

WRH/13

1984 DROUGHT RIVER FLOWS

A COMPARISON WITH OTHER YEARS

WATER RESOURCES DIVISION
AN FORAS FORBARTHA
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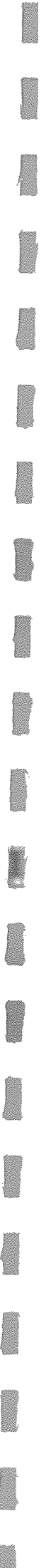
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INTRODUCTION

Background

The months of March and April 1984 were notable for lower than normal rainfall while the summer and early autumn were marked by the occurrence of drought in many places. This publication provides, for selected hydrometric stations in each water resource region, comparisons of low flows in 1984 with flows experienced in other years notable for extremes of low flow.

Format: The report is divided into chapters, each dealing with a separate Water Resource Region. Each chapter contains, in addition to commentaries on rainfall and low flows, a table giving low flows in 1984 and in 1959, 1969, 1975 and 1976.

Rainfall: Rainfall for the period March - August 1984 in the South-East and East was 45 - 60% of normal, while in the Midlands and South-West it was 75 - 85% of normal. Rainfall data have been received from the Meteorological Service and comprise details of the rainfall during the summer of 1984 both in absolute terms and as a percentage of the mean for the period 1951 - 1980. The locations of these selected rainfall stations are shown in Figure 1.

Gauging Installations - Numbering System: Following consultation between An Foras Forbartha, Electricity Supply Board, Meteorological Office and the relevant counterparts in Northern Ireland, the country has been divided into 40 Hydrometric Areas. These are shown in Figure 2.

The number allocated to a gauging installation includes as its first two digits the number of the hydrometric area in which the gauging installation is located.

Water Resource Regions: To carry out its programme of work the Water Resources Division of An Foras Forbartha has divided the country into 7 Water Resource Regions as follows:-

1. Eastern
2. South-Eastern
3. Southern
4. Mid-Western
5. Shannon
6. Western
7. North-Western

These Regions are shown in Figure 2 and include entire river catchments.

Key

x location of rainfall stations

420 rainfall amount mm for March to August 1984

(78) percentage of normal rainfall during this period

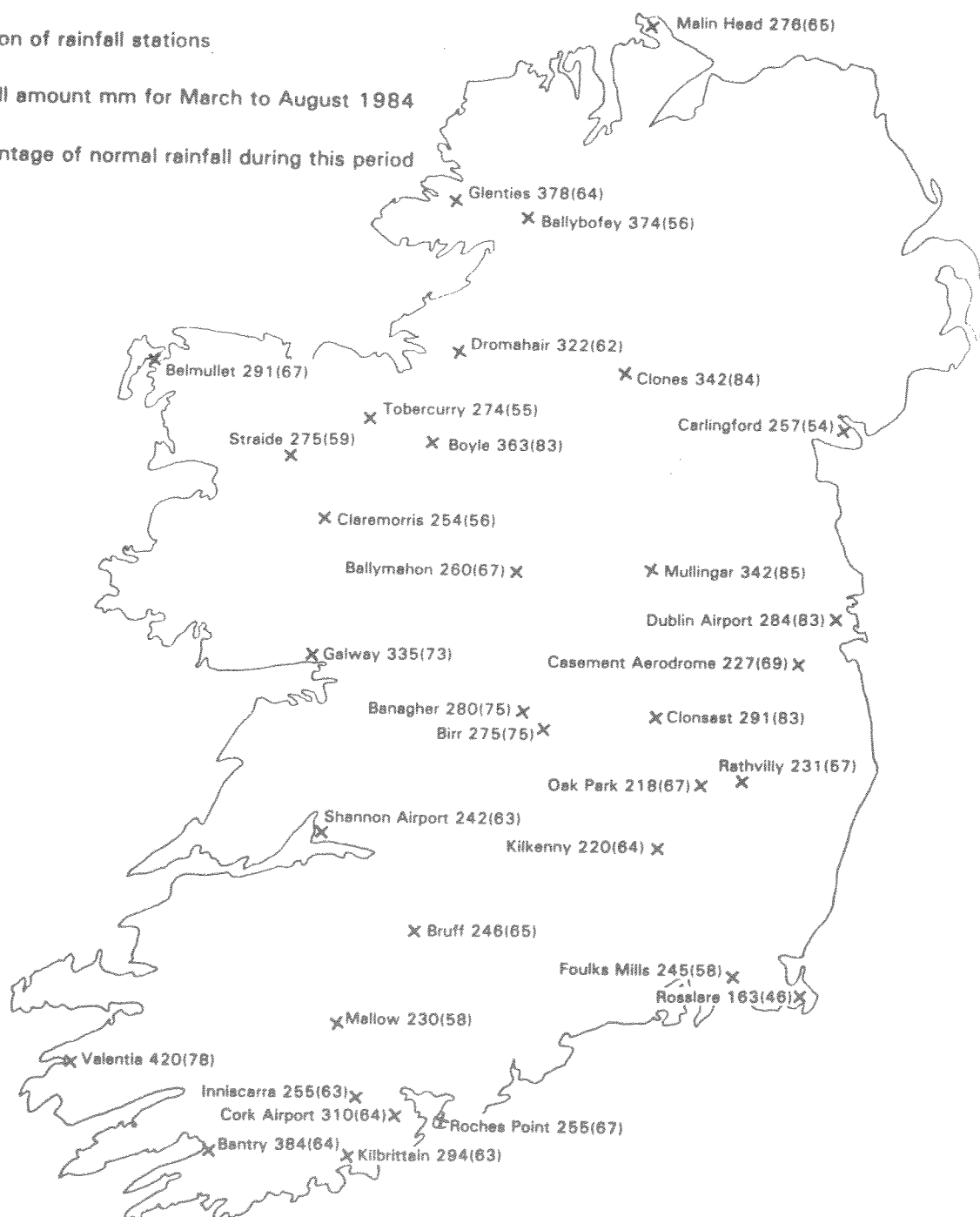


FIG. 1 RAINFALL AT SELECTED RAINFALL STATIONS FOR THE PERIOD MARCH TO AUGUST 1984

Selected Hydrometric Stations: Hydrometric stations, the results from which are included in this publication, are listed in Table 1 and shown in Figure 3.

River Flows : Reference is made in this publication to measured flow and recorded flow. For the purposes of this report, a measured flow is the result of an in-situ flow measurement carried out by current meter using the velocity area method. All other flow results quoted are computed, being based on water level records from which flows were derived using relevant stage discharge relationships. In most cases these flow rates will have been derived from extrapolated rating curves. Care should therefore be taken in the application of these results.

Dates: In the following commentaries where a date is given without a calendar year reference the year 1984 is to be assumed.

Measured Flows 1984 : Rivers flows as measured during 1984 drought periods are given in the Appendix 1984 Survey - Lowest Flows Measured.

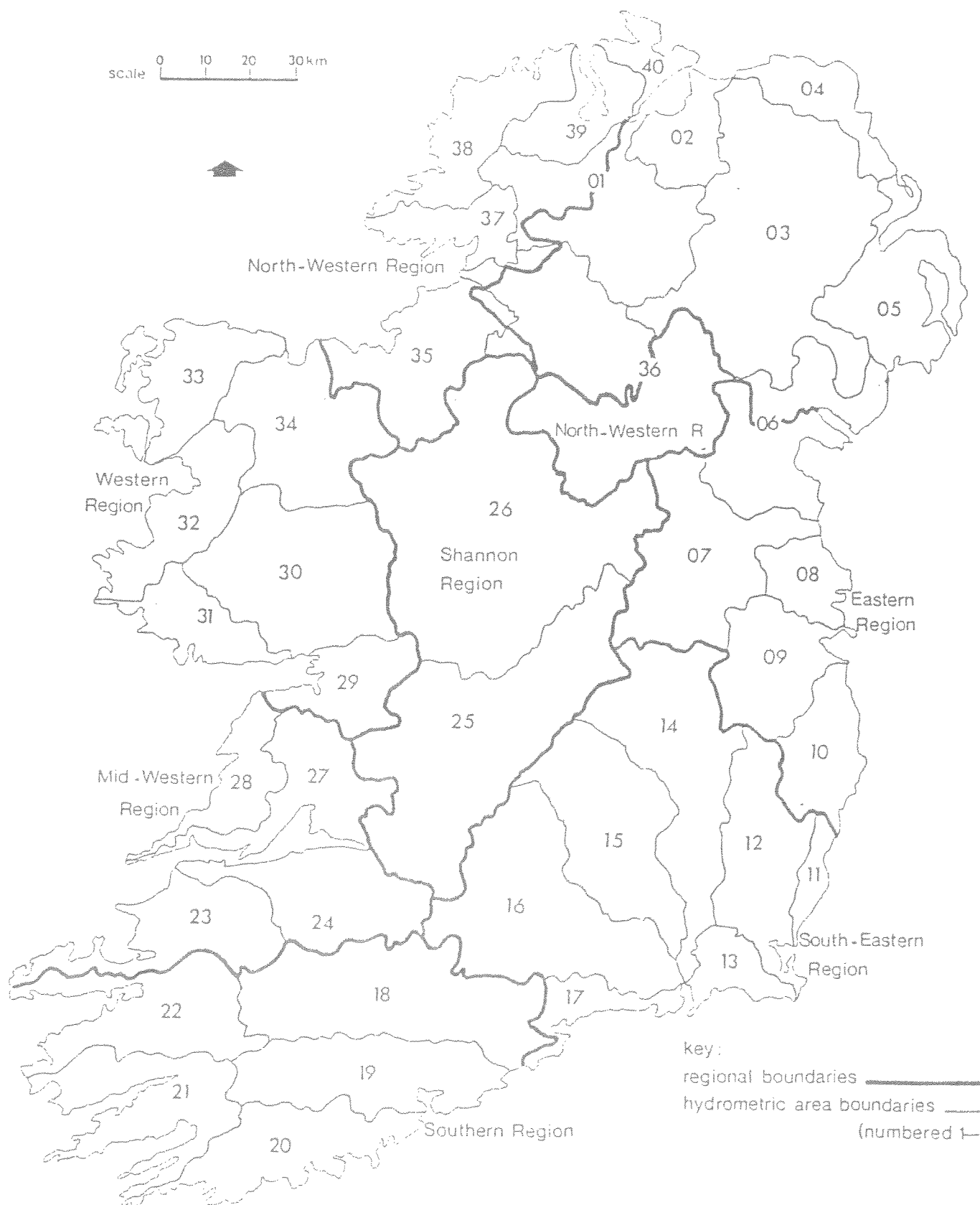


FIG. 2 Water Resource Regions and Hydrometric Areas of Ireland

TABLE 1

Details of Hydrometric Stations Referred to in Regional Commentaries

Station Number	Location	River Name	Nat. Grid Reference	Resp. Auth.	Start of Record
0143	Ballybofey	Finn	H 134 946	OPW	Sept. '72
0351	Faulkland Br.	Blackwater	H 704 379	MON	Mar. '75
0613	Charleville	Dee	O 044 907	OPW	Oct. '75
0630	Ballygoly	Big	J 152 100	LOU	Jan. '75
0705	Trim	Boyne	N 801 568	OPW	Nov. '52
0711	O'Daly's Br.	Kells Blackwater	N 652 805	OPW	Oct. '56
0807	Ashbourne	Broadmeadow	O 087 524	MEA	Aug. '77
0901	Leixlip	Ryewater	O 005 364	OPW	Oct. '56
1016	Newtownmountkennedy	Stream	O 270 058	WIC	Staff Gauge
1201	Scarrawalsh	Slaney	S 983 450	OPW	Sept. '55
1213	Rathvilly	Slaney	S 882 844	CAR	Dec. '76
1303	Mullinderry	Owenduff	S 814 158	WEX	June '76
1405	Portarlinton	Barrow	N 540 126	OPW	May '54
1413	Ballinacarrig	Burren	S 743 753	OPW	Sept. '55
1501	Annamult	Kings	S 543 443	OPW	Sept. '54
1506	Brownsbarn	Nore	S 617 391	OPW	Nov. '53
1610	Anner Rd. Br.	Anner	S 253 256	OPW	Sept. '54
1803	Killavullen	Blackwater	W 646 998	OPW	Aug. '55
1901	Ballea	Owenboy	W 709 635	OPW	Oct. '56
1917	Bawnafinny Br.	Blarney	W 606 754	COR	May '77
2001	Bandon	Bandon	W 493 553	CPW	July '60
2103	Ballylickey	Owvane	W 010 536	COR	July '76
2203	Riverville	Maine	Q 923 063	CPW	Jan. '47
2302	Listowel	Feale	Q 996 333	CPW	Nov. '46
2401	Croom	Maigne	R 511 411	CPW	Oct. '53
2502	Barrington's Br.	Newport	R 677 550	CPW	June '53
2522	Syngefield	Camcor	N 080 046	OPW	Sept. '53
2524	New Bridge	Little Brosna	N 016 090	OPW	June '53
2544	Coole Br.	Kilmastulla	R 712 693	ESB	Oct. '44
2607	Bellagill	Suck	M 840 348	OPW	Nov. '52
2608	Johnston's Bridge	Rinn	N 090 865	CPW	Sept. '55



FIG. 3 LOCATIONS OF SELECTED HYDROMETRIC GAUGING STATIONS

TABLE 1 (Cont/d.)

