NORTH CAROLINA
DEPARTMENT OF CONSERVATION AND DEVELOPMENT
R. BRUCE ETHERIDGE, *Director*

BULLETIN NO. 39

Discharge Records

OF

North Carolina Streams

1889-1936

PREPARED BY

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STATE OF NORTH CAROLINA

DEPARTMENT OF CONSERVATION AND DEVELOPMENT

Raleigh, N. C.
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To His Excellency CLYDE R. HOEY,
Governor of North Carolina.

SIR:

I have the honor to transmit to you Bulletin No. 39, Discharge Records of North Carolina Streams, 1889-1936.

This report supersedes Bulletin 8 and Bulletin 20, previously issued by the N. C. Geological and Economic Survey, and Bulletin 34, published in 1925 by this Department.

It is believed that the information contained herein will be of real value to engineers and others interested in making preliminary investigations of stream flow records in North Carolina.

Respectfully submitted,

R. BRUCE ETHERIDGE, *Director.*

PREFACE

The stream flow data contained herein is based on the latest revised records of the U. S. Geological Survey. This Bulletin, No. 39, therefore succeeds and renders obsolete Bulletin 8, Water Powers in North Carolina, 1899, and Bulletin 20, Water Powers of North Carolina, 1910; both issued by the N. C. Geological and Economic Survey; and supersedes Bulletin 34, Discharge Records of North Carolina Streams, 1889-1923, issued by the N. C. Department of Conservation and Development.

FOREWORD

This Bulletin, Discharge Records of North Carolina Streams, 1889-1936, has been prepared to serve two definite purposes. The first, and perhaps the most important, is the bringing together, under one cover, of records of discharge of North Carolina streams from 1889 to date. The second purpose is to make available, in published form, summary records of all gaging stations, for use of engineers and others interested in making preliminary investigations of water resources.

In problems relating to use of the flow of water in streams it is customary to make preliminary investigations of a number of sites or places in order that definite locations may be selected for more detailed studies. These detailed studies involve the use of daily stream flow records, publication of which would require several volumes. Since these daily records for individual stations are available upon request, and in published form in the annual U. S. Geological Survey Water Supply Papers, it has seemed unnecessary to try to include all of this information in one publication. However, it is believed that summaries of this data for each gaging station will be of real use to the engineer as an aid in determining the desired locations for more detailed investigations and the Bulletin is therefore intended to serve this purpose.

The arrangement of the book is such that the description and data for the various gaging stations are grouped together in separate chapters, each covering the drainage area of a major river system. Within the chapter the active stations are presented first, with the discontinued stations following.

Insofar as possible, deficiency tables have been prepared for ten years of record of two gaging stations in each basin, one located on the main stream and one on a smaller tributary. It is believed that these tables will serve as a general indication of the character of the flow of the streams within the basin. The tables are designed to cover the years 1925-1935, inclusive, which takes into account very wet and very dry years.

There is included also a map showing the location of all river basins and gaging stations within the state, together with reference numbers of the stations. A chart or list of gaging stations by river basins, with station reference numbers, is also included to facilitate the location of any particular station within the basin.

Chapter One includes brief descriptive matter of the topography and drainage of the state, together with explanation of tables and data.

The more detailed information, relating to individual gaging stations, is available upon request from the U. S. Geological Survey, Department of the Interior, Washington, D. C.; the District office of the U. S. Geological Survey, Asheville, N. C. and the Water Resources and Engineering Division of the N. C. Department of Conservation and Development, Raleigh, N. C. Daily discharge data is also available in the Water Supply Papers of the U. S. Geological Survey, a list of which is given in Chapter One.

The stream flow data contained in this Bulletin are based on the official records of the U. S. Geological Survey, which has cooperated in the preparation of this publication.

ACKNOWLEDGMENT

Grateful acknowledgment is made to Mr. E. D. Burchard, District Engineer of the U. S. Geological Survey, for supplying information relating to descriptions of the gaging stations; to Mr. R. E. Shafer, who has done much of the work in compiling the records and tables; and to Miss Dorothy Lindsey, who has prepared the copy for the printer.

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CHAPTER 1

GENERAL DESCRIPTION AND EXPLANATION OF DATA

GENERAL DESCRIPTION

Topography. The topography of North Carolina varies from flat coastal lands, bordering the sounds and ocean in the east, to rugged mountain ranges and high table lands in the west. Between these extremes lies the Piedmont Plateau, a region characterized by low, rounded hills, broad valleys, and deep residual soils. This region, covering approximately one-third of the area of North Carolina, slopes from an average elevation of 1,000 feet at its western boundary, in the foothills of the mountains, to an average elevation of 300 feet where it joins the Coastal Plain in the east. The junction of these two latter areas is marked by a well-defined zone known as the "fall line". In this zone or transition area, the streams and rivers have markedly increased gradients for a short distance and then change their characteristics to typical coastal streams of low, flat gradients.

