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TWO DECADES OF RUNOFF MEASUREMENTS (1974 TO 1993) AT THE PEGELSTATION VERNAGTBACH/OETZTAL ALPS

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With 18 figures

ABSTRACT

This report summarizes the runoff data collected at the "Pegelstation Vernagtbach" in the Oetztal Alps, Tyrol. The drainage basin controlled by the station covers 11.44 km^2, of which 81 % is glacierized by Vernagtferner and has an altitudinal range from 2635 m a.s.l. to 3635 m a.s.l., with 3115 m a.s.l. as the mean altitude. Runoff records, which start in 1974, are given as monthly, daily and hourly mean values. In addition, the mean diurnal variation is presented for each month. The records show the typical features of the glacier runoff regime, with high discharge during fair weather periods in summer, and low discharge during bad weather and throughout the winter and spring; thus, on average, about 90 % of annual runoff is recorded between June and September. The climatic pattern of the two decades and the resulting mass balances of Vernagtferner tend towards increasing runoff amounts, in particular since the middle of the 1980s. 1991 was the year with highest runoff (0.806 m^3/s yearly average), August 1992 delivered the highest monthly mean (4.048 m^3/s), on July 19, 1987 an average daily runoff of 6.123 m^3/s was recorded, and 10.68 m^3/s was the highest hourly average on August 22, 1993. The rise in absolute amounts was accompanied by increasing diurnal variations, which, on average, were less than 1 m^3/s in August 1974, but almost 5 m^3/s in the same month of 1992.

ZWEI JAHRZEHNTE ABFLUSSMESSUNGEN (1974 BIS 1993) AN DER PEGELSTATION VERNAGTBACH/ÖTZTALER ALPEN

ZUSAMMENFASSUNG

In diesem Beitrag werden die Abflußmessungen der Jahre 1974 bis 1993 an der Pegelstation Vernagtbach in den Ötztaler Alpen vorgestellt. Die Meßstelle erfaßt den Gesamtabfluß eines 11,44 km^2 großen, zwischen 2635 m NN und 3635 m NN gelegenen, zu 81 % mit dem Vernagtferner vergletscherten Einzugsgebietes. Die Daten werden anhand von Monats-, Tages- und Stundenmitteln dargestellt, ergänzt durch die mittleren monatlichen Tagesgänge. Die Meßreihen weisen die charakteristischen Merkmale des Abflußregimes eines stark vergletscherten Einzugsgebietes auf mit hohen Abflußwerten während sommerlicher Schönwetterperioden und niedrigen Beträgen bei schlechtem Wetter bzw. im Winter und Frühjahr; ca. 90 % des Jahresabflusses entfällt auf die Zeit zwischen Juni und September. Der Witterungsverlauf der zwei erfaßten Dekaden und die entsprechenden Massenbilanzen des Vernagtferners bedingen steigende Abflußbeträge seit Beginn und verstärkt seit der Mitte der achtziger Jahre. Das höchste Jahresmittel des Abflusses wurde mit 0,806 m^3/s im Jahr 1991 erfaßt, der August 1992 wies den höchsten Monatsmittelwert auf (4,048 m^3/s), am 19. Juli 1987 wurde mit 6,123 m^3/s das höchste Tagesmittel und am 22. August 1993 mit 10,68 m^3/s das höchste Stundenmittel registriert. Diese Zunahme der Beträge war verbunden mit einer merklichen Vergrößerung der Tagesschwankungen, die für den August 1974 im Mittel noch unter 1 m^3/s lagen, dagegen im gleichen Monat 1992 bereits nahezu 5 m^3/s erreichten.

1. INTRODUCTION

Glacier changes at Vernagtferner, one of the larger glaciers in the Vent Valley/Oetztal Alps, are being monitored over a wide range of time scales. Low frequency variations, i.e., volume and mass balance changes, are discussed by Reinwarth and Rentsch in this volume, and runoff, representing a high frequency parameter of glacier change, will be analyzed in this article. The continuous recording of this important component of the water balance was rendered possible by the installation of the gauging station "Pegelstation Vernagtbach" in 1973 at the glacial stream draining Vernagtferner in the Oetztal Alps. As Bergmann and Reinwarth (1976) already provided an extensive description of the planning and construction of this station, only the most important features will be summarized here.

The runoff gauge was installed in Vernagtbach about 1 km downstream from the glacier terminus, at a site where the bedrock, usually buried under morainic material, comes to the surface again. This ensures that the entire volume of water draining from the basin passes the gauge. The actual runoff measurements can be compared to results from runoff modelling, which was accomplished on an hourly basis for the ablation periods of eight years (1978 to 1985) in the framework of the special research project "Abfluß in und von Gletschern" (Moser et al., 1987). After the end of this research programme, recording of the main meteorological and hydrological variables was continued, thus providing a series of discharge data over 20 years, which will be described and discussed here to some extent.

In this contribution, two previous reports (Oerter 1981, Oerter 1984) are included in a slightly modified, partially extended version. Some minor errors, which were detected after the original publication of these two collections, as well as in the monography by Escher-Vetter and Reinwarth (1994a) which contains the whole data set, were amended.

2. GENERAL DATA ON THE VERNAGT DRAINAGE BASIN

Table 1 summarizes the main features of the drainage basin which is controlled by the Pegelstation Vernagtbach. An orthophoto map of the area, representing the state as of August 1990, is explained in detail in the article by Heipke et al. (in this volume). Figure 1 shows the hypsographic curve of the drainage basin.

3. PRINCIPLE OF MEASUREMENT AND CALIBRATION

In order to obtain reliable runoff values in a glacier stream, careful planning was necessary to overcome the special problems envisaged here, mainly given by the wide range of discharge, the high turbulent energy of streamflow, heavy sediment load including large boulders, and other severe environmental conditions encountered at a high alpine measuring site. Finally, the stabilization of stream flow under rapid flow conditions in a channel of proper dimensions with the entrance profile near its lower end made it possible to avoid all these problems, at least until the last few years, when runoff exceeded about 8 m^3/s. In this case, asymmetric flow conditions within the channel began to diminish the accuracy of measurements.

The measurement itself is accomplished by monitoring the water level with a float and recording the signal on a paper chart and a data logger. The parallel measurements are made in order to have at least two independent recording devices. By this, the total missing data during the twenty years amount to 37 days of a total of 3618 days, considering only

the periods between May and October when practically all discharge occurs at this glacial stream. This 1 % of missing data does not include the periods at the beginning and the end of the recording season, when runoff amounts are fairly constant and thus can be extrapolated with reasonable accuracy.

The rating curve (fig. 2) was establish over a large range of discharge values, most frequently with current meter calibrations, which were used from 3 cm up to 95 cm water level. For high runoff conditions, dilution methods were applied using salt and dye tracers. Although all these data provide a fairly well-defined, unambiguous relation, the upper part of the curve still had to be extrapolated.

4. MONTHLY MEANS OF RUNOFF

Figure 3 displays monthly means of runoff from October 1973 to September 1993. Monthly means from November to April were deduced from single measurements of the nearly constant winter runoff of Vernagtbach, mean values from May to October were calculated on the basis of hourly values, derived from the continuous water level recordings.

The hydrograph shows the typical pattern of runoff from a highly glacierized region, i.e., very low amounts from January to April, increasing runoff during May and June, highest runoff in July, August, and September, decreasing from October to December. In 14 out of 20 years, August was the month with highest runoff, whereas highest monthly means in July were recorded in 1976, 1977, 1982, 1983, 1985 and 1987. The only deviation from this pattern was observed in 1976, a year with extremely high melting rates in June and July, but an abrupt stop in meltwater production on July 21, which led to a mean runoff in August smaller than the mean of September in 15 years. The graph also demonstrates the pronounced increase in runoff amounts in the months with peak values, i.e., July and August. Whereas in the 1970, highest monthly means did not exceed 2 m^3/s on a whole (with the exception of 1976), the monthly mean of runoff was greater than 3 m^3/s in 7 of the remaining 14 years. In 1992, it even surpassed 4 m^3/s.

The complete record of the monthly averages of runoff and monthly sums of runoff height is given in tables 2.1 and 2.2. The lowest yearly runoff, recorded in 1978, amounted to 0.349 m^3/s, and the highest yearly runoff was recorded in 1991 at 0.806 m^3/s. The temporal distribution shows that smaller runoff amounts were measured more frequently in the first decade, whereas especially since 1988, yearly averages have been significantly higher than the overall mean value. The sum of monthly runoff means from June to September amounts to 91 % of yearly runoff as a mean over 20 years, which again demonstrates the glacial runoff regime in an almost ideal manner.

The tables also show that average runoff in October amounted to more than twice the value of May. This was the reason that the tables 3.1 to 3.20, which will be discussed in the next paragraph, were expanded compared to those in the previous data collections (Oerter 1981, Oerter 1984).

5. DAILY MEANS OF RUNOFF

Approaching the next smaller time step leads to the discussion of daily means of runoff. In the tables 3.1 to 3.20, these daily means of runoff are depicted for May to September 1974 and 1975, May to October 1976 to 1993. Missing values, printed in brackets, were supplemented for the calculation of monthly averages. The hydrograph of each summer is plotted in the upper right part.

In the lower left part of each table, the main statistical figures of runoff and runoff height for each month are depicted; in detail, the tables comprise

- average, lowest and highest daily runoff (MQ, NQ and HQ in m^3/s) and day of occurence of NQ and HQ ("am . ."),
- for all years, means of average, lowest, and highest monthly runoff (MQ, MNQ, MHQ in m^3/s) and absolutely lowest and highest daily runoff (NQ, HQ in m^3/s),
- sums of runoff heights (A in mm),
- for all years, means of sums of runoff heights (A in mm).

In the lower right part of each table, specific runoff is given as

- average from May to October (V–X) and June to September (VI–IX) (Nq, Mq, Hq in $l/s \cdot km^2$).
- for all years, means of average, lowest and highest specific runoff for the two periods (Mq, MNq, MHq in $l/s \cdot km^2$).

To conclude,

- highest hourly means of runoff (HQ in m^3/s), specific runoff (Hq in $l/s \cdot km^2$) and runoff height (in cm)

are added to the tables.

The quotation "for all years" signifies that the means are calculated from the actual and the preceding years of the series; thus, 1974/1993 includes all values of the 20 years.

Additional abbreviations which are used in the tables stand for:

BAdW	Bavarian Academy of Sciences, Munich
IfR	Institute for Radiohydrometry of the Gesellschaft für Strahlen- und Umweltforschung, Munich; now called: Institute for Hydrology of the Forschungszentrum für Umwelt und Gesundheit GmbH
KfG	Commission for Glaciology of the BAdW
Ss	recording float gauge (since 1974)
Sd	recording pressure gauge (temporarily)
NN	sea level
PN	zero level of gauge
F_N	area of drainage basin
a. P.	at the gauge
ö	more than once

The statistical variables included in the tables enable a first classification of individual years in relation to the overall pattern. As one example, the data for 1993 (table 3.20) will be presented. As 1993 is the last year of the two decades, the parameters also give an overview for the complete series.

First the data of August are discussed. Lowest daily runoff (NQ) amounted to 0.631 m^3/s on August 31, highest (HQ) was recorded on August 23 (6 m^3/s). The monthly average (MQ) amounted to 3.235 m^3/s. The absolutely lowest daily average for August in the whole period (NQ 1974/1993) was much smaller (0.397 m^3/s), and it was recorded on August 31, 1986 (NQ 1986, table 3.13). The averaged lowest runoff MNQ for all the years, on the other hand, is 0.955 m^3/s, 34 % more than in 1993. Averaging all monthly means for August gives the amount of 2.395 m^3/s. The averaged highest runoff MHQ, i.e., the average of HQ for all years, amounts to 4.196 m^3/s, and the highest daily average (HQ August 1974/1993) was recorded in 1993, i.e. in the same year. This also applies for HQ May 1974/1993; on the other

hand, the highest daily runoff for June and October was recorded in 1986. Highest July runoff occurred on July 19, 1987, whereas September 1, 1983 delivered the highest daily runoff for all the Septembers from 1974 to 1993.

Runoff height over the total area amounted to 757 mm in August 1993, the average being 561 mm for the whole period. For the other months, runoff height in 1993 is larger than the 1974/1993 average in May and June, smaller in July, September and October.

Specific runoff is not depicted for the individual months, but as an average from May to October (V–X) and June to September (VI–IX). The lowest specific runoff Nq for the period May to October 1993 was 1.5 $l/s \cdot km^2$, which results from the lowest daily average NQ = 0.017 m^3/s in October. Calculation of the mean specific runoff MNq is performed by arithmetic averaging of Nq. This results in an average of MNq = 1.8 $l/s \cdot km^2$ for May to October, 16.7 $l/s \cdot km^2$ for June to September. Average specific runoff amounts to 101.6 $l/s \cdot km^2$ for May to October 1976 to 1993, and is 138.1 l/s km^2 for June to September 74/93.

Highest daily specific runoff Hq equals 524.4 l/s km^2, which is 33 % above the 74/93 average (394.6 $l/s \cdot km^2$). It was recorded on August 23, which was, however, one day after the occurrence of the highest hourly runoff in that year. In the lower right of the table, this quantity amounts to 934 $l/s \cdot km^2$ for 1993. This is 192 % of the daily average for the same day. These highest hourly means of runoff underwent a rather interesting development during the two decades. In the first three years, they rose from year to year. From 1976 until 1982, the value of 7.23 m^3/s on July 18, 1976 was not exceeded, the next increase happened on August 1, 1983 with a value of 8.30 m^3/s. This maximum lasted until 1987, when, on August 24, 9.31 m^3/s passed the gauging station in one hour. This high amount caused damage to the recording devices, resulting in the longest interruption of the recording series (c.f. table 3.14, August 27 to September 15). However, even this was not the end of rising hourly mean values, as on August 20, 1992, and August 22, 1993, 9.33 m^3/s resp. 10.68 m^3/s of runoff were recorded!

6. MEAN DIURNAL VARIATION OF RUNOFF FOR EACH MONTH

Before advancing to the smallest time step, i.e., one hour, the mean diurnal variation of runoff for the twenty seasons will be described briefly (fig. 4.1 to 4.5). In the 1970s, the diurnal variation was rather small, not exceeding 1 m^3/s even in August or September. From 1980 until the end of the second decade, not only total amounts (as already discussed in paragraph 4), but also diurnal variation increased considerably, resulting for August 1992 in a discharge difference of 4.8 m^3/s between 7 a.m. and 2 p.m. CET. This corresponds to an average peak runoff of 6.9 m^3/s, whereas up until 1980, this maximum did not exceed 3 m^3/s, not counting the previously mentioned exception of 1976. Beside the increase in amounts, there was also a shift in the time when the maximum occurred. This is most significant for July, as in 1974 the diurnal maximum was recorded at 6 p.m., whereas in 1992 it was two hours earlier. This time lag is due to the runoff conditions on the glacier. In the 1970s, the firn and old snow region of Vernagtferner extended to almost $^2/_3$ of the total glacier area at the end of the ablation period. Due to favourable melting conditions, this reservoir, which temporarily stores the meltwater for hours and days, was reduced considerably with a corresponding enlargement of the bare ice area. This led not only to the absolute rise of meltwater volumes, but also to a transport of meltwater down the glacier to the gauging station without further delay.

7. HOURLY MEANS OF RUNOFF

In a last step, hydrographs of hourly mean runoff values from June to September 1974 to 1993 are presented (fig. 5.1 to 5.10). This is the shortest averaging period analyzed in the continuous discharge recording at Pegelstation Vernagtbach, and it reflects the variation in air temperature, humidity, wind, radiation and precipitation, all measurements performed at this gauging station during the whole year.

A look at these curves allows the most detailed insight into the processes by which meltwater production is influenced. The rising of hourly values from day to day during periods of fair weather, or sudden retreats with an exponential decay after the falling of new snow can be discerned, as well as the gradually increasing diurnal amplitude from year to year, already discussed in the previous paragraph. July 21, 1976 was mentioned already, but another fine example of newly fallen snow and its effect on melting is given on August 2, 1983. At this time scale it is even possible to see the additional input of water by heavy rain on a large ice area as for example on August 22, 1993 (Escher-Vetter and Reinwarth 1994b). On this day a heavy thunderstorm with a rainfall amount of 25 mm, averaged over an area of 5.5 km^2 size, resulted in a second discharge maximum in the evening of 6.9 m^3/s. If this rain had happened earlier in the day, it would have contributed to the absolute maximum hourly runoff of the two decades, which was about 10.7 m^3/s at 2 p.m. of the same day.

8. CONCLUSIONS

Over twenty years of runoff from a highly glacierized drainage basin (Vernagtferner, Oetztal Alps) are summarized in this contribution. The data from the Pegelstation Vernagtbach provide not only a unique opportunity to demonstrate the glacial runoff regime, characterized by high discharge amounts during fair weather periods in summer, low values in winter and colder summer periods with precipitation. They also give ample evidence of the development of glacier runoff during a period which started with positive glacier mass balances from 1974 to 1980, but continued with increasingly negative mass balances between 1981 and 1993. The reduction of firn and snow area, connected with this development, changed the hydrologic conditions of the catchment considerably, resulting in ever higher absolute runoff volumes, and, in particular, in an increase in the diurnal variation.

Based on the meltwater production conditions in the 1960s and 1970s (Jochum 1973), the gauging station had been designed for a maximum runoff of approx. 10 m^3/s, according to a specific runoff of about 1 m^3/s per km^2 glaciated area. With this capacity, the station provided the researchers with reliable data for the first two decades, but it did not catch the extreme summer runoff of 1994. Very high air temperature and short-wave radiation balance values, affecting nearly the entire glacier surface, led to extremely high melting rates which resulted in hourly means of runoff of at least 14 m^3/s in August, causing considerable damage to the gauging system itself.

Unfortunately, it has to be expected that the actual stream flow characteristics will prevail at least for the next few years, as the rebuilding of a firn layer with a noticeable meltwater retention capacity will require many more years than did its loss – if it happens at all! Therefore, the Pegelstation Vernagtbach has to be adapted to these extreme conditions, which will be accomplished, it is hoped, at the end of the forthcoming ablation period.

