	mg/l SiO_2	14	10.48	13.80	25/07	3.800	24/05	10.74	4.00	11.15	15.50	9.85	7.04	11.41	13.09
Sulphate	mg/l SO_4	11	201.82	280.00	04/09	138.0	21/01	195.9	97.1	197.0	266.0	167.4	195.8	219.6	194.0
Calcium	mg/l Ca	9	116.7	128.0	18/01	74.0	02/10	121.3	88.0	125.0	140.0	119.4	117.7	123.5	121.5
Magnesium	mg/l Mg	9	29.71	42.50	04/09	17.00	02/10	28.0	15.6	27.0	39.0	24.5	28.7	30.9	27.9
Potassium	mg/l K	11	9.86	15.50	04/09	6.60	14/03	9.9	6.1	9.0	14.5	7.3	10.2	12.0	10.5
Sodium	mg/l Na	11	73.2	110.0	04/09	40.0	14/03	56.4	21.9	55.0	100.0	42.5	53.5	70.2	61.8

Aire at Fleet Weir 1991

Harmonised monitoring station number : 04 005
Measuring authority : NRA-Y NGR : 44 (SE) 381 285

Flow measurement station : 027080 - Fleet Weir
C.A.(km²) : 865.0 NGR : 44 (SE) 381 295

Determinand	Units	1991						Period of record: 1975 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Flow	m^3s^{-1}	365	16.2	128.7	21/12	4.1	12/9								
Temperature	°C	46	11.8	20.1	11/07	2.4	21/11	12.7	5.0	12.0	21.0	7.3	14.4	17.8	10.4
pH	pH units	48	7.5	7.7	21/01	7.1	29/10	7.5	7.2	7.5	7.8	7.6	7.5	7.4	7.5
Conductivity	µS/cm	48	851	2310	13/02	252	02/01	696	389	661	1091	657	701	780	626
Suspended solids	mg/l	48	24.8	137.0	02/01	7.0	20/08	27.7	7.5	16.5	85.0	31.1	25.7	23.8	32.1
Dissolved oxygen	mg/l O	45	7.58	12.90	27/03	3.20	01/08	7.5	2.5	7.8	11.6	10.3	6.6	5.1	8.5
BOD (inhibited)	mg/l O	48	7.5	13.4	08/03	1.8	28/08	8.1	3.9	7.2	14.2	7.9	8.4	8.6	7.8
Ammoniacal nitrogen	mg/l N	48	1.546	2.890	06/06	0.170	03/04	2.33	0.43	1.67	5.15	2.05	2.36	2.58	1.88
Nitrite	mg/l N	48 (2)	0.224	0.510	28/05	0.010	02/01	0.36	0.06	0.28	0.89	0.16	0.42	0.56	0.26
Nitrate	mg/l N	48	6.49	11.79	29/05	1.62	14/03	5.1	2.6	4.7	8.2	4.2	5.4	5.8	4.6
Chloride	mg/l Cl	48	91.7	201.0	13/02	31.8	03/04	82.5	35.8	74.0	154.0	81.9	84.2	91.9	70.9
Total alkalinity	mg/l $CaCO_3$	48	137.9	203.0	19/02	73.0	02/01	122.0	74.2	124.9	165.0	112.7	123.6	133.6	116.9
Orthophosphate	mg/l P	48	1.257	2.670	12/09	0.140	25/02	1.38	0.17	1.19	3.50	0.87	1.52	2.01	1.06
Calcium	mg/l Ca	46	60.0	89.0	19/02	36.1	02/01	61.0	44.9	60.1	74.5	59.4	60.9	61.1	60.9
Magnesium	mg/l Mg	46	10.40	23.42	17/04	3.16	15/01	13.0	5.1	12.4	20.9	12.7	13.4	14.8	11.4

Derwent at Loftsome Bridge 1991

Harmonised monitoring station number : 04 014
Measuring authority : NRA-Y NGR : 44 (SE) 707 302

Flow measurement station : 027041 - Buttercrambe
C.A.(km²) : 1586.0 NGR : 44 (SE) 731 587

Determinand	Units	1991						Period of record: 1975 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	22	12.3	21.7	11/07	5.6	21/01	10.4	3.0	10.0	19.5	5.2	12.8	16.7	.7.9
pH	pH units	36	7.7	8.3	17/06	7.1	13/11	7.9	7.5	7.9	8.3	7.8	8.0	7.9	7.8
Conductivity	µS/cm	30	612	790	21/08	283	08/09	523	366	527	630	524	515	528	521
Suspended solids	mg/l	36 (2)	6.2	19.0	09/01	1.0	11/06	26.7	3.2	12.3	83.9	34.9	19.2	10.7	30.7
Dissolved oxygen	mg/l O	21	9.87	12.20	26/03	7.00	18/10	10.7	8.6	10.7	12.6	11.8	10.6	9.4	10.6
BOD (inhibited)	mg/l O	36 (1)	1.9	3.1	05/06	0.5	21/08	1.7	0.7	1.5	3.1	1.7	2.0	1.4	1.7
Ammoniacal nitrogen	mg/l N	35 (13)	0.107	0.400	13/12	0.010	05/06	0.11	0.01	0.09	0.25	0.14	0.09	0.08	0.11
Nitrate	mg/l N	29	3.31	6.98	11/03	1.92	02/08	4.2	2.4	4.0	7.0	5.3	4.4	3.3	4.1
Chloride	mg/l Cl	35	36.7	54.2	09/01	27.0	13/11	31.5	22.5	30.0	41.0	34.5	29.9	30.1	31.6
Total alkalinity	mg/l $CaCO_3$	29	169.1	223.0	25/09	88.0	13/11	147.6	104.0	153.0	174.0	146.2	152.5	150.0	141.6
Orthophosphate	mg/l P	28 (7)	0.112	0.300	07/10	0.030	21/01	0.10	0.01	0.09	0.24	0.07	0.08	0.13	0.11
Silica	mg/l SiO_2	14	5.80	8.80	02/12	2.100	24/05	6.29	3.00	6.28	9.02	7.01	5.04	6.24	6.72
Sulphate	mg/l SO_4	16	96.26	124.00	18/10	57.00	21/01	79.9	44.9	80.0	101.9	76.7	80.6	82.2	78.3
Calcium	mg/l Ca	28	97.6	113.0	11/06	68.0	27/11	91.4	65.0	91.4	106.0	100.5	89.7	86.1	89.6
Magnesium	mg/l Mg	28	6.49	25.61	15/04	0.97	11/07	9.8	4.4	8.8	19.6	11.9	9.4	9.0	9.6

Nene at Wansford 1991

Harmonised monitoring station number : 05 511
Measuring authority : NRA-A NGR : 52 (TL) 082 996

Flow measurement station : 032001 - Orton
C.A.(km²) : 1634.3 NGR : 52 (TL) 166 972