The topography of the Coastal Plain is almost level, gradually sloping from an elevation of 300 feet at the "fall line" to sea level on the coast. The eastern section of the area is deeply penetrated by inland sounds and tidal estuaries.

The Mountain Region, in the western part of the state, as indicated by its name, consists of an area characterized by numerious high mountain ranges varying in elevation from approximately 2,000 to 6,500 feet. In this region may be found Mount Mitchell, the highest peak east of the Rocky Mountains, having an elevation of 6,684 feet.

The Blue Ridge, Great Smoky Mountains, and other extensive mountain ranges, cross the state through approximately the central portion of this Mountain Region and form the Great Divide, separating the drainage of the state. Streams lying west of this Divide ultimately empty their waters into the Gulf of Mexico, while those lying east of the Divide drain into the Atlantic Ocean.

Rainfall. Over the entire state there is a mean annual rainfall of 49.85 inches. This annual rainfall, distributed about equally among the different seasons of the year, varies from 45 to 55 inches over the Piedmont and Coastal Plain sections, and increases in the Mountain Region to over 80 inches in one locality.

Drainage. As a result of this topography and rainfall there are numerous streams throughout the length and breadth of North Carolina, forming well developed river systems both east and west of the Great Divide. The following tabulation lists the principal rivers, showing the areas of their respective drainage basins lying in North Carolina.

DRAINAGE AREAS IN NORTH CAROLINA

GULF OF MEXICO DRAINAGE

River Basin	*Drainage Area in Square Miles*
New	760
Watauga	220
French Broad	2,825
Little Tennessee	1,875
Hiwassee	650

ATLANTIC OCEAN DRAINAGE

River Basin	*Drainage Area in Square Miles*
Broad	1,450
Catawba	3,250
Yadkin	9,300
Cape Fear	8,500
Neuse	4,450
Tar	3,075
Roanoke	3,375
Meherrin-Chowan	1,175

A considerable coastal area of the state is not included in the above tabulation, since the drainage areas of the river basins emptying into the Atlantic Ocean are considered to extend in an easterly direction only as far as tidewater. This coastal area includes a number of lesser rivers which are relatively short, though generally broad and deep. Among these may be mentioned the Pasquotank, Little and Perquimans rivers, lying north of Albemarle Sound; Alligator and Scuppernong rivers, south of Albemarle Sound; Pungo River, emptying into Pamlico Sound through the Pamlico River; Whiteoak and New rivers, discharging into the ocean; and the Waccamaw River, which enters South Carolina and the Atlantic Ocean through Winyah Bay.

Gaging Stations. At various points throughout the state on these streams and rivers there are established gaging stations for the purpose of recording the variations in the height of the water in the stream at that particular location. By applying this information to the stage-discharge relationship, the continuous record of the flow or discharge of the stream may be computed. This data and other related information is prepared each year for each active gaging station within the state.

These gaging stations have been built, maintained, and operated by the U. S. Geological Survey, in cooperation with other agencies. The work has been carried on continuously since 1889, and at present there is a total of 96 active stations located in the principal drainage basins on the main rivers and their tributaries. Records have been obtained at 69 other stations which are no longer active, and these, together with the active stations, make a total of 165 locations throughout the state at which stream flow data has been recorded. There are four stations having continuous records of 40 years or more; two located in the Little Tennessee River basin, and one each in the French Broad and Hiwassee River basins. There are two stations having records of 35 years or more, one in the Cape Fear Basin and one in the Yadkin River basin. Three stations have records between 20 and 30 years of length; 16 have records of between 10 and 20 years; 62 between 5 and 10 years, and 78 have records of less than 5 years.

Of the total number of active stations now in operation 95 are of the automatic recorder type, the remaining 1 being of the observer type. The automatic recorder stations give a continuous record of the river or stream stage, while at the observer stations readings of the river stage are recorded twice daily, except during periods of extremely high or low flow.

Cooperation. In the construction and operation of these gaging stations the U. S. Geological Survey has received assistance and cooperation from the N. C. Department of Conservation and Development, the U. S. Weather Bureau, Corps of Engineers and other Army agencies, certain Federal Power Permittees, the

Soil Conservation Service, the Tennessee Valley Authority, and various municipalities.