Details of Hydrometric Stations Referred to in Regional Commentaries

Station Number	Location	River Name	Nat. Grid Reference	Resp. Auth.	Start of Record
2612	Tinnecarra	Boyle	G 770 019	OPW	Feb. '51
2621	Ballymahon	Inny	N 161 569	OPW	May '53
2702	Ballycorey	Fergus	R 342 805	OPW	April '54
2901	Rathgorgin	Raford	M 545 235	OPW	Oct. '57
2904	Clarinbridge	Lavally	M 416 203	OPW	July '73
3004	Corofin	Clare	M 425 432	OPW	Aug. '51
3005	Foxhill Br.	Robe	M 236 684	OPW	Oct. '55
3301	Glenamoy	Glenamoy	F 895 337	MAY	Mar. '77
3403	Foxford	Moy	G 267 390	MAY	Sept. '76
3411	Gneeve Br.	Manulla	M 220 913	OPW	July '75
3501	Ballynacarrow	Owenmore	G 639 219	OPW	Oct. '55
3511	Dromahair	Bonet	G 805 309	OPW	Oct. '57
3615	Anlore	Finn	H 537 256	OPW	Oct. '56
3618	Ashfield Br.	Dromore	H 575 140	OPW	Aug. '55
3627	Ballyheady	Woodford	H 250 156	OPW	Aug. '74
3631	Lisdarn	Cavan	H 416 005	CAV	Nov. '74
3801	Clonconwal	Owenea	G 765 927	OPW	June '57
3901	New Mills	Swilly	C 117 092	OPW	Sept. '72

ABBREVIATIONS:Public Bodies:

OPW - Office of Public Works
 ESB - Electricity Supply Board

County Councils:

CAR - Carlow
 CAV - Cavan
 COR - Cork
 LOU - Louth
 MAY - Mayo
 MEA - Meath
 MON - Monaghan
 WEX - Wexford
 WIC - Wicklow

Commentaries on Rainfall and Low Flows

EASTERN WATER RESOURCE REGION

General Notes: Low flow in the summer and early autumn of 1984 in the Eastern Water Resource Region exceeded minimum recorded low flow rates with the exception of the Cooley Peninsula, the Ryewater River and the upper reaches of the Broadmeadow River where minimum recorded flows were equalled.

RAINFALL:

Clones:^{*} At Clones rainfall in the twelve-month period up to the end of July 1984 was 98% of normal while for the six-month period up to the end of 1984 it was 89% of normal. The corresponding values for twelve and six-month periods ending in August 1984 are 104% and 84% respectively. The dry period at the end of July was broken by rainfall amounting to 71.9 mm falling in the period 28 July to 3 August.

Mullingar:^{*} Rainfall at Mullingar in the twelve months up to the end of July 1984 was 95% of normal and in the six months up to the end of July 1984 was 75% of normal. The corresponding figures for twelve-and six-month periods up to the end of August 1984 were 101% and 85% respectively. The dry period at the end of July 1984 was broken by a fall of 97.1 mm in the period 30 July to 3 August.

Dublin Airport: There were two periods of very dry weather in the summer of 1984, one at the end of July and the other during the last week of August. At Dublin Airport, 53.4 mm of rainfall was recorded between 30 July and 4 August. The remainder of August was fairly dry up until the 26th when a fall of 21.1 mm was recorded. Rainfall was 88% of normal in the twelve months up to the end of July 1984 and 78% of normal in the period February to July 1984.

Casement Aerodrome: Rainfall at Casement Aerodrome was 89% of normal in the twelve months up to the end of July 1984 and 70% of normal in the six months up to the end of July 1984. An amount of 21.5 mm was recorded at Casement Aerodrome between 30 July and 4 August.

Carlingford: Rainfall at Carlingford was 54% of normal in the six-month period ending August 1984.

^{*} These rainfall stations, although not located within the Eastern Water Resource Region, may be used to provide a more comprehensive record of rainfall.

LOW FLOWS:

HYDROMETRIC AREA 06 - NEWRY, FANE, GLYDE AND DEE: Very low flows were recorded at the end of July 1984 and in the second half of August 1984. The low flow at Station 0630 (Ballydoly) on the Big River was $0.011 \text{ m}^3/\text{s}$ on 30 July; this flow rate may be compared with a minimum recorded flow of $0.01 \text{ m}^3/\text{s}$ on 9 September 1976.

At Station 0613 (Charleville) on the River Dee the lowest flow in the summer of 1984 was $0.22 \text{ m}^3/\text{s}$ recorded on 31 July. The 1976 minimum recorded flow at Charleville was $0.17 \text{ m}^3/\text{s}$ on 10 September 1976.

A measured flow rate of $0.07 \text{ m}^3/\text{s}$ was obtained at Station 0632 (St. John's Bridge) on the Castletown River on 30 July. The previous minimum measured flow was $0.008 \text{ m}^3/\text{s}$ on 7 September 1976.

Very low flows were encountered north and east of Dundalk at the end of July.

HYDROMETRIC AREA 07 - BOYNE: Lowest flows in the Boyne catchment during 1984 seem to have been well above the 1976 low flow values. At Station 0705 (Trim) on the Boyne the lowest summer flow recorded was $2.38 \text{ m}^3/\text{s}$ on the 30 July, a flow which may be compared with $1.73 \text{ m}^3/\text{s}$ on 7 September 1976.

Similarly, the lowest flow recorded in 1984 at Station 0711 (O'Daly's Bridge) on the Kells Blackwater was $0.14 \text{ m}^3/\text{s}$ on 24 July. The minimum recorded flow rate at this station was $0.022 \text{ m}^3/\text{s}$ on 27 August 1975.

HYDROMETRIC AREA 08 - NANNY, DELVIN: Apart from Ashbourne on the Broadmeadow River low flows encountered during the summer and early autumn of 1984 did not approach the 1975 or 1976 low flow values. At Station 0807 (Ashbourne) a low flow equal to that recorded in 1976 ($0.0004 \text{ m}^3/\text{s}$) was recorded on 22 August 1984.

HYDROMETRIC AREA 09 - JEFFEY AND DUBLIN BAY: River flow was very low at the very end of July 1984 and in the second half of August 1984. The minimum flow of $0.033 \text{ m}^3/\text{s}$ was measured at Station 0901 (Leixlip) on the Ryewater on 30 August. The previous minimum flow rate on record was $0.038 \text{ m}^3/\text{s}$ on 30 July 1976.

HYDROMETRIC AREA 10 - GVOCA, VARTRY: A number of flow measurements were made in this Hydrometric Area in the summer of 1984 but few were at stations with information on river flows in previous drought years.

An in-situ flow measurement was made on the Avonmore River at Station 1070 (Lough Dan) on 23 August. This measurement returned a flow of $0.3 \text{ m}^3/\text{s}$ which may be compared with the minimum measured flow of $0.15 \text{ m}^3/\text{s}$, measured on 30 August 1976.

In a stream at Newtownmountkennedy (Station 1016) a flow rate of $0.037 \text{ m}^3/\text{s}$ was measured on 28 August 1984. On 30 August 1976 a flow of $0.034 \text{ m}^3/\text{s}$ was measured at this station.

TABLE 2.

Table of Low Flows - Eastern Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:					Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year							
			1959	1969	1975	1976	1984			
HYDROMETRIC AREA 06 - NEWRY, FANE, GLYDE AND DEE										
0613	Dee	Charleville	Flow	-	-	0.17	0.22	0.29	307	1
			Date			10/9	31/7	23/8		
0630	Big	Ballygoly	Flow	-	-	0.01	0.011	0.011	10.2	2
			Date			9/9	30/7	30/7		
HYDROMETRIC AREA 07 - BOYNE										
0705	Boyne	Trim	Flow	-	-	1.95	1.73	2.38	1282	
			Date			6/9	7/9	30/7		
0711	Kells Blackwater	O'Daly's Br.	Flow	0.035	-	0.022	0.061	0.14	294	3
			Date	19/9		27/8	8/9	24/7		
HYDROMETRIC AREA 08 - NANNY, DELVIN										
0807	Broadmeadow	Ashbourne	Flow	-	-	-	0.0004	0.0004*	34	
			Date				24/8	22/8		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

- 1 Minimum computed flow rate up to 19/8/84
- 2 Minimum computed flow rate up to 13/8/84
- 3 Minimum computed flow rate up to 19/8/84

TABLE 2
Table of Low Flows- Eastern Water Resource Region (Cont/d.)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
HYDROMETRIC AREA 09 - LIFFEY AND DUBLIN BAY											
0901	Ryewater	Leixlip	Flow	0.047	0.094	0.074*	0.038	0.03*	0.03	215	
			Date	4/9	28/8	9/7	30/7	30/8	30/8		
HYDROMETRIC AREA 10 - OVOCA, VARTRY											
1016	Stream	Newtownmount-kennedy	Flow	-	-	-	0.034*	0.037*	0.037		
			Date				30/8	28/8	28/8		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

SOUTH-EASTERN WATER RESOURCE REGION

General Notes: For locations where information is available, low flow in 1984 in the South-Eastern Water Resource Region was well in excess of minimum recorded flow rates.

RAINFALL:

Kilkenny: Rainfall at Kilkenny was 93% of normal in the year up to the end of August and 98% of normal in the year up to the end of July. In the six-month period February to July rainfall was 79% of normal while in the six-month period March to August rainfall was 64% of normal. The dry period at the end of July was broken by a fall of 33.8 mm in the period 30 July to 4 August.

Rosslare: Rainfall at Rosslare was 73% of normal in the year up to the end of August and 83% of normal in the year up to the end of July. In the six-month period February to July rainfall was 56% of normal while in the six-month period March to August rainfall was 46% of normal. From 30 July to 2 August precipitation of 17.2 mm was recorded.

Rathvilly: Rainfall at Rathvilly was 57% of normal in the six months ending August 1984.

Carlow: Rainfall at Carlow (Oak Park) was 67% of normal in the six months ending August 1984.

Foulks Mills: Rainfall at Foulks Mills was 58% of normal in the six months ending August 1984.

LOW FLOWS:

HYDROMETRIC AREA 11 - OWENAVORRAGH: No in-situ flow measurements were made in Hydrometric Area 11 during periods of extremely low flow in the summer of 1984.

HYDROMETRIC AREA 12 - SLANEY AND WEXFORD HARBOUR: Two periods of low flows may be distinguished in the summer and early autumn of 1984, one from 25 to 30 July approximately and the other from 20 to 30 August approximately. A low flow of 2.75 m³/s was measured at Station 1201 (Scarrawalsh) on the Slaney on 30 July. This flow rate may be compared with low recorded flow rates of 1.95 m³/s on 25 August 1976 and 2.5 m³/s on 17 September 1975.

Further upstream on the Slaney, at Station 1213 (Rathvilly), a flow of $0.98 \text{ m}^3/\text{s}$ was recorded on 22 August; the minimum recorded flow at this location was $0.82 \text{ m}^3/\text{s}$ on 10 September 1976.

In-situ flow measurements on the Clody and Bann Rivers may be compared with low measured flows in 1976. At Station 1220 (Craan) on the Clody River a flow of $0.062 \text{ m}^3/\text{s}$ was measured on 26 July 1984. The minimum measured flow at this station is $0.028 \text{ m}^3/\text{s}$, measured on 31 August 1976.

A flow rate of $0.3 \text{ m}^3/\text{s}$ was measured on 23 August on the Bann at Station 1215 (Ferns). The minimum measured flow at this location is $0.17 \text{ m}^3/\text{s}$, measured on 9 September 1976.

HYDROMETRIC AREA 13 - BALLYTEIGUE, BANNOW: At Station 1303 (Mullinderry) on the Owenduff River a minimum flow of $0.19 \text{ m}^3/\text{s}$ was recorded on 30 July, 1984. This flow rate may be compared with the minimum flow on record at this station. $0.16 \text{ m}^3/\text{s}$ on 8 September 1976.

No in-situ river flow measurements were made in Hydrometric Area 13 during the period of lowest flows in the summer of 1984. However, a flow measurement of interest was made earlier on 5 July 1984 at Station 1301 (Goff's Bridge) on the Corock River resulting in a flow rate of $0.14 \text{ m}^3/\text{s}$. A measurement of $0.047 \text{ m}^3/\text{s}$ was made at this station on 10 September 1976.

HYDROMETRIC AREA 14 - BARROW: The 1984 low flow on the Barrow at Station 1405 (Portarlinton) was recorded as $0.31 \text{ m}^3/\text{s}$ on 31 August, this value may be compared with a flow of $0.19 \text{ m}^3/\text{s}$ recorded on 15 September 1976.

At Station 1413 (Ballinacarrig) on the Burren River a low flow of $0.14 \text{ m}^3/\text{s}$ was recorded on 19 July. This latter flow rate is twice the minimum of $0.07 \text{ m}^3/\text{s}$ recorded on 13 September 1976.

An in-situ flow measurement of $0.073 \text{ m}^3/\text{s}$ was made on 28 August at Station 1425 (Coonogue) on the Aughnabriskey River. The 1976 minimum measured flow at this location was $0.053 \text{ m}^3/\text{s}$ on 26 August 1976.

At Station 1426 (Rosdellig) on the Mountain River a low flow of $0.17 \text{ m}^3/\text{s}$ was measured on 15 July; the 1976 minimum measured flow was $0.08 \text{ m}^3/\text{s}$ on 18 August 1976.

At Station 1416 (Kilcumber Bridge) on the River Figile a flow of $0.21 \text{ m}^3/\text{s}$ was measured on 15 August. The minimum measured flow at Kilcumber Bridge was $0.2 \text{ m}^3/\text{s}$ measured on 6 October 1959.

In general, low flows in this Hydrometric Area were of the order of twice the minimum recorded flows.

HYDROMETRIC AREA 15 - NORE: The lowest flow recorded in the summer of 1984 at Station 1506 (Brownsbarn) on the River Nore was $4.0 \text{ m}^3/\text{s}$ on 29 July: the minimum recorded flow rate at this station was $3.1 \text{ m}^3/\text{s}$ on 4 September 1975.

On the Kings River at Station 1501 (Annamult) the lowest flow recorded in 1984 was $0.33 \text{ m}^3/\text{s}$ on 21 August. This value may be compared with a flow of $0.19 \text{ m}^3/\text{s}$ recorded on 7 September 1976.

An in-situ flow measurement of $0.22 \text{ m}^3/\text{s}$ was made at Station 1503 (Dinan Bridge) on the Dinan River on 20 August. The minimum measured flow at this station is $0.096 \text{ m}^3/\text{s}$, measured on 27 August 1976.

On the Delour River at Station 1521 (Annagh Bridge) a measurement of $0.26 \text{ m}^3/\text{s}$ was made on 29 August. The minimum measured flow at Annagh Bridge was $0.20 \text{ m}^3/\text{s}$, measured on 1 September 1976.

In general, the low flows in Hydrometric Area 15 during 1984 exceeded minimum recorded flows by upwards of 20%.