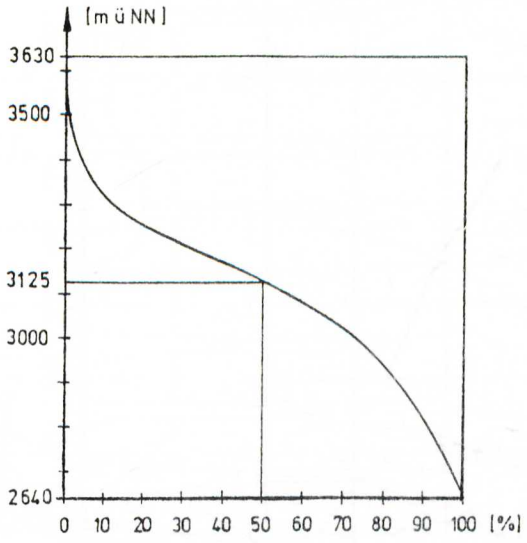


Fig. 1: Hypsographic curve of the Vernagtbach basin, based on the map of 1979

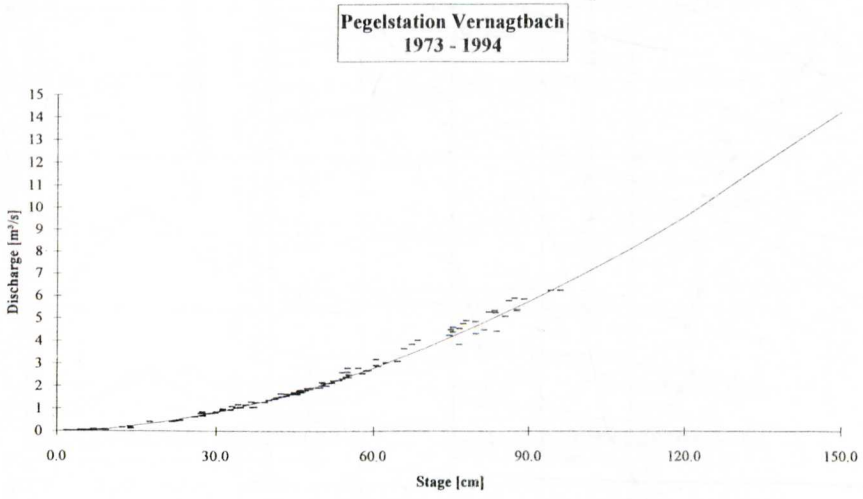


Fig. 2: Rating curve of the Vernagtbach gauge, including current meter data

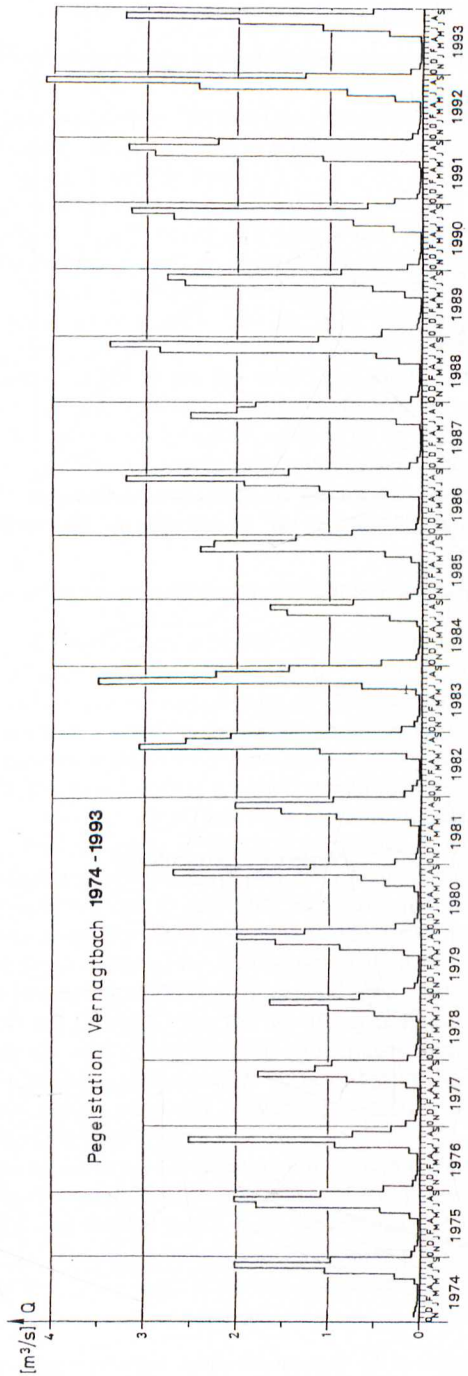


Fig. 3: Monthly means of runoff from October 1973 to September 1993

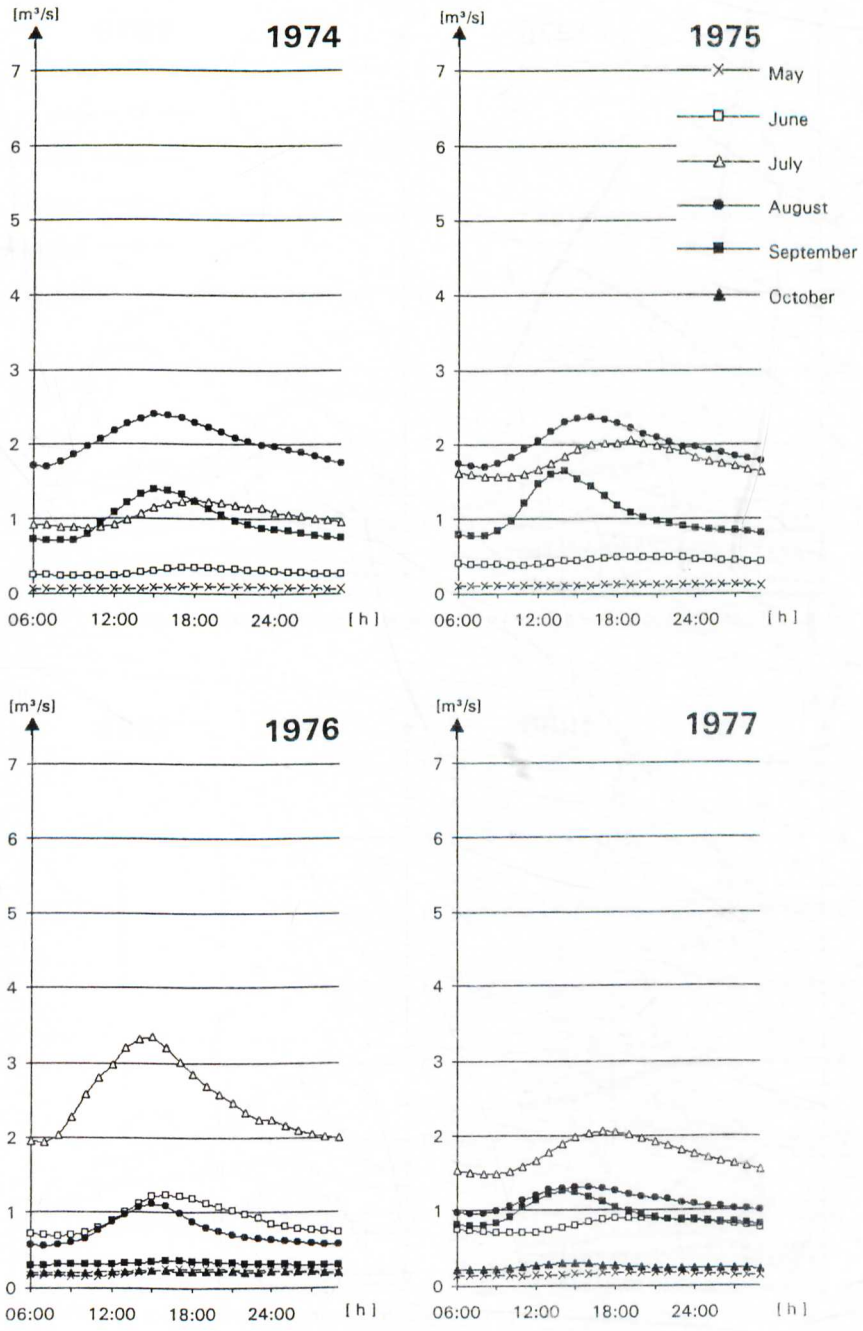


Fig. 4.1: Mean diurnal variation of runoff for the months, May to October 1974 to 1977 (May to September for 1974, 1975)

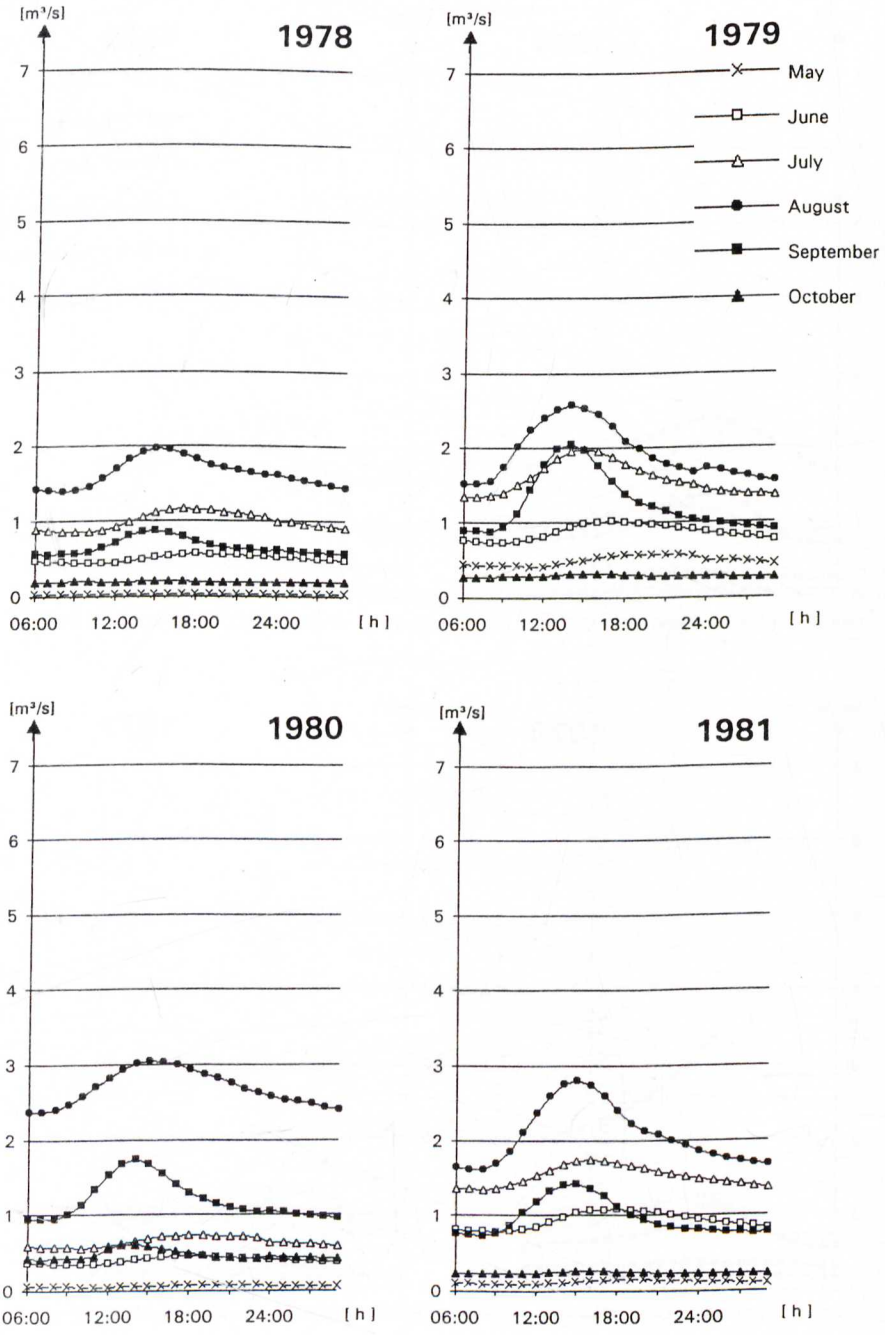


Fig. 4.2: Mean diurnal variation of runoff for the months, May to October 1978 to 1981

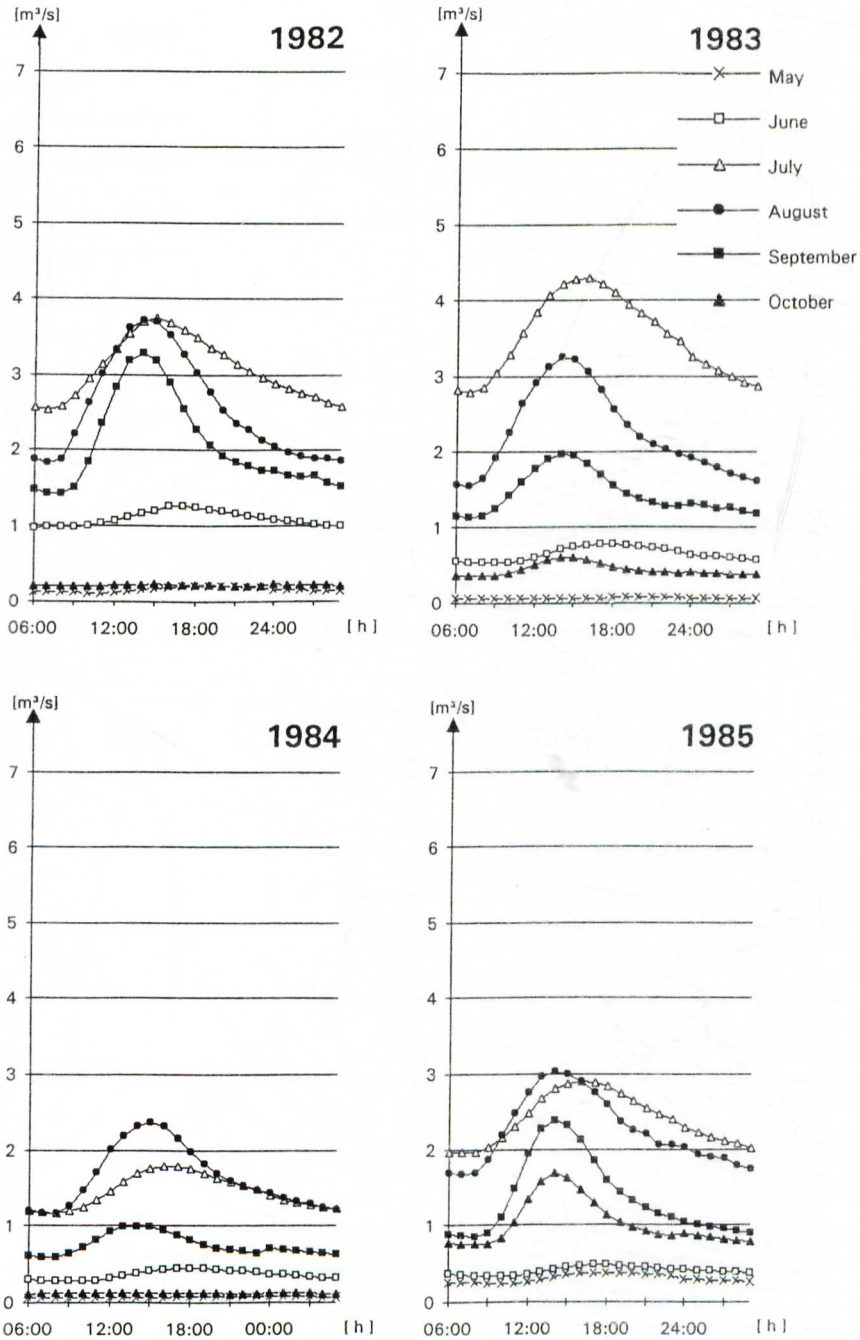


Fig. 4.3: Mean diurnal variation of runoff for the months, May to October 1982 to 1985

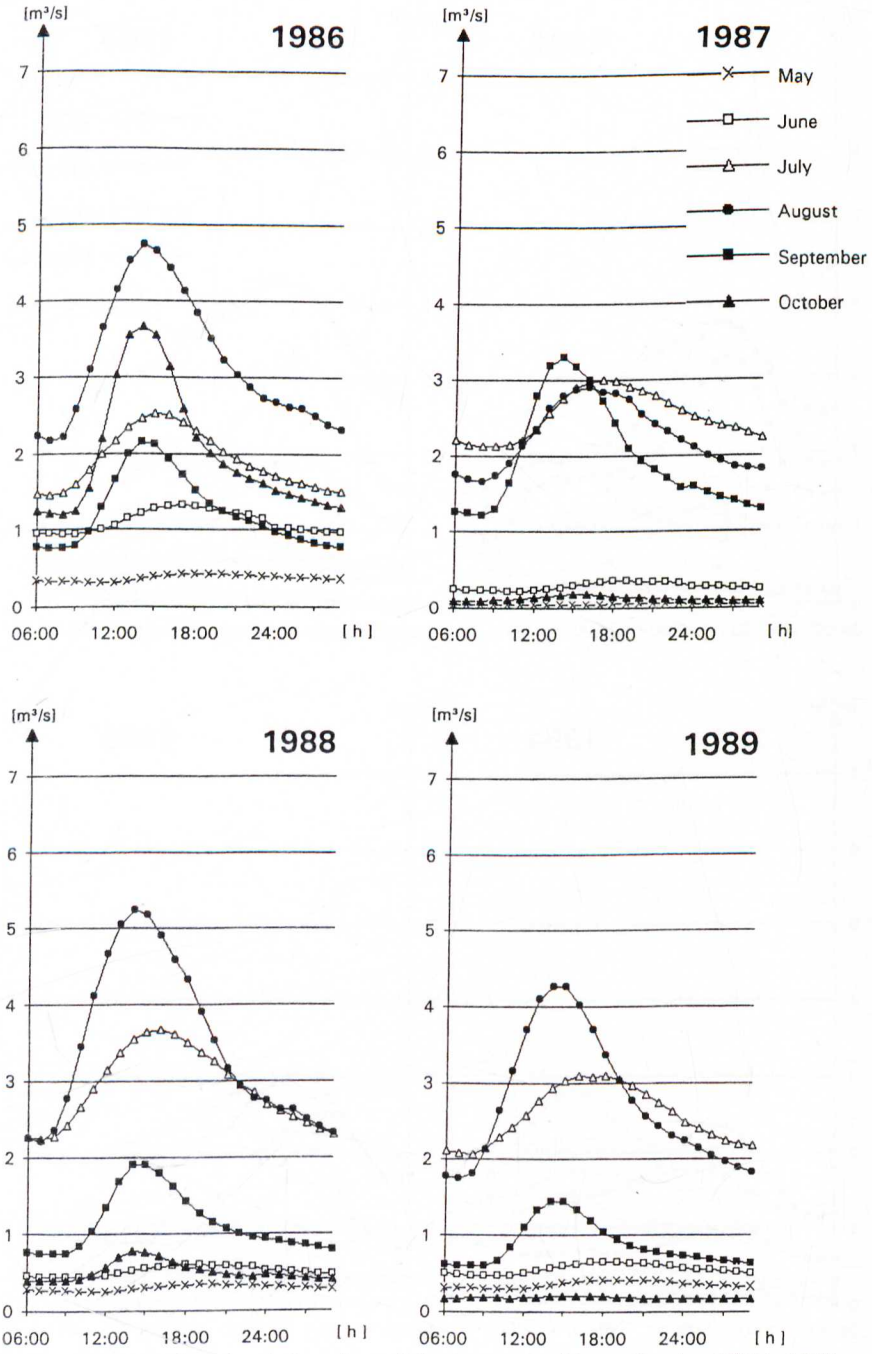


Fig. 4.4: Mean diurnal variation of runoff for the months, May to October 1986 to 1989