Determinand	Units	1991						Period of record: 1974 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	48	11.0	21.0	09/07	0.2	30/01	11.5	3.0	11.3	20.5	5.5	13.8	17.8	8.2
pH	pH units	48	8.1	8.7	10/04	7.8	03/07	8.1	7.7	8.0	8.8	7.9	8.3	8.2	7.9
Conductivity	µS/cm	48	1060	1317	20/02	821	07/10	949	720	939	1200	907	926	985	978
Suspended solids	mg/l	24 (4)	22.1	264.0	28/02	5.0	07/08	22.0	4.0	13.2	63.7	28.9	22.8	13.9	18.6
Dissolved oxygen	mg/l O	47	10.37	14.90	10/04	6.50	31/07	10.6	7.9	10.6	13.1	11.9	10.8	9.1	10.8
BOD (inhibited)	mg/l O	48 (2)	2.9	8.3	22/04	1.0	07/08	3.7	1.2	2.9	8.8	3.2	5.9	3.2	2.5
Ammoniacal nitrogen	mg/l N	48 (14)	0.158	1.244	20/02	0.023	10/04	0.35	0.04	0.17	1.04	0.66	0.18	0.11	0.52
Nitrite	mg/l N	24	0.099	0.211	04/11	0.026	21/08	0.10	0.03	0.10	0.20	0.09	0.12	0.08	0.13
Nitrate	mg/l N	48	9.99	18.07	28/02	0.42	11/02	9.5	5.4	9.1	15.1	12.0	9.2	6.9	10.1
Chloride	mg/l Cl	48	98.2	164.9	20/02	75.3	07/10	73.7	43.0	72.0	109.2	64.7	69.2	84.1	77.2
Total alkalinity	mg/l $CaCO_3$	24	176.1	220.0	11/02	125.0	14/01	207.3	170.0	210.0	235.1	206.1	208.7	209.8	205.1
Silica	mg/l SiO_2	24 (1)	5.70	10.75	17/12	0.200	15/05	5.88	0.17	6.10	9.35	6.95	3.11	4.76	7.95
Calcium	mg/l Ca	24	186.26	242.40	23/09	141.6	28/02	167.6	106.0	167.0	229.0	155.6	165.5	192.9	179.1
Magnesium	mg/l Mg	12	126.6	156.0	11/02	92.9	07/10	128.4	87.0	139.5	155.0	128.4	140.9	130.4	130.6
Sulphate	mg/l SO_4	12	10.45	13.05	11/02	7.72	07/10	11.0	7.9	11.4	13.2	10.5	11.1	11.9	10.8
Potassium	mg/l K	12	11.17	16.50	04/11	6.20	11/03	10.5	5.3	9.8	19.1	7.7	10.5	12.9	11.3
Sodium	mg/l Na	12	65.9	91.6	02/09	42.4	14/01	53.2	22.2	49.7	95.3	41.3	50.8	65.1	59.9

Bure at Horstead Mill 1991

Harmonised monitoring station number : 05 722
Measuring authority : NRA-A NGR : 63 (TG) 267 198

Flow measurement station : 034003 - Ingworth
C.A.(km^2) : 164.7 NGR : 63 (TG) 192 296

Determinand	Units	1991						Period of record: 1975 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	49	11.0	22.0	08/07	2.0	13/12	10.6	3.5	10.0	19.5	6.0	12.6	16.8	8.4
pH	pH units	49	8.0	8.4	08/07	7.5	25/11	7.8	7.4	7.8	8.2	7.7	7.8	7.9	7.7
Conductivity	µS/cm	49	799	931	14/01	712	19/08	736	625	740	835	750	709	726	753
BOD (inhibited)	mg/l O	49 (6)	1.6	2.8	28/05	1.0	15/07	1.7	0.7	1.6	3.1	1.8	2.2	1.7	1.3
Ammoniacal nitrogen	mg/l N	49 (21)	0.044	0.137	11/02	0.023	25/02	0.14	0.01	0.09	0.47	0.23	0.10	0.09	0.14
Nitrite	mg/l N	24	0.045	0.070	29/07	0.026	06/03	0.07	0.01	0.06	0.13	0.07	0.06	0.08	0.07
Nitrate	mg/l N	49	5.36	7.99	07/01	2.84	15/07	5.8	3.4	5.5	8.8	7.6	5.8	4.5	5.8
Chloride	mg/l Cl	49	60.9	72.0	25/11	54.1	05/08	58.2	47.0	57.0	75.4	60.7	55.7	56.4	60.5
Total alkalinity	mg/l $CaCO_3$	24	199.7	215.0	04/02	185.0	08/04	220.1	179.9	216.1	255.1	221.2	208.0	217.1	237.3
Silica	mg/l SiO_2	24 (1)	7.50	13.46	09/12	0.200	20/05	7.33	3.07	8.12	12.30	8.75	4.81	6.41	10.36
Sulphate	mg/l SO_4	24	100.95	154.10	25/11	56.01	21/01	88.6	56.9	79.9	112.0	85.6	83.2	83.8	87.7
Calcium	mg/l Ca	12	125.7	157.4	07/01	110.0	27/08	118.2	95.3	117.1	142.0	120.5	117.2	114.4	122.1
Magnesium	mg/l Mg	12	7.73	9.30	04/02	5.43	30/09	7.5	4.9	7.6	9.4	7.6	7.7	7.2	7.3
Potassium	mg/l K	12	3.66	4.47	28/10	2.90	01/07	4.0	2.5	4.0	5.6	4.1	3.7	4.0	4.5
Sodium	mg/l Na	12	28.3	30.0	06/03	23.0	25/11	30.9	20.0	27.5	47.0	29.7	29.3	29.4	29.6

Stour at Langham 1991

Harmonised monitoring station number : 05 810
Measuring authority : NRA-A NGR : 62 (TM) 026 345

Flow measurement station : 036006 - Langham
C.A.(km^2) : 578.0 NGR : 62 (TM) 020 344

Determinand	Units	1991						Period of record: 1974 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	38	11.9	22.0	23/07	2.0	04/02	11.2	3.0	11.0	20.0	5.1	13.6	17.1	8.3
pH	pH units	42	8.3	9.0	22/04	7.9	25/11	8.2	7.8	8.2	8.9	8.1	8.4	8.3	8.1
Conductivity	µS/cm	42	918	1111	18/02	799	22/04	903	730	910	1100	922	876	885	944
Suspended solids	mg/l	21 (4)	16.3	88.0	19/11	2.5	04/02	16.1	3.0	9.9	47.0	17.7	19.5	10.9	16.0
Dissolved oxygen	mg/l O	42	10.27	13.60	21/01	4.90	01/07	10.8	7.6	10.9	14.0	12.2	11.5	9.3	10.5
BOD (inhibited)	mg/l O	41 (1)	3.4	11.2	22/04	1.0	31/07	3.2	1.0	2.3	9.4	2.3	5.5	2.5	2.2
Tot. diss. org. carbon	mg/l O	17	6.3	7.9	27/11	4.5	28/10	6.2	4.2	6.3	10.4	5.4	7.8	6.8	6.1
Ammoniacal nitrogen	mg/l N	42 (11)	0.071	0.404	18/02	0.023	18/03	0.12	0.02	0.08	0.38	0.19	0.09	0.07	0.14
Nitrite	mg/l N	19	0.053	0.127	27/11	0.014	28/10	0.07	0.02	0.06	0.16	0.07	0.09	0.04	0.08
Nitrate	mg/l N	42	5.64	14.10	26/02	2.66	31/07	8.0	2.2	7.3	16.0	12.2	7.7	4.3	8.4
Chloride	mg/l Cl	42	90.2	210.6	26/03	68.1	01/07	67.7	39.1	65.1	99.8	55.8	62.9	75.4	74.9
Total alkalinity	mg/l $CaCO_3$	19	244.7	280.0	29/07	215.0	07/05	246.3	195.0	250.0	283.0	244.2	243.3	250.2	251.1
Silica	mg/l SiO_2	19 (1)	7.72	13.90	09/01	0.260	10/04	7.72	0.22	7.95	13.00	7.55	4.18	8.34	10.26
Sulphate	mg/l SO_4	19 (1)	93.67	140.90	08/04	10.00	09/01	104.7	70.0	97.1	136.0	112.3	110.7	96.1	103.8
Calcium	mg/l Ca	12	129.7	150.0	08/04	112.0	29/07	134.5	95.0	137.0	166.0	147.3	133.5	120.0	139.1
Magnesium	mg/l Mg	12	7.38	10.00	30/09	5.30	25/11	8.9	5.3	8.4	20.0	7.7	8.7	9.8	8.9
Potassium	mg/l K	12	8.79	9.90	30/09	6.90	25/11	7.5	3.5	7.3	12.0	5.8	7.0	7.7	9.4
Sodium	mg/l Na	12	50.8	59.0	28/08	45.0	07/05	43.5	20.0	42.0	70.0	32.7	39.9	50.5	50.1

Thames at Teddington Weir 1991

Harmonised monitoring station number : 06 010
Measuring authority : NRA-T NGR : 51 (TQ) 171 714

Flow measurement station : 039001 - Kingston
C.A.(km^2) : 9948.0 NGR : 51 (TQ) 177 698