HYDROMETRIC AREA 16 - SUIR: The period of lowest flow was from 20 August to 30 August 1984. At Station 1610 (Anner Road Bridge) on the Anner River the lowest flow recorded in 1984 was $1.5 \text{ m}^3/\text{s}$ on 30 August. The minimum flow rate in the period of record was $1.1 \text{ m}^3/\text{s}$ on 16 September 1975.

On the River Clodiagh at Station 1603 (Rathkennan) a low flow of $0.24 \text{ m}^3/\text{s}$ was recorded on 22 August. This may be compared with the 1976 minimum flow of $0.18 \text{ m}^3/\text{s}$ recorded on 10 September 1976.

An in-situ flow measurement was carried out on the River Lingaun at Station 1616 (Lingaun Dale) on 30 August. The measured flow was $0.34 \text{ m}^3/\text{s}$. This flow rate may be compared with a flow of $0.23 \text{ m}^3/\text{s}$ measured at Lingaun Dale on 2 September 1976.

Lowest measured flows in 1984 exceeded 1976 measured flows by at least 30%.

HYDROMETRIC AREA 17 - COLLIGAN, MAHON: No in-situ measurements were made in Hydrometric Area 17 during the periods of extreme low flows during the summer of 1984.

TABLE 3

Table of Low Flows - South Eastern Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:							Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984				
HYDROMETRIC AREA 11 - OWENAVORRAGH - No relevant recorded data is available for this Hydrometric Area												
HYDROMETRIC AREA 12 - SLANEY												
1201	Slaney	Scarrawalsh	Flow	3.13	1.98	2.5	1.95	2.75*	2.75	1036		
			Date	15/9	8/9	17/9	25/8	30/7	30/7			
1213	Slaney	Rathvilly	Flow	-	-	1.19*	0.82	0.98	0.98	185		
			Date			20/8	10/9	22/8	25/7			
HYDROMETRIC AREA 13 - BALLYTEIGUE, BANNOW												
1303	Owenduff	Mullinderry	Flow	-	-	-	0.16	0.19	0.202	90	1	
			Date				8/9	30/7	11/10			
HYDROMETRIC AREA 14 - BARROW												
1405	Barrow	Portarlinton	Flow	0.16	0.34	0.18	0.19	0.31	0.38	398		
			Date	27/7	15/8	16/8	15/9	31/8	29/8			
1413	Burren	Ballina-carrig	Flow	-	-	0.15*	0.07	0.14	0.15	155	2	
			Date			8/9	13/9	29/7	28/8			

Note:

* Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.
 1 Minimum computed flow rate up to 6/8/84.

2 No record from 6/8/84 to 4/9/84. Lowest computed flow is that for the period up to 6/8/84.
 No record from 25/6/75 to 18/8/75 inclusive.

TABLE 3.
Table of Low Flows - South Eastern Water Resource Region (contd)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
HYDROMETRIC AREA 15 - NORE											
1501	Kings	Annamult	Flow	-	-	0.34	0.19	0.33	0.5	443	
			Date			10/9	7/9	21/8	29/8		
1506	Nore	Brownsbarn	Flow	3.31*	4.3*	3.1	3.38	4.0	4.0	2388	
			Date	18/9	2/9	4/9	15/8	29/7	27/7		
HYDROMETRIC AREA 16 - SUIR											
1603	Clodiagh	Rathkennan	Flow	0.23	0.27	0.2	0.18	0.24	0.25	246	
			Date	24/9	25/9 to 13/10	23/9	10/9	22/8	26/7		
1610	Anner	Anner Road Br.	Flow	1.1*	1.3*	1.1	0.96*	1.5	1.5	422	
			Date	25/9	9/9	16/9	7/9	30/8	30/8		
HYDROMETRIC AREA 17 - COLLIGAN AND MAHON - No relevant recorded data is available for this Hydrometric Area.											

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

SOUTHERN WATER RESOURCE REGION

General Notes: River flow in the Southern Water Resource Region generally exceeded minimum recorded values but the River Ilan, measured at Ballyhilty on 24 July, had a flow rate lower than the previous lowest flow rate measured on 1 September 1976.

RAINFALL:

Cork Airport: Rainfall in the twelve months up to the end of July 1984 was 93% of normal and in the six months up to the end of July 1984 was 67% of normal. The corresponding figures for twelve-and six-month periods ending August 1984 are 92% and 64% respectively. Rainfall in the period 30 July to 3 August 1984 was 49 mm.

Roches Point: Rainfall in the twelve months ending July 1984 was 97% of normal and in the six months ending July 1984 was 70% of normal. The corresponding figures for twelve-and six-month periods ending August 1984 are 96% and 67% respectively. Rainfall in the period 1 to 3 August was 22.9 mm.

Mallow: Rainfall at Mallow in the six months up to the end of August 1984 was 58% of normal.

Valentia: Rainfall in the twelve months ending July 1984 was normal and in the six months ending July 1984 was 72% of normal. Corresponding values for twelve-and six-month periods ending August 1984 are 103% and 78% respectively. The dry period at the end of July was broken by a fall of 51.8 mm in the period 30 July to 3 August.

Bantry: Rainfall in the six-month period up to the end of August 1984 was 64% of normal.

Kilbrittain: Rainfall in the six-month period up to the end of August 1984 was 63% of normal.

Inniscarra: Rainfall at Inniscarra in the six-month period up to the end of August was 63% of normal.

LOW FLOWS:

HYDROMETRIC AREA 18 - MUNSTER BLACKWATER: A flow of 3.1 m³/s was recorded at Station 1803 (Killavullen) on the Munster Blackwater on 21 August. The minimum measured flow of 3.35 m³/s at this station was measured on 11 August 1976.

An in-situ flow measurement of 0.022 m³/s was made at Station 1812 (Freemount) on the Allow River on 31 July. Prior to 1984 the minimum measured flow at

this station was 0.047 m³/s on 20 September 1977; no flow measurement is available for 1976.

HYDROMETRIC AREA 19 - LEE, CORK HARBOUR AND YOUGHAL BAY: At Station 1901, Ballea on the Owenboy the lowest flow recorded in the summer of 1984 was 0.088 m³/s on 31 July. This flow may be compared with the 1975 low flow of 0.03 m³/s recorded on 6 July 1975

An in-situ flow measurement of 0.1 m³/s was made on 27 July at Station 1917 (Bawnafinny Bridge) on the River Blarney. The lowest measured flow at this station is 0.038 m³/s, measured on 27 August 1976.

On the Owenacurra River at Station 1920 (Ballyedmond) an in-situ flow measurement of 0.16 m³/s was made on 25 July. The lowest flow at Ballyedmond is 0.089 m³/s, measured on 7 July 1976.

At Station 1918 (Tower) on the Shournagh River a flow of 0.21 m³/s was measured on 27 July, this may be compared with the previous lowest measured flow of 0.139 m³/s on 6 September 1976.

In general, lowest flows in 1984 in Hydrometric Area 19 stayed well above the minimum flow rates observed over the period of record.

HYDROMETRIC AREA 20 - BANDON, ILEN: At Station 2001 (Bandon) on the Bandon River the lowest flow rate recorded in 1984 was 0.6 m³/s on 20 August. The minimum recorded flow rate was 0.51 m³/s on 14 September 1976.

Very low flows were observed on the Ilen River at Ballyhilty, north of Skibbereen. On 24 July 1984 an in-situ flow measurement was carried out at Station 2005 (Ballyhilty) giving a measured flow of 0.18 m³/s. This is the minimum measured flow at this station, the previous lowest being 0.25 m³/s on 1 September 1976.

HYDROMETRIC AREA 21 - DUNMANUS, BANTRY AND KENMARE BAYS: At Station 2103 (Ballylickey) on the Owvane River the lowest flow in the summer of 1984 was 0.075 m³/s recorded on 17 August. The minimum recorded flow over the period of record was 0.04 m³/s on 8 September 1976.

An in-situ flow measurement of 0.16 m³/s was made on the Cummeragh River at the outlet of Lough Derriana, Station 2172, on 15 August. The minimum flow measured at this station was 0.13 m³/s on 5 June 1975.

Flows in this Hydrometric Area appear, in general, to have remained above minimum recorded levels.

HYDROMETRIC AREA 22 - LAUNE, MAINE AND DINGLE BAY: At Station 2203, the River Maine at Riverville, the lowest flow recorded during the summer and autumn of 1984 was $0.71 \text{ m}^3/\text{s}$ on 17 August 1984. The minimum flow rate over the period of record was $0.32 \text{ m}^3/\text{s}$ on 2 September 1975.

At Station 2206 (Flesk Bridge, Killarney) on the River Flesk a measurement of $1.1 \text{ m}^3/\text{s}$ was made on 16 August 1984. The lowest measured flow at this station was $0.74 \text{ m}^3/\text{s}$ measured on 18 August 1976.

The outflow from Caragh Lake at Caragh, Station 2207, was measured as $0.91 \text{ m}^3/\text{s}$ on 15 August. This value may be compared with the minimum flow measured on 31 August 1976 of $0.39 \text{ m}^3/\text{s}$.

TABLE 4

Table of Low Flows - Southern Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
HYDROMETRIC AREA 18 - MUNSTER BLACKWATER											
1803	Blackwater	Killavullen	Flow		5.55*	5.95*	3.35*	3.1	3.48	1258	
			Date		8/8	9/7	11/8	21/8	17/8		
HYDROMETRIC AREA 19 - LEE, CORK HARBOUR AND YOUGHAL BAY											
1901	Owenboy	Ballea	Flow	-	0.2*	0.03	0.035*	0.088	0.11	106	
			Date		29/8	6/7	31/8	31/7	5/9		
1917	Blarney	Bawnafinny Br.	Flow	-	-	0.098*	0.038*	-	0.1	89	
			Date		10/9	27/8			27/7		
HYDROMETRIC AREA 20 - BANDON AND ILEN											
2001	Bandon	Bandon	Flow	-	0.67	0.58	0.51	0.6	0.67	406	
			Date		11/9	15/9	14/9	20/8	14/8		
HYDROMETRIC AREA 21 - DUNMANUS, BANTRY AND KENMARE BAY											
2103	Owvane	Ballylickey	Flow	-	-	0.175*	0.04	0.075	0.085	75	
			Date			7/8	8/9	17/8	24/7		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

TABLE 4

Table of Low Flows - Southern Water Resource Region (contd.)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
HYDROMETRIC AREA 22 - LAUNE, MAINE AND DINGLE BAY											
2203	Maine	Riverville	Flow	-	-	0.32	0.48	0.71	0.71	272	
			Date			2/9	22/8	17/8	17/8		

MID-WESTERN WATER RESOURCE REGION

General Notes: Low flow in the summer and early autumn of 1984 in the Mid-Western Water Resource Region generally exceeded 1976 low flows but tended, north of the Shannon Estuary, to approach these flow rates.

RAINFALL:

Shannon Airport: Rainfall at Shannon Airport in the twelve months ending July 1984 was 102% of normal and in the six months ending July 1984 was 63% of normal. The corresponding values for twelve-and six-month periods ending August 1984 are 104% and 63%. The dry period at the end of July was broken by a fall of 23.7 mm between 30 July and 3 August.

Bruff: Rainfall at Bruff in the six months ending August 1984 was 65% of normal.

Clasheen: Rainfall at Clasheen in the six months ending August 1984 was 65% of normal.

LOW FLOWS:

HYDROMETRIC AREA 23 - TRALEE BAY, FEALE: Lowest flows in this Hydrometric Area during 1984 were generally somewhat in excess of minimum recorded flows. The lowest flow rate in the summer of 1984 at Station 2302 (Listowel) on the River Feale was $0.61 \text{ m}^3/\text{s}$ and occurred on 28 July. The minimum recorded flow rate at this station, $0.43 \text{ m}^3/\text{s}$, occurred on 8 September 1976.

An in-situ flow measurement was made on the Kerry Lee River at Station 2312 (Ballymullen) on 20 August 1984. This measurement gave a flow rate of $0.13 \text{ m}^3/\text{s}$. The minimum measured flow at Ballymullen is $0.1 \text{ m}^3/\text{s}$ and was measured on 30 August 1976.

On the Galey River at Station 2301 (Inch Bridge) the measured flow on 23 July was $0.071 \text{ m}^3/\text{s}$. This value may be compared with the minimum measured flow of $0.059 \text{ m}^3/\text{s}$; this was measured on 11 August 1976.

HYDROMETRIC AREA 24 - SHANNON ESTUARY SOUTH: Lowest flows during the summer of 1984 in this Hydrometric Area did not fall below minimum flow rates on record.

At Station 2401 (Croom) on the River Maigue a flow rate of $0.8 \text{ m}^3/\text{s}$ was recorded on 27 August. The minimum recorded flow rate at this station is $0.7 \text{ m}^3/\text{s}$; this flow was observed on 9 September 1975.

An in-situ flow measurement was made at Station 2402 (Gray's Bridge) on the River Camoge on 26 July 1984 giving a flow rate of $0.18 \text{ m}^3/\text{s}$. This value may be compared with a minimum recorded flow of $0.06 \text{ m}^3/\text{s}$ on 23 August 1976.

At Station 2403 (Garroose) on the Loobagh River a flow rate of $0.36 \text{ m}^3/\text{s}$ was measured in-situ on 19 July 1984. The minimum measured flow rate for this station was $0.28 \text{ m}^3/\text{s}$ on 23 August 1976.

HYDROMETRIC AREA 27 - SHANNON ESTUARY NORTH: River flows in this Hydrometric Area were very low at the end of July and in the third quarter of August 1984. On the River Fergus at Station 2702 (Ballycorey) a flow rate of $0.17 \text{ m}^3/\text{s}$ was recorded on 1 August 1984 equalling the minimum flow recorded on 23 September 1976.

An in-situ flow measurement carried out at Station 2721 (Ardsolus) on the River Quin on 13 August resulted in a flow of $0.039 \text{ m}^3/\text{s}$. This flow may be compared with the minimum measured flow of $0.015 \text{ m}^3/\text{s}$, measured on 28 August 1976.