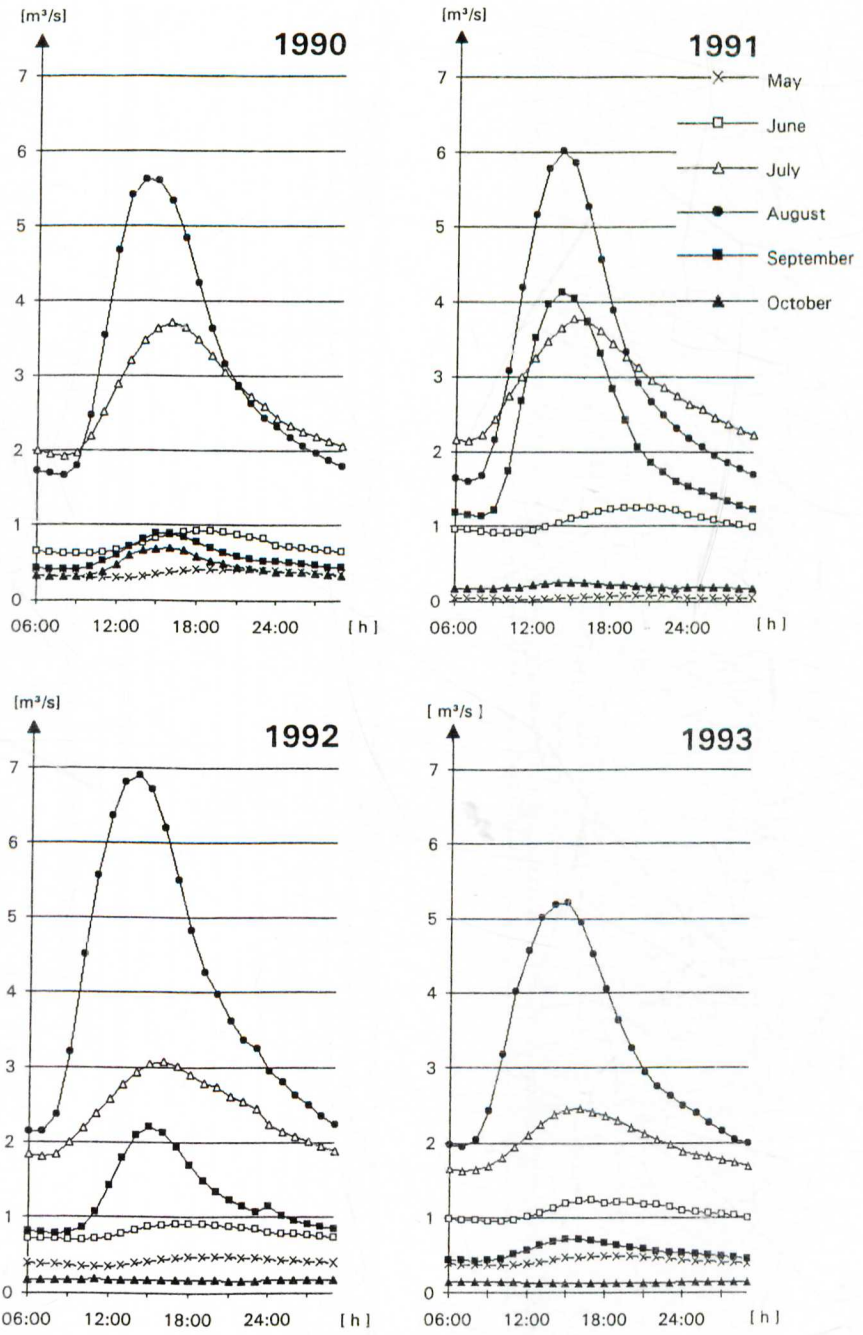


Fig. 4.5: Mean diurnal variation of runoff for the months, May to October 1990 to 1993
In fig. 4.1 to 4.5, the following symbols were used to distinguish the different months; averaging was performed over those days only, which are not put in brackets in table 3.1 to 3.20; time is given in CET

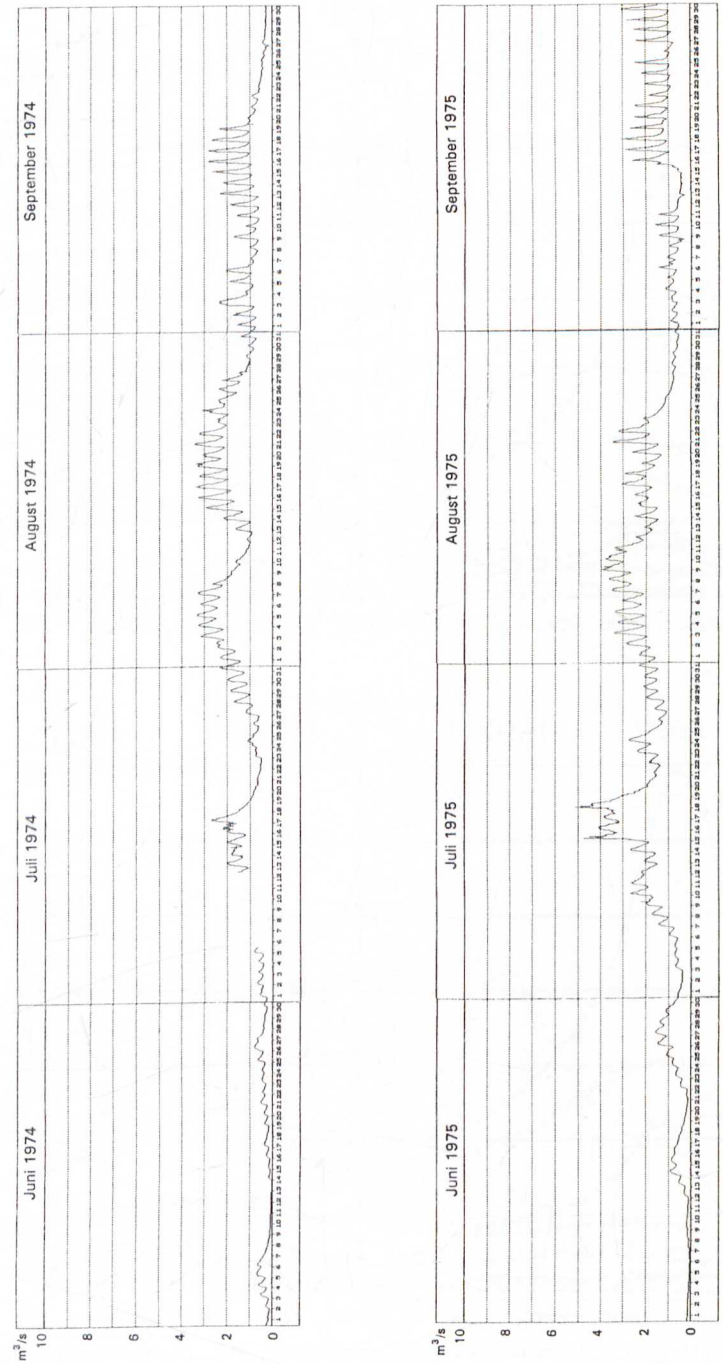


Fig. 5.1: Hydrographs of hourly means of runoff for June to September, 1974 to 1975

Fig. 5.2: Hydrographs of hourly means of runoff for June to September, 1976 to 1977

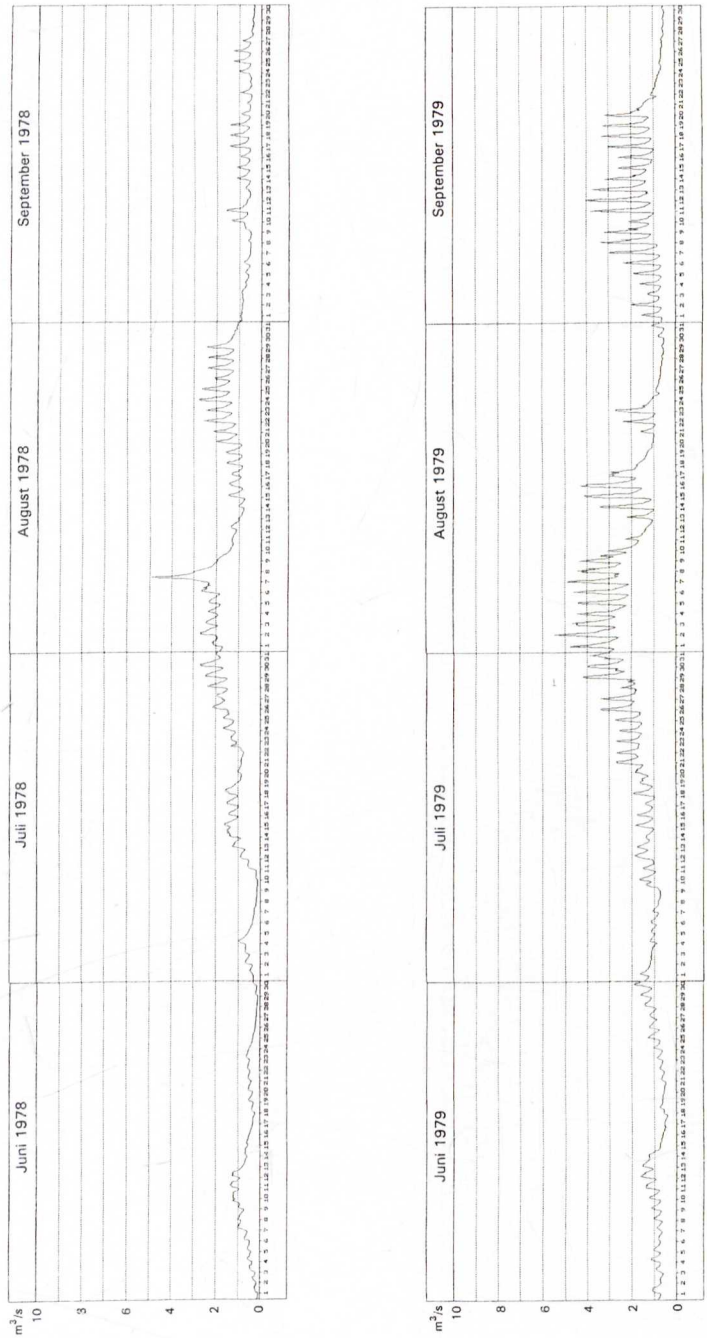


Fig. 5.3: Hydrographs of hourly means of runoff for June to September, 1978 to 1979

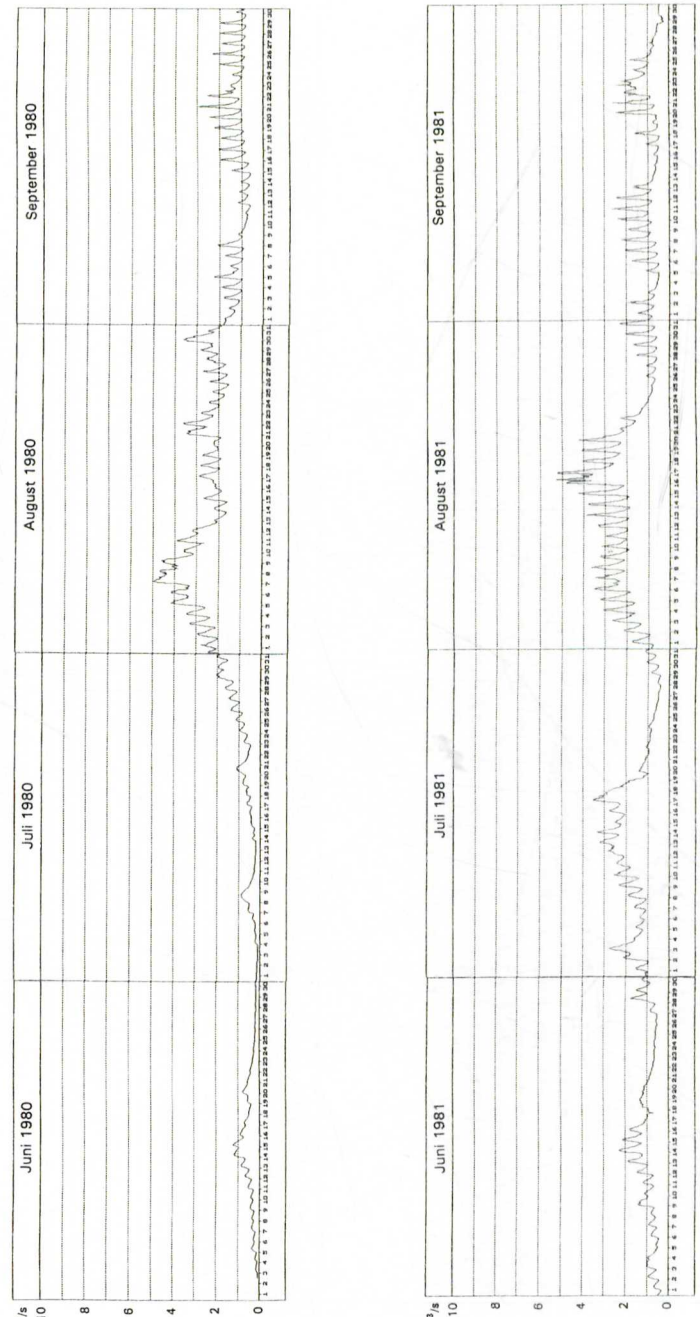


Fig. 5.4: Hydrographs of hourly means of runoff for June to September, 1980 to 1981

Fig. 5.5: Hydrographs of hourly means of runoff for June to September, 1982 to 1983

Fig. 5.6. Hydrographs of hourly means of runoff for June to September 1984 to 1985

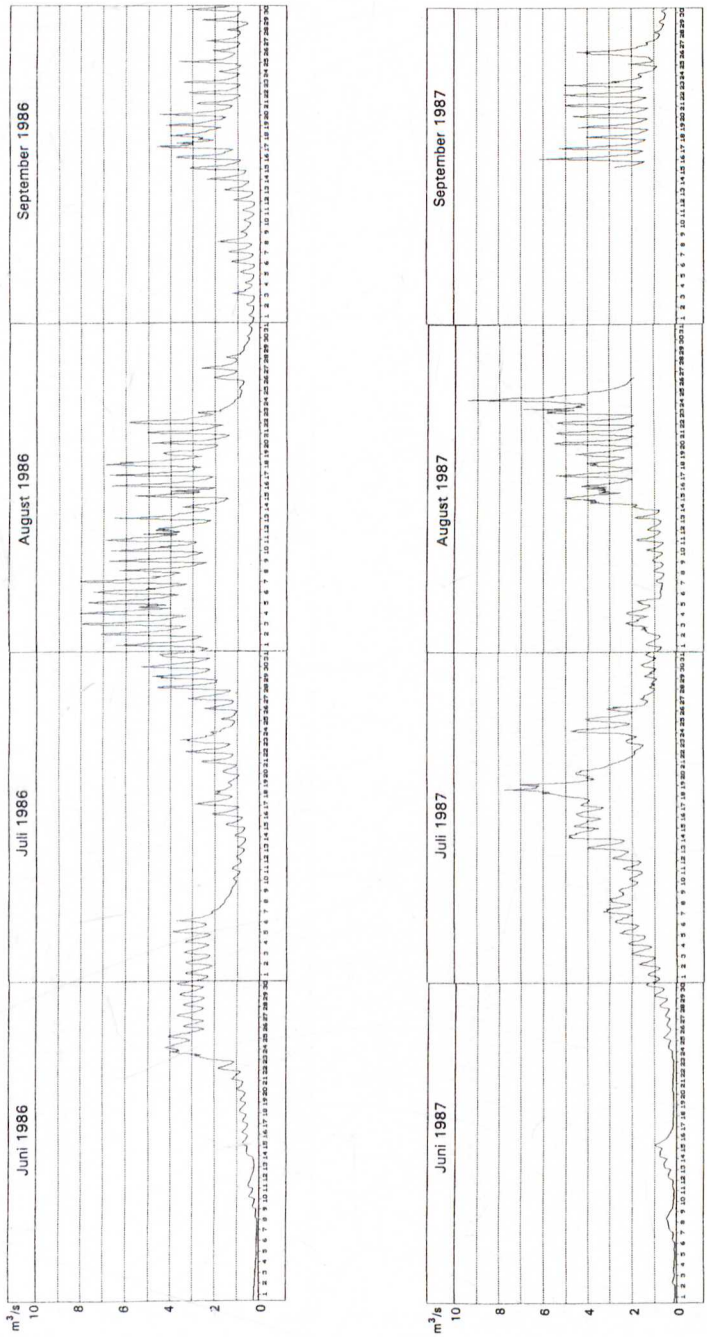


Fig. 5.7: Hydrographs of hourly means of runoff for June to September, 1986 to 1987

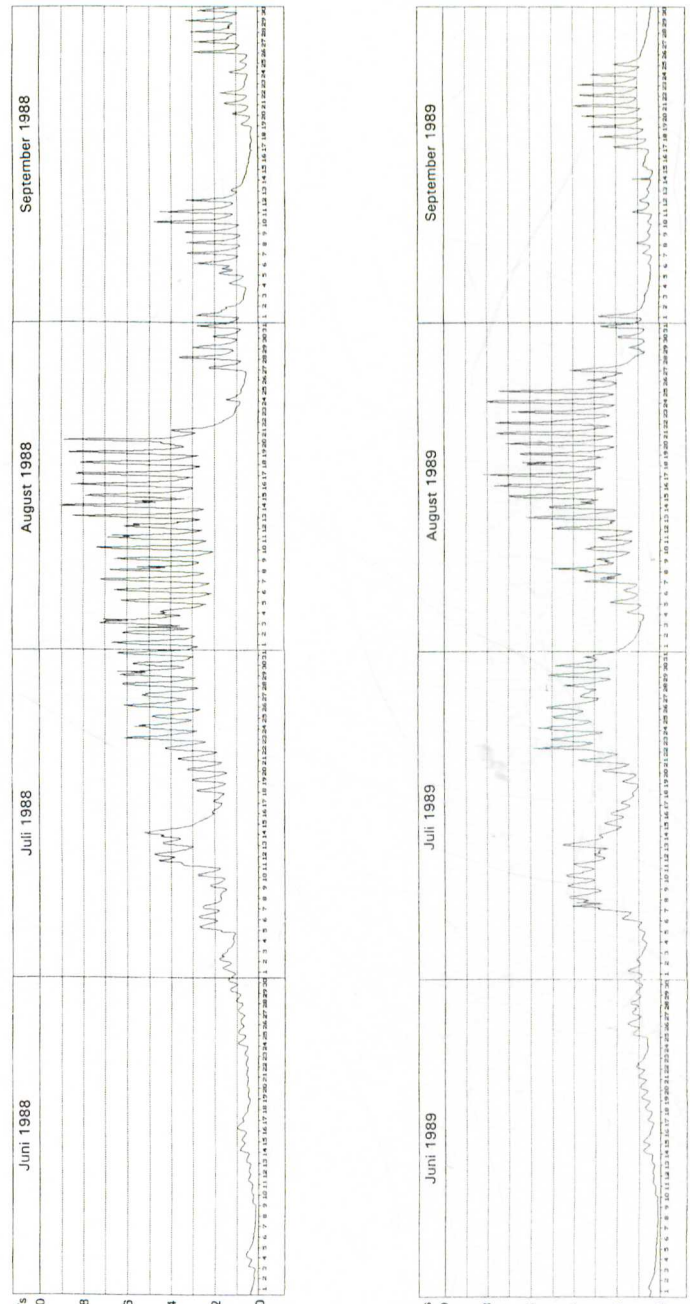


Fig. 5.8: Hydrographs of hourly means of runoff for June to September, 1988 to 1989