Determinand	Units	1991						Period of record: 1974 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	12.6	22.0	11/07	4.0	01/02	12.2	4.0	12.0	21.0	6.1	14.0	18.4	10.0
pH	pH units	23	7.9	8.6	22/04	7.1	27/06	8.0	7.5	8.0	8.7	7.9	8.3	8.0	7.8
Conductivity	ms/cm	11	721	1343	12/02	576	18/06	606	485	585	717	602	585	626	613
Suspended solids	mg/l	23	11.8	36.0	12/04	2.4	10/09	20.9	4.5	13.2	68.6	28.2	21.8	12.5	22.7
Dissolved oxygen	mg/l O	9	10.08	12.00	16/12	7.50	16/07	10.0	6.7	10.0	13.1	11.3	10.6	8.6	9.7
BOD (inhibited)	mg/l O	21 (3)	3.1	7.7	22/04	1.3	10/12	2.9	1.1	2.3	6.6	2.2	4.3	2.9	2.2
Ammoniacal nitrogen	mg/l N	23 (7)	0.390	1.200	12/02	0.050	08/01	0.33	0.01	0.22	1.00	0.34	0.20	0.36	0.41
Nitrite	mg/l N	10	0.163	0.709	08/01	0.040	09/12	0.12	0.0	0.1	0.3	0.11	0.12	0.11	0.14
Nitrate	mg/l N	10	8.17	12.10	13/03	5.80	16/07	7.3	5.4	7.1	10.0	8.2	6.5	6.6	7.7
Chloride	mg/l Cl	21	61.8	76.0	12/02	50.0	27/06	43.5	30.0	41.0	64.0	40.2	39.4	47.0	45.2
Total alkalinity	mg/l $CaCO_3$	9	174.0	189.0	14/05	147.0	08/01	186.8	145.10	190.00	214.00	185.7	199.3	189.7	178.0
Orthophosphate	mg/l P	21 (1)	1.576	2.370	10/09	0.016	22/01	1.50	0.40	1.27	3.80	0.84	1.14	2.18	1.68
Sulphate	mg/l SO_2	9	73.56	79.00	14/05	65.00	16/07	68.4	47.0	62.8	76.0	63.3	61.7	63.2	69.0
Calcium	mg/l Ca	8	100.6	115.0	12/02	81.0	13/03	98.4	77.0	100.0	116.0	103.2	103.0	95.4	94.5
Potassium	mg/l K	8	8.40	10.50	09/12	5.60	13/03	7.0	4.4	6.5	10.5	6.2	6.0	7.9	7.4
Sodium	mg/l Na	8	46.7	58.0	23/09	28.0	13/03	33.5	19.7	29.8	55.2	26.7	28.8	40.4	35.4

Lee at Waterhall 1991

Harmonised monitoring station number : 06 101
Measuring authority : NRA-T NGR : 52 (TL) 299 099

Flow measurement station : 038018 - Water Hall
C.A.(km^2) : 150.0 NGR : 52 (TL) 299 099

Determinand	Units	1991						Period of record: 1975 - 1990							
		Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	12.1	21.0	12/08	3.0	13/02	12.0	4.5	12.0	20.0	6.9	13.7	16.9	9.3
pH	pH units	25	7.8	8.2	26/03	7.5	24/05	8.0	7.6	8.0	8.4	8.0	8.1	8.1	7.8
Conductivity	µS/cm	13	882	1056	06/12	690	31/01	814	594	802	1133	867	798	779	860
Suspended solids	mg/l	13	13.1	58.0	06/03	2.0	31/01	14.4	3.0	10.0	46.5	15.5	13.1	16.9	14.1
Dissolved oxygen	mg/l O	24	9.67	12.00	13/02	7.00	19/07	10.4	8.0	10.3	13.0	11.4	10.4	9.5	10.2
BOD (inhibited)	mg/l O	19 (6)	2.4	4.0	13/02	2.0	12/03	2.6	1.3	2.4	4.4	2.6	3.0	2.2	2.5
Tot. diss. org. carbon	mg/l O	8	19.6	40.5	03/01	11.5	06/03	18.1	3.0	12.4	52.8	15.2	17.5	9.4	21.8
Nitrite	mg/l N	10	0.155	0.400	06/03	0.061	03/01	0.17	0.05	0.11	0.29	0.11	0.12	0.31	0.18
Nitrate	mg/l N	8	9.03	11.90	26/03	6.30	12/08	12.4	7.7	11.1	16.3	12.6	12.0	11.9	13.7
Chloride	mg/l Cl	24	102.3	156.0	13/02	64.0	18/01	77.2	46.1	68.0	111.9	85.6	67.0	78.4	79.8
Total alkalinity	mg/l $CaCO_3$	14	223.9	278.0	16/09	149.0	22/11	210.7	130.9	222.5	254.0	203.2	218.0	212.4	203.0
Orthophosphate	mg/l P	23	3.816	6.470	13/10	0.050	18/01	2.48	1.12	2.42	4.24	2.20	2.42	2.66	2.71
Sulphate	mg/l SO_4	11	109.18	243.00	06/03	80.00	12/08	79.9	58.0	79.0	110.0	78.4	79.9	76.9	86.4
Calcium	mg/l Ca	11	140.9	353.0	06/03	96.0	03/01	117.6	93.1	117.9	140.0	118.5	119.4	114.4	115.7
Magnesium	mg/l Mg	11 (1)	6.30	22.40	06/03	3.60	19/07	4.1	3.1	3.9	4.9	4.2	4.0	4.3	3.9
Potassium	mg/l K	10	12.59	21.20	13/10	8.70	06/03	8.8	5.9	8.3	14.2	7.9	7.6	9.1	10.4
Sodium	mg/l Na	11	98.8	131.7	06/03	74.1	03/01	65.2	37.0	62.0	113.6	63.9	64.1	68.4	65.6

Great Stour at Bretts Bailey Bridge 1991

Harmonised monitoring station number : 07 003
Measuring authority : NRA-S NGR : 61 (TR) 187 603

Flow measurement station : 040011 - Horton
C.A.(km²) : 345.0 NGR : 61 (TR) 116 554

		1991						Period of record: 1974 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	25	10.3	18.0	29/07	3.0	05/02	12.1	4.5	12.0	18.5	7.2	13.5	16.7	9.9
pH	pH units	24	8.0	8.3	13/08	6.9	29/07	7.8	7.4	7.8	8.3	7.7	8.0	7.9	7.7
Suspended solids	mg/l	28	11.7	35.0	24/05	1.5	20/06	12.9	2.0	6.9	44.2	23.7	7.6	6.6	15.1
BOD (inhibited)	mg/l O	24 (1)	2.4	4.9	24/05	1.0	29/07	2.6	1.1	2.5	5.1	3.0	2.9	2.2	2.4
Tot. diss. org. carbon	mg/l O	13	14.8	25.1	13/11	9.9	16/12	6.1	3.1	4.3	13.9	4.2	4.4	5.7	7.4
Ammoniacal nitrogen	mg/l N	28 (5)	0.154	0.880	10/12	0.030	22/04	0.32	0.01	0.14	1.24	0.50	0.33	0.11	0.37
Nitrite	mg/l N	28	0.092	0.280	01/11	0.030	05/02	0.12	0.03	0.08	0.30	0.10	0.12	0.12	0.13
Nitrate	mg/l N	28	8.31	13.30	13/11	4.44	04/07	5.9	3.9	5.7	8.7	6.8	5.4	4.8	6.4
Chloride	mg/l Cl	25	71.9	115.0	16/10	42.0	04/07	52.2	37.0	49.0	76.0	54.2	49.8	50.6	55.8
Total alkalinity	mg/l $CaCO_3$	24	218.0	245.0	24/05	155.0	18/02	215.8	156.0	224.5	247.0	199.0	221.5	224.4	211.7
Orthophosphate	mg/l P	28	1.447	3.400	16/10	0.720	04/01	1.03	0.33	0.91	2.10	0.71	1.00	1.27	1.12

Itchen at Gatersmill 1991

Harmonised monitoring station number : 07 013
Measuring authority : NRA-S NGR : 41 (SU) 434 156

Flow measurement station : 042010 - Highbridge
C.A.(km²) : 360.0 NGR : 41 (SU) 467 213