At Station 2770 (Baunkyle) the outflow from Lough Inchiquin was measured on 27 July as $0.05 \text{ m}^3/\text{s}$. This is the lowest measured flow at this station. The previous lowest flow was $0.075 \text{ m}^3/\text{s}$ measured on 27 August 1976.

HYDROMETRIC AREA 28 - MAL BAY: A number of in-situ flow measurements were made in this Hydrometric Area in the summer of 1984. Because of the short period of record at these stations it is not possible to compare these flow rates with flow rates in previous drought years.

TABLE 5

Table of Low Flows - Mid Western Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
<u>HYDROMETRIC AREA 23 - TRALEE BAY AND FEALE</u>											
2302	Feale	Listowel	Flow	0.44	0.46	0.76	0.43	0.61	0.61	646	1
			Date	30/9	22/7	5/7	8/9	28/7	28/7		
<u>HYDROMETRIC AREA 24 - SHANNON ESTUARY SOUTH</u>											
2401	Maigue	Croon	Flow	-	0.92*	0.7	-	0.8	1.04	774	
			Date		29/10	9/9		27/8	1/8		
<u>HYDROMETRIC AREA 27 - SHANNON ESTUARY NORTH</u>											
2702	Fergus	Ballycorey	Flow	-	-	-	0.17	0.174*	0.17	562	2
			Date			23/9	1/8	1/8	1/8		

HYDROMETRIC AREA 28 - MAL BAY: - No relevant recorded data available for this Hydrometric Area.

Notes:* Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

1 Record for last week in July 1969 and for all of August and September 1969 unavailable.

2 Minimum of all flow rates encountered at this station prior to 21/7/84 was greater than 0.174 m³/s.

SHANNON WATER RESOURCE REGION

General Notes: Minimum flow rates in the Shannon Water Resource Region in the the summer and autumn of 1984 approached minimum flow rates on record.

RAINFALL:

Birr: Rainfall at Birr in the twelve months up to the end of July 1984 was 95% of normal and in the six months up to the end of July 1984 was 68% of normal. The corresponding figures for twelve-and six-month periods up to the end of August 1984 are 100% and 75% respectively. The dry period at the end of July 1984 was broken by rainfall of 84.9 mm occurring in the period 30 July to 4 August.

Banagher: Rainfall at Banagher in the six months up to the end of August 1984 was 75% of normal.

Clonsast: Rainfall at Clonsast in the six months up to the end of August 1984 was 83% of normal.

Ballymahon: Rainfall at Ballymahon in the six months up to the end of August 1984 was 67% of normal.

Boyle: Rainfall at Boyle in the six months up to the end of August 1984 was 83% of normal.

Mullingar: Rainfall at Mullingar in the twelve months up to the end of July 1984 was 95% of normal and in the six months up to the end of July 1984 was 75% of normal. The corresponding figures for twelve-and six-month periods up to the end of August 1984 are 101% and 85% respectively. The dry period at the end of July 1984 was broken by rainfall up 97.1 mm falling in the period 30 July to 3 August.

LOW FLOWS:

HYDROMETRIC AREA 25 - LOWER SHANNON: (This Hydrometric Area contains stations with numbers commencing 25 or 65)

The lowest observed flow rates in the Lower Shannon sub-catchments in the summer and early autumn of 1984 occurred at the end of July and at the end of August. Station 2522 (Syngefield), on the Camcor River, the lowest 1984 recorded flow rate was $0.49 \text{ m}^3/\text{s}$ on 30 August: this value may be compared with the minimum recorded flow rate over the period of record, $0.33 \text{ m}^3/\text{s}$, which occurred on 3 September 1975.

At Station 2502 (Barrington's Bridge) on the Newport River a flow of $0.5 \text{ m}^3/\text{s}$ was recorded on 23 August 1984. The minimum recorded flow rate at this station is $0.25 \text{ m}^3/\text{s}$ on 2 September 1976.

The lowest 1984 recorded flow rate at Station 2524 (New Bridge) on the Little Brosna was $1.22 \text{ m}^3/\text{s}$ on 29 July. The lowest measured flow in 1976 at this station was $1.56 \text{ m}^3/\text{s}$ on 27 August 1976.

At Station 2544 (Coole Bridge) on the Kilmastulla River a flow of $0.15 \text{ m}^3/\text{s}$ was measured on 31 July. This flow rate was of the same order as the minimum flow rate recorded on 15 June 1975, $0.14 \text{ m}^3/\text{s}$.

A large number of in-situ flow measurements were carried out in the Lower Shannon area during the late summer and early autumn of 1984. At Station 2552 (Ballycumber) on the River Brosna, a flow measurement of $1.1 \text{ m}^3/\text{s}$ was made on 21 August. The previous lowest measured flow at this station was $1.11 \text{ m}^3/\text{s}$ on 11 September 1975.

Further downstream on the Brosna at Station 2511 (Moystown) a flow measurement on 26 July yielded the minimum measured flow on record, $2.7 \text{ m}^3/\text{s}$. The previous lowest flow was $3.7 \text{ m}^3/\text{s}$ on 30 July 1968.

The flow at Station 2519 (Conicar) on the Cappagh River was measured on 28 August with a resulting flow rate of $0.078 \text{ m}^3/\text{s}$. The minimum measured flow rate at Conicar is $0.04 \text{ m}^3/\text{s}$, measured on 31 August 1976.

At Abbington, on the Mulkear River, Station 2503, a low flow of $0.76 \text{ m}^3/\text{s}$ was measured on 23 August. This flow rate equals the lowest measured flow at this station which was obtained on 23 August 1976.

HYDROMETRIC AREA 26 - UPPER SHANNON: (This Hydrometric Area contains stations with numbers commencing 26 or 66).

The lowest flows in the Upper Shannon sub-catchments during the summer and early autumn of 1984 were of the same order as the minimum recorded flow rates. At Station 2612 (Tinnecarra) on the Boyle River a low flow of $0.41 \text{ m}^3/\text{s}$ was recorded on 26 August. The 1976 low flow value was $0.47 \text{ m}^3/\text{s}$.

At Station 2621 (Ballymahon) on the River Inny a flow of $1.7 \text{ m}^3/\text{s}$ was measured on 24 August. The minimum recorded flow rate at this station is $1.6 \text{ m}^3/\text{s}$ and occurred on 10 September 1975.

On the River Rinn at Station 2608 (Johnston's Bridge) a flow rate of $0.04 \text{ m}^3/\text{s}$ was recorded on 25 July. The minimum recorded flow at this station is $0.018 \text{ m}^3/\text{s}$ on 21 September 1976.

At Station 2607 (Bellagill) on the River Suck the lowest recorded flow of $1.6 \text{ m}^3/\text{s}$ occurred on 26 August 1984. The previous minimum recorded flow was $1.7 \text{ m}^3/\text{s}$ on 9 September 1976.

An in-situ flow measurement was made at Station 2619 (Mullagh) on the Camlin River on 1 August 1984. This measurement gave a flow rate of $0.13 \text{ m}^3/\text{s}$. This rate of flow equals the minimum measured flow rate of $0.13 \text{ m}^3/\text{s}$ measured on 30 August 1976.

At Station 2616 (Ballymurray) on the Hind River a flow of $0.16 \text{ m}^3/\text{s}$ was measured on 28 August. This is the minimum measured flow rate at this station, the previous lowest being $0.2 \text{ m}^3/\text{s}$ on 31 August 1978.

TABLE 6

Table of Low Flows - Shannon Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:							Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984				
HYDROMETRIC AREA 25 - LOWER SHANNON												
2502	Newport	Barrington's Bridge	Flow	-	0.532*	0.58*	0.25	0.5	0.54	223		
			Date		10/9	22/7	2/9	23/8	25/7			
2522	Camcor	Syngefield	Flow	0.53	0.34	0.33	0.34	0.49	0.49	160		
			Date	9/10	8/9	3/9	2/9	30/8	30/8			
2524	Little Brosna	New Bridge	Flow	-	-	-	1.56*	1.22	1.34	508		
			Date				27/8	29/7	9/7			
2544	Kilmastulla	Coole Bridge	Flow	-	-	0.14	0.3	0.15*	0.15	99		
			Date		15/6	3/9	31/7	31/7				
HYDROMETRIC AREA 26 - UPPER SHANNON												
2607	Suck	Bellagill	Flow	-	2.18*	2.35*	1.7	1.6	1.63	1184		
			Date		2/9	2/9	9/9	26/8	6/7			

Notes: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

TABLE 6

Table of Low Flows - Shannon Water Resource Region (Contd)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			

HYDROMETRIC AREA 26 - UPPER SHANNON (Contd.)

2608	Rinn	Johnston's Bridge	Flow	-	-	0.06*	0.018	0.04	0.057	292	
			Date			16/9	21/9	25/7	1/8		
2612	Boyle	Tinnecarra	Flow	0.85	0.96	0.65	0.47	0.41	0.47	520	
			Date	13/8	1/10	19/7	17/9	26/8	30/8		
2621	Inny	Ballymahon	Flow	-	-	1.59	1.6	1.7*	1.7	1071	
			Date			10/9	10/9	24/8	24/8		

Notes: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

WESTERN WATER RESOURCE REGION

General Notes: Low flows during 1984 in many rivers in the Corrib and South Galway catchments were lower than 1976 minimum flows, in some cases significantly so. Otherwise, low flows in the Western Water Resource Region were generally above minimum recorded flow rates.

RAINFALL:

Galway: Rainfall in the twelve-month period ending July 1984 was 95% of normal and in the six-month period ending July 1984 was 71% of normal. The corresponding figures for twelve and six-month periods ending August 1984 are 96% and 73% respectively. The dry period at the end of July was broken by a fall of 38.9 mm in the period 30 July to 3 August inclusive.

Claremorris: Rainfall at Claremorris in the twelve-month period ending July 1984 was 93% of normal and in the six-month period ending July 1984 was 62% of normal. The corresponding figures for twelve and six-month periods ending August 1984 are 94% and 56%. Rainfall in the period 30 July to 4 August was 21.5 mm.

Straide: Rainfall at Straide in the six-month period ending August 1984 was 59% of normal.

Belmullet: Rainfall at Belmullet in the twelve-month period ending July 1984 was 93% of normal and in the six-month period ending July 1984 was 75% of normal. The corresponding figures for twelve and six-month periods ending in August 1984 are 94% and 67% respectively. In the period 28 July to 2 August 1984 a fall of 44 mm was recorded.

Tobercurry: Rainfall at Tobercurry in the six-month period ending August 1984 was 55% of normal.

LOW FLOWS:

HYDROMETRIC AREA 29 - GALWAY BAY SOUTH-EAST: The lowest flow rates in the summer of 1984 in Hydrometric Area 29 were generally well in excess of minimum recorded flow rates in the southern part of this Hydrometric Area but equalled or fell below these minima in the northern part.

At Station 2901 (Raford) on the Rathgorgin River a flow rate of 0.013 m³/s was recorded on 1 August. The previous minimum flow rate over the period of record was 0.015 m³/s which occurred on 9 September 1976.

At Station 2904 (Clarinbridge) the Lavally River was noted as being dry on 27 August. The record shows that the lowest flow observed during 1976 was $0.007 \text{ m}^3/\text{s}$ on 13 August 1976. However, the Lavally River also dried up in the summer and early autumn of 1977.

On the Cannahowna River at Station 2908 (Gort) an in-situ flow measurement was made on 27 August 1984 giving a flow value of $0.085 \text{ m}^3/\text{s}$, which may be compared with the minimum measured flow of $0.017 \text{ m}^3/\text{s}$ observed on 22 September 1976.

HYDROMETRIC AREA 30 - CORRIB: Lowest rates of flow observed in certain rivers of Hydrometric Area 30 during the summer of 1984 were as low as, or below, minimum flows observed during the drought of 1976. At Station 3004 (Corofin) on the Clare River a flow of $0.61 \text{ m}^3/\text{s}$ was recorded on 29 July 1984. A flow of $0.91 \text{ m}^3/\text{s}$ was measured at this station on 30 August 1976 while the minimum 1975 flow rate observed was $0.9 \text{ m}^3/\text{s}$ on 12 August 1975.

The lowest flow recorded in 1984 at Station 3005 (Foxhill Bridge) on the River Robe was $0.24 \text{ m}^3/\text{s}$ on 31 July. The lowest flow rate on record for this station was $0.19 \text{ m}^3/\text{s}$ on 9 July 1975. The lowest 1976 flow rate was $0.23 \text{ m}^3/\text{s}$ observed on 14 September 1976.

An in-situ flow measurement was made at Station 3003 (Dunmore) on the Sinking River on 27 July 1984. The resulting flow rate was $0.011 \text{ m}^3/\text{s}$ which may be compared with the lowest flow rate measured in 1976, $0.016 \text{ m}^3/\text{s}$.

In-situ flow measurements at the following stations gave flow rates lower than minimum flows measured in the summers of 1975 and 1976: 3020 (Ballyhaunis) on the Dalgan; 3026 (Grange) on the Grange; 3024 (Pallas) on the Abbert; 3002 (Ower Bridge) on the Black River; the stream at Headford (Station 3023) and the Drimneen at the outlet of Buffy Lough (Station 3027).

HYDROMETRIC AREA 31 - GALWAY BAY NORTH: On 22 August 1984 an in-situ flow measurement at Station 3171 (Boliska) on the outlet of Lough Boliska gave a flow rate of $0.093 \text{ m}^3/\text{s}$ which may be compared with the lowest measured flow rate $0.073 \text{ m}^3/\text{s}$ measured on 9 September 1976.

HYDROMETRIC AREA 32 - ERRIFF AND CLEW BAY: Low measured flows on some rivers in this Hydrometric Area in the summer of 1984 were of the same order as minimum flows measured in Autumn 1976. At the E.S.B. hydrometric station on the Owenglin River, Station 3204 (Clifden), a flow rate of $0.085 \text{ m}^3/\text{s}$ was measured on 24 May 1984. This flow rate may be compared with the 1976 value of $0.052 \text{ m}^3/\text{s}$ measured on 8 September 1976.

At Station 3210 (Glinsk) on the Owenure River, a flow of $0.001 \text{ m}^3/\text{s}$ was measured on 18 August. The 1976 minimum measured flow at this station was $0.0009 \text{ m}^3/\text{s}$ on 8 September 1976.