Discharge Records. Records of daily discharge data for each year of record of all gaging stations ever operated in North Carolina are on file with the Water Resources and Engineering Division of the N. C. Department of Conservation and Development at Raleigh. Copies of these records may be procured from the U. S. Geological Survey, Department of the Interior, Washington, D. C., or from the district office of the Survey at Asheville, N. C. The U. S. Geological Survey publishes annually in its water supply papers the discharge records of each active station. The following tabulation lists the numbers of the Water Supply Papers in which discharge data for North Carolina streams may be found.

LIST OF WATER SUPPLY PAPERS OF THE U. S. GEOLOGICAL SURVEY RELATING TO NORTH CAROLINA STREAMS

(Part 2 and Part 3)

Year ending Sept. 30	*Nos. of Water Supply Papers*	*Year ending Sept. 30*	*Nos. of Water Supply Papers*
1896	11	1917	452, 453
1897	15	1918	472, 473
1898	27	1919 & 1920	502, 503
1899	36	1921	522, 523
1900	48	1922	542, 543
1901	65 and 75	1923	562, 563
1902	83	1924	582, 583
1903	98	1925	602, 603
1904	126, 127, 128	1926	622, 623
1905	167, 168, 169	1927	642, 643
1906	203, 204, 205	1928	662, 663
1907 & 1908	242, 243	1929	682, 683
1909	262, 263	1930	697, 698
1910	282, 283	1931	712, 713
1911	302, 303	1932	727, 728
1912	322, 323	1933	742, 743
1913	352, 353	1934	757, 758
1914	382, 383	1935	782, 783
1915	402, 403	1936	802, 803
1916	432, 433		

NOTE: Where the numbers of two papers are listed above in any one year the first number refers to Part 2, "South Atlantic Slope and Eastern Gulf of Mexico Basins," and the second number refers to Part 3, "Ohio River Basin."

EXPLANATION OF DATA

General. In the following pages of this Bulletin there is presented information relating to the location of gaging stations and summary or condensed data of discharge records at these stations. The various gaging stations have been grouped into chapters, each covering a major river drainage system. There are also included tables of deficiency data for certain stations within each drainage basin or chapter. The arrangement of the data within the chapter is such that

the active stations are presented first, with the discontinued stations following. At the beginning of each chapter there is a short description of the drainage area in which the stations are located. A map showing the location of all stations and river basin boundaries, together with a chart or list of all stations, showing their reference numbers, is included in the back of the book.

More detailed discussion of the drainage areas of the principal river basins may be found in the "Report on Water Resources, 1937", of the North Carolina State Planning Board.

Definition of Terms. "Cubic feet per second" or "second-feet" is the rate of discharge of water in a channel of one square foot cross-sectional area at a velocity of one foot per second.

"Mean per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off in inches" is the depth to which an area would be covered if all the water flowing from it in a given period were uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usually expressed in inches.

Basic Data. The basic data from which the information contained in this Bulletin is derived, is collected at the separate gaging stations and consists of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained either from direct readings on a non-recording gage or from a water stage recorder that gives a continuous record of the fluctuations. Measurements of discharge are made with a current meter by the standard method of the U. S. Geological Survey. Rating tables giving the discharge for all stages are prepared from the discharge measurements. The application of the daily gage height to these rating tables gives the mean daily discharge, from which weekly, monthly, and yearly means are computed.

Description of Stations. For each active and discontinued station a description has been prepared. This description gives the name of the station, the reference number, its general and, in some cases, the specific location. The drainage area is given, together with any revisions. Under "Records Available" the dates of establishment, discontinuance, re-establishment, etc., are shown, also the status of the station, whether active or discontinued. The extremes of discharge given represent the maximum and minimum instantaneous discharge, as determined from the highest or lowest gage reading, with the dates of occurence. Additional information relating to the type of stations, mean sea level elevations of the zero of the gage, etc., is given under "Remarks".

Discharge Data. The tables of discharge data present summary information for each year of the record at the station. Included in these tables are the following columns.

"Daily Maximum and Minimum", which gives the highest and lowest mean daily discharge for the year;

"Weekly Maximum and Minimum", which gives the mean daily discharge for the weeks of the year which have the highest and lowest 7-day average discharge.

"Monthly Maximum and Minimum", which gives the mean daily discharge for the months of the year which have the highest and lowest monthly average discharge.

"Mean" is the mean daily discharge for 365 or 366 days.

"Mean per Square Mile" is the mean daily discharge for the year divided by the number of square miles of drainage area above the station.

"Run-off in Inches" represents the total amount of water which passed the station during the year, expressed in inches depth, distributed equally over the entire drainage area above the station.

All data included in the tables refer to the calendar year, that is, January 1st through December 31st. Records are also available for the water years, October 1 through September 30.