		1991						Period of record: 1980 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	25	11.2	17.0	10/07	5.0	04/02	11.4	5.0	11.0	18.0	7.7	12.9	16.0	10.0
pH	pH units	27	8.1	8.4	22/04	7.8	10/01	8.1	7.7	8.1	8.4	8.0	8.1	8.2	8.0
Suspended solids	mg/l	37	10.4	62.0	10/01	1.0	02/10	11.5	2.3	7.1	34.2	28.4	9.6	4.8	10.2
BOD (inhibited)	mg/l O	23	1.8	3.2	06/03	1.0	10/07	1.9	0.9	1.9	3.3	2.1	2.2	1.5	1.9
Tot. diss. org. carbon	mg/l O	16	6.9	13.3	10/01	3.7	22/04	7.3	4.0	6.7	13.6	7.0	6.9	7.0	8.0
Ammoniacal nitrogen	mg/l N	35	0.085	0.210	17/06	0.020	06/03	0.11	0.01	0.09	0.28	0.15	0.08	0.06	0.12
Nitrite	mg/l N	35	0.074	0.330	04/11	0.030	11/04	0.06	0.03	0.05	0.11	0.04	0.05	0.06	0.07
Nitrate	mg/l N	35	5.49	9.60	04/11	4.06	25/07	5.1	3.9	5.2	6.2	5.5	5.2	4.6	5.1
Chloride	mg/l Cl	26	22.8	31.1	10/01	18.0	10/10	21.5	17.7	21.0	26.7	22.0	20.8	20.8	22.2
Total alkalinity	mg/l $CaCO_3$	22	234.6	258.0	04/02	168.0	10/01	235.5	200.0	235.0	259.9	240.4	231.4	233.9	231.7
Orthophosphate	mg/l P	34	0.392	0.800	28/08	0.150	10/10	0.41	0.14	0.40	0.74	0.36	0.36	0.44	0.50
Silica	mg/l SiO_2	20	9.86	12.90	04/12	3.530	22/04	10.24	5.43	10.70	12.50	10.43	7.65	10.96	11.65

Stour at Hurn Court School 1991

Harmonised monitoring station number : 08 200
Measuring authority : NRA-W NGR : 40 (SZ) 122 955

Flow measurement station : 043007 - Throop Mill
C.A.(km²) : 1073.0 NGR : 40 (SZ) 113 958

		1991						Period of record: 1975 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	31	10.4	17.6	02/08	4.0	14/01	11.1	4.0	10.8	19.0	6.8	12.7	16.9	8.4
pH	pH units	55	8.0	8.3	29/04	7.0	16/05	7.9	7.5	7.9	8.5	7.9	8.1	8.0	7.8
Suspended solids	mg/l	55 (3)	10.3	43.0	11/03	2.0	21/06	16.0	3.0	8.9	54.0	18.6	10.3	9.6	21.4
Dissolved oxygen	mg/l O	28	10.59	13.80	22/01	8.00	18/09	10.5	8.1	10.2	13.2	10.6	11.3	9.4	10.7
BOD (inhibited)	mg/l O	54 (2)	2.4	6.5	06/06	1.0	22/07	2.9	1.1	2.3	7.3	2.4	4.0	2.0	2.8
Ammoniacal nitrogen	mg/l N	55 (17)	0.071	0.230	07/04	0.020	14/01	0.18	0.02	0.14	0.40	0.22	0.16	0.12	0.21
Nitrite	mg/l N	55 (1)	0.083	0.380	19/06	0.010	19/03	0.09	0.03	0.08	0.19	0.06	0.11	0.11	0.09
Nitrate	mg/l N	55	6.70	13.80	09/01	4.30	18/09	5.5	2.7	5.4	8.5	6.4	5.2	4.4	6.2
Chloride	mg/l Cl	54	32.5	74.0	22/05	27.0	19/03	27.1	20.0	28.0	38.0	25.6	25.8	28.7	29.9
Orthophosphate	mg/l P	54 (1)	0.346	0.840	10/09	0.030	29/08	0.41	0.10	0.36	1.03	0.25	0.30	0.69	0.51
Magnesium	mg/l Mg	16	3.21	4.28	22/01	2.03	06/06	4.1	2.7	3.7	6.0	4.1	4.1	3.4	4.3
Potassium	mg/l K	17	4.36	7.70	02/07	1.80	06/06	5.6	2.9	5.1	9.1	4.8	4.3	5.1	7.0

Axe at Whitford Road Bridge 1991

Harmonised monitoring station number : 09 001
Measuring authority : NRA-SW NGR : 30 (SY) 262 953

Flow measurement station : 045004 - Whitford
C.A.(km²) : 288.5 NGR : 30 (SY) 262 953

		1991						Period of record: 1974 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	27	9.8	18.0	01/08	1.0	12/02	10.9	4.0	10.5	18.5	5.9	12.3	16.0	8.9
pH	pH units	29	8.0	8.8	15/05	7.1	03/01	7.9	7.4	8.0	8.5	7.8	8.1	8.0	7.8
Conductivity	µS/cm	29	386	455	12/02	334	25/06	385	304	392	452	372	390	412	376
Suspended solids	mg/l	29	7.2	30.0	25/06	2.0	14/08	14.1	2.1	5.9	45.0	17.2	9.7	5.8	23.4
Dissolved oxygen	mg/l O	27	11.36	14.60	15/05	6.70	14/08	10.9	8.3	10.8	13.5	12.0	11.2	9.8	10.6
BOD (inhibited)	mg/l O	29 (4)	1.8	3.0	15/05	0.8	18/01	2.1	0.8	1.7	4.4	2.1	2.2	1.7	2.2
Tot. diss. org. carbon	mg/l O	29	9.9	23.7	25/06	2.4	12/02	12.9	4.2	11.2	25.6	11.4	12.4	11.4	15.7
Ammoniacal nitrogen	mg/l N	29 (2)	0.075	0.220	18/01	0.010	26/04	0.10	0.01	0.06	0.31	0.16	0.08	0.06	0.12
Nitrite	mg/l N	29 (1)	0.052	0.169	15/07	0.005	26/04	0.05	0.02	0.04	0.10	0.04	0.05	0.03	0.05
Nitrate	mg/l N	29	4.75	10.00	03/01	3.00	29/08	3.8	2.1	3.4	5.8	4.3	3.4	3.1	4.5
Chloride	mg/l Cl	29	29.5	46.2	12/02	22.5	25/06	23.5	19.0	23.0	30.5	24.3	21.4	23.4	24.6
Total alkalinity	mg/l $CaCO_3$	29	133.5	172.0	06/09	78.0	03/01	135.9	89.0	140.0	168.0	120.2	144.2	153.3	127.0
Orthophosphate	mg/l P	29 (1)	0.261	0.530	12/02	0.010	25/06	0.26	0.12	0.23	0.45	0.21	0.26	0.33	0.24
Silica	mg/l SiO_2	29	9.86	12.50	17/12	0.800	15/05	9.44	4.40	9.85	12.71	9.12	7.47	10.21	10.94
Sulphate	mg/l SO_4	29	35.85	53.70	19/11	12.00	25/06	33.6	23.4	34.2	42.1	31.9	32.2	35.0	34.8
Calcium	mg/l Ca	29	66.2	83.2	29/08	53.5	03/01	62.4	44.0	63.5	77.0	57.3	63.8	69.7	59.4
Magnesium	mg/l Mg	29	6.56	8.20	01/08	5.10	25/06	6.1	4.7	6.0	7.2	6.1	6.0	6.1	6.1
Potassium	mg/l K	29	3.86	5.60	01/10	2.50	15/05	4.2	3.0	3.9	6.6	4.2	3.8	4.2	4.7
Sodium	mg/l Na	29	15.9	21.8	06/09	12.3	25/06	13.0	10.3	12.7	17.1	13.1	12.7	13.6	13.0

Tamar at Gunnislake Newbridge 1991

Harmonised monitoring station number : 09 017
Measuring authority : NRA-SW NGR : 20 (SX) 433 722

Flow measurement station : 047001 - Gunnislake
C.A.(km²) : 916.9 NGR : 20 (SX) 426 725