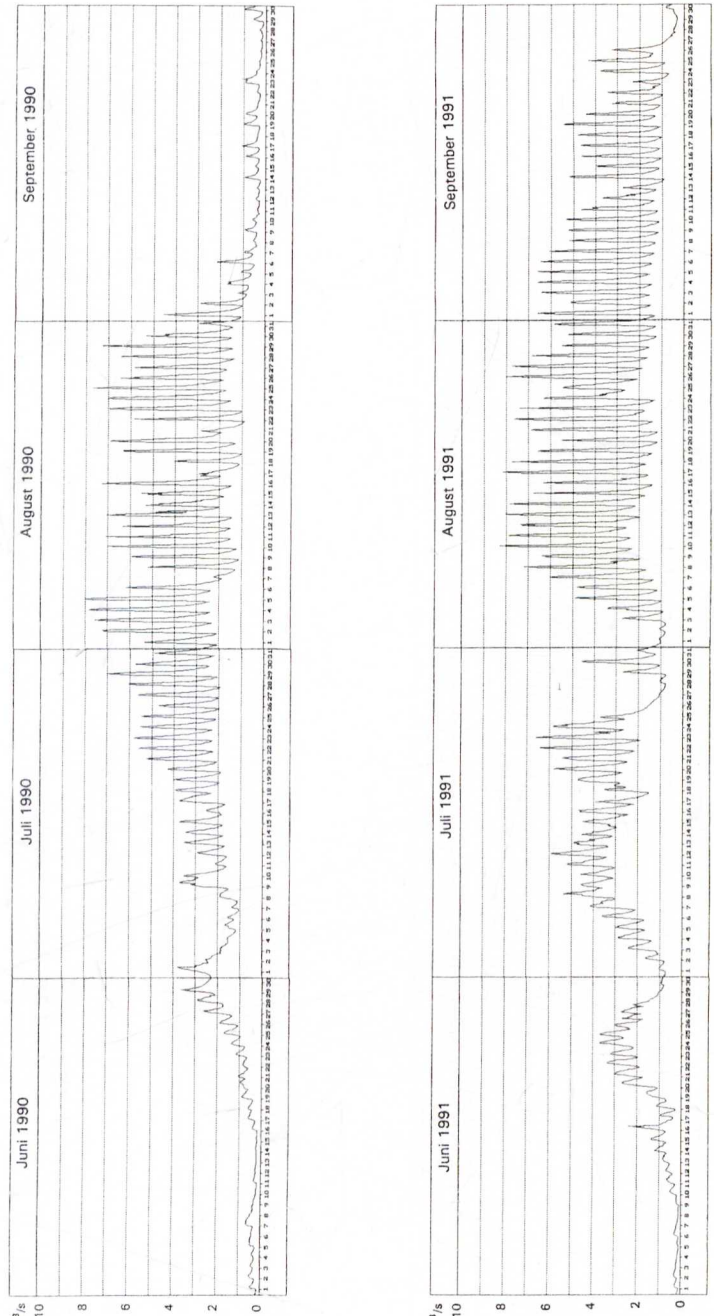


Fig. 5.9: Hydrographs of hourly means of runoff for June to September, 1990 to 1991

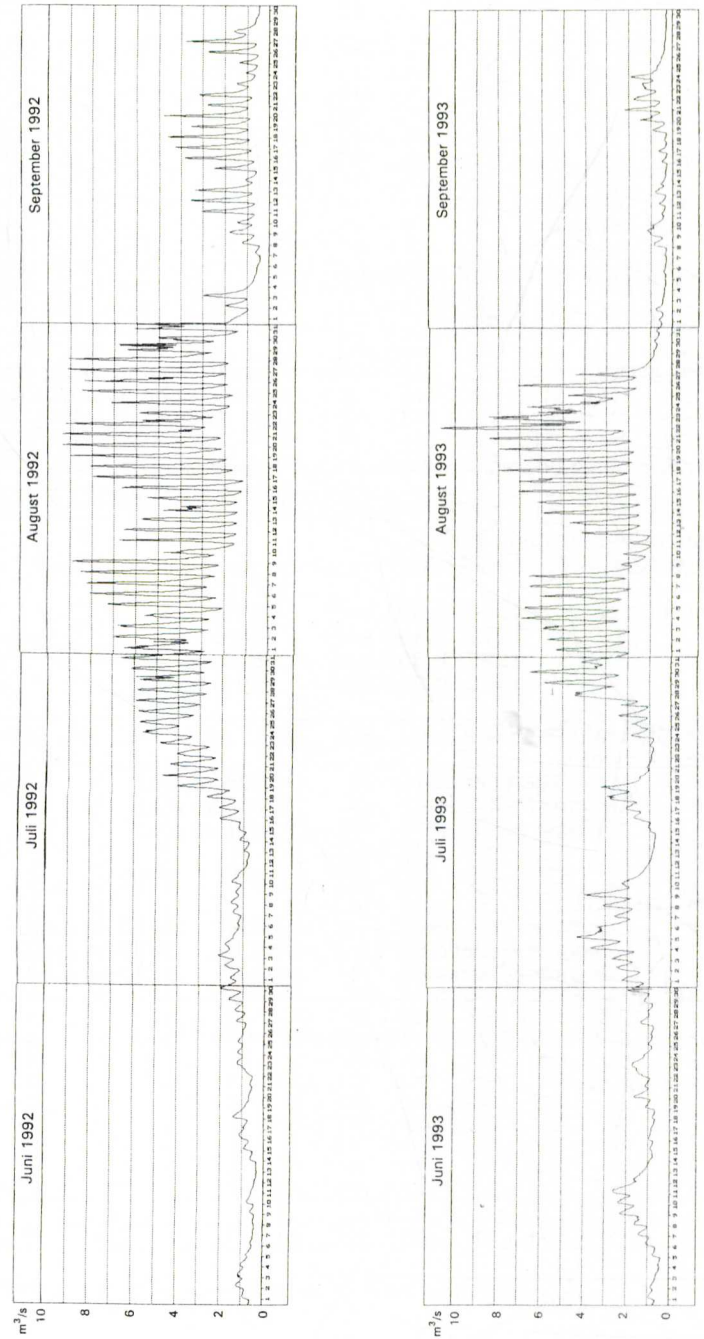


Fig. 5.10: Hydrographs of hourly means of runoff for June to September, 1992 to 1993

I.	State: Austria Country: Tyrol		
II.	Geographical location of the basin:		
		Longitude	10°49'E
		Latitude	46°52'N
	River system		Donau: Vernagtbach, Rofenache, Venter Ache, Ötztaler Ache, Inn, Donau
	Physiographic characterization:		High alpine, highly glacierized basin
III.	Area of the drainage basin:		
	Total area	11.441 km^2	
			rel. share
	Glacier area	1974: 9.301 km^2	81%
		1979: 9.550 km^2	84%
		1982: 9.350 km^2	82%
		1990: 9.088 km^2	79%
IV.	Elevation information:		
	Drainage basin		
		average altitude	3125 m a.s.l.
		highest elevation	3633 m a.s.l.
		lowest elevation	2635 m a.s.l.
			1979 1990
	Vernagt glacier		
		average altitude	3130 3115 m a.s.l.
		highest elevation	3633 3631 m a.s.l.
		lowest elevation	2747 2747 m a.s.l.

Table 1: Geographical features of Vernagtbach basin

Jahr	Jan.	Feb.	März	Apr.	Mai	Juni	Juli	Aug.	Sep.	Okt.	Nov.	Dez.	Jahr
1974	0,025	0,019	0,019	0,020	0,056	0,284	1,050	2,040	0,973	0,100	0,040	0,035	0,388
1975	0,025	0,019	0,019	0,020	0,115	0,443	1,790	2,010	1,060	0,404	0,060	0,035	0,500
1976	0,025	0,019	0,019	0,020	0,129	0,916	2,510	0,743	0,321	0,148	0,050	0,035	0,411
1977	0,025	0,019	0,019	0,020	0,150	0,800	1,750	1,130	0,958	0,213	0,060	0,035	0,432
1978	0,025	0,019	0,019	0,020	0,028	0,504	0,999	1,630	0,663	0,190	0,050	0,035	0,349
1979	0,025	0,019	0,019	0,020	0,197	0,868	1,580	1,930	1,250	0,285	0,040	0,035	0,522
1980	0,025	0,019	0,019	0,020	0,063	0,381	0,643	2,680	1,200	0,283	0,055	0,035	0,452
1981	0,025	0,019	0,019	0,020	0,119	0,927	1,520	2,070	0,964	0,192	0,055	0,035	0,497
1982	0,025	0,019	0,019	0,020	0,156	1,100	3,070	2,550	2,050	0,187	0,055	0,035	0,774
1983	0,025	0,019	0,019	0,020	0,056	0,648	3,500	2,240	1,440	0,441	0,060	0,035	0,709
1984	0,025	0,019	0,019	0,020	0,064	0,357	1,459	1,638	0,743	0,118	0,050	0,035	0,379
1985	0,025	0,019	0,019	0,020	0,117	0,399	2,394	2,242	1,357	1,028	0,070	0,035	0,644
1986	0,025	0,019	0,019	0,020	0,374	1,102	1,909	3,202	1,233	1,231	0,075	0,035	0,770
1987	0,025	0,019	0,019	0,020	0,037	0,285	2,500	2,013	1,793	0,125	0,050	0,035	0,577
1988	0,025	0,019	0,019	0,020	0,255	0,517	2,898	3,438	1,134	0,436	0,060	0,035	0,738
1989	0,025	0,019	0,019	0,020	0,183	0,559	2,569	2,744	0,875	0,177	0,050	0,035	0,606
1990	0,025	0,019	0,019	0,020	0,296	0,751	2,687	3,144	0,586	0,322	0,055	0,035	0,663
1991	0,025	0,019	0,019	0,020	0,023	1,074	2,878	3,170	2,189	0,165	0,050	0,035	0,806
1992	0,025	0,019	0,019	0,020	0,289	0,799	2,407	4,048	1,266	0,126	0,050	0,035	0,759
1993	0,025	0,019	0,019	0,020	0,366	1,087	2,006	3,235	0,551	0,144	0,050	0,035	0,630
74/93	0,025	0,019	0,019	0,020	0,154	0,690	2,106	2,395	1,130	0,316	0,054	0,035	0,580

Table 2.1: Monthly and yearly means of runoff for the years 1974 to 1993

Jahr	Jan.	Feb.	März	Apr.	Mai	Juni	Juli	Aug.	Sep.	Okt.	Nov.	Dez.	Jahr
1974	6	4	4	5	13	64	245	477	220	23	9	8	1078
1975	6	4	4	5	27	100	419	470	241	95	14	8	1393
1976	6	4	4	5	30	208	588	173	72	35	11	8	1144
1977	6	4	4	5	35	181	410	264	217	50	14	8	1198
1978	6	4	4	5	6	114	234	381	150	44	11	8	967
1979	6	4	4	5	46	197	370	452	283	67	9	7	1450
1980	6	4	4	5	15	86	150	627	272	66	13	8	1256
1981	6	4	4	5	28	210	356	485	218	45	13	8	1382
1982	6	4	4	5	36	249	718	597	465	44	13	8	2149
1983	6	4	4	5	13	147	820	524	326	103	14	8	1974
1984	6	4	4	5	14	81	342	384	168	28	11	8	1055
1985	6	4	4	5	22	90	561	525	307	233	16	8	1781
1986	6	4	4	5	87	250	447	750	279	288	17	8	2145
1987	6	4	4	5	7	64	585	471	406	29	11	8	1600
1988	6	4	4	5	60	117	678	805	257	102	14	8	2060
1989	6	4	4	5	43	127	601	642	198	41	11	8	1690
1990	6	4	4	5	69	170	629	736	133	75	13	8	1852
1991	6	4	4	5	5	243	674	742	496	39	11	8	2237
1992	6	4	4	5	68	181	563	948	287	29	11	8	2114
1993	6	4	4	5	86	246	470	757	125	34	11	8	1756
74/93	6	4	4	5	36	156	493	561	256	74	12	8	1614

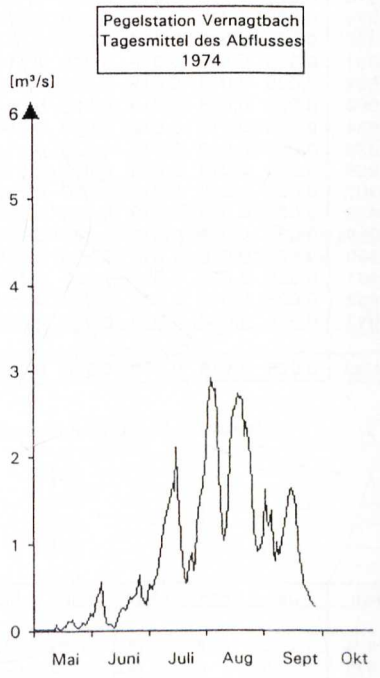
Table 2.2: Monthly and yearly means of runoff height for the years 1974 to 1993

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (81 % vergletschert)
Nach Stundenwerten des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.015)	0.190	0.409	1.87	1.05	
2.	(0.015)	0.169	0.533	2.03	1.13	
3.	(0.015)	0.273	0.502	2.61	1.63	
4.	(0.015)	0.376	0.475	2.71	1.28	
5.	(0.015)	0.457	0.588	2.90	1.20	
6.	(0.020)	0.559	(0.659)	2.77	1.38	
7.	(0.020)	0.390	(0.795)	2.79	0.912	
8.	(0.020)	0.199	(0.909)	2.38	0.800	
9.	(0.020)	0.104	(1.020)	1.83	1.02	
10.	0.025	0.078	(1.180)	1.53	0.881	
11.	0.016	0.065	(1.300)	1.18	0.903	
12.	0.015	0.051	(1.410)	1.03	1.04	
13.	0.067	0.038	1.50	1.22	1.26	
14.	0.031	0.077	1.58	1.55	1.36	
15.	0.022	0.129	1.69	2.04	1.49	
16.	0.022	0.178	1.61	2.39	1.62	
17.	0.053	0.245	2.10	2.55	1.64	
18.	0.062	0.253	1.66	2.55	1.60	
19.	0.111	0.233	1.05	2.72	1.41	
20.	0.112	0.280	0.804	2.67	1.00	
21.	0.109	0.350	0.711	2.70	0.811	
22.	0.130	0.383	0.541	2.63	0.737	
23.	0.081	0.363	0.582	2.24	0.572	
24.	0.044	0.407	0.790	2.41	0.488	
25.	0.036	0.444	0.884	2.19	0.443	
26.	0.048	0.565	0.690	1.94	0.360	
27.	0.093	0.635	0.835	1.64	0.330	
28.	0.097	0.397	1.20	1.16	0.311	
29.	0.074	0.338	1.37	1.04	0.275	
30.	0.133	0.288	1.51	0.915	0.265	
31.	0.202		1.67	0.946		



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Abflüsse [m³/s] 1974

	ö				
am		13.	1.	30.	30.
NQ	(0.015)	0.038	0.409	0.915	0.265
MQ	(0.056)	0.284	(1.050)	2.04	0.973
HQ	0.202	0.635	2.10	2.90	1.64
am	31.	27.	17.	5.	17.

Abflußhöhen [mm] 1974

A	(13)	64	(245)	477	220

Abflußspenden (l/s km²)

	1974 V - X	1974 VI - IX	V - X	VI - IX	
Nq	-	3.0	-	-	MNq
Mq	-	94.9	-	-	Mq
Hq	-	253.5	-	-	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1974 5.8.
HQ	3.44
Hq	309
cm a.P.	67

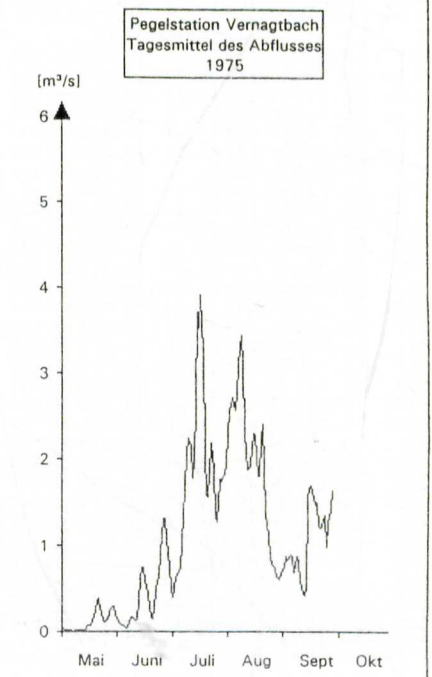
Table 3.1: Runoff, runoff heights and specific runoff in 1974

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (81 % vergletschert)
Nach Stundenwerten des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	0.035	0.140	0.516	1.94	0.687	
2.	0.029	0.121	0.399	2.30	0.723	
3.	0.021	0.099	0.503	2.57	0.761	
4.	0.017	0.067	0.632	2.64	0.882	
5.	0.016	0.047	0.675	2.71	0.843	
6.	0.016	0.042	0.750	2.57	0.894	
7.	0.015	0.059	1.05	2.77	0.870	
8.	0.015	0.112	1.34	3.10	0.701	
9.	0.016	0.156	1.65	3.31	0.792	
10.	0.023	0.164	2.07	3.43	0.869	
11.	0.023	0.129	2.23	3.11	0.812	
12.	0.016	0.162	2.14	2.29	0.600	
13.	0.016	0.338	1.78	1.87	0.452	
14.	0.025	0.616	2.01	1.88	0.422	
15.	0.051	0.747	2.65	1.94	0.512	
16.	0.080	0.746	3.72	2.12	1.54	
17.	0.079	0.597	3.54	2.30	1.68	
18.	0.132	0.440	3.91	2.28	1.69	
19.	0.177	0.291	3.25	1.80	1.59	
20.	0.251	0.189	2.05	1.80	1.46	
21.	0.371	0.144	1.61	2.24	1.49	
22.	0.375	0.265	1.56	2.40	1.23	
23.	0.272	0.495	1.85	1.93	1.21	
24.	0.154	0.664	2.19	1.36	1.24	
25.	0.115	0.906	1.89	1.11	1.34	
26.	0.126	1.11	1.34	0.866	0.982	
27.	0.151	1.31	1.28	0.784	1.26	
28.	0.219	1.31	1.52	0.771	1.35	
29.	0.267	1.07	1.77	0.743	1.43	
30.	0.284	0.749	1.75	0.635	1.65	
31.	0.196		1,83	0.605		



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Abflüsse [m³/s] 1975

am	7./8.	6.	2.	31.	14.
NQ	0.015	0.042	0.399	0.605	0.422
MQ	0.115	0.443	1.79	2.01	1.06
HQ	0.375	1.31	3.91	3.43	1.69
am	22.	28.	18.	10.	18.