The lowest measured flow on file for Station 3272, the outlet from Moher Lake, occurred on 18 August and was $0.0007 \text{ m}^3/\text{s}$. In 1976 the lowest measured flow was $0.0009 \text{ m}^3/\text{s}$ occurring on 25 August 1976.

HYDROMETRIC AREA 33 - BLACKSOD, BROADHAVEN AND NORTH MAYO: Some variation in low flow severity occurred in this Hydrometric Area. At Station 3301 (Glenamoy Bridge) on the Glenamoy River a low flow rate of $0.21 \text{ m}^3/\text{s}$ was recorded on 28 August. The 1976 minimum measured flow rate of $0.15 \text{ m}^3/\text{s}$ occurred on 24 August 1976.

A minimum measured flow rate of $0.417 \text{ m}^3/\text{s}$ was observed at Station 3306 (Srahnamanragh) on the Owenduff River on 29 May 1984. The previous lowest measured flow rate at this station, $0.422 \text{ m}^3/\text{s}$, occurred on 24 August 1976.

HYDROMETRIC AREA 34 - MOY AND KILLALA BAY: The low flow during the summer and autumn of 1984 in Hydrometric Area 34 occurred over two periods, one period from 25 July to the end of July and the other from the second week in August to the end of August. The low recorded flow at Station 3411 (Gneeve Bridge) on the Manulla River, $0.06 \text{ m}^3/\text{s}$, occurred on 25 August. The minimum recorded flow rate at this station was $0.054 \text{ m}^3/\text{s}$ on 31 August 1976.

At Station 3403 (Foxford) on the River Moy a minimum flow of $2.1 \text{ m}^3/\text{s}$ was recorded on 20 August; the previous minimum flow rate recorded at Foxford was $3.3 \text{ m}^3/\text{s}$ on 19 September 1976.

A number of in-situ flow measurements yielded minimum measured flows. At Station 3404 (Ballylahan) on the River Moy a flow of $1.7 \text{ m}^3/\text{s}$ was measured on 14 August. Flow measurement records for this station commenced in 1940 and the previous minimum flow measured was $1.8 \text{ m}^3/\text{s}$ on 8 July 1975.

The lowest measured flow for the River Moy at Station 3401 (Rahans) was observed on 13 August to be $3.2 \text{ m}^3/\text{s}$, the previous minimum being $3.3 \text{ m}^3/\text{s}$ on 16 October 1951.

On the Palmerstown River at Station 3430 (Tully Mills) a flow of $0.18 \text{ m}^3/\text{s}$ was measured on 16 August. A flow of $0.17 \text{ m}^3/\text{s}$ was measured at this station on 9 August 1976.

On 15 August a flow of $0.041 \text{ m}^3/\text{s}$ was measured at Station 3421 (the stream at Swinford); this flow rate may be compared with a measured flow of $0.047 \text{ m}^3/\text{s}$ on 23 August 1976.

TABLE 7 Table of Low Flows - Western Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:							Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year									
			1959	1969	1975	1976	1984					

HYDROMETRIC AREA 29 - GALWAY BAY SOUTH-EAST

2901	Raford	Rathgorgin	Flow	0.05*	-	0.08	0.015	0.013	0.06	119	
			Date	17/9		25/8	9/9	1/8	18/7		
2904	Lavally	Clarinbridge	Flow	-	-	0.02	0.007	No Flow	No Flow	123	
			Date			12/6	13/8	27/8	27/8		

HYDROMETRIC AREA 30 - CORRIB

3004	Clare	Corofin	Flow	-	-	0.9	0.91*	0.61	0.64	695	
			Date			12/8	30/8	29/7	26/7		
3005	Robe	Foxhill Br.	Flow	0.45	0.35	0.19	0.23	0.24	0.24	250	
			Date	20/9	5/10	9/7	14/9	31/7	25/7		

HYDROMETRIC AREA 31 and 32 - GALWAY BAY NORTH, ERRIFF AND CLEW BAYS - No relevant recorded data available for these Hydrometric Areas

HYDROMETRIC AREA 33 - BLACKSOD, BROADHAVEN AND NORTH MAYO

3301	Glenamoy	Glenamoy	Flow	-	-	0.19*	0.15*	0.21	0.23		
			Date			11/6	24/8	28/8	10/8		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

TABLE 7

Table of Low Flows - Western Water Resource Region (Contd)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			

HYDROMETRIC AREA 34 - MOY AND KILLALA BAY

3403	Moy	Foxford	Flow	-	-	-	3.3	2.1	2.3	1737	
			Date				19/9	20/8	13/8		
3411	Manulla	Gneeve Br.	Flow	0.14	-	0.069*	0.054	0.06	0.063	144	
			Date	15/9		8/7	31/8	25/8	29/8		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

NORTH-WESTERN WATER RESOURCE REGION

General Notes: Low flow in the summer of 1984 in the North-Western Water Resource Region was generally above minimum recorded flow rates.

RAINFALL:

Malin Head: Rainfall at Malin Head was 94% of normal in the twelve-month period up to the end of August 1984 and 65% of normal in the six-month period up to the end of August 1984.

Clones: Rainfall at Clones was 98% of normal in the twelve-month period up to the end of June 1984 and 91% of normal for the period February - June 1984. The corresponding values for twelve and six-month periods up to the end of August 1984 were 104% and 84% respectively.

Glenties: Rainfall at Glenties was 64% of normal in the six-month period ending August 1984.

Ballybofey: Rainfall at Ballybofey was 56% of normal in the six-month period ending August 1984.

LOW FLOWS:

HYDROMETRIC AREA 01 - FOYLE: Very low flows were observed towards the end of May 1984 and at the very end of August 1984. The lowest flow recorded during the summer of 1984 at Station 0143 (Ballybofey) on the River Finn was $0.47 \text{ m}^3/\text{s}$ on 30 May. This value may be compared with a low flow of $0.31 \text{ m}^3/\text{s}$ on 5 July 1975.

In-situ measurements made at Station 0170 (Lough Finn) on 22 May gave a flow of $0.016 \text{ m}^3/\text{s}$. The previous minimum measured flow at this station was $0.018 \text{ m}^3/\text{s}$ on 30 August 1976. Apart from this exception, flow rates based on in-situ flow measurements during the summer of 1984 exceeded those measured during 1976.

HYDROMETRIC AREA 03 - BANN: The lowest recorded flow at Station 0351 (Faulkland Bridge) on the Monaghan Blackwater during the summer of 1984 was $0.088 \text{ m}^3/\text{s}$ on 6 July. This flow rate may be compared with the minimum recorded flow rate of $0.02 \text{ m}^3/\text{s}$ in September 1975 and September 1976.

HYDROMETRIC AREA 35 - SLIGO BAY, DROWES: Low flow in this Hydrometric Area in the summer of 1984 generally exceeded the 1975 and 1976 low flow values. The lowest recorded flow rate at Station 3501 (Ballynacarrow) on the Owenmore River in the summer of 1984 was $0.23 \text{ m}^3/\text{s}$ on 9 August. This value may be compared with a flow of $0.2 \text{ m}^3/\text{s}$ recorded on 18 August 1975.

On the Bonet River at Station 3511 (Dromahair) a flow rate of $0.57 \text{ m}^3/\text{s}$ was recorded on 26 August. The minimum flow rate on record at this station is $0.33 \text{ m}^3/\text{s}$, recorded on 30 August 1976.

An in-situ flow measurement was made at Station 3505 (Ballysadare) on the Ballysadare River on 24 August 1984. The resulting flow of $0.88 \text{ m}^3/\text{s}$ exceeds the lowest measured flow of $0.7 \text{ m}^3/\text{s}$, measured on 7 July 1975.

HYDROMETRIC AREA 36 - ERNE: There were large variations in the low flow behaviour of rivers in this Hydrometric Area in the summer of 1984. While flows in the upper reaches of the Annalee were as low as 1976 summer flows, in the lower reaches of the Annalee, and in the other streams in the Upper Erne catchment, 1984 minimum flows were well in excess of 1976 values. On the River Finn at Station 3615 (Anlore) the lowest flow rate recorded in the summer of 1984 was $0.19 \text{ m}^3/\text{s}$ on 26 July. The lowest flow rate recorded in 1976 was $0.007 \text{ m}^3/\text{s}$ on 4 September 1976.

On the Cavan River at Station 3631 (Lisdarn) a flow rate of $0.07 \text{ m}^3/\text{s}$ was recorded on 29 July. The lowest flow on record at Lisdarn was $0.03 \text{ m}^3/\text{s}$ on 5 September 1976.

On the Woodford River at Station 3627 (Ballyheady) a flow rate of $0.4 \text{ m}^3/\text{s}$ was recorded on 30 July. The lowest recorded flow rate at this station occurred on 15 July 1975 and was $0.32 \text{ m}^3/\text{s}$.

The minimum flow rate recorded at Station 3618 (Ashfield Bridge) on the Dromore River in the summer of 1984 occurred on 27 July and was $0.316 \text{ m}^3/\text{s}$. This value may be compared with the lowest flow rate on record for this station, $0.006 \text{ m}^3/\text{s}$, on 26 August 1975.

At the outlet of Derrygooney Lough, Station 3678, an in-situ flow measurement of $0.004 \text{ m}^3/\text{s}$ was made on 1 August 1984. The previous lowest measured flow at this station was $0.015 \text{ m}^3/\text{s}$ on 17 August 1976.

HYDROMETRIC AREA 37 - DONEGAL BAY NORTH: Insufficient flow measurements were made in this hydrometric area during periods of low flow to enable comparisons with previous drought years to be made.

HYDROMETRIC AREA 38 - DEBARRA, DEEPHAVEN: At Station 3801 (Clonconwal) the Owenea River the lowest flow rate recorded during the summer of 1984 was $0.17 \text{ m}^3/\text{s}$ on 30 May. This flow rate may be compared with a measured flow rate of $0.11 \text{ m}^3/\text{s}$ on 1 July 1975.

On the Gweedore River at Station 3803 (Crolly) an in-situ flow measurement of $0.13 \text{ m}^3/\text{s}$ was made on 15 May 1984. The lowest measured flow at this station measured on 25 August 1976, was $0.10 \text{ m}^3/\text{s}$.

HYDROMETRIC AREA 39 - LOUGH SWILLY: Flow rates during the summer of 1984 in this hydrometric area seem to have kept above 1976 values. On the River Swilly at Station 3901 (New Mills) the lowest recorded flow rate in 1984 was $0.04 \text{ m}^3/\text{s}$ on 20 August. The minimum flow on record at this Station is $0.032 \text{ m}^3/\text{s}$ on 1 June 1975.

On the Glenalla River at Station 3907 (Headley's Bridge) the lowest flow measured in the summer of 1984 was $0.005 \text{ m}^3/\text{s}$ on 21 June. The lowest flow rate measured during the summer of 1976 at this station was $0.004 \text{ m}^3/\text{s}$ on 7 September 1976.

HYDROMETRIC AREA 40 - DONAGH, MOVILLE: Insufficient flow measurements were made in this hydrometric area during periods of low flow to enable comparisons with previous drought years to be made.

TABLE 8

Table of Low Flows - North-Western Water Resource Region

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
<u>HYDROMETRIC AREA 01 - FOYLE</u>											
0143	Finn	Ballybofey	Flow	-	-	0.31	0.38	0.47	0.47	319	
			Date		5/7	4/9	30/5	30/5			
<u>HYDROMETRIC AREA 02 - This hydrometric area is totally within Northern Ireland</u>											
<u>HYDROMETRIC AREA 03 - BANN</u>											
0351	Monaghan Blackwater	Faulkland Bridge	Flow	-	-	0.02	0.02	0.088	0.32	126	1
			Date		7/9	6/9	6/7	7/8			
<u>HYDROMETRIC AREA 35 - SLIGO BAY, DROWES</u>											
3501	Owenmore	Ballina-carrow	Flow	-	-	0.2	0.36*	0.23	0.23	299	
			Date		18/8	3/9	9/8	8/8			
3511	Bonet	Dromahair	Flow	0.62	0.41	0.38	0.33	0.57	0.58	294	
			Date	19/9	17/6	7/7	30/8	26/8	22/8		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.
 1 Minimum computed flow rate up to the end of July 1984.

TABLE 8 Table of Low Flows - North Western Water Resource Region (Contd)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			
HYDROMETRIC AREA 36 - ERNE											
3615	Finn	Anlore	Flow	0.036	0.13	0.075	0.007	0.19	0.19	175	
			Date	9/10	10/9	8/8	4/9	26/7	27/7		
3618	Dromore	Ashfield Br.	Flow	-	-	0.006	0.009	0.316	0.32	233	
			Date			26/8	5/9	27/7	27/7		
3627	Woodford	Ballyheady	Flow	-	-	0.32	0.33	0.4	0.64	324	
			Date			15/7	19/9	30/7	25/7		
3631	Cavan	Lisdarn	Flow	-	-	0.03	0.03	0.07	0.21	52	
			Date			30/8	5/9	29/7	8/8		

HYDROMETRIC AREA 37 - DONEGAL BAY NORTH - No relevant recorded data is available for this Hydrometric Area.

HYDROMETRIC AREA 38 - DEBARRA, DEEPHAVEN

3801	Owenea	Clonconwall	Flow	-	-	0.11*	0.2	0.17	0.2	109	
			Date			1/7	31/8	30/5	22/5		

Note: * Minimum flow rates derived from in-situ flow measurements rather than computed from chart record.

TABLE 8

Table of Low Flows - North Western Resource Region (Contd)

Station No.	River	Location	Magnitude and Dates of occurrence of Lowest Computed Flow Rates (m ³ /s) for Each of the Following Drought Years:						Lowest In-situ Measured Flow in 1984 (m ³ /s)	Area (km ²)	Notes
			Year	1959	1969	1975	1976	1984			

HYDROMETRIC AREA 39 - LOUGH SWILLY

3901	Swilly	New Mills	Flow	-	-	0.032	0.035	0.04	0.04		
			Date			1/6	8/9	20/8	20/8	49	

HYDROMETRIC AREA 40 - No relevant data is available for this Hydrometric Area.