		1991						Period of record: 1975 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	26	10.7	17.5	05/09	1.5	12/12	11.3	4.9	11.0	19.0	7.0	12.6	16.3	9.5
pH	pH units	25	7.5	7.7	12/12	7.2	23/01	7.4	6.8	7.4	8.1	7.2	7.5	7.5	7.2
Conductivity	µS/cm	25	198	234	11/04	163	05/03	181	140	180	233	168	185	199	177
Suspended solids	mg/l	25 (1)	14.7	127.0	05/03	1.0	29/08	24.9	2.0	6.9	112.7	31.8	11.9	12.5	41.1
Dissolved oxygen	mg/l O	25	10.86	16.20	23/01	8.30	05/09	10.6	8.7	10.7	12.5	11.7	10.5	9.5	10.8
BOD (inhibited)	mg/l O	25 (2)	1.6	4.5	09/10	0.7	14/03	2.1	0.8	2.0	4.8	2.2	2.1	1.9	2.5
Tot. diss. org. carbon	mg/l O	24	4.9	21.3	09/10	2.0	23/01	10.9	4.1	9.1	24.5	9.0	10.6	10.9	12.8
Ammoniacal nitrogen	mg/l N	25 (3)	0.058	0.260	05/03	0.010	15/04	0.08	0.01	0.05	0.24	0.10	0.06	0.06	0.10
Nitrite	mg/l N	25 (1)	0.022	0.070	05/03	0.010	15/04	0.03	0.01	0.02	0.06	0.03	0.02	0.02	0.03
Nitrate	mg/l N	24	2.85	4.10	23/01	0.40	03/06	2.6	1.5	2.5	4.1	3.2	2.6	2.1	2.8
Chloride	mg/l Cl	25	25.6	30.8	09/10	22.0	12/12	22.7	18.0	22.0	29.0	23.3	21.7	22.8	23.5
Total alkalinity	mg/l $CaCO_3$	25	32.9	43.0	07/08	23.0	04/02	36.4	22.9	35.0	53.0	30.4	40.0	42.8	33.4
Orthophosphate	mg/l P	25	0.067	0.120	05/03	0.020	14/03	0.09	0.03	0.07	0.16	0.06	0.08	0.11	0.09
Silica	mg/l SiO_2	25	4.69	6.40	04/12	2.100	29/08	4.79	1.30	5.10	6.70	5.07	3.88	4.57	5.60
Sulphate	mg/l SO_4	25	15.80	22.00	18/06	11.20	03/01	15.6	11.0	15.6	21.0	14.9	16.6	17.1	15.3
Calcium	mg/l Ca	25	17.7	21.0	12/11	14.0	05/03	17.3	14.0	17.5	22.0	16.7	17.4	18.5	16.9
Magnesium	mg/l Mg	25	4.76	5.90	09/10	3.40	05/03	4.8	3.4	4.7	6.5	4.3	5.0	5.4	4.6
Potassium	mg/l K	25	2.86	5.40	09/10	2.00	23/01	3.2	1.9	3.0	5.3	2.7	2.9	4.0	3.5
Sodium	mg/l Na	25	13.5	16.4	17/09	10.0	14/03	12.4	9.4	12.2	15.7	12.2	12.4	13.3	12.3

Exe at Thorverton Road Bridge 1991

Harmonised monitoring station number : 09 036
Measuring authority : NRA-SW NGR : 21 (SS) 936 016

Flow measurement station : 045001 - Thorverton
C.A.(km²) : 600.9 NGR : 21 (SS) 936 016

		1991						Period of record: 1974 - 1990							
Determinand	Units	Samples *	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	28	10.1	18.5	06/09	1.0	11/02	11.0	4.5	10.5	19.0	6.1	12.5	16.5	9.1
pH	pH units	29	7.5	7.8	28/11	7.0	11/01	7.5	6.9	7.5	8.1	7.4	7.7	7.6	7.4
Conductivity	µS/cm	29	171	238	21/06	132	02/08	172	123	164	244	159	185	188	160
Suspended solids	mg/l	29	10.2	68.0	09/10	1.0	22/09	12.1	2.0	5.1	44.0	15.5	8.2	6.6	12.6
Dissolved oxygen	mg/l O	28	10.82	14.60	12/12	8.60	14/08	11.0	8.6	11.2	13.1	12.3	10.9	9.7	11.3
BOD (inhibited)	mg/l O	29	1.9	4.1	30/10	0.6	14/08	1.8	0.8	1.6	3.3	1.7	2.1	1.6	1.5
Tot. diss. org. carbon	mg/l O	25	6.2	15.1	30/10	1.8	17/01	7.2	2.6	6.8	13.6	5.7	7.6	8.0	7.1
Ammoniacal nitrogen	mg/l N	29 (2)	0.051	0.113	09/10	0.010	09/04	0.07	0.01	0.05	0.17	0.08	0.07	0.05	0.05
Nitrite	mg/l N	29 (1)	0.026	0.063	21/06	0.001	07/08	0.02	0.01	0.02	0.05	0.02	0.04	0.03	0.02
Nitrate	mg/l N	29	2.75	7.10	11/02	1.70	25/06	2.4	1.4	2.3	3.7	2.9	2.5	2.0	2.4
Chloride	mg/l Cl	29	19.6	26.8	17/01	14.6	02/08	17.8	13.0	17.0	27.0	17.5	18.0	19.0	16.7
Total alkalinity	mg/l $CaCO_3$	29	35.9	52.0	10/06	23.0	11/01	40.3	23.0	38.0	65.1	33.7	46.0	47.5	35.7
Orthophosphate	mg/l P	29	0.098	0.270	25/06	0.040	11/01	0.11	0.03	0.08	0.30	0.07	0.12	0.19	0.08
Silica	mg/l SiO_2	29	4.08	5.60	05/12	1.300	13/05	3.97	1.60	4.20	5.30	4.54	3.09	3.47	4.61
Sulphate	mg/l SO_4	29	15.11	40.20	22/09	7.30	07/08	13.7	9.4	13.1	23.3	12.4	14.9	14.8	13.5
Calcium	mg/l Ca	29	16.5	22.5	10/06	12.5	01/10	16.7	11.6	16.1	24.0	16.0	18.4	17.7	15.0
Magnesium	mg/l Mg	29	3.98	5.20	10/06	3.10	01/10	4.1	2.9	4.0	5.4	3.8	4.5	4.4	3.7
Potassium	mg/l K	29	2.00	3.40	27/03	1.00	04/03	2.1	1.3	1.9	3.6	1.9	2.1	2.4	1.9
Sodium	mg/l Na	29	12.7	26.6	22/09	7.8	02/08	10.7	7.1	9.6	19.0	9.4	11.4	13.0	9.9

Dee at Overton 1991

Harmonised monitoring station number : 10 002
Measuring authority : NRA-WEL NGR : 33 (SJ) 354 427

Flow measurement station : 067015 - Manley Hall
C.A.(km²) : 1019.3 NGR : 33 (SJ) 348 415

		1991						Period of record: 1974 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	10	10.5	19.0	14/08	1.5	19/02	10.0	3.0	10.0	17.5	5.0	11.6	15.3	8.0
pH	pH units	9	7.2	7.5	03/05	6.9	04/04	7.2	6.5	7.2	7.8	7.1	7.3	7.3	7.2
Conductivity	µS/cm	9	168	238	19/02	90	04/04	172	99	165	270	157	214	174	148
Suspended solids	mg/l	9 (2)	15.7	65.0	11/11	1.0	19/02	9.1	1.0	3.2	35.0	11.2	6.7	6.6	10.7
Dissolved oxygen	mg/l O	10	11.11	13.20	19/02	9.30	02/07	11.1	9.1	11.1	13.2	12.4	10.7	9.8	11.6
BOD (inhibited)	mg/l O	9 (2)	1.8	2.7	04/04	0.9	16/09	1.2	0.5	1.1	2.5	1.1	1.5	1.2	1.2
Ammoniacal nitrogen	mg/l N	10 (1)	0.063	0.280	16/09	0.010	11/01	0.05	0.01	0.03	0.13	0.06	0.05	0.04	0.06
Nitrite	mg/l N	10	0.018	0.036	14/08	0.008	11/01	0.02	0.01	0.01	0.05	0.02	0.03	0.02	0.02
Orthophosphate	mg/l P	9 (2)	0.047	0.080	02/07	0.020	11/01	0.06	0.01	0.05	0.13	0.05	0.06	0.07	0.06

Taf at Clog-y-fran Bridge 1991

Harmonised monitoring station number : 10 027
Measuring authority : NRA-WEL NGR : 22 (SN) 238 161

Flow measurement station : 060003 - Clog-y-fran
C.A.(km²) : 217.3 NGR : 22 (SN) 238 160