Deficiency Tables. Deficiency Tables have been prepared insofar as possible for ten years of record for two gaging stations in each major drainage basin, one on the main stream and one on a smaller tributary. The period covered, 1925-1935, includes very wet and very dry years. These tables show the number of days during each year during which the flow was equal to or less than certain selected discharges, which are indicated in cubic feet per second at the left of the table.

The following table, taken from the 1935 Daily River Stage report of the U. S. Weather Bureau, contains certain information relating to the streams of North Carolina.

U. S. WEATHER BUREAU RIVER STATIONS ON NORTH CAROLINA STREAMS

STATION	RIVER	Length of Record	Elevation Zero of gage above sea level	Distance above mouth of river	Drainage area above gage	Flood Stage	Extreme Stages from Gage Readings			
							Highest	Date	Lowest	Date
		years	feet	miles	sq. miles	feet	feet		feet	
Weldon, N. C.	Roanoke	45	15.81	126	8,380	31	50.3	3–18–12	6.7	9–14–1900
Williamston, N. C.	Roanoke	6		36	9,010	10	12.7	3–14–32	1.8	9– 8–32
Enfield, N. C.	Fishing Creek	22		29	492	14	19.6	7–24–19	0.1	10–28–33
Rocky Mount, N. C.	Tar	25		86	905	8	15.5	7–24–19	0.3	8–22–21
Tarboro, N. C.	Tar	31		46	2,112	18	33.2	7–27–19	−0.6	10– 1–32
Greenville, N. C.	Tar	31	1.45	20	2,579	13	24.5	7–28–19	1.6	8–19–26
Neuse, N. C.	Neuse	25		176	873	14	24.8	7–24–19	0.0	9–20–16
Smithfield, N. C.	Neuse	25		130	1,251	13	26.5	10– 3–29	1.1	7–12–11
Moncure, N. C.	Haw	31	150.67	2	1,841	20	34.3	8–26–08	0.2	9– 2–07
Fayetteville, N. C.	Cape Fear	43	20.23	138	4,292	35	63.3	9–22–28	0.2	10– 8–97
Lock No. 2, Elizabethtown, N. C.	Cape Fear	25	9.55	80	4,940	20	39.1	9–23–28	−0.7	7–15–13
Asheville, N. C.	French Broad	33	1,959.9	147.3	949	6	25.6	7–16–16	0.0	11– 1–04

CHAPTER 2

THE ROANOKE RIVER BASIN

The Roanoke River Basin, located in northeastern North Carolina and southern Virginia, has a total drainage area of 9,630 square miles, of which 3,330 square miles lie in North Carolina. The Roanoke River, the principal stream of the basin, rises in the great Valley of Virginia, and flows southeast approximately 240 miles to enter North Carolina in Warren County. From this point it continues its general southeasterly course for 160 miles to empty into Batchelors Bay, at the head of Albemarle Sound.

The principal tributary of the Roanoke is the Dan River, which also has its beginning in Virginia. For approximately 95 miles of its length this stream flows through North Carolina; finally recrossing into Virginia to join the Roanoke River at Clarksville.

There are a number of coastal streams draining the area lying east of the Roanoke River Basin proper. Among these streams, may be mentioned the Chowan, Meherrin, Blackwater, Nottoway rivers, the Perquimans, Pasquotank, Little and North rivers, and the Scuppernong and Alligator rivers, all of which empty their waters into Albemarle Sound. Chief of these streams is the Chowan River which has a total drainage area of 1,175 square miles lying within North Carolina. This area together with the drainage areas of the other rivers mentioned, when combined with the Roanoke River Basin proper gives a total drainage area of 10,580 square miles lying within the borders of North Carolina. This combined area is referred to as the Roanoke-Chowan River Basin.

The upper part of the Roanoke or Roanoke-Chowan River Basin lies in the Piedmont Plateau, a rolling country, characterized by low rounded hills, broad valleys, and deep residual soils. Elevations in this section range from 900 feet down to 300 feet above mean sea level. The lower part of the basin is located in the Coastal Plain, which has a gradual slope of from 300 feet at the "fall line" (the eastern border of the Piedmont Plateau) to sea level at the coast. The characteristics of this region are gently sloping lands, except for a few hills near the western border.

The cover of the Roanoke-Chowan Basin consists of approximately 70% forest lands. The mean annual temperature varies from 61 degrees at the coast to 57 degrees near the western edge of the basin. The mean annual rainfall of the entire basin is 46.90 inches, varying from 43 inches to 51 inches in different sections. Most of the precipitation occurs as rainfall.

Principal cities located within the North Carolina section of the basin are Elizabeth City, Reidsville, Roanoke Rapids, Williamston, Weldon, Plymouth, Mayodan, and Leaksville.