1974/75

NQ	0.015	0.038	0.399	0.605	0.265
MNQ	0.015	0.040	0.404	0.760	0.344
NQ	0.086	0.364	1.42	2.02	1.02
MHQ	0.288	0.974	3.01	3.17	1.66
HQ	0.375	1.31	3.91	3.43	1.69

Abflußhöhen [mm] 1975

A	27	100	419	470	241
A	20	82	332	473	231

Abflußspenden (l/s km²)

	1975 V - X	1975 VI - IX	1974/75 V - X	1974/75 VI - IX	
Nq	-	3.7	-	3.3	MNq
Mq	-	115.9	-	105.4	Mq
Hq	-	341.7	-	297.6	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1975 18.7.	1974/75 18.7.75
HQ	5.30	5.30
Hq	463	463
cm a.P.	79	79

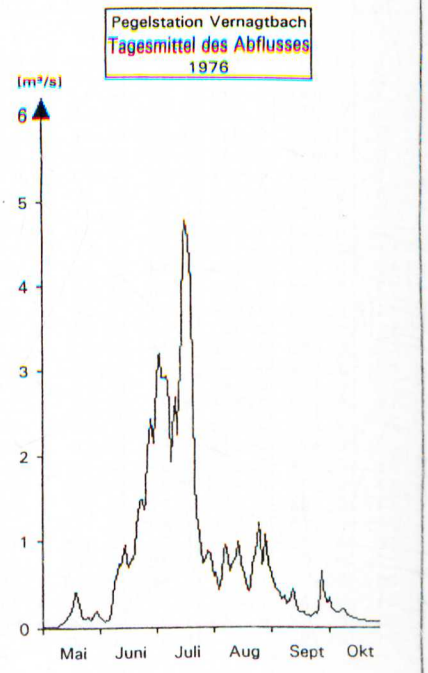
Table 3.2: Runoff, runoff heights and specific runoff in 1975

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (81 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.015)	0.124	2.48	0.679	0.652	0.297
2.	(0.015)	0.111	2.83	0.588	0.604	0.288
3.	(0.015)	0.083	3.19	0.628	0.523	0.349
4.	(0.015)	0.079	3.20	0.553	0.468	0.247
5.	(0.015)	0.092	2.91	0.444	0.435	0.214
6.	(0.020)	0.129	2.91	0.588	0.399	0.199
7.	(0.020)	0.209	2.93	0.856	0.331	0.190
8.	(0.020)	0.371	2.86	0.939	0.347	0.190
9.	(0.020)	0.549	2.47	0.887	0.359	0.207
10.	(0.040)	0.588	1.92	0.780	0.280	0.220
11.	(0.060)	0.733	2.28	0.632	0.284	0.219
12.	(0.080)	0.717	2.66	0.713	0.304	0.199
13.	(0.100)	0.774	2.24	0.758	0.435	0.143
14.	(0.120)	0.909	2.74	0.838	0.389	0.133
15.	(0.140)	0.941	2.99	0.984	0.279	0.124
16.	0.159	0.768	3.60	0.918	0.223	(0.115)
17.	0.283	0.691	4.49	0.719	0.192	(0.110)
18.	0.417	0.775	4.76	0.650	0.191	(0.105)
19.	0.417	0.779	4.51	0.526	0.174	(0.100)
20.	0.354	0.873	4.18	0.449	0.150	(0.095)
21.	0.279	1.19	4.07	0.418	0.141	(0.090)
22.	0.178	1.32	2.64	0.499	0.138	(0.083)
23.	0.110	1.48	1.75	0.716	0.125	(0.080)
24.	0.115	1.49	1.33	0.767	0.139	(0.080)
25.	0.134	1.39	1.08	0.986	0.176	(0.075)
26.	0.125	1.48	0.890	1.22	0.168	(0.075)
27.	0.100	2.09	0.737	1.05	0.215	(0.075)
28.	0.108	2.19	0.771	0.705	0.431	(0.070)
29.	0.170	2.40	0.802	0.757	0.630	(0.070)
30.	0.199	2.16	0.872	1.07	0.461	(0.070)
31.	0.155		0.833	0.729		(0.065)



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Abflüsse [m³/s] 1976

	ö	4.	27.	21.	23.	31.
am						
NQ	(0.015)	0.079	0.737	0.418	0.125	(0.065)
MQ	(0.129)	0.916	2.51	0.743	0.321	(0.148)
HQ	0.417	2.40	4.76	1.22	0.652	0.349
am	18.	29.	18.	26.	1.	3.

1974/76

NQ	0.015	0.038	0.399	0.418	0.125	0.015
MNQ	0.015	0.053	0.515	0.646	0.271	-
MQ	0.100	0.548	1.78	1.59	0.786	-
MHQ	0.331	1.45	3.59	2.51	1.32	-
HQ	0.417	2.40	4.76	3.43	1.69	-

Abflußhöhen [mm] 1976

A	(30)	208	588	173	72	(35)

1974/76

A	23	125	416	372	179	-

Abflußspenden (l/s km²)

	1976 V - X	1976 VI - IX	1974/76 V - X	1974/76 VI - IX	
Nq	1.3	6.9	-	4.5	MNq
Mq	69.5	98.0	-	102.9	Mq
Hq	416.0	416.0	-	337.0	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1976 18.7.	1974/76 18.7.76
HQ	7.23	7.23
Hq	632	632
cm a.P.	97	97

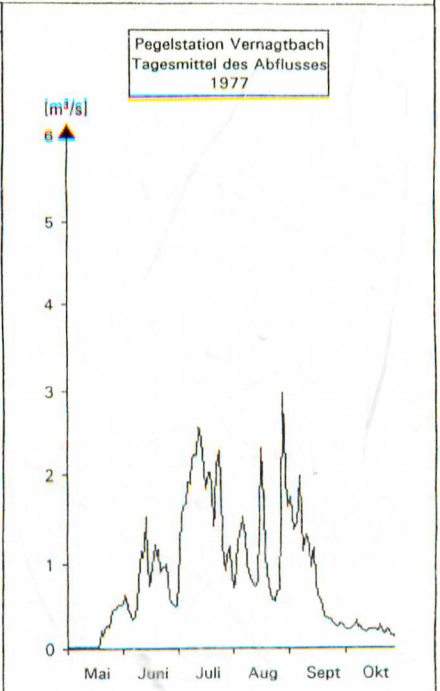
Table 3.3: Runoff, runoff heights and specific runoff in 1976

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (81 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.015)	0.524	0.525	0.897	1.65	0.270
2.	(0.015)	0.631	0.816	0.732	1.71	0.248
3.	(0.015)	0.598	1.17	0.791	1.75	0.219
4.	(0.015)	0.475	1.59	0.989	1.58	0.217
5.	(0.015)	0.378	1.66	1.26	1.41	0.215
6.	(0.015)	0.325	1.69	1.44	1.48	0.221
7.	(0.015)	0.341	1.92	1.55	1.70	0.235
8.	(0.015)	0.380	1.92	1.38	1.98	0.281
9	(0.015)	0.518	1.89	1.36	1.53	0.329
10.	(0.015)	0.822	2.20	0.999	1.14	0.238
11.	(0.015)	1.14	2.24	0.904	1.28	0.247
12.	(0.017)	1.07	2.24	0.854	1.34	(0.230)
13.	(0.022)	1.22	2.58	0.769	1.21	(0.200)
14.	(0.015)	1.55	2.56	0.752	0.972	(0.180)
15.	(0.015)	1.03	2.40	0.775	1.14	(0.200)
16.	(0.015)	0.739	2.26	0.819	1.18	0.223
17.	0.022	0.862	2.04	1.40	0.828	0.210
18.	0.027	1.08	1.83	2.33	0.634	0.214
19.	0.091	1.22	2.02	1.67	0.585	0.216
20.	0.209	1.09	2.01	1.11	0.485	0.209
21.	0.154	1.16	1.86	0.916	0.407	0.205
22.	0.193	0.909	1.44	0.785	0.360	0.278
23.	0.247	0.950	1.61	0.678	0.366	0.240
24.	0.245	0.958	2.11	0.592	0.344	0.175
25.	0.346	1.00	2.30	0.572	0.322	0.160
26.	0,444	0.862	1.88	0.700	0.296	0.212
27.	0.452	0.605	1.26	0.693	0.270	0.204
28.	0.464	0.544	1.03	0.736	0.253	0.154
29.	0.484	0.528	0.936	1.45	0.249	0.137
30.	0.517	0.492	1.10	2.99	0.285	0.141
31.	0.513		1.20	2.02		0.109



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Abflüsse [m³/s] 1977

am	Ö	6.	1.	25.	29.	31.
NQ	(0.015)	0.325	0.525	0.572	0.249	0.109
MQ	(0.150)	0.800	1.75	1.13	0.958	(0.213)
HQ	0.517	1.55	2.58	2.99	1.98	1.329
am	30.	14.	13.	30.	8.	9.

	1974/77				1976/77
NQ	0.015	0.038	0.399	0.418	0.125	0.065
MNQ	0.015	0.121	0.517	0.628	0.264	0.087
MQ	0.125	0.612	1.78	1.48	0.829	0.181
MHQ	0.390	1.48	3.34	2.64	1.48	0.339
HQ	0.517	2.40	4.76	3.43	1.98	0.349

Abflußhöhen [mm] 1977

A	(35)	181	410	264	217	(50)

	1974/77				1976/77
A	26	139	417	346	188	43

Abflußspenden (l/s km²)

	1977 V - X	1977 VI - IX	1976/77 V - X	1974/77 VI - IX	
Nq	1.3	21.8	1.3	8.8	MNq
Mq	73	101.3	71.3	102.5	Mq
Hq	261.3	261.3	338.7	318.0	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1977 30.8.	1974/77 18.7.76
HQ	3.68	7.23
Hq	322	632
cm a.P.	67	97

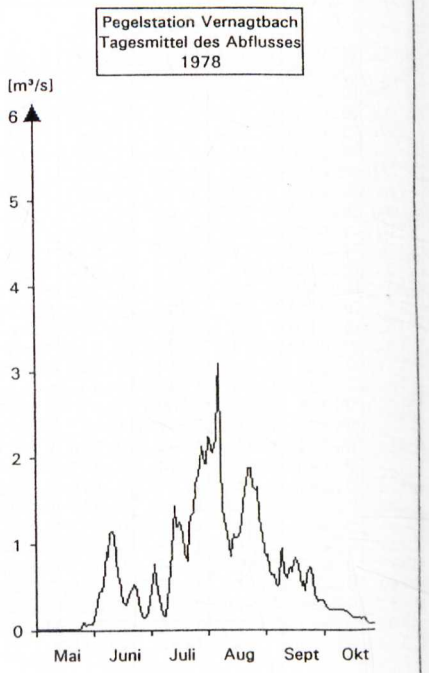
Table 3.4: Runoff, runoff heights and specific runoff in 1977

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (84 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.015)	0.136	0.352	1.93	0.922	0.339
2.	(0.015)	0.219	0.501	2.23	0.862	0.339
3.	(0.016)	0.306	0.580	2.21	0.874	0.330
4.	(0.017)	0.436	0.763	2.09	0.717	0.281
5.	(0.015)	0.465	0.585	2.06	0.645	0.257
6.	(0.015)	0.548	0.369	2.22	0.644	0.245
7.	(0.015)	0.736	0.276	2.82	0.538	0.237
8.	(0.015)	0.905	0.194	3.09	0.514	0.242
9.	(0.015)	0.847	0.159	1.98	0.556	0.233
10.	(0.015)	1.13	0.166	1.44	0.916	0.236
11.	(0.015)	1.15	0.347	1.27	0.955	0.238
12.	(0.015)	1.11	0.692	1.21	0.660	0.237
13.	(0.015)	0.843	0.931	1.00	0.604	0.229
14.	(0.015)	0.633	1.16	0.858	0.719	0.218
15.	(0.015)	0.596	1.43	1.02	0.737	0.217
16.	(0.015)	0.478	1.20	1.10	0.670	0.209
17.	(0.015)	0.334	1.20	1.08	0.798	0.180
18.	(0.015)	0.295	1.25	1.08	0.835	0.163
19.	(0.015)	0.369	1.13	1.13	0.772	0.147
20.	(0.018)	0.407	0.895	1.29	0.626	0.150
21.	(0.018)	0.452	0.855	1.44	0.519	0.142
22.	(0.018)	0.490	0.808	1.64	0.565	0.139
23.	(0.018)	0.520	1.20	1.70	0.465	0.134
24.	(0.018)	0.481	1.33	1.87	0.647	0.155
25.	0.048	0.320	1.37	1.87	0.728	0.155
26.	0.092	0.231	1.70	1.65	0.703	0.092
27.	0.087	0.177	1.76	1.64	0.580	0.074
28.	0.062	0.148	1.81	1.62	0.410	0.075
29.	0.073	0.150	1.93	1.65	0.380	0.075
30.	0.066	0.212	2.13	1.31	0.332	0.070
31.	0.074		1.92	1.09		0.061



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Abflüsse [m³/s] 1978

	am	ö	1.	9.	14.	30.	31.
NQ	(0.015)	0.136	0.159	0.858	0.332	0.061	
MQ	(0.028)	0.504	0.999	1.63	0.663	0.190	
HQ	0.092	1.15	2.13	3.09	0.955	0.339	
am	26.	11.	30.	8.	11.	ö	

	1974/78					1976/78
NQ	0.015	0.038	0.159	0.418	0.125	0.061
MNQ	0.015	0.124	0.446	0.673	0.278	0.080
MQ	0.091	0.590	1.62	1.51	0.795	0.184
MHQ	0.321	1.41	3.10	2.73	1.38	0.339
HQ	0.517	2.40	4.76	3.43	1.98	0.349

Abflußhöhen [mm] 1978

A	(6)	114	234	381	150	44

	1974/78					1976/78
A	21	133	379	353	180	43

Abflußspenden (l/s km²)

	1978 V - X	1978 VI - IX	1976/78 V - X	1974/78 VI - IX	
Nq	1.3	11.9	1.3	9.4	MNq
Mq	58.5	82.9	67.0	98.6	Mq
Hq	270.0	270.0	315.8	308.4	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1978 8.8.	1974/78 18.7.76
HQ	4.92	7.23
Hq	430	632
cm a.P.	78	97

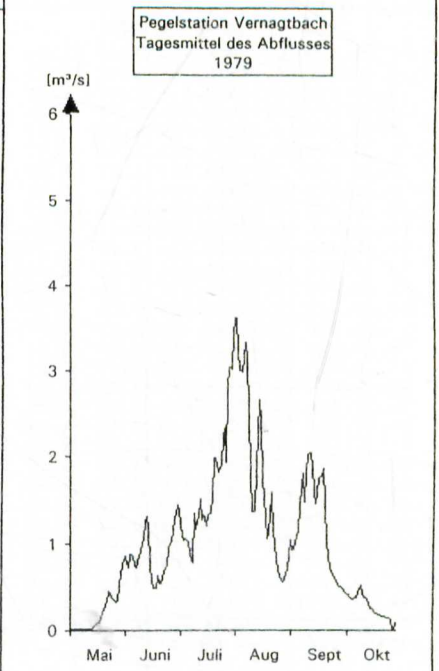
Table 3.5: Runoff, runoff heights and specific runoff in 1978

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (84 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.015)	0.848	1.39	3.44	0.886	0.478
2.	(0.015)	0.791	1.20	3.63	1.04	0.445
3.	(0.015)	0.721	1.12	3.62	0.923	0.422
4.	(0.015)	0.870	1.04	3.24	0.923	0.414
5.	(0.015)	0.863	1.06	3.01	1.03	0.387
6.	(0.020)	0.772	1.01	2.98	1.17	0.362
7.	(0.020)	0.736	0.916	3.16	1.40	0.356
8.	(0.020)	0.792	0.803	3.33	1.70	0.385
9.	(0.020)	0.855	0.777	3.13	1.81	0.432
10.	(0.020)	0.925	1.35	2.53	1.48	0.490
11.	(0.020)	1.07	1.16	1.80	1.84	0.535
12.	(0.025)	1.26	1.34	1.36	2.02	0.460
13.	(0.025)	1.32	1.50	1.36	2.04	0.375
14.	(0.030)	1.20	1.28	1.85	1.89	0.356
15.	(0.050)	0.747	1.32	2.27	1.60	0.315
16.	(0.070)	0.610	1.30	2.65	1.46	0.262
17.	(0.100)	0.500	1.20	2.42	1.59	0.253
18.	(0.150)	0.500	1.33	1.73	1.74	0.229
19.	(0.200)	0.645	1.34	1.32	1.77	0.202
20.	(0.250)	0.554	1.54	1.06	1.86	0.181
21.	(0.300)	0.551	1.98	1.13	1.47	0.179
22.	(0.350)	0.613	1.98	1.32	1.01	0.171
23.	(0.450)	0.687	1.91	1.58	0.874	0.171
24.	0.401	0.765	1.82	1.15	0.716	0.171
25.	0.363	0.940	1.91	0.812	0.650	0.146
26.	0.353	0.996	2.24	0.714	0.608	0.138
27.	0.321	1.04	2.33	0.633	0.577	0.120
28.	0.352	1.14	1.94	0.587	0.529	0.100
29.	0.530	1.30	2.83	0.563	0.507	0.101
30.	0.762	1.43	3.03	0.604	0.506	0.100
31.	0.822		3.02	0.703		0.100



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Abflüsse [m³/s] 1979

	am	ö	17.	9.	29.	30.	ö
NQ		(0.015)	0.500	0.777	0.563	0.506	0.100
MQ		(0.197)	0.868	1.58	1.93	1.25	0.285
HQ		0.822	1.43	3.03	3.63	2.04	0.535
	am	31.	30.	31.	2.	13.	11.

	1974/79					1976/79
NQ	0.015	0.038	0.159	0.418	0.125	0.061
MNQ	0.015	0.187	0.501	0.655	0.318	0.085
MQ	0.112	0.637	1.61	1.58	0.871	0.209
MHQ	0.405	1.41	3.09	2.88	1.49	0.388
HQ	0.822	2.40	4.76	3.63	2.04	0.535

Abflußhöhen [mm] 1979

A	(46)	197	370	452	283	67

	1974/79					1976/79
A	26	144	378	370	197	49

Abflußspenden (l/s km²)

	1979		1976/79	1974/79	
	V - X	VI - IX	V - X	VI - IX	
Nq	1.3	43.7	1.3	15.1	MNq
Mq	89.0	123.0	72.5	102.7	Mq
Hq	317.3	317.3	316.2	310.0	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1979 2.8.	1974/79 18.7.76
HQ	5.45	7.23
Hq	476	632
cm a.P.	82	97

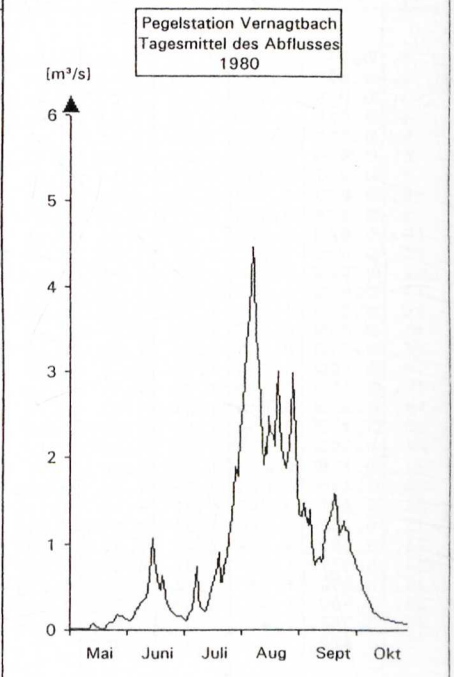
Table 3.6: Runoff, runoff heights and specific runoff in 1979

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (84 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.019)	(0.126)	0.154	2.34	1.68	0.879
2.	(0.019)	(0.115)	0.127	2.42	1.37	0.822
3.	(0.019)	0.105	0.111	2.66	1.32	0.723
4.	(0.019)	0.135	0.145	2.89	1.32	0.704
5.	(0.019)	0.202	0.199	3.33	1.47	0.688
6.	(0.019)	0.252	0.242	3.70	1.27	0.589
7.	(0.019)	0.255	0.407	4.07	1.22	0.479
8.	0.019	0.299	0.601	4.46	1.40	0.415
9.	0.015	0.322	0.754	4.22	1.07	0.365
10.	0.015	0.349	0.418	3.43	0.856	0.354
11.	0.024	0.388	0.283	3.28	0.758	0.292
12.	0.054	0.495	0.234	3.03	0.818	0.231
13.	0.076	0.644	0.210	2.15	0.855	0.208
14.	0.072	0.884	0.251	1.90	0.792	0.177
15.	0.050	1.07	0.316	2.11	0.877	0.158
16.	0.036	0.846	0.418	2.04	1.14	(0.150)
17.	0.027	0.702	0.485	2.47	1.23	(0.145)
18.	0.024	0.510	0.539	2.30	1.23	(0.135)
19.	0.024	0.470	0.680	2.25	1.35	(0.130)
20.	0.023	0.640	0.744	2.13	1.44	(0.120)
21.	0.050	0.560	0.900	2.72	1.58	(0.115)
22.	0.077	0.404	0.570	3.00	1.57	(0.110)
23.	0.087	0.318	0.570	2.47	1.35	(0.105)
24.	0.099	0.257	0.750	2.12	1.11	(0.100)
25.	0.102	0.216	0.900	1.92	1.21	(0.095)
26.	0.158	0.192	1.08	1.87	1.27	(0.090)
27.	0.178	0.182	1.20	2.01	1.16	(0.085)
28.	(0.168)	0.170	1.35	2.14	1.16	(0.080)
29.	(0.157)	0.160	1.57	2.39	1.15	(0.080)
30.	(0.147)	0.162	1.89	2.99	0.920	(0.075)
31.	(0.136)		1.82	2.24		(0.075)



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Abflüsse [m³/s] 1980

	Mai	Juni	Juli	August	Sept.	Okt.
am	6	3.	3.	26.	11.	6
NQ	0.015	0.105	0.111	1.87	0.758	(0.075)
MQ	(0.063)	0.381	0.643	2.68	1.20	(0.283)
HQ	0.178	1.07	1.89	4.46	1.58	0.879
am	27.	15.	30.	8.	21.	1.