APPENDIX

1984 SURVEY

LOWEST FLOWS MEASURED

Water Resources Division An Foras Forbartha

December 1984



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INTRODUCTION

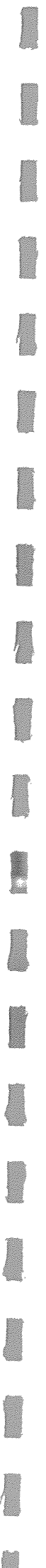
Purpose

Flow Measurements

Results Included

Format

Tables (in Hydrometric Area Order)



INTRODUCTION

Purpose

The purpose of this publication is to make available for easy reference results of flow measurements giving lowest values in 1984 for various locations throughout the country.

Flow Measurement

For the purposes of this publication a flow measurement is an in situ measurement of flow carried out by current meter using the velocity area method.

Results Included

This publication contains a selected list of results of flow measurements satisfying the following criteria -

- i) the measured flow rate is the lowest measured flow on record at the station, and/or
- ii) the measurement was made during periods of known extremely low flow rates, i.e. from 25 July to 1 August and from 20 August to 31 August (some measurements made in May in the north-western water resource region were also included), and/or
- iii) the measurement was of the order of measured flows in the summers of previous drought years.

Format

The results of the flow measurements are in tabular form in Hydrometric Area order. (The country has been divided into 40 Hydrometric Areas Fig. 1).

Within each Hydrometric Area the stations are grouped according to the rivers and are listed in alphabetic order of river names.

Notes are included indicating for each location whether a result is -

1. The lowest measured flow on record at the location.

2. Greater than the lowest rate of flow (not measured) likely to have occurred at the location during the summer of 1984.
3. As low as, or lower than, the lowest measured flow rate at the location during the 1976 drought.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff ℓ/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 06 NEWRY, FANE, GLYDE AND DEE</u>						
0613	Charleville	Dee	23. 8.84	0.29	0.94	
0670	Muckno	Muckno L.	28. 8.84	0.2	1.30	
0635	Stephenstown	Fane	4. 7.84	0.12		1, 2
0631	Curralhir	Flurry	28. 8.84	0.057	1.3	
0634	Brothna	Flurry	28. 8.84	0.044		3
0614	Tallanstown	Glyde	23. 8.84	0.33	1.2	
0644	Lurgankeel	Kilcurry	30. 7.84	0.041		1
0638	Drummond	Tr. to L. Naglack	20. 8.84	0.008		1, 2
0637	Termonfecken	Termonfecken	20. 8.84	0.009		2
<u>HYDROMETRIC AREA 07 BOYNE</u>						
0723	Athboy	Athboy	29. 8.84	0.17	1.8	
0739	Johnstown Bridge	Blackwater	31. 8.84	0.19		1, 2
0707*	Boyne Aqueduct	Boyne	1. 8.84	0.88	2.0	2
0705*	Trim	Boyne	1. 8.84	2.4	1.9	2
0709*	Navan	Boyne	1. 8.84	2.7	1.7	2
0741	Ballinkeer Bridge	Boyne	28. 8.84	3.4		1

Notes: * C.P.W. flow measurement. All other flow measurements by A.F.F.

1. This flow rate is the lowest in-situ measured flow rate on record for this location.
2. Although this is the lowest flow rate measured in-situ during 1984, it is likely that a lower flow rate occurred at this location during the summer/autumn drought of 1984.
3. This flow rate is as low as, or lower than, the lowest in-situ measured flow rate at this location during the drought of 1976.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff l/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 01 FOYLE</u>						
0144	Sessiagh	Burndaurnet	30. 5.84	0.022		1, 2
0141	Sandy Mills	Deele	10. 8.84	0.14	1.2	2
0170	Lough Finn	O/L L. Finn	22. 5.84	0.016		1, 2, 3
0171	Lough Mourne	Mourne	12. 6.84	0.002		2
<u>HYDROMETRIC AREA 03 BANN</u>						
0355*	Glaslough	Blackwater	30. 7.84	0.016		1
<u>HYDROMETRIC AREA 06 NEWRY, FANE, GLYDE AND DEE</u>						
0630	Ballygoly	Big	30. 7.84	0.011	1.1	1, 3
0642	Mountbagnall	Big	28. 8.84	0.056		1, 3
0632	St. John's Bridge	Castletown	30. 7.84	0.007		1
0641	Ford's Bridge	Castletown	2. 7.84	0.07		1, 2
0640	Dungooly	Cully Water	30. 7.84	0.006		1
0643	Deegvee	Dee	23. 8.84	0.099		1

Notes:

* C.P.W. flow measurement. All other flow measurements by A.F.F.

1. This flow rate is the lowest in-situ measured flow rate on record for this location.
2. Although this is the lowest flow rate measured in-situ during 1984, it is likely that a lower flow rate occurred at this location during the summer/autumn drought of 1984.
3. This flow rate is as low as, or lower than, the lowest in-situ measured flow rate at this location during the drought of 1976.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff ℓ/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 07 BOYNE (cont'd.)</u>						
0724	Clonymeath	Clonymeath	22. 8.84	0.0047		
0772	Lough Bane	Deel	31. 7.84	No Flow	0	1
0702*	Killyon	Deel	1. 8.84	0.67	2.4	2
0703*	Castlerickard	Enfield Blackwater	1. 8.84	0.31	1.7	2
0733*	Virginia Hatchery	Kells Blackwater	24. 7.84	0.015		2
0704*	Stramatt	Kells Blackwater	24. 7.84	0.094	0.37	2
0711*	O'Daly's Bridge	Kells Blackwater	24. 7.84	0.14	0.48	1, 2
0717	Rosehill Bridge	Moynalty	23. 8.84	0.067	0.91	
0721	Drumree	Skane	22. 8.84	0.004		
0771	Skeagh Lough	O/ℓ Skeagh L.	31. 7.84	0.003	0.56	
0715	Clonmaskill	Stonyford	11.10.84	0.14		1, 2
0701*	Tremblestown	Tremblestown	1. 8.84	0.26	1.7	2
<u>HYDROMETRIC AREA 08 NANNY, DELVIN</u>						
0813	Ratoath	Broadmeadow	22. 8.84	0.0004	0.034	1, 3
0807	Ashbourne	Broadmeadow	22. 8.84	0.0004	0.012	1, 3

Notes: * O.P.W. flow measurement. All other flow measurements by A.F.F.

1. This flow rate is the lowest in-situ measured flow rate on record for this location.
2. Although this is the lowest flow rate measured in-situ during 1984, it is likely that a lower flow rate occurred at this location during the summer/autumn drought of 1984.
3. This flow rate is as low as, or lower than, the lowest in-situ measured flow rate at this location during the drought of 1976.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff ℓ/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 08 NANNY, DELVIN (cont'd.)</u>						
0803	Fieldstown	Broadmeadow	29. 8.84	0.012	0.15	
0808*	Broadmeadow	Broadmeadow	30. 8.84	0.028	0.25	1, 2
0802	Naul	Delvin	29. 8.84	0.052	1.6	
0806	Hole in the Wall	Mayne	22. 8.84	0.01	0.60	
0814	Skerries	Mill	22. 8.84	0.01		
0805	Kinsalely Hall	Sluice	22. 8.84	0.01	0.99	
0810	Garristown	Stream	29. 8.84	0.004		1
0812	Ballyboghil	Stream	30. 8.84	0.003		1, 2
0809	Balheary	Ward	30. 8.84	0.03		2
<u>HYDROMETRIC AREA 09 LIFFEY AND DUBLIN BAY</u>						
0910	Waldron's Bridge	Dodder	30. 8.84	0.32		1, 2
0907	Golden Falls	Liffey	20. 6.84	1.2		1, 2
0909	Willbrook Road	Owendoher	23. 8.84	0.12		1
0901*	Leixlip	Ryewater	30. 8.84	0.03	0.18	1, 2
0911	Frankfort	Slang	30. 8.84	0.013		1, 2

Notes: * O.P.W. flow measurement. All other flow measurements by A.F.F.

1. This flow rate is the lowest in-situ measured flow rate on record for this location.
2. Although this is the lowest flow rate measured in-situ during 1984, it is likely that a lower flow rate occurred at this location during the summer/autumn drought of 1984.
3. This flow rate is as low as, or lower than, the lowest in-situ measured flow rate at this location during the drought of 1976.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff l/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 10 OVOCA, VARTY</u>						
1027	Ballintemple	Aughrim	31. 7.84	0.11		1
1070	Lough Dan	Lough Dan	23. 8.84	0.3		
1017	Ballyman	Ballyman	24. 8.84	0.014	3.7	
1019	Vallambrosa	Ballyman	24. 8.84	0.042	7.4	
1022	Carrickmines	Ballyogan	24. 8.84	0.011		1
1024	Glencullen Bridge	Glencullen	23. 8.84	0.045		1
1010	Enniskerry	Glencullen	24. 7.84	0.087		1, 2
1021	Common's Road	Shanganagh	24. 8.84	0.063		1
10--	Newcastle	Stream	28. 8.84	0.036		1
1016	Newtownmountkennedy	Stream	28. 8.84	0.037		1, 3
<u>HYDROMETRIC AREA 11 OWENAVORRAGH - No relevant measurements in Hydrometric Area 11</u>						
<u>HYDROMETRIC AREA 12 SLANEY AND WEXFORD HARBOUR</u>						
1215	Ferns	Bann	23. 8.84	0.3	1.8	
1216	Dunahore	Boro	24. 8.84	0.76	4.4	

Notes: * O.P.W. flow measurement. All other flow measurements by A.F.F.

1. This flow rate is the lowest in-situ measured flow rate on record for this location.
2. Although this is the lowest flow rate measured in-situ during 1984, it is likely that a lower flow rate occurred at this location during the summer/autumn drought of 1984.
3. This flow rate is as low as, or lower than, the lowest in-situ measured flow rate at this location during the drought of 1976.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff ℓ/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 12 SLANEY AND WEXFORD HARBOUR (cont'd.)</u>						
1220	Craan	Clody	26. 7.84	0.062	4.1	
1223	Knockloe	Derreen	25. 7.84	0.49	2.5	1
1219	Tinahely	Derry	24. 7.84	0.052	1.6	2
1224	Myshall	Douglas	23. 8.84	0.009	1.5	1
1218	Cronyhorn	Mine	24. 7.84	0.087	1.9	2
1213	Rathvilly	Slaney	25. 7.84	0.98	5.3	
1221	Tullow	Slaney	5. 7.84	1.05	4.0	1
1212	Kilcarry	Slaney	26. 7.84	1.58	2.9	
1227	Clohamon	Slaney	16. 8.84	2.7		1, 2
1201*	Scarrawalsh	Slaney	30. 7.84	2.75	2.7	
12--	Edenvale	Sow	27. 7.84	0.18		1
1217	Carnew	Stream	24. 7.84	0.02	2.2	2
1226	Carley's Bridge	Urrin	23. 8.84	0.39		1
<u>HYDROMETRIC AREA 13 BALLYTEIGUE - BANNOW</u>						
1301	Goff's Bridge	Corock	5. 7.84	0.14	2.5	2

Notes: *

O.P.W. flow measurement. All other flow measurements by A.F.F.

1. This flow rate is the lowest in-situ measured flow rate on record for this location.
2. Although this is the lowest flow rate measured in-situ during 1984, it is likely that a lower flow rate occurred at this location during the summer/autumn drought of 1984.
3. This flow rate is as low as, or lower than, the lowest in-situ measured flow rate at this location during the drought of 1976.

Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff ℓ/s/km ²	Notes See Bottom of Page
<u>HYDROMETRIC AREA 14 BARROW</u>						
1425	Coonogue	Aughnabriskey	28. 8.84	0.073	6.6	
1442	Reary Valley	Barrow	27. 8.84	0.03	0.9	
1403	Borress	Barrow	29. 8.84	0.17	0.86	
1405	Portarlington	Barrow	29. 8.84	0.38	0.95	1
1434	Bestfield	Barrow	28. 8.84	4.4	2.1	
1418	Royal Oak	Barrow	28. 8.84	5.1	2.1	
1424	Coolasnachta	Burren	28. 8.84	0.027	6.2	
1435	Rathoe	Burren	21. 8.84	0.14		2
1413	Ballinacarrig	Burren	28. 8.84	0.15	0.94	
1447	Ballyshear	Cushina	17.10.84	0.011		1, 2
1443	Killleen	Douglas	22. 8.84	0.022		1
1446	Esker Bridge	Esker	15. 8.84	0.383		1
1416	Kilcumber Bridge	Figile	15. 8.84	0.21	2.1	2
1440	Clonmore	Fushoge	22. 8.84	0.0007		1
1428	Ballitore	Greese	27. 8.84	0.24		1
1426	Rosdelling	Mountain	25. 7.84	0.17	4.4	

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<u>HYDROMETRIC AREA 14 BARROW (Cont'd.)</u>						
1427	Borris	Mountain	25. 7.84	0.16	1.5	
1433	Mountmellick	Owenass	23. 8.84	0.06	0.66	
1437	Daingean	Philipstown	28. 8.84	0.034		
1428	Poultmounty	Poultmounty	26. 7.84	0.13	3.3	
1444	Stradbally	Stradbally	22. 8.84	0.11		1
1445	Ballylynan	Stream	22. 8.84	0.002		1
1432	Kyle Bridge	Triogue	23. 8.84	0.13	4.2	
<u>HYDROMETRIC AREA 15 NORE</u>						
15--	Coolrainy	Arrigle	29. 8.84	0.096		
1514	Ballygub	Clodiagh	29. 8.84	0.013	2.3	1
1510	Slatt Bridge	Clogh	20. 8.84	0.011	1.48	1, 2
1521	Annagh	Delour	29. 8.84	0.26	3.6	
1517	Dinan Bridge	Dinan	20. 8.84	0.22	0.73	2
1517	Maasford	Dinan	20. 8.84	0.05	0.6	1, 2
1513	Castlecomer	Dinan	20. 8.84	0.18	1.2	2