DAN RIVER NEAR FRANCISCO

No. 105

LOCATION: Stokes County, Dan River at steel bridge just below Georges Mill, 5 miles from Francisco, 3 miles from State Highway 89, and 8 miles by river below Little Dan River.

DRAINAGE AREA: 119 square miles.

RECORDS AVAILABLE: Active station, August 16, 1924 to September 30, 1926; and May 1, 1927 to date.

EXTREMES: *Maximum* (estimated) 8,700 second-feet, December 8, 1924; *Minimum* 7.1 second-feet, September 8, 1932.

REMARKS: Seven months break in record. Automatic recorder installed November 15, 1929; chain gage prior to this date. Slight diurnal fluctuation from operation of grist mills upstream. No diversions. Elevation zero of gage 919.94 feet above mean sea level.

DAN RIVER NEAR FRANCISCO

Drainage Area 119 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	2,300	67	668	83	271	128	194	4 months only	
1925	522	35	330	46	272	62.9	142	1.19	16.13
1926	1,800	31	449	50	204	70.4	125	9 months only	
1927	1,160	48	741	52	354	78.3	145	8 months only	
1928	6,460	90	1,812	116	697	146	253	2.14	28.98
1929	3,040	107	724	118	489	136	260	2.19	29.70
1930	998	31	463	37	258	50.6	124	1.04	14.19
1931	882	44	278	48	213	54.6	114	0.958	12.96
1932	3,500	30	788	36	324	52.9	176	1.48	20.10
1933	793	42	444	46	293	66.8	163	1.37	18.61
1934	2,090	49	843	58	287	68.9	169	1.42	19.31
1935	1,130	85	495	91	339	114	201	1.69	22.88
1936	2,220	60	718	73	464	94.7	221	1.86	25.28

DAN RIVER NEAR FRANCISCO

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50						66	18	37	12	4	
75						141	142	78	113	46	
100				2		177	228	120	161	109	34
125				10	31	208	265	163	183	187	108
150				99	94	239	301	210	196	246	147
175				175	132	278	320	255	210	274	169
200				217	167	314	333	280	230	303	212
225				253	234	343	339	303	258	316	261
250				282	260	352	342	316	295	326	296
300				330	297	357	349	332	328	339	325
400				347	336	363	359	346	355	348	350
500				351	344	363	363	354	361	352	357
1,000				358	356	365	365	364	365	360	364
2,000				362	363			364		364	365
6,500				366	365			366		365	

DAN RIVER AT LEAKSVILLE

No. 107

LOCATION: Rockingham County, Dan River at covered bridge on old Leaksville-Reidsville Road, one-half mile east of Leaksville and one-half mile above mouth of Smith River.

DRAINAGE AREA: 1,150 square miles.

RECORDS AVAILABLE: Active station, July 12, 1929 to date.

EXTREMES: *Maximum* 24,800 second-feet, January 20, 1936;
Minimum 84 second-feet, September 12, 1932.

REMARKS: Automatic recorder installed October 25, 1929; staff gage prior to this date. Slight diurnal regulation caused by operation of power plants upstream. No diversions.

DAN RIVER AT LEAKSVILLE

Drainage Area 1,150 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1929	17,300	540	7,570	848	2,810	1,390	1,548	5 months only	
1930	7,800	125	2,410	177	1,520	263	729	0.634	8.61
1931	9,390	182	3,013	271	1,680	291	868	0.755	10.42
1932	21,000	114	6,221	159	2,550	292	1,380	1.20	16.30
1933	6,140	216	2,976	245	1,800	318	960	0.839	11.34
1934	13,900	200	4,949	377	2,400	503	1,261	1.10	14.90
1935	13,000	365	4,140	415	2,476	467	1,192	1.04	14.09
1936	22,100	308	7,559	355	4,405	501	1,619	1.41	19.17

MAYO RIVER NEAR PRICE

No. 108

LOCATION: Rockingham County, Mayo River just below Anglins Bridge, 4 miles west of Price, one-half mile below forks of river, and three-fourths mile below Virginia State Line.

DRAINAGE AREA: 260 square miles.

RECORDS AVAILABLE: Active station, July 13, 1929 to date.

EXTREMES: *Maximum* (estimated) 16,200 second-feet, October 2, 1929; *Minimum* 41 second-feet, September 19, 1932.

REMARKS: Automatic recorder installed October 1929, staff gage prior to this date. May be slight regulation from grist mills above. No diversions.