	1974/80	1976/80
NQ	0.015	0.038	0.111	0.418	0.125	0.061
MNQ	0.015	0.175	0.445	0.829	0.215	0.083
MQ	0.123	0.600	1.47	1.74	0.918	0.224
MHQ	0.373	1.36	2.92	3.11	1.50	0.486
HQ	0.822	2.40	4.76	4.46	2.04	0.879

Abflußhöhen [mm] 1980

A	15	86	150	627	272	(66)

	1974/80	1976/80
A	29	136	344	407	208	52

Abflußspenden (l/s km²)

	1980 V - X	1980 VI - IX	1976/80 V - X	1974/80 VI - IX	
Nq	1.3	9.2	1.3	14.2	MNq
Mq	76.5	107.1	73.3	103.3	Mq
Hq	389.8	389.8	330.9	321.4	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1980 7.8.	1974/80 18.7.76
HQ	5.01	7.23
Hq	438	632
cm a.P.	78	97

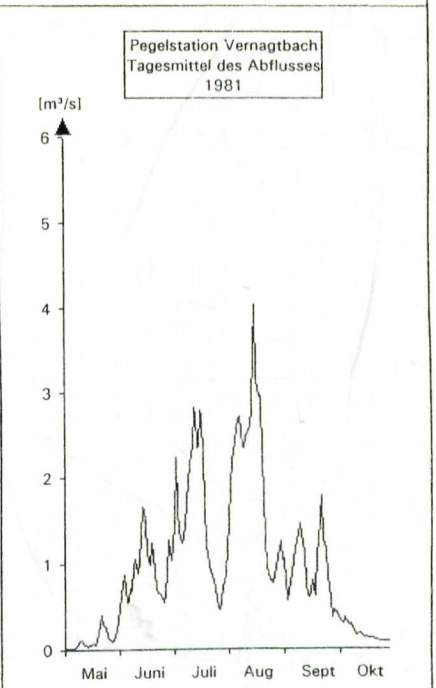
Table 3.7: Runoff, runoff heights and specific runoff in 1980

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (84 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	0.028	0.481	1.22	1.20	1.04	0.428
2.	0.023	0.652	1.45	1.46	1.05	0.387
3.	0.023	0.770	2.24	1.91	0.796	0.340
4.	0.023	0.876	1.65	2.21	0.571	0.305
5.	0.023	0.546	1.36	2.30	0.663	0.298
6.	0.023	0.591	1.24	2.57	0.899	0.355
7.	0.041	0.702	1.30	2.69	1.04	0.321
8.	0.053	0.689	1.45	2.71	1.16	0.280
9.	0.085	0.991	1.71	2.55	1.26	0.293
10.	0.118	1.05	1.96	2.34	1.34	0.251
11.	0.099	0.901	2.14	2.35	1.46	0.212
12.	0.061	1.04	2.39	2.49	1.35	0.170
13.	0.047	1.33	2.83	2.57	1.13	0.172
14.	0.044	1.65	2.74	2.60	0.755	0.185
15.	0.055	1.64	2.35	2.82	0.632	0.159
16.	0.064	1.50	2.36	3.52	0.598	0.141
17.	0.069	1.11	2.79	4.04	0.670	0.136
18.	0.062	0.974	2.73	3.12	0.800	0.142
19.	0.116	1.24	1.69	2.95	0.614	0.136
20.	0.198	1.12	1.21	2.94	1.17	0.126
21.	0.317	0.904	1.11	2.22	1.20	(0.120)
22.	0.393	0.731	0.980	1.78	1.54	(0.115)
23.	0.286	0.656	0.909	1.27	1.78	(0.110)
24.	0.260	0.641	0.870	0.974	1.28	(0.105)
25.	0.169	0.601	0.711	0.802	1.16	(0.100)
26.	0.133	0.551	0.587	0.799	0.821	(0.100)
27.	0.104	0.646	0.490	0.771	0.734	(0.095)
28.	0.087	0.916	0.462	0.859	0.577	(0.095)
29.	0.110	1.28	0.571	0.953	0.357	(0.090)
30.	0.213	1.04	0.731	1.07	0.459	(0.090)
31.	0.352		0.867	1.26		(0.085)



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Abflüsse [m³/s] 1981

	am	1.	28.	27.	29.	31.
NQ	0.023	0.481	0.462	0.771	0.357	(0.085)
MQ	0.119	0.927	1.52	2.07	0.964	(0.192)
HQ	0.393	1.65	2.83	4.04	1.78	0.428
am	22.	14.	13.	17.	23.	1.

	1974/81	1976/81
NQ	0.015	0.038	0.111	0.418	0.125	0.061
MNQ	0.016	0.213	0.447	0.821	0.376	0.083
MQ	0.107	0.641	1.48	1.78	0.924	0.218
MHQ	0.375	1.40	2.90	3.22	1.54	0.477
HQ	0.822	2.40	4.76	4.46	2.04	0.879

Abflußhöhen [mm] 1981

A	28	210	356	485	218	(45)

	1974/81	1976/81
A	25	145	347	417	209	51

Abflußspenden (l/s km²)

	1981 V - X	1981 VI - IX	1976/81 V - X	1974/81 VI - IX	
Nq	2.0	31.2	1.4	16.3	MNq
Mq	84.0	119.7	75.1	105.3	Mq
Hq	353.1	353.1	334.6	325.4	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1981 16.8.	1974/81 18.7.76
HQ	5.28	7.23
Hq	461	632
cm a.P.	83	97

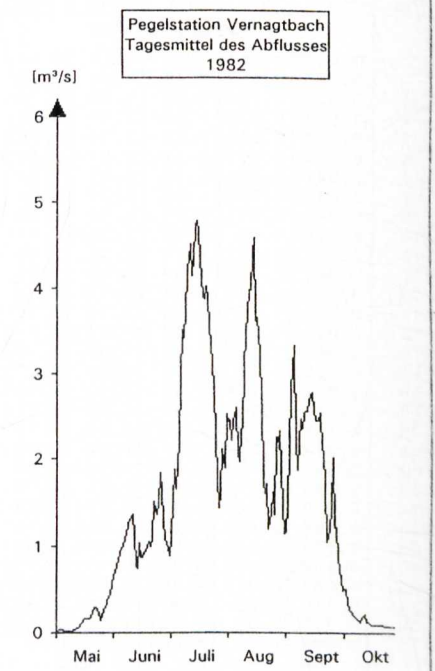
Table 3.8: Runoff, runoff heights and specific runoff in 1981

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (82 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	0.022	0.655	0.889	2.53	1.14	0.622
2.	0.027	0.705	1.09	2.45	1.17	0.496
3.	0.036	0.783	1.54	2.45	1.49	0.518
4.	0.032	0.857	1.88	2.22	2.15	0.501
5.	0.022	0.975	1.65	2.45	2.82	0.368
6.	0.022	0.998	2.20	2.61	3.34	0.282
7.	0.022	1.12	2.96	2.06	2.22	0.252
8.	0.022	1.13	3.50	1.96	1.88	0.209
9.	0.028	1.27	3.42	2.34	2.22	0.176
10.	0.027	1.31	3.73	2.39	2.48	0.157
11.	0.034	1.37	4.21	3.07	2.36	0.146
12.	0.053	1.14	4.52	3.47	2.54	0.125
13.	0.063	0.786	4.15	3.99	2.57	0.174
14.	0.088	0.746	4.35	3.99	2.69	0.219
15.	0.114	1.03	4.73	4.42	2.76	0.126
16.	0.146	0.867	4.79	4.59	2.79	0.136
17.	0.159	0.873	4.67	3.62	2.60	0.113
18.	0.167	0.959	4.33	3.66	2.46	0.098
19.	0.172	1.01	3.91	3.24	2.46	0.097
20.	0.191	1.06	3.87	2.69	2.56	0.093
21.	0.258	0.995	4.01	1.72	2.12	0.093
22.	0.287	1.11	3.90	1.60	2.09	0.094
23.	0.294	1.50	3.55	1.72	1.69	0.096
24.	0.230	1.36	3.36	1.20	1.06	0.085
25.	0.149	1.52	2.85	1.38	1.20	0.080
26.	0.207	1.84	2.21	1.62	1.46	(0.080)
27.	0.276	1.65	1.80	1.37	2.02	(0.075)
28.	0.297	1.29	1.44	2.26	1.21	(0.075)
29.	0.365	1.09	1.62	2.21	1.21	(0.075)
30.	0.453	0.985	2.10	2.32	0.877	(0.070)
31.	0.567		1.89	1.46		(0.070)



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Abflüsse [m³/s] 1982

am	ö	1.	1.	24.	30.	ö
NQ	0.022	0.655	0.889	1.20	0.877	(0.070)
MQ	0.156	1.10	3.07	2.55	2.05	(0.187)
HQ	0.567	1.84	4.79	4.59	3.34	0.622
am	31.	26.	17.	16.	6.	1.

1974/82

NQ	0.015	0.038	0.111	0.418	0.125	0.061
MNQ	0.017	0.262	0.496	0.863	0.432	0.081
MQ	0.112	0.692	1.66	1.87	1.05	0.214
MHQ	0.396	1.45	3.11	3.37	1.74	0.497
HQ	0.822	2.40	4.79	4.59	3.34	0.879

Abflußhöhen [mm] 1982

A	36	249	718	597	465	(44)

1974/82 1976/82

A	26	157	388	438	238	50

Abflußspenden (l/s km²)

	1982 V - X	1982 VI - IX	1976/82 V - X	1974/82 VI - IX	
Nq	1.9	57.2	1.5	20.8	MNq
Mq	132.8	191.6	83.3	114.9	Mq
Hq	418.7	418.7	346.6	335.8	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1982 15.8.	1974/82 18.7.76
HQ	6.79	7.23
Hq	593	632
cm a.P.	94	97

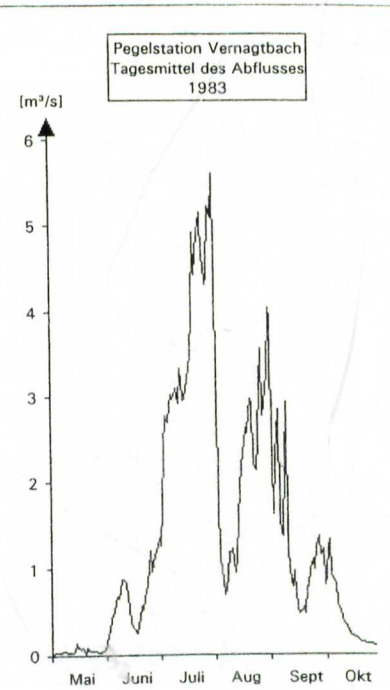
Table 3.9: Runoff, runoff heights and specific runoff in 1982

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (82 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.025)	0.148	1.34	5.61	4.03	1.220
2.	(0.025)	0.245	1.26	4.54	3.92	0.810
3.	(0.030)	0.297	1.71	3.02	2.21	0.905
4.	(0.030)	0.411	2.40	1.78	1.62	1.260
5.	(0.035)	0.514	2.77	1.10	2.30	1.330
6.	(0.040)	0.615	2.70	0.864	2.83	0.927
7.	0.046	0.679	2.88	0.696	1.58	0.878
8.	0.052	0.659	3.02	0.747	1.41	0.812
9.	0.046	0.759	2.96	0.910	1.37	0.574
10.	0.038	0.869	3.02	1.18	2.24	0.546
11.	0.033	0.848	3.09	1.19	2.92	0.502
12.	0.033	0.829	2.92	1.22	1.21	0.422
13.	0.033	0.678	3.33	0.945	0.838	0.361
14.	0.061	0.548	3.18	1.12	0.783	0.333
15.	0.139	0.401	2.95	1.57	0.960	0.270
16.	0.086	0.326	2.99	1.94	0.709	0.255
17.	0.079	0.318	3.08	2.19	0.542	0.228
18.	0.082	0.263	3.21	2.32	0.475	0.228
19.	0.079	0.338	3.47	2.63	0.512	0.203
20.	0.100	0.458	4.00	2.56	0.555	0.184
21.	0.096	0.570	4.91	2.81	0.471	0.163
22.	0.074	0.529	4.41	2.97	0.788	0.153
23.	0.060	0.659	4.66	2.93	0.788	0.146
24.	0.055	0.829	4.93	2.19	0.983	0.138
25.	0.046	1.01	5.15	2.13	1.08	0.127
26.	0.046	1.20	4.61	2.50	0.981	0.121
27.	0.045	0.959	4.57	3.17	1.26	0.132
28.	0.043	1.07	4.31	3.57	1.34	0.131
29.	0.038	1.15	4.42	2.77	1.36	0.116
30.	0.050	1.26	5.22	2.90	1.15	0.111
31.	0.080		5.10	3.25		0.097



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Abflüsse [m³/s] 1983

am	ö	1.	2.	7.	21.	31.
NQ	(0.025)	0.148	1.26	0.696	0.471	0.097
MQ	(0.056)	0.648	3.50	2.24	1.44	0.441
HQ	0.139	1.26	5.22	5.61	4.03	1.330
am	15.	30.	30.	1.	1.	5.

	1974/83					1976/83
NQ	0.015	0.038	0.111	0.418	0.125	0.061
MNQ	0.018	0.251	0.572	0.846	0.436	0.083
MQ	0.106	0.688	1.84	1.91	1.09	0.243
MHQ	0.370	1.43	3.32	3.59	1.97	0.602
HQ	0.822	2.40	5.22	5.61	4.03	1.330

Abflußhöhen [mm] 1983

A	(13)	147	820	524	326	103

	1974/83					1976/83
A	25	156	431	447	247	57

Abflußspenden (l/s km²)

	1983 V - X	1983 VI - IX	1976/83 V - X	1974/83 VI - IX	
Nq	2.2	12.9	1.6	20.0	MNq
Mq	121.5	171.0	88.1	120.5	Mq
Hq	490.3	490.3	364.6	351.2	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1983 1.8.	1974/83 1.8.83
HQ	8.30	8.30
Hq	726	726
cm a.P.	104	104

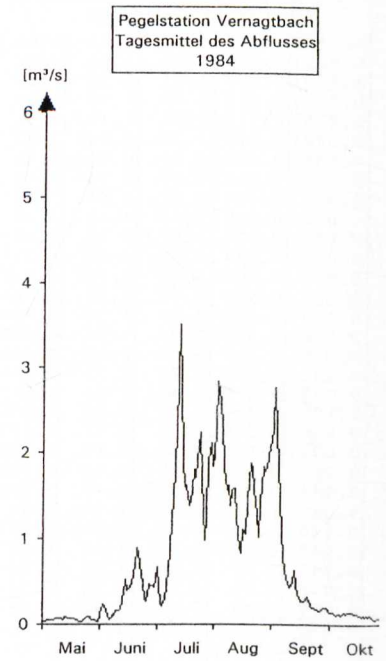
Table 3.10: Runoff, runoff heights and specific runoff in 1983

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (82 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.033)	0.104	0.549	1.832	2.092	0.195
2.	(0.040)	0.208	0.667	1.968	2.112	0.175
3.	(0.040)	0.240	0.580	2.278	2.336	0.148
4.	(0.050)	0.226	0.261	2.836	2.768	0.154
5.	(0.050)	0.105	0.223	2.759	2.264	0.142
6.	(0.060)	0.048	0.312	2.342	1.449	0.133
7.	(0.060)	0.065	0.454	1.842	1.082	0.116
8.	0.066	0.109	0.648	1.691	0.807	0.121
9.	0.064	0.104	0.855	1.561	0.639	0.119
10.	0.077	0.161	1.231	1.614	0.544	0.132
11.	0.066	0.163	1.456	1.390	0.485	0.140
12.	0.063	0.181	2.243	1.557	0.445	0.135
13.	0.086	0.286	2.894	1.576	0.507	0.139
14.	0.089	0.387	3.516	1.254	0.628	0.139
15.	0.072	0.527	2.783	1.048	0.472	0.138
16.	0.067	0.402	1.937	0.917	0.361	0.124
17.	0.068	0.415	1.596	0.831	0.320	0.128
18.	0.067	0.498	1.611	1.111	0.269	0.137
19.	0.063	0.595	1.376	1.053	0.267	0.115
20.	0.046	0.684	1.446	1.446	0.303	0.092
21.	0.040	0.887	1.582	1.698	0.322	0.103
22.	0.033	0.846	1.800	1.870	0.293	0.099
23.	0.041	0.701	1.712	1.839	0.234	0.101
24.	0.076	0.466	1.902	1.578	0.202	0.098
25.	0.092	0.302	2.241	1.288	0.188	0.105
26.	0.098	0.275	1.735	1.026	0.188	0.081
27.	0.087	0.365	1.327	1.421	0.167	0.063
28.	0.062	0.476	0.984	1.615	0.168	0.063
29.	0.046	0.447	1.270	1.830	0.177	0.070
30.	0.033	0.440	1.908	1.782	0.194	0.071
31.	0.034		2.117	1.937		0.075



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Abflüsse [m³/s] 1984

am	ö	6.	5.	17.	27.	ö
NQ	0.033	0.048	0.223	0.831	0.167	0.063
MQ	(0.064)	0.357	1.459	1.638	0.743	0.118
HQ	0.098	0.887	3.516	2.836	2.768	0.195
am	26.	21.	14.	4.	4.	1.
			1974/84			1976/84
NQ	0.015	0.038	0.111	0.418	0.125	0.061
MNQ	0.019	0.233	0.540	0.845	0.412	0.081
MQ	0.102	0.658	1.805	1.878	1.058	0.228
MHQ	0.345	1.381	3.338	3.524	2.043	0.557
HQ	0.822	2.40	5.22	5.61	4.03	1.333

Abflußhöhen [mm]

A	(14)	81	342	384	168	28
			1974/84			
A	24	149	423	441	240	54

Abflußspenden (l/s km²)

	1984 V - X	1984 VI - IX	1976/84 V - X	1974/84 VI - IX	
Nq	2.9	4.2	1.7	18.6	MNq
Mq	63.8	91.7	85.4	117.9	Mq
Hq	307.3	307.3	358.2	347.2	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1984 4.9.	1974/84 1.8.83
HQ	4.61	8.30
Hq	403	726
cm a.P.	77	104

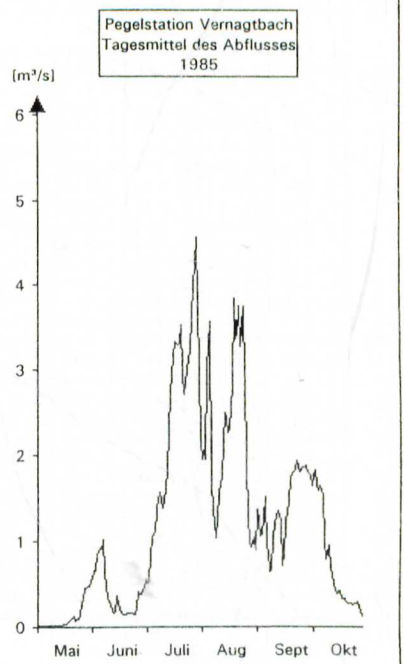
Table 3.11: Runoff, runoff heights and specific runoff in 1984