		1991						Period of record: 1975 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	20	9.3	18.0	20/08	3.0	11/02	10.5	4.0	10.0	17.5	6.5	11.9	14.8	8.6
pH	pH units	20	7.4	7.9	13/05	6.4	11/02	7.4	6.9	7.4	7.9	7.3	7.5	7.5	7.2
Conductivity	µS/cm	11	177	211	17/06	147	11/11	169	115	158	248	145	179	200	151
Suspended solids	mg/l	20 (2)	14.8	67.0	08/03	3.0	08/05	16.4	1.9	6.2	60.0	26.1	8.3	10.9	21.0
Dissolved oxygen	mg/l O	20	10.65	13.10	11/02	9.30	01/11	10.3	7.5	10.5	12.7	10.8	10.6	9.3	10.5
BOD (inhibited)	mg/l O	20	1.8	3.8	21/02	0.7	15/04	1.8	0.8	1.6	3.6	1.9	2.0	1.6	1.6
Ammoniacal nitrogen	mg/l N	20 (1)	0.139	0.660	21/02	0.010	15/04	0.12	0.02	0.08	0.34	0.17	0.13	0.08	0.12
Nitrite	mg/l N	20	0.032	0.071	13/09	0.014	08/05	0.03	0.01	0.03	0.07	0.03	0.03	0.04	0.03
Orthophosphate	mg/l P	11 (1)	0.161	0.380	17/06	0.030	11/03	0.13	0.03	0.09	0.41	0.07	0.17	0.23	0.07

Carron at A890 Road Bridge 1991

Harmonised monitoring station number : 11 009
Measuring authority : HRPB NGR : 18 (NG) 938 425

Flow measurement station : 093001 - New Kelso
C.A.(km²) : 137.8 NGR : 18 (NG) 942 429

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1979 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	7.1	16.0	10/07	−0.1	02/05	8.5	2.5	8.4	15.3	3.8	11.1	13.0	7.1
pH	pH units	12	6.5	7.5	15/04	6.1	14/08	6.6	5.8	6.6	7.4	6.6	6.7	6.7	6.5
Conductivity	µS/cm	12	46	67	23/10	33	14/08	44	28	43	65	50	47	41	39
Suspended solids	mg/l	12 (3)	1.6	6.0	07/06	0.5	10/07	1.4	0.3	1.0	4.4	1.7	1.1	1.3	1.5
Dissolved oxygen	mg/l O	12	10.92	13.72	12/02	8.13	14/08	11.3	9.7	11.3	13.0	12.5	10.9	10.2	11.3
BOD (inhibited)	mg/l O	12	1.0	1.5	09/12	0.4	14/08	0.9	0.3	0.9	1.4	0.9	0.7	0.8	1.0
Ammoniacal nitrogen	mg/l N	12 (2)	0.008	0.026	12/02	0.002	07/03	0.01	0.00	0.01	0.03	0.01	0.01	0.01	0.01
Nitrite	mg/l N	12 (4)	0.001	0.002	10/07	0.001	17/01	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Nitrate	mg/l N	12	0.07	0.12	12/02	0.03	10/07	0.1	0.0	0.1	0.1	0.1	0.1	0.1	0.0
Chloride	mg/l Cl	11	10.5	16.7	23/10	5.2	14/08	10.4	5.9	9.6	18.2	14.0	10.6	8.1	9.1
Total alkalinity	mg/l $CaCO_3$	12	4.1	7.1	07/06	1.9	14/08	5.8	1.2	5.0	12.5	5.1	6.6	6.2	5.4

Spey at Fochabers 1991

Harmonised monitoring station number : 12 002
Measuring authority : NERPB NGR : 38 (NJ) 341 596

Flow measurement station : 008006 - Boat o Brig
C.A.(km²) : 2861.2 NGR : 38 (NJ) 318 518

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	7	8.4	16.5	13/08	2.5	06/02	9.6	2.0	11.0	18.0	3.5	10.1	15.1	6.4
pH	pH units	7	6.5	7.2	06/02	6.0	07/11	7.2	6.5	7.2	7.8	6.9	7.2	7.4	7.0
Conductivity	µS/cm	7	84	115	06/02	57	07/11	76	50	76	100	78	71	85	72
Suspended solids	mg/l	7 (1)	2.7	4.0	09/04	0.2	03/12	4.0	0.1	2.0	18.0	3.3	4.0	3.6	3.7
Dissolved oxygen	mg/l O	7	11.64	13.72	06/02	10.24	13/08	11.4	9.3	11.3	13.5	12.7	11.1	10.0	11.8
BOD (inhibited)	mg/l O	7	0.9	1.2	06/06	0.4	06/02	0.9	0.4	0.9	1.5	0.8	1.0	0.9	0.8
Ammoniacal nitrogen	mg/l N	7	0.026	0.051	13/08	0.011	07/11	0.04	0.00	0.02	0.11	0.02	0.04	0.04	0.03
Nitrite	mg/l N	7	0.006	0.009	13/08	0.003	06/02	0.01	0.00	0.01	0.01	0.01	0.01	0.01	0.01
Nitrate	mg/l N	7	0.31	0.58	06/02	0.15	07/11	0.3	0.2	0.3	0.6	0.4	0.3	0.3	0.3
Chloride	mg/l Cl	7	9.3	12.0	06/02	7.0	09/04	10.4	6.0	10.0	15.0	11.9	10.0	10.4	9.2
Total alkalinity	mg/l $CaCO_3$	7	17.4	28.0	13/08	8.0	07/11	25.2	14.0	25.0	35.0	22.6	24.1	29.2	25.9
Orthophosphate	mg/l P	7	0.013	0.025	13/08	0.007	09/04	0.02	0.00	0.01	0.08	0.02	0.02	0.03	0.02
Silica	mg/l SiO_2	7	5.62	7.96	06/02	3.700	07/11	5.80	3.66	5.73	7.53	5.21	4.80	5.55	6.14

Almond at Craigiehall 1991

Harmonised monitoring station number : 14 008
Measuring authority : FRPB NGR : 36 (NT) 165 752

Flow measurement station : 019001 - Craigiehall
C.A.(km²) : 369.0 NGR : 36 (NT) 165 752

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
pH	pH units	16	7.8	8.1	02/05	7.6	03/07	7.6	7.1	7.6	8.0	7.4	7.7	7.6	7.5
Conductivity	µS/cm	15	712	1500	12/02	375	03/04	610	320	600	900	512	705	669	522
Suspended solids	mg/l	15	14.3	38.0	02/10	3.0	06/02	20.7	3.0	10.0	62.9	34.3	10.0	13.6	26.2
Dissolved oxygen	mg/l O	13	9.35	11.90	02/05	5.70	29/08	9.1	5.3	9.5	12.1	11.2	9.0	7.3	9.6
BOD (inhibited)	mg/l O	16	6.8	44.4	02/10	2.7	06/02	3.3	1.6	2.8	6.7	3.2	3.7	3.1	3.1
Ammoniacal nitrogen	mg/l N	16	1.664	4.000	12/02	0.470	03/04	1.24	0.24	0.93	3.10	1.19	1.54	1.14	0.94
Nitrite	mg/l N	12	0.238	1.000	29/08	0.040	10/01	0.28	0.03	0.15	0.85	0.14	0.36	0.47	0.15
Nitrate	mg/l N	12	4.35	8.00	29/08	2.20	03/04	3.8	2.1	3.7	5.9	3.5	4.1	3.9	3.7
Total alkalinity	mg/l $CaCO_3$	15	119.0	168.0	02/05	69.0	28/11	121.7	60.0	124.0	180.0	98.3	141.8	132.8	104.8
Orthophosphate	mg/l P	14	0.771	2.100	29/08	0.170	03/04	0.78	0.09	0.47	2.10	0.25	1.00	1.32	0.43
Sulphate	mg/l SO_4	12	117.42	186.00	02/05	25.00	10/01	127.5	56.1	130.5	202.0	106.9	141.1	147.0	117.2

Tweed at Norham 1991

Harmonised monitoring station number : 15 001
Measuring authority : TWRPB NGR : 36 (NT) 898 477

Flow measurement station : 021009 - Norham
C.A.(km²) : 4390.0 NGR : 36 (NT) 898 477