MAYO RIVER NEAR PRICE

Drainage Area 260 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1929	10,900	192	2,290	212	824	235	441	6 months only	
1930	1,390	51	565	61	386	83.3	205	0.788	10.71
1931	2,340	69	577	79	359	84.5	198	0.764	10.36
1932	8,800	44	2,006	54	571	74.9	320	1.23	16.75
1933	1,590	90	834	100	463	119	276	1.06	14.38
1934	3,510	90	1,125	119	501	135	298	1.15	15.55
1935	2,410	130	884	148	552	164	326	1.25	17.02
1936	7,440	109	1,759	121	1,022	163	401	1.54	21.01

ROANOKE RIVER AT ROANOKE RAPIDS

No. 109

LOCATION: Halifax County, Roanoke River 1½ miles below State Highway bridge at Roanoke Rapids.

DRAINAGE AREA: 8,410 square miles.

RECORDS AVAILABLE: Active station, February 18, 1930 to date.

EXTREMES: *Maximum* 110,000 second-feet, January 23, 1936;
Minimum 458 second-feet, September 21, 1932.

REMARKS: Automatic recorder entire record. Marked diurnal fluctuation during periods of low flow due to operation of plants at Roanoke Rapids. No diversions. Record of this station is supplemental to prior 19-year record at Old Gaston gaging station 8 miles above, No. 103.

ROANOKE RIVER AT ROANOKE RAPIDS

Drainage Area 8,410 square miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1930	22,900	648	10,700	677	7,500	940	3,432	10½ mo	nths only
1931	33,700	1,070	23,700	1,150	12,000	1,330	5,240	0.623	8.46
1932	86,300	472	40,600	560	16,400	1,020	8,129	0.967	13.17
1933	34,700	930	21,900	1,149	13,300	1,330	6,514	0.778	10.52
1934	91,800	1,930	39,013	2,351	18,800	2,940	8,907	1.06	14.36
1935	57,400	2,180	31,986	2,271	19,840	2,529	8,774	1.04	14.17
1936	100,000	1,660	53,586	1,776	38,640	2,239	12,320	1.46	19.93

ROANOKE RIVER AT ROANOKE RAPIDS

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
500								2			
1,000								31	3		
1,500							49	56	38		
2,000							85	85	90	2	
2,500							110	104	127	47	35
3,000							142	118	153	104	61
3,500							177	131	165	134	87
4,000							206	147	179	156	104
4,500							230	167	185	178	131
5,000							256	187	193	191	140
6,000							281	218	204	223	163
7,000							295	245	234	237	203
8,000							307	270	251	254	232
9,000							311	281	275	270	260
10,000							320	294	295	285	283
12,000							332	312	312	305	301
14 000							340	319	326	316	311
16,000							344	330	330	327	327
20,000							355	342	349	334	338
30,000							362	349	363	346	348
40,000							365	353	365	352	357
60,000								362		360	365
92,000								366		365	

ROANOKE RIVER AT NEAL

No. 101

LOCATION: Bertie County, Roanoke River at Norfolk and Carolina R. R. bridge at Neal, near Kelford.

DRAINAGE AREA: 8,717 square miles.

RECORDS AVAILABLE: Discontinued station. July 27, 1896 to May 31, 1903.

EXTREMES: *Maximum* 85,200 second-feet, May 26, 1901;
Minimum 2,000 second-feet, September 21-22, 1897.

REMARKS: Wire gage. Slight regulation due to operation of plants at Roanoke Rapids and on Dan River.

ROANOKE RIVER AT NEAL

Drainage Area 8,717 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1896	39,720	2,400	26,760	2,822	9,117	3,154	5,777	4 months only	
1897	64,300	2,000	38,946	2,006	28,178	2,217	8,077	0.93	12.37
1898	34,274	2,060	20,269	2,147	13,100	3,544	6,485	0.74	10.11
1899	83,000	2,690	61,999	3,510	37,777	4,563	12,884	1.48	19.86
1900	49,140	1,380	31,646	1,543	17,575	2,311	8,468	0.971	13.22
1901	84,400	3,420	46,239	3,530	30,897	4,637	13,763	1.58	21.53
1902	80,800	2,375	54,286	2,705	26,139	3,703	12,084	1.39	18.67
1903	84,800	6,705	61,868	6,995	33,880	10,676	26,202	5 months only	

DAN RIVER AT MADISON

No. 102

LOCATION: Rockingham County, Dan River at Southern R. R. bridge about one-fourth mile from Madison and one-half mile above mouth of Mayo River.

DRAINAGE AREA: 605 square miles.

RECORDS AVAILABLE: Discontinued station. May 7, 1903 to December 31, 1908.

EXTREMES: *Maximum* stage recorded 20.3 feet, August 26, 1908 (discharge not determined);
Minimum 180 second-feet, October 9 to 19, 1904.

REMARKS: Chain gage. Regulation not known.