VERNAGTBACH

Pegel: Pegelstation Vernagtbach (Ss und Sd; betreut durch KfG und IfR); 3,1 km oberhalb Mündung in Rofenache, 1,3 km unterhalb Gletscherzunge
PN = NN + 2634,8 m F_N = 11,44 km² (82 % vergletschert)
Nach Stundenmitteln des Wasserstandes berechnet

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.020)	0.588	0.542	2.156	0.889	1.763
2.	(0.020)	0.657	0.503	1.948	1.369	1.645
3.	(0.020)	0.651	0.553	2.049	1.239	1.789
4.	(0.020)	0.864	0.822	1.952	1.064	1.828
5.	(0.020)	0.933	1.050	3.018	1.072	1.661
6.	(0.020)	0.907	1.120	3.572	1.516	1.578
7.	(0.020)	1.026	1.362	1.693	0.902	1.647
8.	(0.020)	0.655	1.493	1.373	0.886	1.527
9.	(0.020)	0.481	1.557	1.204	0.630	2.006
10.	(0.020)	0.355	1.479	1.043	0.664	0.780
11.	(0.020)	0.281	1.385	1.273	1.044	0.881
12.	(0.020)	0.208	1.603	1.570	1.215	0.951
13.	(0.020)	0.166	1.832	1.752	1.355	0.686
14.	(0.020)	0.186	2.266	2.146	1.305	0.510
15.	(0.025)	0.370	2.754	2.486	1.226	0.437
16.	(0.030)	0.285	2.908	2.440	0.717	0.381
17.	(0.040)	0.214	3.189	2.252	0.839	0.420
18.	(0.050)	0.155	3.331	2.312	1.216	0.415
19.	(0.070)	0.142	3.292	2.813	1.465	0.336
20.	(0.090)	0.149	3.334	3.840	1.723	0.327
21.	(0.110)	0.172	3.533	3.373	1.789	(0.296)
22.	0.127	0.165	2.964	3.431	1.801	(0.282)
23.	0.071	0.155	2.715	3.747	1.845	(0.267)
24.	0.095	0.151	2.835	3.272	1.929	(0.267)
25.	0.168	0.139	3.149	3.743	1.798	(0.254)
26.	0.247	0.237	3.195	2.891	1.837	(0.282)
27.	0.355	0.414	3.651	1.910	1.858	(0.296)
28.	0.451	0.382	3.993	1.291	1.854	(0.254)
29.	0.449	0.391	4.266	0.985	1.875	(0.173)
30.	0.446	0.482	4.563	0.936	1.793	(0.133)
31.	0.537		2.992	1.035		(0.109)



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Abflüsse [m³/s] 1985

	ö	25.	2.	30.	9.	31.
NQ	(0.020)	0.139	0.503	0.936	0.630	(0.109)
MQ	(0.117)	0.399	2.394	2.242	1.357	(1.028)
HQ	0.537	1.026	4.563	3.840	1.929	1.828
am	31.	7.	30.	20.	23.	4.

	1974/85	1976/85
NQ	0.015	0.038	0.111	0.418	0.125	0.061
MNQ	0.019	0.225	0.537	0.853	0.430	0.084
MQ	0.103	0.636	1.854	1.908	1.083	0.308
MHQ	0.360	1.351	3.440	3.550	2.034	0.684
HQ	0.822	2.40	5.22	5.61	4.03	1.828

Abflußhöhen [mm] 1985

A	(22)	90	561	525	307	(155)

1974/85

A	24	144	434	448	246	64

Abflußspenden (l/s km²)

	1985 V - X	1985 VI - IX	1976/85 V - X	1974/85 VI - IX	
Nq	1.7	12.1	1.7	18.0	MNq
Mq	109.8	139.7	87.8	119.7	Mq
Hq	398.8	398.8	362.3	351.5	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1985 25.8.	1974/85 1.8.83
HQ	6.43	8.30
Hq	559	726
cm a.P.	91	104

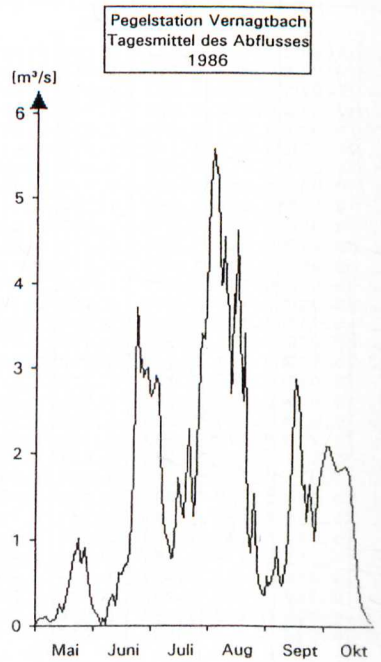
Table 3.12: Runoff, runoff heights and specific runoff in 1985

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 82% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	0.026	0.217	2.750	3.836	0.360	1.792
2.	0.049	0.186	2.668	4.442	0.372	1.890
3.	0.077	0.152	2.740	5.114	0.582	1.984
4.	0.098	0.120	2.760	5.324	0.474	2.085
5.	0.091	0.100	2.905	5.593	0.488	2.086
6.	0.104	0.093	2.802	5.309	0.624	2.101
7.	0.114	0.078	2.101	5.252	0.703	(2.000)
8.	0.081	0.101	1.573	4.412	0.922	(1.900)
9.	0.059	0.187	1.272	3.986	0.673	(1.830)
10.	0.056	0.287	1.094	4.056	0.528	(1.800)
11.	0.076	0.365	1.033	4.553	0.466	(1.800)
12.	0.112	0.351	0.915	3.974	0.547	(1.820)
13.	0.160	0.228	0.790	3.681	0.784	(1.820)
14.	0.263	0.392	0.808	2.712	1.145	(1.850)
15.	0.215	0.612	1.006	2.909	1.549	(1.830)
16.	0.159	0.602	1.272	3.876	1.980	(1.800)
17.	0.293	0.597	1.711	3.642	2.664	(1.730)
18.	0.422	0.710	1.584	4.614	2.870	(1.550)
19.	0.470	0.713	1.303	3.508	2.615	(1.300)
20.	0.626	0.759	1.248	2.793	2.406	(0.950)
21.	0.693	0.901	1.622	2.618	1.697	(0.650)
22.	0.840	1.256	1.932	3.406	1.586	(0.460)
23.	0.837	1.900	2.298	2.142	1.630	(0.320)
24.	1.014	3.715	1.866	1.140	1.222	(0.230)
25.	0.760	3.538	1.270	0.848	1.638	(0.180)
26.	0.729	2.953	1.508	1.201	1.379	(0.130)
27.	0.855	3.085	1.961	1.532	1.309	(0.100)
28.	0.904	2.901	2.598	1.157	1.001	(0.060)
29.	0.714	2.967	3.068	0.718	1.202	(0.050)
30.	0.421	3.002	3.404	0.501	1.562	(0.040)
31.	0.275		3.321	0.397		(0.030)



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Abflüsse [m³/s]

	1.	7.	13.	31.	1.	31.
am						
NQ	0.026	0.078	0.790	0.397	0.360	(0.030)
MQ	0.374	1.102	1.909	3.202	1.233	(1.231)
HQ	1.014	3.715	3.404	5.593	2.870	2.101
am	24.	24.	30.	5.	18.	6.

	1974/86					1976/86
NQ	0.015	0.038	0.111	0.397	0.125	0.030
MNQ	0.019	0.214	0.556	0.818	0.425	0.080
MQ	0.124	0.672	1.858	2.008	1.094	0.392
MHQ	0.411	1.533	3.437	3.707	2.098	0.813
HQ	1.014	3.715	5.220	5.610	4.030	2.101

Abflußhöhen [mm] 1986

A	87	250	447	750	279	(288)

	1974/86					1976/86
A	29	152	435	471	248	84

Abflußspenden (l/s km²)

	1986		1976/86	1974/86	
	V - X	VI - IX	V - X	VI - IX	
Nq	2.3	6.8	1.8	17.1	MNq
Mq	131.9	162.7	91.9	123.0	Mq
Hq	488.8	488.8	373.8	362.0	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1986	1974/86
	7.8.	1.8.83
HQ	8.04	8.30
Hq	703	726
cm a.P.	102	104

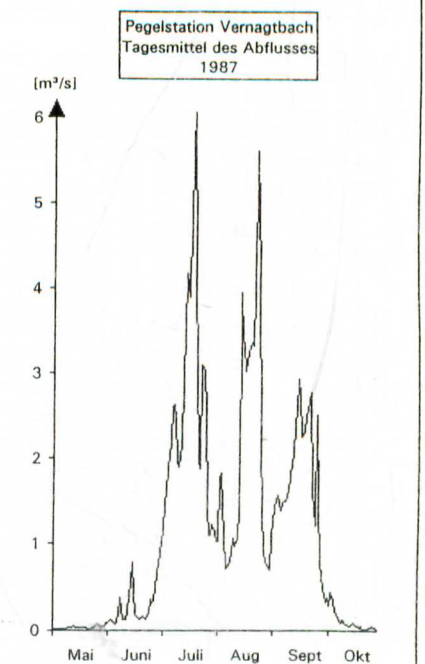
Table 3.13: Runoff, runoff heights and specific runoff in 1986

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 81% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.020)	0.093	1.016	1.009	(1.090)	0.323
2.	(0.020)	0.106	1.144	1.015	(1.280)	0.384
3.	(0.020)	0.126	1.441	1.754	(1.410)	0.297
4.	(0.020)	0.106	1.613	1.801	(1.510)	0.437
5.	(0.020)	0.080	1.864	1.442	(1.570)	0.392
6.	(0.020)	0.106	2.169	0.707	(1.390)	0.343
7.	(0.020)	0.204	2.585	0.726	(1.470)	0.231
8.	(0.020)	0.381	2.590	0.745	(1.500)	0.147
9.	(0.025)	0.280	2.462	0.804	(1.500)	0.125
10.	(0.030)	0.132	1.940	0.880	(1.560)	0.096
11.	(0.035)	0.130	1.880	1.045	(1.610)	0.125
12.	(0.040)	0.236	2.127	0.959	(1.800)	0.106
13.	0.053	0.400	2.881	1.042	(2.060)	0.078
14.	0.046	0.585	3.487	1.403	(2.370)	0.062
15.	0.037	0.776	4.127	3.907	(2.560)	0.052
16.	0.035	0.461	3.999	3.393	2.933	0.071
17.	0.032	0.185	3.849	3.315	2.710	0.089
18.	0.031	0.144	4.776	2.989	2.212	0.069
19.	0.032	0.135	6.123	3.229	2.283	0.051
20.	0.031	0.143	4.097	3.291	2.473	0.045
21.	0.027	0.161	3.029	3.328	2.527	0.050
22.	0.026	0.137	1.951	3.291	2.645	0.027
23.	0.027	0.136	1.857	3.920	2.742	0.018
24.	0.046	0.227	3.064	5.547	1.598	0.020
25.	0.047	0.361	3.015	4.156	1.194	0.013
26.	0.069	0.328	2.494	2.148	2.477	0.039
27.	0.074	0.371	1.405	(1.420)	1.440	0.061
28.	0.048	0.489	1.080	(0.880)	0.791	0.040
29.	0.043	0.651	1.092	(0.810)	0.618	0.035
30.	0.061	0.881	1.206	(0.750)	0.485	0.020
31.	0.088		1.130	(0.690)		0.026



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Abflüsse [m³/s]

am	ö	5.	1.	31.	30.	25.
NQ	(0.020)	0.080	1.016	(0.690)	0.485	0.013
MQ	(0.037)	0.285	2.500	(2.013)	(1.793)	0.125
HQ	0.088	0.881	6.123	5.547	2.933	0.437
am	31.	30.	19.	24.	16.	4.

	1974/87					1976/87
NQ	0.015	0.038	0.111	0.397	0.125	0.013
MNQ	0.019	0.204	0.589	0.809	0.429	0.074
MQ	0.118	0.644	1.904	2.008	1.144	0.370
MHQ	0.388	1.486	3.629	3.838	2.158	0.782
HQ	1.014	3.715	6.123	5.610	4.030	2.101

Abflußhöhen [mm]

	1987					
A	(7)	64	585	(471)	(406)	29

	1974/87					1976/87
A	27	146	446	471	259	79

Abflußspenden (l/s km²)

	1987		1976/87	1974/87	
	V - X	VI - IX	V - X	VI - IX	
Nq	1.1	7.0	1.7	16.9	MNq
Mq	98.4	144.0	92.4	124.5	Mq
Hq	535.2	535.2	387.2	373.4	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1987	1974/87
	24.8.	24.8.87
HQ	9.31	9.31
Hq	814	814
cm a.P.	112	112

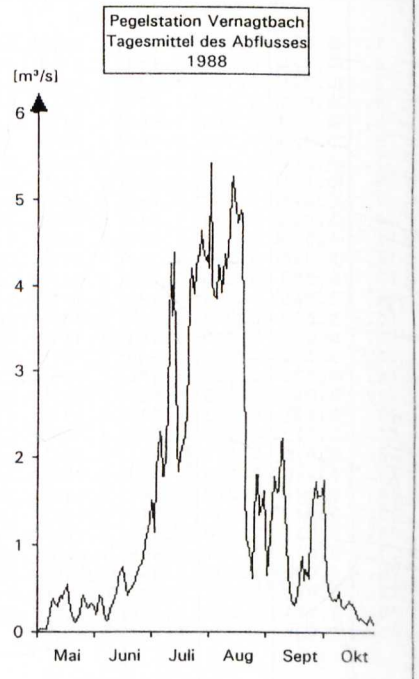
Table 3.14: Runoff, runoff heights and specific runoff in 1987

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 81% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.020)	0.297	1.297	4.350	1.624	1.563
2.	(0.025)	0.199	1.517	4.211	1.216	1.590
3.	(0.030)	0.264	1.467	5.415	0.652	1.743
4.	(0.035)	0.427	1.150	4.050	0.875	1.024
5.	(0.040)	0.374	1.837	3.889	1.138	0.661
6.	0.045	0.221	2.300	3.864	1.785	0.503
7.	0.121	0.164	2.198	4.232	1.703	0.418
8.	0.244	0.133	1.775	4.209	1.604	0.360
9.	0.323	0.166	1.788	3.933	1.643	0.388
10.	0.375	0.265	2.073	4.091	2.186	0.371
11.	0.309	0.330	2.639	4.373	2.224	0.415
12.	0.283	0.413	4.256	4.205	1.739	0.469
13.	0.399	0.446	3.658	4.667	1.092	0.311
14.	0.412	0.604	4.383	5.163	0.687	0.267
15.	0.381	0.697	3.051	5.282	0.517	0.312
16.	0.475	0.735	2.126	5.002	0.404	0.322
17.	0.542	0.741	1.831	4.953	0.334	0.374
18.	0.409	0.515	2.044	4.734	0.314	0.320
19.	0.262	0.426	2.157	4.883	0.458	0.331
20.	0.193	0.472	2.254	4.829	0.623	0.243
21.	0.139	0.497	2.577	3.329	0.785	0.189
22.	0.111	0.520	3.095	1.724	0.882	0.153
23.	0.137	0.540	3.990	1.083	0.604	0.170
24.	0.215	0.670	4.210	1.035	0.733	0.141
25.	0.360	0.752	3.910	0.803	0.625	0.129
26.	0.420	0.773	4.184	0.624	1.216	(0.100)
27.	0.357	0.782	4.340	1.212	1.471	(0.150)
28.	0.311	0.865	4.345	1.807	1.618	(0.175)
29.	0.279	1.028	4.643	1.799	1.727	(0.150)
30.	0.320	1.180	4.454	1.350	1.549	(0.100)
31.	0.318		4.303	1.468		(0.080)



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Abflüsse [m³/s] 1988

	am	1.	8.	4.	26.	18.	31.
NQ	(0.020)	0.133	1.150	0.624	0.314	(0.080)
MQ	(0.255)	0.517	2.898	3.438	1.134	(0.436)
HQ	0.542	1.180	4.643	5.415	2.224	1.743
am	17.	30.	29.	3.	11.	3.

	1974/88					1976/88
NQ	0.015	0.038	0.111	0.397	0.125	0.013
MNQ	0.019	0.199	0.626	0.800	0.421	0.074
MQ	0.127	0.635	1.970	2.104	1.143	0.375
MHQ	0.398	1.465	3.697	3.943	2.162	0.856
HQ	1.014	3.715	6.123	5.610	4.030	2.101

Abflußhöhen [mm] 1988

A	(60)	117	678	805	257	(102)

	1974/88					1976/88
A	29	144	461	493	259	81

Abflußspenden (l/s km²)

	1988 V - X	1988 VI - IX	1976/88 V - X	1974/88 VI - IX	
Nq	1.7	11.6	1.7	16.5	MNq
Mq	126.4	174.8	95.0	127.8	Mq
Hq	473.3	473.3	393.9	381.1	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1988 14.8.	1974/88 24.8.87
HQ	9.07	9.31
Hq	793	813
cm a.P.	109	110

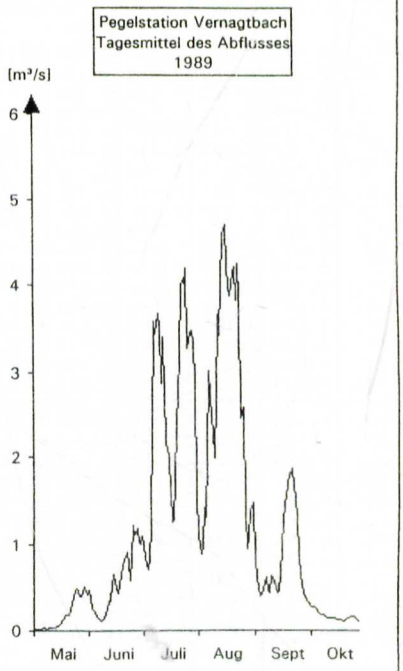
Table 3.15: Runoff, runoff heights and specific runoff in 1988

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 81% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.020)	0.474	1.083	1.595	1.470	0.335
2.	(0.020)	0.400	1.028	1.098	0.825	0.309
3.	(0.020)	0.257	0.829	0.899	0.640	0.279
4.	(0.020)	0.212	0.716	1.009	0.486	0.272
5.	(0.025)	0.174	0.830	1.421	0.410	0.250
6.	(0.030)	0.148	1.242	1.305	0.423	0.251
7.	(0.030)	0.125	2.341	2.013	0.497	0.207
8.	(0.025)	0.116	3.592	3.029	0.613	0.169
9.	(0.025)	0.129	3.447	2.460	0.478	0.186
10.	(0.030)	0.179	3.684	2.288	0.436	0.220
11.	(0.035)	0.275	3.514	1.974	0.633	0.253
12.	(0.040)	0.341	2.870	2.706	0.622	1.153
13.	(0.045)	0.338	3.410	3.652	0.507	0.182
14.	(0.050)	0.539	2.774	3.415	0.436	0.158
15.	(0.060)	0.656	2.159	4.609	0.473	0.153
16.	(0.080)	0.508	1.999	4.675	0.635	0.151
17.	(0.120)	0.436	1.599	4.720	0.999	0.127
18.	0.160	0.522	1.248	4.221	1.251	0.129
19.	0.180	0.653	1.265	3.986	1.454	0.125
20.	0.184	0.754	1.735	3.867	1.669	0.117
21.	0.185	0.831	2.380	4.160	1.794	0.112
22.	0.251	0.913	3.178	4.222	1.808	0.134
23.	0.374	0.797	4.001	3.818	1.852	0.145
24.	0.480	0.589	4.058	4.257	1.671	0.152
25.	0.497	0.852	4.015	3.833	1.326	(0.155)
26.	0.469	1.227	4.211	2.461	0.851	(0.155)
27.	0.398	1.106	3.284	2.586	0.654	(0.145)
28.	0.405	1.191	3.452	1.345	0.533	(0.130)
29.	0.519	1.032	3.481	0.953	0.433	(0.117)
30.	0.474	0.995	3.367	1.097	0.374	(0.107)
31.	0.419		2.852	1.390		(0.095)



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Abflüsse [m³/s] 1989

	ö	8.	4.	3.	30.	31.
am						
NQ	(0.020)	0.116	0.716	0.899	0.374	(0.095)
MQ	(0.183)	0.559	2.569	2.744	0.875	(0.177)
HQ	0.519	1.227	4.211	4.720	1.852	0.335
am	29.	26.	26.	17.	23.	1.