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HYDROMETRIC AREA 15 NORE (Cont'd.)						
1516	Drumgool	Tr. to Dinan	20. 8.84	0.022	1.2	1, 2
1530	Clarneyhall Bridge	Erkina	23. 8.84	0.033		1
1528	Ballydine Bridge	Gloreen	23. 8.84	0.084		1
1523	Rathculbin	Kings	27. 7.84	0.22	0.94	1
1501	Annamult	Kings	29. 8.84	0.5	1.1	
1527	Mountrath	Mountrath	23. 8.84	0.11		1
1524	Ballyline	Munster	29. 8.84	0.016		1
1508	Borris in Ossory	Nore	29. 8.84	0.14	1.2	1
15--	Castletown	Nore	30. 7.84	0.26		
1512	Ballyragget	Nore	20. 8.84	2.3		2
1502	John's Bridge	Nore	17. 7.84	3.7	2.3	2
1511	Mount Juliet	Nore	20. 8.84	4.6	2.0	
1506	Brownsbarn	Nore	27. 7.84	4.0	1.7	
15--	Bennettsbridge	Nore	17. 7.84	5.4		2
1529	Donaghmore	Stream	23. 8.84	0.011		1

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<u>HYDROMETRIC AREA 16 SUIR</u>						
1629	Gaibally Bridge	Aherlow	29. 8.84	0.18		1
1634	Melbourne Bridge	Anner	30. 8.84	0.34		2
1632	Beeverstown	Tr. to Anner	30. 8.84	0.013		2
1626	Shanakill	Clodiagh	27. 7.84	0.14		1, 2
1603	Rathkennan	Clodiagh	26. 7.84	0.25	1.0	
1636	Borrisland	Tr. to Cromoge	30. 8.84	0.005		1, 2
1616	Lingaun Dale	Lingaun	30. 8.84	0.34	4.0	2
1637	Knocknageragh	Suir	26. 7.84	0.015	0.17	1
1610	Anner Road Bridge	Anner	30. 8.84	1.5	3.5	2
<u>HYDROMETRIC AREA 17 COLLIGAN - MAHON</u>						
1704	Ballykeroge	Dalligan	11. 9.84	0.062		1, 2
1705	Woodhouse	Tay	11. 9.84	0.24		1, 2

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HYDROMETRIC AREA 18 BLACKWATER (MUNSTER)						
1812	Freemount	Allow	21. 7.84	0.022	0.36	1
1813	Araglin	Araglin	24. 8.84	0.63	6.0	1
1835	Sunfort	Awbeg	27. 2.84	0.004	0.21	1
1803	Killavullen	Blackwater	17. 8.84	3.48	2.8	2
1816	Duncannon	Blackwater	16. 8.84	0.15	1.3	1, 2
1850	Duarrigle	Blackwater	16. 8.84	0.33		1, 2
1815	Colthurst	Blackwater	16. 8.84	0.53	1.7	1, 2
1848	Drumconner	Blackwater	16. 8.84	1.6	1.8	1, 2
1811	Ballinterry	Bride	23. 8.84	0.35	3.0	
1854	Rathmore	Cullavan	9. 8.84	0.032		1, 2
1822	Ballyderown	Douglas	24. 8.84	0.1	4.8	
1836	Killee	Funshion	17. 8.84	0.71	5.1	1, 2
1824	Glenavuddig	Funshion	17. 8.84	1.1	4.7	1, 2
1845	Flower Hill	Glenmore	12. 9.84	0.085	4.5	1, 2
1849	Sruh	Owenasad	12. 9.84	0.36		1, 2
1828	Kilcorney	Owenbaun	9. 8.84	0.12	5.0	1, 2
1842	Clasheel Bridge	Tourig	10. 8.84	0.13	3.4	1, 2

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HYDROMETRIC AREA 19 LEE, CORK HARBOUR AND KOUGHAL BAY						
1917	Bawnafinny	Blarney	27.7.84	0.1	1.2	
1916*	Ovens	Bridge	21.7.84	0.084	0.68	
1909	Brookhill	Butlerstown	28.8.84	0.076	1.3	
1925	Killeagh	Dissoar	19.2.84	0.1		1, 2
1929	Daylie	Tr. to Dissoar	10.3.84	0.015		1, 2
1919	Dowal	Dowal	30.7.84	0.13		
1905	Brickley's Bridge	Dungourney	24.8.84	0.062		
1924	Carraigaphoooca	Pokerish	15.9.84	0.14		1, 2
1966	Glanmire	Glasnaboy	23.8.84	0.056	0.40	1
1932	Meadowbrook	Glasnaboy	15.8.84	0.094		1, 2
1935	Brooklodge	Glennore	28.8.84	0.045		1
1901	Castlesnaryz	Kiltha	30.7.84	0.043		
1934	Bawnmore	Laney	27.7.84	0.24		1
1927	Kill	Laney	27.7.84	0.25		1
1922	East Cork Floods	Owenacurra	25.7.84	0.12		
1926	Ballyedmond	Owenacurra	25.7.84	0.16	2.1	
1921	Clochemallin	Owenacurra	24.8.84	0.2		1

Notes:

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HYDROMETRIC AREA 19 LEE, CORK HARBOUR AND YOUGHAL BAY (cont'd.)						
1918	Tower Bridge	Shournagh	27. 7.84	0.21	1.3	1
1926	Titeskin	Carrigacrumpp	3. 7.84	0.019		
1931	Macroon	Sullane	27. 7.84	0.27		
1923	Coolcaum	Toon	13. 8.84	0.003		
HYDROMETRIC AREA 20 BANDON, ILEN						
2006	Clonakilty	Argideen	26. 7.84	0.17		1, 2
2013	Carbery Milk Products	Bandon	14. 8.84	0.36		1, 2, 3
2001	Bandon	Bandon	14. 8.84	0.67	1.7	1
2010	Carrigmore	Blackwater	26. 7.84	2.03		1, 2
2011	Brinny	Brinny	14. 8.84	0.19		1, 3
2005	Ballyhilty	Ilen	24. 7.84	0.18		
HYDROMETRIC AREA 21 DUNMANUS, BANTRY AND KENMARE BAYS						
2102	Coomhola	Coomhola	23. 7.84	0.14	2.2	2
2172	Lough Derriana	Cummeragh	15. 8.84	0.16		2

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<u>HYDROMETRIC AREA 21 DUNMANUS, BANTRY & KENMARE BAYS (cont'd.)</u>						
2108	Kenmare	Finnihy	23. 7.84	0.042		1, 2
2109	Kenmare Church	Tr. to Finnihy	23. 7.84	0.0004		1, 2
2104	Inchiclough	Mealagh	24. 7.84	0.039	0.85	2
2103	Ballylickey	Owvane	24. 7.84	0.085	1.1	2
<u>HYDROMETRIC AREA 22 LAUNE, MAINE AND DINGLE BAY</u>						
2207**	Caragh Lake	Caragh	15. 8.84	0.91	5.7	2
2272	Lough Guitane	Finow	29. 8.84	0.14	7.4	
2206**	Killarney	Flesk	16. 8.84	1.1	3.4	2
2203*	Riverville	Maine	17. 8.84	0.71	2.6	2
2270	Brickeen Bridge		29. 8.84	0.95		
2205	Torc Weir	Torc	29. 8.84	0.049	6.1	
<u>HYDROMETRIC AREA 23 TRALEE BAY, FEALE</u>						
2305	Goulburn Bridge	Allaghaun	28. 7.84	0.046	0.41	
2306	Neodata	Feale	28. 7.84	0.427	1.5	

Notes: *

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HYDROMETRIC AREA 23 TRALEE BAY, FEALE (cont'd.)						
2302	Listowel	Peale	28. 7.84	0.61	0.95	
2301	Inch Bridge	Galey	23. 7.84	0.071	0.36	2
2311	Ballycarty	Lee	20. 8.84	0.023	0.96	2
2312	Ballymullen	Lee	20. 8.84	0.13	2.2	2
2307	Oolagh Railway Bridge	Oolagh	28. 7.84	0.019		
2308	Knockaunbrack	Smealagh	23. 7.84	0.084	1.0	
HYDROMETRIC AREA 24 SHANNON ESTUARY SOUTH						
2431	Newcastle West	Arra	15. 8.84	0.051		1, 2
2402	Gray's Bridge	Canoge	26. 7.84	0.18	0.78	
2430	Danganbeg	Deel	15. 8.84	0.26		1, 2
2429	Inchirourke More	Deel	27. 7.84	0.46		1
2423	Knocklong	Drumcamoge	29. 8.84	0.0057		1
2422	Hospital	Mahore	30. 7.84	0.01		1
2409	Adare Manor	Maigue	16. 8.84	0.91		1, 2
2401	Croom	Maigue	1. 8.84	1.04	1.3	2

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HYDROMETRIC AREA 24 SHANNON ESTUARY SOUTH		(cont'd.)				
2424	Garryspillane	Morningstar	14. 8.84	0.055		1, 2
2425	Bruff	Morningstar	15. 8.84	0.051		1, 2
2417	Robertstown	Robertstown	27. 7.84	0.027		1
2433	Ballyhahill	White	15. 8.84	0.008		1, 2
HYDROMETRIC AREA 25 SHANNON LOWER						
6520	Cullenwaine	Ballyfinboy	3. 9.84	0.026		1, 2
6522	Borrisokane	Ballyfinboy	17. 8.84	0.057		1, 2
6513	Cloughjordan	Tr. to Ballyfinboy	17. 8.84	0.021		
2504*	New Bridge	Bilboa	25. 7.84	0.42	3.4	
6503	Knocknakill	Tr. to Bilboa	30. 8.84	0.019		1, 2
2550*	Mullingar Pump House	Brosna	22. 8.84	0.21	3.96	1
2513	Newell's Bridge	Brosna	23. 7.84	0.25	1.1	1, 2
6524	Ballynagore	Brosna	14. 8.84	0.48	1.9	1, 2

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HYDROMETRIC AREA 25 SHANNON LOWER (cont'd.)						
2535	Clara	Brosna	16. 8.84	0.54	1.6	1, 2
2552	Ballycumber	Brosna	21. 8.84	1.1	2.2	1
2511	Moystown	Brosna	26. 7.84	2.7	2.21	1
2540	Roscrea	Bunow	26. 7.84	0.018	0.6	
6557	Cloonlusk	Cahernahallia	14. 8.84	0.076		1, 2
6527	Moneyguynen	Camcor	30. 8.84	0.097	6.1	1, 2
2522	Syngefield	Camcor	30. 8.84	0.49	3.1	2
2542	Culleen Weir	Canal Supply	21. 8.84	0.25	7.9	2
2519	Conicar	Cappagh	28. 8.84	0.078	0.62	
2507	Gorteen	Clodiagh	27. 8.84	0.071	1.3	
2539	Kilgortin	Clodiagh	28. 8.84	0.11	0.83	
2516*	Rahan	Clodiagh	29. 8.84	0.35	1.3	
6525	Kinnity Intake	Cumber	30. 8.84	0.035	3.2	1, 2
2505*	Sunville	Dead	25. 7.84	0.37	1.93	
6553	Doonane	Doonane	30. 7.84	0.042		1
6531	Woodfield	Gageborough	27. 8.84	0.28	2.6	1

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HYDROMETRIC AREA 25 SHANNON LOWER (cont'd.)						
2512*	Groody Bridge	Groody	27. 8.84	0.14	2.2	
2520	Killeen	Killimor	28. 8.84	0.078	0.4	
2544	Coole	Kilmastulla	31. 7.84	0.15	1.5	1
6509	Cooleen	Tr. to Kilmastulla	30. 8.84	0.0012		1, 2
6521	Clogmoyle	Little Brosna	2. 8.84	0.058	1.3	1, 2
6522	Keeloge Cottage	Little Brosna	2. 8.84	0.096	0.61	1, 2
6511	Clythanane	Little Brosna	22. 8.84	0.079	0.54	1
6506	Ballindarra	Little Brosna	25. 7.84	0.74	2.1	1
2524	New Bridge	Little Brosna	9. 7.84	1.34	2.6	1, 3
6512*	Drumbane	Milbrook	30. 8.84	0.041	1.8	1, 2
2503*	Abbingdon	Mulkear	23. 8.84	0.76	1.9	3
2501*	Annacotty	Mulkear	23. 8.84	1.1	1.8	
6504	Gorteenavalla	Nenagh	30. 8.84	0.032		1, 2
2538	Tyone	Nenagh	17. 8.84	0.21		1, 2
6534	Nenagh Bridge	Nenagh	17. 8.84	0.59		1, 2
2554	Rockvale	Newport	31. 7.84	0.14		1

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<u>HYDROMETRIC AREA 25 SHANNON LOWER (cont'd.)</u>						
2502*	Barrington's Bridge	Newport	25. 7.84	0.54	2.4	1
6500	Pallas Bridge	Pallas	25. 7.84	0.031		
6526	Rapemills	Rapemills	26. 7.84	0.12	3.2	1
6528	Cadamstown	Silver	30. 8.84	0.027	1.7	2
2536	Kilcormac	Silver	30. 8.84	0.19	1.6	2
2514	Millbrook	Silver	27. 8.84	0.42	2.5	
6502	Killodieran	Stream	24. 7.84	0.0005		2
6541	Lorrha	Stream	25. 7.84	0.011		1
6529	Ballmoney	Tullamore	28. 8.84	0.032	1.2	
2533	Ballycowan	Tullamore	28. 8.84	0.2	1.52	1
6510	Bolag	Woodford	28. 8.84	0.017		1
6505	Ballycarridge	Youghal	24. 7.84	0.029		2
<u>HYDROMETRIC AREA 26 SHANNON UPPER</u>						
2609	Bellantry	Black	1. 8.84	0.022	0.22	2
2633	Blackwater Bridge	Blackwater	26. 7.84	0.13	1.6	1