Determinand	Units	1991 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1990 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	9.9	18.5	17/07	0.5	12/12	10.1	2.5	9.5	20.0	4.4	13.3	16.1	6.4
pH	pH units	12	8.0	9.1	17/07	7.1	20/11	8.0	7.1	7.9	9.4	7.6	8.3	8.5	7.7
Conductivity	µS/cm	12	245	353	20/02	166	20/03	236	169	225	292	232	235	224	235
Suspended solids	mg/l	12	8.0	43.0	20/02	1.0	23/10	9.9	1.1	4.9	32.0	16.0	5.0	7.8	10.1
Dissolved oxygen	mg/l O	12	11.87	14.60	17/07	10.00	28/08	11.6	9.0	11.4	15.3	12.0	11.6	11.5	11.4
BOD (inhibited)	mg/l O	12	2.2	3.8	18/09	1.3	19/06	2.3	1.0	2.2	4.2	2.2	2.5	2.6	1.9
Ammoniacal nitrogen	mg/l N	12	0.071	0.160	20/11	0.010	23/05	0.09	0.03	0.08	0.16	0.11	0.08	0.08	0.09
Nitrite	mg/l N	12	0.015	0.025	20/02	0.005	17/07	0.02	0.01	0.01	0.05	0.02	0.02	0.02	0.02
Nitrate	mg/l N	12	2.09	5.95	20/02	1.05	28/08	1.7	0.8	1.7	3.4	2.5	1.8	1.1	1.8
Chloride	mg/l Cl	12	17.8	30.5	20/02	11.5	20/03	16.1	10.5	15.8	22.5	17.3	16.5	15.7	15.0
Orthophosphate	mg/l P	11	0.059	0.110	18/09	0.010	23/05	0.15	0.02	0.08	0.43	0.15	0.13	0.16	0.15

Dee at Glenlochar 1991

Harmonised monitoring station number : 16 005
Measuring authority : SRPB NGR : 25 (NX) 733 642

Flow measurement station : 080002 - Glenlochar
C.A.(km²) : 809.0 NGR : 25 (NX) 733 641

		1991						Period of record: 1975 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	13	10.5	21.0	02/09	2.0	01/02	10.0	2.0	9.0	20.0	3.6	11.4	16.7	8.3
pH	pH units	13	6.6	6.9	01/05	6.4	01/02	6.7	6.2	6.7	7.3	6.6	6.7	6.9	6.6
Conductivity	µS/cm	13	57	86	01/11	47	01/08	62	40	55	78	55	59	67	60
Suspended solids	mg/l	13	2.5	6.0	01/08	1.0	03/04	3.5	1.0	2.0	8.0	5.1	3.6	2.5	2.7
Dissolved oxygen	mg/l O	12	11.17	13.20	01/02	9.20	01/07	10.9	8.7	11.0	13.1	12.4	11.1	9.5	10.7
BOD (inhibited)	mg/l O	13	2.2	3.2	03/01	0.8	01/08	1.9	1.0	1.9	3.1	2.1	1.8	1.7	1.9
Ammoniacal nitrogen	mg/l N	13	0.053	0.190	01/10	0.020	01/03	0.06	0.01	0.04	0.15	0.06	0.06	0.07	0.05
Nitrate	mg/l N	13	0.35	0.67	03/01	0.05	02/09	0.3	0.1	0.3	0.7	0.5	0.3	0.2	0.3
Chloride	mg/l Cl	13	9.7	13.8	01/11	6.5	01/08	9.1	5.0	9.0	13.8	9.6	9.6	8.9	8.4
Orthophosphate	mg/l P	13	0.007	0.039	01/11	0.001	03/06	0.01	0.00	0.01	0.04	0.01	0.01	0.02	0.01
Silica	mg/l SiO_2	13	1.81	2.70	01/03	0.100	02/09	2.32	0.40	2.30	4.40	3.38	1.67	1.30	2.99
Sulphate	mg/l SO_4	13	5.03	7.33	01/11	4.22	02/09	5.6	2.1	5.4	10.2	5.6	5.3	5.8	6.5
Calcium	mg/l Ca	13	3.3	5.0	01/11	2.6	03/04	4.0	2.4	3.3	6.0	3.5	3.5	4.8	3.8
Magnesium	mg/l Mg	13	1.41	2.14	01/11	1.16	03/04	1.5	0.7	1.4	2.2	1.4	1.5	1.5	1.4
Potassium	mg/l K	13	0.62	1.45	01/11	0.36	01/08	0.5	0.3	0.5	0.8	0.6	0.5	0.5	0.6
Sodium	mg/l Na	13	5.6	7.3	01/11	4.4	01/08	5.0	3.4	5.0	7.0	5.3	5.3	4.8	4.7

Leven at Renton Footbridge 1991

Harmonised monitoring station number : 17 005
Measuring authority : CRPB NGR : 26 (NS) 389 783

Flow measurement station : 085001 - Linnbrane
C.A.(km²) : 784.3 NGR : 26 (NS) 394 803

		1991						Period of record: 1975 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	17	10.4	17.0	22/07	3.0	13/02	9.5	3.0	9.0	17.0	4.0	11.0	14.9	8.3
pH	pH units	10	7.2	7.5	11/06	6.9	25/01	7.1	6.7	7.1	7.5	7.0	7.2	7.1	7.0
Conductivity	µS/cm	10	68	78	13/02	58	07/11	72	60	69	95	72	73	71	72
Suspended solids	mg/l	19	2.4	6.0	19/03	1.0	19/02	4.9	1.0	4.0	13.0	7.0	3.9	4.0	4.4
Dissolved oxygen	mg/l O	10	11.16	13.00	13/02	9.30	22/07	10.9	9.3	11.0	12.6	12.3	11.3	9.7	10.7
BOD (inhibited)	mg/l O	10	2.5	3.9	13/02	1.0	20/08	1.7	0.9	1.8	2.9	2.1	2.1	1.4	1.6
Ammoniacal nitrogen	mg/l N	10 (1)	0.054	0.160	22/07	0.010	11/06	0.05	0.01	0.02	0.20	0.05	0.05	0.05	0.04
Nitrate	mg/l N	9	0.32	0.98	22/07	0.10	11/06	0.3	0.1	0.3	0.5	0.4	0.3	0.2	0.3
Total alkalinity	mg/l $CaCO_3$	10	13.8	24.0	19/04	11.0	25/01	16.3	10.0	16.0	22.0	15.1	16.4	16.8	16.6
Orthophosphate	mg/l P	18 (3)	0.007	0.025	10/04	0.002	17/07	0.02	0.00	0.01	0.05	0.02	0.02	0.02	0.02

Ballinderry at Ballinderry Bridge 1991

DOE Northern Ireland station number : 03/07/Q001
Measuring authority : DOEN NGR : *23 (IH) 927 798*

Flow measurement station : 203012 - Ballinderry Br.
C.A.(km²) : 419.5 NGR : *23 (IH) 926 799*

		1991						Period of record: 1974 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	10.0	18.0	31/07	3.0	07/01	9.8	3.0	10.0	17.0	5.0	12.0	14.9	8.1
pH	pH units	24	8.0	8.7	17/05	7.4	26/11	7.7	7.3	7.7	8.3	7.6	7.9	7.8	7.6
Conductivity	µS/cm	24	325	400	29/08	206	07/02	305	215	303	375	278	326	336	292
Suspended solids	mg/l	24 (1)	8.1	78.0	02/07	2.0	12/10	9.3	2.0	6.0	30.0	12.6	7.1	7.0	10.1
Dissolved oxygen	mg/l O	24	11.6	15.90	17/05	8.10	31/07	9.9	6.7	10.0	12.5	11.2	9.7	8.5	10.4
BOD (inhibited)	mg/l O	24 (1)	2.4	5.2	02/07	1.0	27/09	2.4	1.0	2.0	4.2	2.6	2.7	2.2	2.1
Ammoniacal nitrogen	mg/l N	24 (3)	0.220	0.750	06/03	0.040	16/07	0.26	0.04	0.20	0.53	0.35	0.27	0.17	0.24
Nitrite	mg/l N	24 (1)	0.06	0.15	14/08	0.05	07/01	0.05	0.02	0.04	0.13	0.03	0.05	0.06	0.05
Chloride	mg/l Cl	24	22.0	27.0	07/01	16.0	02/07	18.8	11.0	18.0	26.0	19.1	18.9	19.5	18.0
Orthophosphate	mg/l P	24	0.20	0.64	02/07	0.05	07/01	0.23	0.07	0.20	0.50	0.14	0.18	0.34	0.20