DAN RIVER AT MADISON

Drainage Area 605 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max	Min.			
1903	4,250	265	1,505	344	1,199	388	699	8 months only	
1904	5,255	180	1,323	182	865	195	502	0.83	11.30
1905	11,000	278	2,511	315	1,306	334	818	1.35	18.35
1906	Records too incomplete								
1907									
1908									

ROANOKE RIVER AT OLD GASTON

No. 103

LOCATION: Northampton County, Roanoke River at Old Gaston bridge of Roanoke R. R., three-fourths mile below mouth of Indian Creek, 2½ miles above mouth of Deep Creek, and 5½ miles above mouth of Roanoke Rapids Canal.

DRAINAGE AREA: 8,350 square miles.

RECORDS AVAILABLE: Discontinued station. December 7, 1911 to December 31, 1932.

EXTREMES: *Maximum* 210,000 second-feet, March 18, 1912;
Minimum 790 second-feet, October 1, 1914.

REMARKS: Automatic recorder installed November 21, 1921; chain gage prior to this date. Slight regulation caused by power developments considerable distance above.

See Station No. 109, Roanoke River at Roanoke Rapids, for subsequent active records supplemental to records at this station.

ROANOKE RIVER AT OLD GASTON

Drainage Area 8,350 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max	Min.	Max.	Min.			
1911	37,800	2,460	21,585	3,536			12,900	1 month	only
1912	210,000	790	77,643	1,510	38,000	2,610	9,920	1.19	16.19
1913	117,000	1,250	54,449	2,054	20,300	4,320	8,220	0.984	13.36
1914	45,400	790	25,109	956	15,300	1,480	7,049	0.844	11.41
1915	72,300	900	46,371	2,494	23,400	3,300	9,534	1.14	15.47
1916	68,000	900	21,790	1,783	14,800	2,440	7,168	0.857	11.63
1917	77,100	900	47,243	1,075	26,200	2,190	7,515	0.899	12.22
1918	72,300	900	34,429	933	21,100	2,250	7,935	0.951	12.83
1919	110,000	1,370	55,404	1,514	25,500	2,340	9,966	1.20	16.25
1920	75,400	1,340	36,460	1,439	18,400	3,089	8,765	1.05	14.23
1921	55,300	890	25,514	921	17,200	1,570	6,954	0.833	11.27
1922	69,400	1,580	40,157	1,929	23,700	2,880	9,540	1.14	15.41
1923	113,000	2,390	48,314	2,583	26,900	2,930	8,670	1.04	14.11
1924	82,800	2,160	41,884	2,223	20,000	4,380	10,300	1.23	16.73
1925	71,800	1,250	37,520	1,486	24,000	2,490	6,570	0.787	10.68
1926	56,500	1,000	27,313	1,134	14,800	1,730	5,870	0.703	9.53
1927	55,300	1,820	33,430	2,027	16,000	3,130	7,300	0.874	11.86
1928	117,000	1,930	61,671	2,297	23,700	4,210	9,700	1.16	15.80
1929	98,600	2,890	59,300	3,244	21,800	3,830	10,300	1.23	16.73
1930	32,600	620	19,600	681	10,700	927	4,385	0.525	7.13
1931	38,700	1,160	24,800	1,220	11,900	1,330	5,180	0.620	8.44
1932	89,000	505	40,300	558	16,200	964	8,108	0.971	13.19

DAN RIVER AT PINE HALL

No. 104

LOCATION: Stokes County, Dan River at highway bridge at Pine Hall, 2 miles above mouth of Belew Creek and 3 miles below Town Fork Creek.

DRAINAGE AREA: 481 square miles.

RECORDS AVAILABLE: Discontinued station. November 20, 1923 to September 30, 1926.

EXTREMES: *Maximum* 15,800 second-feet (daily), September 30, 1924; *Minimum* 64 second-feet, August 21 and September 9, 1925.

REMARKS: Chain gage. Slight regulation due to operation of mills above. No diversions.

DAN RIVER AT PINE HALL

Drainage Area 481 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1923	4,150	232	1,259	245			468	1 month	only
1924	15,800	195	3,150	243	948	329	653	1.36	18.49
1925	4,430	65	1,314	98	1,030	168	400	0.814	11.25
1926	4,010	131	1,334	141	638	146	351	10 months	only

DAN RIVER AT ASBURY

No. 106

LOCATION: Stokes County, Dan River at county bridge at Joyce's Mill, 1 mile above mouth of Little Dan River and 2 miles below Virginia State Line.

DRAINAGE AREA: 66.4 square miles.

RECORDS AVAILABLE: Discontinued station. August 17, 1924 to September 30, 1926.