	1974/89					1976/89
NQ	0.015	0.038	0.111	0.397	0.125	0.013
MNQ	0.019	0.194	0.632	0.806	0.418	0.080
MQ	0.130	0.630	2.007	2.144	1.126	0.361
MHQ	0.405	1.450	3.729	3.991	2.143	0.819
HQ	1.014	3.715	6.123	5.610	4.030	2.101

Abflußhöhen [mm] 1989

A	(43)	127	601	642	198	(41)

	1974/89					1976/89
A	30	143	470	502	255	78

Abflußspenden (l/s km²)

	1989 V - X	1989 VI - IX	1976/89 V - X	1974/89 VI - IX	
Nq	1.7	10.1	1.7	16.1	MNq
Mq	103.5	147.4	95.6	129.0	Mq
Hq	412.5	412.5	395.2	383.3	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1989 17.8.	1974/89 24.8.87
HQ	8.19	9.31
Hq	716	813
cm a.P.	104	110

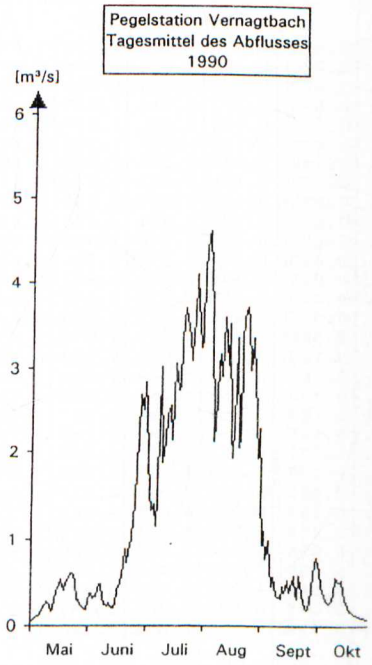
Table 3.16: Runoff, runoff heights and specific runoff in 1989

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 79% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.040)	0.267	2.833	3.352	2.297	0.739
2.	(0.051)	0.357	2.556	4.183	1.592	0.801
3.	(0.070)	0.363	1.924	4.374	0.951	0.737
4.	(0.090)	0.315	1.545	4.563	1.116	0.649
5.	(0.116)	0.327	1.347	4.629	0.790	0.455
6.	(0.150)	0.424	1.412	3.658	0.997	0.402
7.	(0.185)	0.473	1.169	2.133	0.692	0.344
8.	(0.220)	0.481	1.535	2.366	0.455	0.268
9.	0.243	0.335	2.357	2.642	0.557	0.251
10.	0.274	0.232	3.026	3.062	0.477	0.273
11.	0.234	0.226	1.874	3.161	0.338	0.285
12.	0.173	0.259	2.129	2.907	0.327	0.379
13.	0.198	0.219	2.433	3.579	0.311	0.566
14.	0.297	0.208	2.524	3.313	0.459	0.509
15.	0.399	0.197	2.567	3.040	0.383	0.502
16.	0.423	0.247	2.149	3.519	0.463	0.533
17.	0.536	0.399	2.629	2.259	0.533	0.395
18.	0.454	0.501	3.064	1.923	0.379	0.303
19.	0.399	0.583	2.753	2.795	0.511	0.277
20.	0.488	0.721	2.819	3.348	0.578	(0.165)
21.	0.507	0.886	3.302	2.064	0.372	(0.155)
22.	0.556	0.728	3.543	2.192	0.308	(0.145)
23.	0.597	0.855	3.697	3.267	0.590	(0.135)
24.	0.582	1.021	3.579	3.582	0.480	(0.120)
25.	0.484	1.259	3.361	3.707	0.274	(0.105)
26.	0.298	1.434	3.090	3.554	0.212	(0.092)
27.	0.298	1.827	3.408	2.976	0.186	(0.088)
28.	0.232	2.165	3.524	3.135	0.204	(0.082)
29.	0.227	2.692	4.118	3.356	0.289	(0.078)
30.	0.180	2.515	3.785	2.910	0.442	(0.070)
31.	0.180		3.246	1.929		(0.065)



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Abflüsse [m³/s] 1990

	1.	15.	7.	18.	27.	31.
am						
NQ	(0.040)	0.197	1.169	1.923	0.186	(0.065)
MQ	(0.296)	0.751	2.687	3.144	0.586	(0.322)
HQ	0.597	2.692	4.118	4.629	2.297	0.801
am	23.	29.	29.	5.	1.	2.

	1974/90					1976/90
NQ	0.015	0.038	0.111	0.397	0.125	0.013
MNQ	0.020	0.194	0.663	0.872	0.404	0.079
MQ	0.140	0.637	2.047	2.202	1.094	0.358
MHQ	0.416	1.523	3.752	4.028	2.152	0.818
HQ	1.014	3.715	6.123	5.610	4.030	2.101

Abflußhöhen [mm] 1990

A	(69)	170	629	736	133	(75)

	1974/90					1976/90
A	32	144	479	516	248	78

Abflußspenden (l/s km²)

	1990 V - X	1990 VI - IX	1976/90 V - X	1974/90 VI - IX	
Nq	3.5	16.2	1.8	16.1	MNq
Mq	113.4	156.6	96.8	130.6	Mq
Hq	404.6	404.6	395.8	384.7	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1990 5.8.	1974/90 24.8.87
HQ	7.99	9.31
Hq	698	813
cm a.P.	102	110

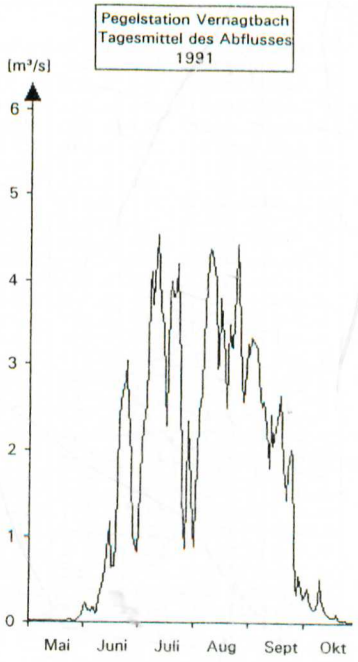
Table 3.17: Runoff, runoff heights and specific runoff in 1990

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 79% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.015)	0.174	0.838	1.070	3.259	0.423
2.	(0.015)	0.228	1.103	0.897	3.126	0.297
3.	(0.015)	0.220	1.642	1.449	3.325	0.302
4.	(0.015)	0.155	2.049	1.892	3.305	0.363
5.	(0.015)	0.120	2.299	2.442	3.277	0.418
6.	(0.015)	0.186	2.554	2.670	3.189	0.323
7.	(0.015)	0.187	3.092	3.197	2.901	0.221
8.	(0.015)	0.109	3.975	3.692	2.600	0.165
9.	(0.015)	0.138	4.121	3.947	2.508	0.166
10.	(0.015)	0.306	3.725	4.275	2.567	0.209
11.	(0.015)	0.429	4.010	4.369	2.483	0.277
12.	(0.015)	0.536	4.527	4.354	2.261	0.535
13.	(0.015)	0.652	4.118	4.130	1.794	0.286
14.	(0.015)	0.874	3.686	4.025	2.414	0.175
15.	(0.015)	0.957	3.568	2.949	2.064	0.125
16.	(0.015)	1.160	3.481	3.005	2.160	0.103
17.	(0.015)	0.663	2.738	3.804	2.272	0.087
18.	(0.015)	0.672	2.293	3.545	2.342	0.077
19.	(0.015)	0.994	3.810	3.071	2.642	0.076
20.	(0.015)	1.619	3.997	2.498	2.291	0.070
21.	(0.015)	2.400	3.826	3.045	1.769	0.109
22.	(0.016)	2.539	3.817	3.487	1.736	0.052
23.	(0.024)	2.679	3.909	3.216	1.421	0.039
24.	(0.030)	2.797	4.206	3.209	1.795	0.037
25.	0.033	3.042	2.931	3.910	2.022	0.030
26.	0.028	2.390	1.588	4.419	1.940	(0.028)
27.	0.021	2.370	1.066	4.046	0.842	(0.026)
28.	0.026	1.752	0.875	3.395	0.452	(0.023)
29.	0.035	1.007	1.429	2.802	0.342	(0.022)
30.	0.071	0.869	2.350	2.560	0.567	(0.021)
31.	0.118		1.582	2.903		(0.020)



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Abflüsse [m³/s] 1991

	ö	8.	1.	2.	29.	31.
NQ	(0.015)	0.109	0.838	0.897	0.342	(0.020)
MQ	(0.023)	1.074	2.878	3.170	2.189	(0.165)
HQ	0.118	3.042	4.527	4.419	3.325	0.535
am	31.	25.	12.	26.	3.	12.

	1974/91	1976/91
NQ	0.015	0.013
MNQ	0.020	0.075
MQ	0.133	0.346
MHQ	0.399	0.800
HQ	1.014	2.101

Abflußhöhen [mm] 1991

A	(5)	243	674	742	496	(39)

	1974/91	1976/91
A	30	149	490	528	262	75

Abflußspenden (l/s km²)

	1991 V - X	1991 VI - IX	1976/91 V - X	1974/91 VI - IX	
Nq	1.3	9.5	1.8	15.7	MNq
Mq	138.4	203.5	99.4	134.6	Mq
Hq	395.7	395.7	395.8	385.4	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

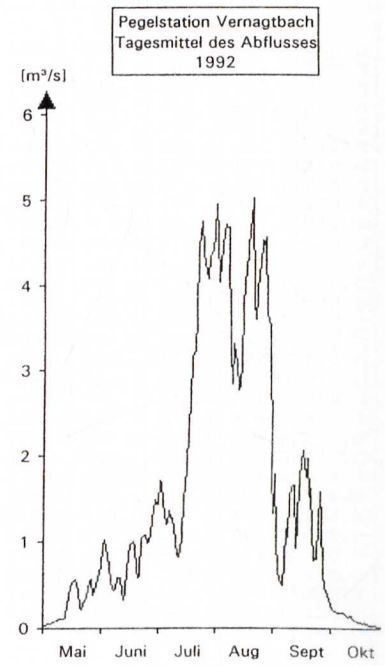
	1991 10.8.	1974/91 24.8.87
HQ	8.27	9.31
Hq	723	813
cm a.P.	108	110

Table 3.18: Runoff, runoff heights and specific runoff in 1991

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 79% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tag	Mai	Juni	Juli	August	Sept.	Okt.
	Tageswerte [m³/s]					
1.	(0.020)	0.713	1.442	4.610	1.781	0.398
2.	(0.030)	0.970	1.431	4.951	1.332	0.333
3.	(0.040)	1.024	1.707	4.570	1.777	0.280
4.	(0.050)	0.944	1.685	4.036	1.038	0.239
5.	(0.060)	0.730	1.449	4.269	0.651	0.205
6.	(0.070)	0.539	1.205	4.620	0.514	0.203
7.	(0.080)	0.461	1.226	4.707	0.486	0.187
8.	(0.090)	0.431	1.366	4.669	0.763	0.190
9.	(0.100)	0.482	1.281	4.678	1.142	0.191
10.	(0.110)	0.576	1.272	3.248	1.065	0.178
11.	(0.110)	0.575	1.169	2.832	1.515	0.156
12.	0.102	0.418	0.840	3.306	1.645	0.141
13.	0.155	0.337	0.817	3.093	1.651	0.130
14.	0.279	0.446	0.914	2.760	0.934	0.148
15.	0.376	0.670	1.048	2.837	1.204	0.118
16.	0.501	0.843	1.526	3.091	1.725	0.096
17.	0.540	0.957	1.614	3.741	1.954	0.086
18.	0.567	1.009	1.894	4.029	2.061	0.074
19.	0.513	0.955	2.668	4.383	1.750	0.076
20.	0.430	0.676	3.149	4.694	1.972	0.061
21.	0.247	0.575	3.196	4.769	1.525	0.070
22.	0.213	0.612	3.227	5.029	1.620	(0.060)
23.	0.281	1.041	3.631	3.799	1.144	(0.050)
24.	0.361	1.071	4.447	3.603	0.783	(0.043)
25.	0.455	1.066	4.756	4.171	0.808	(0.037)
26.	0.547	0.985	4.405	4.238	1.220	(0.032)
27.	0.563	0.998	4.259	4.536	1.576	(0.028)
28.	0.391	1.094	4.163	4.469	1,242	(0.025)
29.	0.431	1.278	4.078	4.563	0.642	(0.023)
30.	0.588	1.498	4.344	3.674	0.468	(0.022)
31.	0.658		4.395	3.525		(0.020)



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Abflüsse [m³/s] 1992

am	1.	13.	12.	14.	30.	31.
NQ	(0.020)	0.337	0.840	2.760	0.468	(0.020)
MQ	(0.289)	0.799	2.407	4.048	1.266	(0.126)
HQ	0.658	1.498	4.756	5.029	2.061	0.398
am	31.	30.	25.	22.	18.	1.

	1974/92					1976/92
NQ	0.015	0.038	0.111	0.397	0.125	0.013
MNQ	0.020	0.197	0.682	0.972	0.403	0.072
MQ	0.141	0.668	2.109	2.351	1.161	0.333
MHQ	0.413	1.601	3.845	4.101	2.209	0.776
HQ	1.014	3.715	6.123	5.610	4.030	2.101

Abflußhöhen [mm] 1992

A	(68)	181	563	948	287	(29)

	1974/92					1976/92
A	32	151	494	550	263	72

Abflußspenden (l/s km²)

	1992 V - X	1992 VI - IX	1976/92 V - X	1974/92 VI - IX	
Nq	1.7	29.4	1.8	16.4	MNq
Mq	130.2	186.2	101.2	137.3	Mq
Hq	439.5	439.5	398.4	388.6	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1992 20.8.	1974/92 20.8.92
HQ	9.33	9.33
Hq	815	815
cm a.P.	113	113

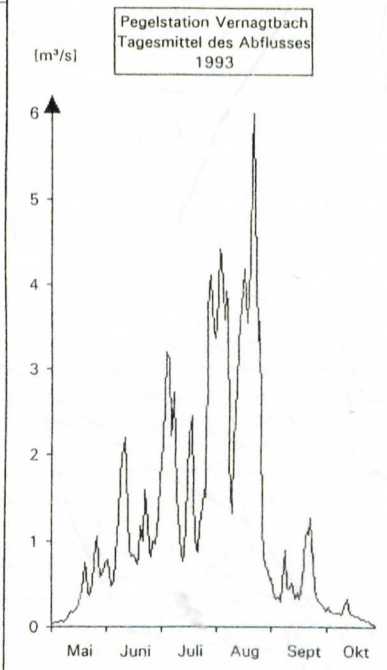
Table 3.19: Runoff, runoff heights and specific runoff in 1992

VERNAGTBACH

Pegel: Pegelstation Vernagtbach der Kommission für Glaziologie der BAdW; 1 km Entfernung vom Gletscherende bzw. 3,1 km vor der Einmündung in die Rofenache.
PN = NN + 2634,8 m, F_N = 11,44 km², 79% vergletschert;
Abflüsse aus Stundenmitteln des Wasserstandes berechnet.

Tageswerte [m³/s]

Tag	Mai	Juni	Juli	August	Sept.	Okt.
1.	(0.040)	0.772	1.721	3.367	0.538	0.242
2.	(0.045)	0.789	1.896	3.539	0.564	0.182
3.	(0.050)	0.632	2.188	3.933	0.442	0.211
4.	(0.055)	0.471	2.604	4.421	0.362	0.240
5.	(0.060)	0.537	3.200	4.323	0.325	0.180
6.	(0.065)	0.789	3.131	3.584	0.348	0.177
7.	0.072	1.117	2.227	3.924	0.300	0.169
8.	0.064	1.258	2.352	3.763	0.504	0.163
9.	0.080	1.745	2.735	2.003	0.732	0.160
10.	0.097	1.966	2.152	1.560	0.889	0.161
11.	0.159	2.210	1.553	1.321	0.461	0.147
12.	0.189	1.819	1.078	2.113	0.434	0.182
13.	0.159	1.288	0.864	2.812	0.506	0.254
14.	0.188	0.923	0.765	3.290	0.475	0.334
15.	0.199	0.823	0.848	3.545	0.330	0.231
16.	0.222	0.847	1.229	3.743	0.345	0.168
17.	0.351	0.840	1.705	3.950	0.394	0.155
18.	0.444	0.730	2.224	4.186	0.320	0.143
19.	0.565	0.839	2.458	3.542	0.528	0.131
20.	0.754	1.176	1.543	3.921	0.769	0.125
21.	0.657	1.089	1.060	4.248	1.074	0.115
22.	0.384	1.101	0.905	5.550	1.115	0.088
23.	0.364	1.603	0.865	6.000	1.065	0.095
24.	0.490	1.238	1.204	4.992	1.282	0.091
25.	0.791	0.901	1.395	3.335	0.722	0.080
26.	0.961	0.826	1.598	3.565	0.476	0.065
27.	1.063	0.995	1.505	2.360	0.358	0.053
28.	0.801	0.999	3.637	1.210	0.314	0.043
29.	0.583	0.973	3.976	0.835	0.286	0.033
30.	0.631	1.314	4.117	0.729	0.280	0.024
31.	0.746		3.448	0.631		0.017



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Abflüsse [m³/s] 1993

	am	1.	4.	14.	31.	30.	31.
NQ		(0.040)	0.471	0.765	0.631	0.280	0.017
MQ		(0.366)	1.087	2.006	3.235	0.551	0.144
HQ		1.063	2.210	4.117	6.000	1.282	0.334
	am	27.	11.	30.	23.	24.	14.

	1974/1993					1976/93
NQ	0.015	0.038	0.111	0.397	0.125	0.013
MNQ	0.021	0.211	0.686	0.955	0.397	0.069
MQ	0.152	0.689	2.104	2.395	1.131	0.323
MHQ	0.446	1.631	3.859	4.196	2.163	0.751
HQ	1.063	3.715	6.123	6.000	4.030	2.101

Abflußhöhen [mm]

A	(86)	246	470	757	125	34

	1974/1993					1976/93
A	36	156	493	561	256	76

Abflußspenden (l/s km²)

	1993		1976/93	1974/93	
	V - X	VI - IX	V - X	VI - IX	
Nq	1.5	24.5	1.8	16.7	MNq
Mq	107.6	150.6	101.6	138.1	Mq
Hq	524.4	524.4	405.4	394.6	MHq

Höchste Stundenmittelwerte:
Abfluß HQ (m³/s), Abflußspende Hq (l/s km²)
Wasserstand am Pegel (cm)

	1993	1974/93
	22.8.	22.8.93
HQ	10.68	10.68
Hq	934	934
cm a.P.	128	128

Table 3.20: Runoff, runoff heights and specific runoff in 1993

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