Lagan at Shaws Bridge 1991

DOE Northern Ireland station number : 05/01/Q002
Measuring authority : DOEN NGR : *33 (IJ) 325 690*

Flow measurement station : 205004 - Newforge
C.A.(km²) : 490.4 NGR : *33 (IJ) 329 693*

		1991						Period of record: 1973 - 1990							
Determinand	Units	Samples	Mean	Max.	Date	Min.	Date	Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	9.8	15.0	07/08	5.0	13/03	10.5	4.0	10.5	17.0	5.2	12.8	15.5	8.2
pH	pH units	24	7.8	8.0	27/03	7.6	18/11	7.6	7.2	7.6	8.0	7.6	7.6	7.5	7.5
Conductivity	µS/cm	24	487	671	05/09	357	26/02	425	278	407	601	376	445	522	385
Suspended solids	mg/l	24 (3)	8.3	26.0	27/03	2.0	24/05	13.1	2.0	7.0	41.0	15.3	8.4	7.2	16.8
Dissolved oxygen	mg/l O	24	15.3	27.6	25/04	7.7	24/06	9.4	3.5	9.8	13.4	12.1	9.4	5.7	10.7
BOD (inhibited)	mg/l O	24 (1)	3.1	20.0	24/06	1.0	24/05	3.4	1.3	3.0	7.0	2.9	4.2	3.5	3.1
Ammoniacal nitrogen	mg/l N	24	0.62	4.00	24/06	0.08	25/04	0.91	0.17	0.60	2.40	0.71	0.97	1.61	0.90
Nitrite	mg/l N	22	0.15	0.19	17/12	0.04	14/01	0.20	0.02	0.12	0.50	0.10	0.23	0.36	0.10
Chloride	mg/l Cl	24	52.5	92.0	12/02	31.0	11/04	40.9	21.0	37.0	68.0	35.4	42.3	44.2	33.7
Orthophosphate	mg/l P	24	0.82	2.86	05/09	0.16	25/04	0.92	0.11	0.68	2.30	0.32	1.14	1.33	0.64

DIRECTORY OF MEASURING AUTHORITIES

	Address	Code
National Rivers Authority	Rivers House, Waterside Drive, Aztec West, Almondsbury, Bristol BS12 4UD	NRA

NRA Regional Headquarters

Anglian	Kingfisher House, Goldhay Way, Orton Goldhay, Peterborough PE2 5ZR	NRA-A
Northumbria	Eldon House, Regent Centre, Gosforth, Newcastle-upon-Tyne NE3 3UD	NRA-N
North West	Richard Fairclough House, PO Box 12, Knutsford Rd, Warrington WA4 1HG	NRA-NW
Severn-Trent	Sapphire East, 550 Streetsbrook Road, Solihull B91 1QT	NRA-ST
Southern	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD	NRA-S
South West	Manley House, Kestrel Way, Sowton Industrial Estate, Exeter EX2 7LQ	NRA-SW
Thames	Kings Meadow House, Kings Meadow Road, Reading RG1 8DQ	NRA-T
Welsh	Rivers House/Plas-yr-Afon, St Mellons Business Park, St Mellons, Cardiff CF3 0LT	NRA-WEL
Wessex	Rivers House, East Quay, Bridgwater TA6 4YS	NRA-W
Yorkshire	Rivers House, 21 Park Square South, Leeds LS1 2QG	NRA-Y

River Purification Boards

Clyde River Purification Board	Rivers House, Murray Road, East Kilbride, Glasgow G75 0LA	CRPB
Forth River Purification Board	Clearwater House, Heriot Watt Research Park, Avenue North, Riccarton, Edinburgh EH14 4AP	FRPB
Highland River Purification Board	Strathpeffer Road, Dingwall IV15 9QY	HRPB
North East River Purification Board	Greyhope House, Greyhope Road, Torry, Aberdeen AB1 3RD	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, Northland House, 3 Frederick Street, Belfast BT1 2NS Environmental Protection Division, Calvert House, 23 Castle Place, Belfast BT1 1FY	DOEN
Dumfries and Galloway Regional Council (Department of Water and Sewerage)	Marchmount House, Marchmount, Dumfries DG1 1PW	DGRW
Essex Water Company	Hall Street, Chelmsford CM2 OHH	EWC
Geological Survey of Northern Ireland	20 College Gardens, Belfast BT9 6BS	GSNI
Grampian Regional Council (Water Services Department)	Woodhill House, Westburn Road, Aberdeen AB9 2LU	GRWD
Highland Regional Council (Water Department)	Regional Buildings, Glenurquhart Road, Inverness IV3 5NX	HRCW
Institute of Hydrology	Maclean Building, Wallingford OX10 8BB	IH
Lothian Regional Council (Department of Water and Drainage)	6 Cockburn Street, Edinburgh EH1 1NZ	LRWD
Newcastle and Gateshead Water Plc	PO Box 10, Allendale Road, Newcastle-upon-Tyne NE6 2SW	NGWC
North West Water	Dawson House, Liverpool Road, Great Sankey, Warrington WA5 3LW	NWW
Scottish Hydro-Electric Plc	16 Rothesay Terrace, Edinburgh EH3 7SE	SE
Southern Water	Southern House, Yeoman Road, Worthing BN13 3NX	SW
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
Yorkshire Water	2, The Embankment, Sovereign Street, Leeds LS1 4B6	YW

Note: The measuring authorities listed in this directory provide (or have provided) daily flow data to the national archive for primary flow measurement stations. In recent years a number of valuable long records for additional sites have been identified. Most of these will be incorporated into the River Flow Archive when appraisals of the gauging stations and flow records are complete. Further lengthy records, whether of springs, runoff, river levels, well levels or bourne flow occurrences, would be welcomed and holders of such data are invited to contact the Institute of Hydrology.

PUBLICATIONS - in the Hydrological data UK series

Title	*Published*	*Price* (inclusive of second class postage within the UK) *Loose-Leaf**	*Bound*
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Yearbook 1991	1992		£20
Reports:			
Hydrometric Register and Statistics 1981-5	1988	£12	£15
Hydrometric Register and Statistics 1986-90[1]	1992		£20
The 1984 Drought[2]	1985		£12

Concessionary rates apply to the purchase of two or more of the pre-1988 Yearbooks.

All the Hydrological data UK publications may be obtained from:-

Institute of Hydrology
Maclean Building
WALLINGFORD
OXFORDSHIRE OX10 8BB

Tel: (0491) 38800 Fax: (0491) 32256

Enquiries or comments regarding the series, or individual publications are welcomed and should be directed to the National Water Archive Office at the above address.

1. Hydrometric Register and Statistics 1986-90

This reference volume includes maps, tables and statistics for over 1000 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 1986-90, 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.

*Loose-leaf versions of the Hydrological data UK publications have been discontinued.

2. The 1984 Drought

This 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 in the perspective provided by historical records of rainfall and runoff.

Associated Publications

Representative Basin Catalogue

Data collection for the national Flood Event Archive, maintained by the Institute of Hydrology, concentrates on a selection of basins that form a representative sample of UK catchments. A catalogue providing comprehensive hydrological and reference information for 200 representative basins has been prepared and is available as national (five volumes) or regional sets; user-selected groups of catchments can be provided for particular investigations. Enquiries concerning the cost and availability of the catalogue should be directed to the above address.

Groundwater Level Hydrographs

In 1990 the British Geological Survey launched a series of wallcharts depicting long term variations in groundwater levels. The following are currently available:

i. Long term hydrograph of groundwater levels in the Chilgrove House well in the Chalk of southern England
ii. Long term hydrograph of groundwater levels in the Dalton Holme estate well in the Chalk of Yorkshire

Copies may be obtained from the Wallingford office of the British Geological Survey (address on page 159).

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 conventional 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
DWF	Dry weather flow
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
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	Point
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
SOE	The Scottish Office Environment Department (previously SDD)
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

Natural
Environment
Research
Council