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HYDROMETRIC AREA 26 SHANNON UPPER (cont'd.)						
2634	New Bridge	Boor	24. 7.84	0.054	1.0	1, 2
2612	Tinnecarra	Boyle	30. 8.84	0.47	0.90	1. 2. 3
2611	Bella Bridge	Breedoge	31. 7.84	0.043	0.38	3
2643	Ballykeeran	Breensford	30. 7.84	0.083	1.5	
2603*	Ballinruane	Bunowen	23. 8.84	0.11	1.1	
2632	Sonnagh	Bunowen	25. 7.84	0.16	1.6	1
2620	Argar	Camlin	21. 8.84	0.087	0.69	
2619	Mullagh	Camlin	1. 8.84	0.13	0.52	2
6605	Moylough	Castlegar Stream	9. 8.84	0.0009	0.0009	1, 2
2610	Riverstown	Cloone	1. 8.84	0.015	0.15	2
2641	Burnbrook	Cross	25. 7.84	0.63	10.6	
2639	Railway Bridge	Deerpark	25. 7.84	0.13	2.0	
2615	Corrascoffey	Eslin	1. 8.84	0.007	0.11	2
2622	Kilmore	Fallan	1. 8.84	0.007	0.11	2
6610	Moate Park	Hind	31. 7.84	0.14	2.8	1
2616	Ballymurray	Hind	28. 8.84	0.16	2.6	1

Notes:

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Station Number	Station Location	River	Date	Flow Rate m ³ /s	Specific Runoff ℓ/s/km ²	Notes See Bottom of Page
HYDROMETRIC AREA 26 SHANNON UPPER (cont'd.)						
6604	Ballinaleck	Inny	30.7.84	1.3	2.0	1
2621	Ballymahon	Inny	24.8.84	1.7	1.6	
2658	Ballinrink Bridge	Inny Upper	21.8.84	0.12	2.1	1
2638	Ballinure	Tr. to Suck	25.7.84	0.028	0.51	
6601	Ballinrink	Tr. to Upper Inny	21.8.84	0.002	0.088	1
2646	Mountmurray	Tr. to L. Iron	20.8.84	0.004	0.14	1, 2
2652	Carrick	Tr. to L. Sheelin	21.8.84	No Flow	0	1
2655	Crover	Tr. to L. Sheelin	21.8.84	0.0002	0.035	1
2652	Doose	Tr. to L. Sheelin	21.8.84	0.001	0.41	
2653	Magheraboy	Tr. to L. Sheelin	21.8.84	0.002	0.51	1
2654	The Cottage	Tr. to L. Sheelin	21.8.84	0.008	0.85	1
6603	Moneybeg	Tr. to L. Sheelin	21.8.84	0.008	1.9	1
2670	Uriaur Abbey	O/L L. Uriaur	23.8.84	0.006	0.24	1
2613	Banada	Lung	16.8.84	0.35	1.6	2
2656	Mountnugent Bridge	Mountnugent	20.8.84	0.042	0.45	1, 2
2657	Garrysallagh	Inny Upper	21.8.84	0.007	0.96	1
2613*	Bellavahan	Owenure	1.8.84	0.053	0.45	1, 2

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HYDROMETRIC AREA 26 SHANNON UPPER (cont'd)						
2608	Johnston's Bridge	Rinn	1. 8.84	0.057	0.20	2
2617	Gillstown	Scramoge	1. 8.84	0.062	0.29	1, 2
2601	Ballinamore	Sliven	31. 7.84	0.17	0.74	1
6609	Drumshambo	Stream	22. 5.84	0.002		1, 2
2642	Mohill	Stream	1. 8.84	0.005		1, 2
2649	Glassan	Stream	30. 7.84	0.006	0.5	
2605	Derrycanilly	Suck	23. 8.84	1.44	1.4	1
2657	Bellagill	Suck	25. 7.84	1.63	1.4	
2643	Tang	Tang	30. 7.84	0.14	1.5	1
HYDROMETRIC AREA 27 SHANNON ESTUARY NORTH						
2798	Clonliffad	Ballycorick	23. 8.84	0.035		
2705	Cratloe Moyle	Cratloe Creek	7. 5.84	0.004		1, 2
2796	Carrowniska	Crompaun	23. 8.84	0.006		1
2702	Ballycorey	Fergus	1. 8.84	0.17	0.30	2

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HYDROMETRIC AREA 27 SHANNON ESTUARY NORTH		(cont'd.)				
2771	Cullaun Lake	O/ℓ Cullaun Lake	21. 8.84	0.0006		1
2770	Baunkyle	O/ℓ L. Inchiquin	27. 7.84	0.05		1
2707	Ballyvohane	Stream	23. 8.84	0.0007		1
HYDROMETRIC AREA 28 MAL. BAY						
2804	Kilshanny	Derreen	21. 8.84	0.006		1
2805	Kilmihil	Tr. to Doonbeg	23. 8.84	0.007		1
HYDROMETRIC AREA 29 GALWAY BAY SOUTH EAST						
2908	Gort	Cannahowna	27. 8.84	0.085		
2906	Athenry	Clarinbridge	27. 8.84	0.022		
2907	Craughwell	Dunkellin	27. 8.84	0.058		
2904	Clarinbridge	Clarinbridge	27. 8.84	No Flow	0	3
2905	Whistle Bridge	Lavally	27. 8.84	No Flow	0	3
2970	Loughrea	O/ℓ L. Rea	27. 8.84	0.007		

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HYDROMETRIC AREA 30 CORRIB						
3024	Pallas	Abbott	26. 7.84	0.19		1
3016	Ballindine	Ballindine	28. 7.84	0.004		1
3002	Over Bridge	Black	27. 7.84	0.13	0.75	1
3030	Shrule	Black	20. 8.84	0.18		2
3004	Corofin	Clare	26. 7.84	0.64	0.93	1, 3
3007	Ballygaddy	Clare	26. 7.84	0.67		
3020	Ballyhaunis	Daligan	28. 7.84	0.083	1.5	
3022	Cottage	Daligan	28. 7.84	0.25	4.1	1
3032	Dalyin	Daligan	28. 8.84	0.45		
3027	O/L Bally Lough	Drineen	30. 7.84	0.002		1
3033	Tournakaddy	Glensaul	9. 7.84	0.025		1, 3
3026	Grange	Grange	26. 7.84	0.091		1, 2
3025	Guam	Nanny	26. 7.84	0.047		1, 3
3021	Christina's Bridge	Robe	28. 7.84	0.12	0.89	
3037*	Glencormick	Robe	25. 7.84	0.18		
3045*	Foxhill Bridge	Robe	25. 7.84	0.24	0.97	

Notes:

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HYDROMETRIC AREA 30 CORRIB (cont'd.)						
3003	Dunmore	Sinking	27. 7.84	0.011		1, 3
3023	Headford	Stream	27. 7.84	0.008		1, 3
30--	Ballyhaunis	Well	28. 7.84	0.043		1
HYDROMETRIC AREA 31 GALWAY BAY NORTH						
3101	O/ℓ Derryclare L.	Ballynahinch	21. 8.84	0.73		1
3102	Cashla	Cashla	22. 8.84	0.079		1
3171	Boliska	O/ℓ L. Boliska	22. 8.84	0.093		
HYDROMETRIC AREA 32 ERRIFF AND CLEW BAY						
3206	Cooloughra	Carrowbeg	18. 8.84	0.028		1, 2
3273	Letterettrim	O/ℓ L. Fee	30. 7.84	0.015		
3272	Moher	O/ℓ Moher L.	18. 8.84	0.0007		1, 2
3274	Tully Lough	O/ℓ Tully Lough	21. 8.84	No Flow	0	
3204	Clifden	Owenglin	24. 5.84	0.085	2.7	2
3210	Glinsk	Owenwee	18. 8.84	0.001		2

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<u>HYDROMETRIC AREA 33 BLACKSOD, BROADHAVEN AND NORTH MAYO</u>						
3306	Srahnamanragh	Owenduff	29. 5.84	0.417		1, 2
<u>HYDROMETRIC AREA 34 MOY AND KILLALA BAY</u>						
3435	Rathkip	Brusna	16. 8.84	0.39		1, 2
3432	Raheens	Castlebar	18. 8.84	0.015		1, 2, 3
3428	Drumask	Castlebar	14. 8.84	0.12		1, 2
3418*	Turlough	Castlebar	29. 8.84	0.11	1.2	1
3426	Toormore	Castlebar	14. 8.84	0.21		1, 2
3431	Charlestown	Charlestown	15. 8.84	0.049		1, 2
3420	Molloy's Bridge	Castlebar	18. 8.84	0.056		1
3414*	Mill Bridge	Clydagh	29. 8.84	0.23	4.6	
3417	Hollywood House	Corroy	13. 8.84	0.043		1, 2
3425	Treankeel	Glore	17. 8.84	0.15		1, 2
3415	Aclare	Lough Talt River	23. 7.84	0.15		1, 2
3433	Balla	Manulla	17. 8.84	0.005		1, 2

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HYDROMETRIC AREA 34 MOY AND KILLALA BAY (cont'd.)						
3411*	Gneve	Manulla	29. 8.84	0.063	0.44	
3413	Banada	Moy	25. 7.84	0.24	1.4	
3410	Cloonacarnana	Moy	15. 8.84	0.93	2.0	1, 2, 3
3404	Ballylahan	Moy	14. 8.84	1.7	1.9	1, 2, 3
3403	Foxford	Moy	13. 8.84	2.3	1.3	1, 2, 3
3401*	Rahan's	Moy	13. 8.84	3.2	1.7	1, 2, 3
3427	Cloonlaughlilly	Mullaghane	15. 8.84	0.082		1, 2
3409	Curraghbonaun	Owengarve	15. 8.84	0.102	0.90	1, 2, 3
3474	Coriumin	O/L L. Cullin	15. 8.84	0.48		1, 2, 3
3473	Lannagh	O/L L. Lannagh	13. 8.84	0.045		1, 2, 3
3430	Tully Mills	Palmerstown	16. 8.84	0.18		2
3424	Kiltinagh	Pollagh	23. 8.84	0.17	1.3	
3440	Keesaun	Stream	16. 8.84	0.39		1, 2
3421	Swinford	Stream	15. 8.84	0.041		1, 2, 3
3436	Tobercurry	Tobercurry	25. 7.84	0.015		1
3416	Castleroyan	Trinoge	17. 8.84	0.15		1, 2

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<u>HYDROMETRIC AREA 35 SLIGO BAY, DROWES</u>						
3510	Ballymote	Ballymote	23. 8.84	0.007		1
3505	Bailysadare	Bailysadare	24. 8.84	0.88	1.4	
3511	Cromahair	Bonet	22. 8.84	0.58	2.0	
3517	Bunnamadan	Bunnamadan Stream	19. 9.84	0.058		1, 2
3516	Donaghintraine	Dunneill	23. 8.84	0.065		1
3515	Lisbaleely	Corteen Stream	23. 8.84	0.004		
3514	Carrowreagh	Owenmore	23. 8.84	0.16		1
3501*	Ballynacarrow	Owenmore	8. 8.84	0.23	0.76	2
3506	Ceilcooney	Owenmore	2. 8.84	0.71		1, 2
3506	Bellarush	O/K. L. Arrow	22. 8.84	0.2		
3521	Kinlough	Stream	12. 7.84	0.004		1, 2
3578	Riverstown	Unshin	22. 8.84	0.2		1
<u>HYDROMETRIC AREA 36 ERNE</u>						
3679	Corlea	Annalee	1. 8.84	0.003	0.04	1, 2
3678	Berrygarry Lower	Annalee	1. 8.84	0.004	0.05	1, 2

Notes: *

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<u>HYDROMETRIC AREA 36 ERNE (cont'd.)</u>						
7650	Shantonagh Bridge	Dromore	27. 8.84	0.016		
3644	Lisnaclea	Annalee	1. 8.84	0.023	0.14	1, 2
3617*	Corick	Annalee	27. 7.84	0.13	0.5	
3616*	Rathkenny	Annalee	27. 7.84	0.3	0.57	
7635	Bellanagh	Erne Trib	3. 7.84	0.007		1, 2
3671	Gowly	L. Scur	14. 8.84	0.13	0.9 2.0	2
3613*	Dereskit	Cullies	25. 7.84	0.013	0.08	
3674	Ballybay	Dromore	11. 7.84	No Flow	0	3
3630	Balladian Bridge	Dromore	11. 7.84	No Flow	0	3
3618*	Ashfield Bridge	Dromore	27. 7.84	0.32	1.4	
3612*	Sallaghan	Erne	25. 7.84	0.26	0.97	
3615*	Anlore	Finn	27. 7.84	0.19	1.2	
3676	Lough Sillan	O/ℓ L. Sillan	1. 8.84	0.008	0.15	2
7670	Lough Unshin	O/ℓ L. Unshin	26. 7.84	No Flow	0	1, 3
3634	Ballinamore	Stream	16. 7.84	0.011		1
3627*	Ballyheady	Woodford	25. 7.84	0.64	2.0	

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<u>HYDROMETRIC AREA 37 DONEGAL BAY NORTH</u>						
3709	Bridgetown	Ballintra	29. 8.84	0.052		
<u>HYDROMETRIC AREA 38 DEBARRA, DEEPHAVEN</u>						
3803	Croly	Gweedore	15. 5.84	0.13		2
3872	Lough Altan	O/ℓ L. Altan	15. 5.84	0.08		2
3810	Glenties	Stracashel	11. 7.84	0.59		1
<u>HYDROMETRIC AREA 39 LOUGH SWILLY</u>						
3907	Headley's Bridge	Glenalla	21. 6.84	0.005		1
3906	Claragh	Leannan	27. 8.84	0.27		2
3912	Kilmacrenan	Lurgy	8. 5.84	0.039		2
3904	Dunree	Owenerk	1. 5.84	0.04	1.9	2
3909	Aghawoney	O/ℓ L. Fern	27. 8.84	0.29	1.4	
3901	New Mills	Swilly	20. 8.84	0.04	0.82	

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	<u>HYDROMETRIC AREA 40 DONAGH-MOVILLE</u>					
4001	Noville	Bredagh	19. 6.84	0.02		1, 2
4003	Glennagannon	Glennagannon	16. 5.84	0.062		2
4070	Meendoran	O/L L. Fad (W)	May 1984 No flow for periods in May & June 1984	No Flow	0	3
4002	Malin	Stream	19. 6.84	0.003		1, 2
4005	Muff	Muff	24. 5.84	0.007		1, 2

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