EXTREMES: *Maximum* 3,370 second-feet, December 8, 1924;
Minimum 12.7 second-feet, August 20, 1925.

REMARKS: Staff gage. Slight regulation from Joyce's Mill above. No diversions.

DAN RIVER AT ASBURY

Drainage Area 66.4 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	1,080	65	366	76	175	99.7	134.4	3½ months only	
1925	332	20	208	22	189	30.7	84.8	1.28	17.26
1926	558	26	208	29	129	47.6	80.5	9 months only	

CHAPTER 3

THE TAR RIVER BASIN

The Tar River Basin is the smallest of the three river basins which lie entirely within the State of North Carolina. The drainage area of the Tar River Basin proper, that is, the area lying above the town of Washington, is 3,075 square miles. However, if the basin lines are extended to Pamlico Sound, to include the area drained by coastal streams, the total drainage area is approximately 4,200 square miles.

The basin originates in the Piedmont Plateau in Person County, extends in a southeast direction, crossing the "fall line", and traverses the Coastal Plain to border on Pamlico Sound. It has a straight line length of about 160 miles, average width of 30 miles, and a maximum width of 50 miles.

The main stream of the basin, the Tar River, rises in the west central part of Granville County and follows a general southeasterly course for 180 miles by river, or about 120 miles by straight line, to empty into the Pamlico River at Washington, about 40 miles above Pamlico Sound.

The river crosses the "fall line" at Rocky Mount. Above this point the slope is quite uniform and the river bed is mostly sand, clay, gravel or mud, with rock in some places. In the Piedmont Plateau region the river bottoms are relatively narrow and the banks are high enough to confine the river except during periods of very heavy run-off. Below Rocky Mount the banks are often overtopped, twenty-five foot stages at Tarboro being comparatively frequent. The average fall of the stream below Rocky Mount is about one and one-half feet per mile. For more than 60 miles above the "fall line" the gradient of the stream is about two feet per mile.

Principal tributaries to the Tar River are Fishing Creek and Swift Creek. The former, the principal tributary of the main stream, rises in the east central part of Vance County. It flows generally southeast for a straight line length of about 50 miles to enter the Tar River from the left bank a short distance above Tarboro. Above this point it has a drainage area of 760 square miles.

Swift Creek rises in the southeastern part of Vance County, where it is called Sandy Creek, and flows generally parallel to Fishing Creek to enter the Tar River from the left bank seven miles above the mouth of Fishing Creek. It has a straight line length of about 50 miles, and a drainage area of about 350 square miles above its mouth.

Approximately 65 per cent of the area covered by the Tar River basin consists of forest lands, of which 40 per cent is farm woodland and 60 per cent woodland pasture. Most of the remaining area of the basin is devoted to agricultural purposes. The mean annual temperature ranges from 62.5 degrees on the coast to 58.5 degrees at the western end of the basin, with a mean for the whole area of 60.5 degrees. The mean annual rainfall of the basin is 45.92 inches, varying from 44 inches to 54 inches in different sections of the basin.

Principal cities located within the basin are Rocky Mount, Greenville, Washington, Tarboro, and Henderson.

FISHING CREEK NEAR ENFIELD

No. 202

LOCATION: Halifax County, Fishing Creek at bridge on U. S. Highway 301, 2,000 feet below Atlantic Coast Line Railroad Bridge, 2 miles southwest of Enfield and 4¾ miles below mouth of Rocky Creek.

DRAINAGE AREA: 462 square miles.

RECORDS AVAILABLE: Active station. October 1, 1918 to date.

EXTREMES: *Maximum* 20,300 second-feet, July 24, 1919;
Minimum about 10 second-feet, October 19, 1933.

REMARKS: Automatic recorder installed October, 1932; staff gage prior to this date. No regulation and no diversions.

FISHING CREEK NEAR ENFIELD

Drainage Area 462 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1918	4,340	108	2,223	120	882	133	393	3 months only	
1919	20,300	94	8,870	130	2,800	230	770	1.67	22.63
1920	3,000	45	1,735	53	1,050	96.3	508	1.10	14.97
1921	2,570	22	1,534	25	1,000	28.4	314	0.68	9.23
1922	6,650	45	4,073	47	1,800	180	634	1.37	18.63
1923	4,200	31	2,427	45	1,620	59.8	548	1.19	16.12
1924	12,300	81	5,819	139	1,670	266	833	1.80	20.99
1925	3,140	45	2,040	82	1,840	130	507	1.10	14.90
1926	3,140	40	1,765	44	1,470	45.3	375	0.812	11.03
1927	3,670	45	2,175	51	997	113	387	0.838	11.38
1928	9,200	52	4,920	94	2,080	289	586	1.27	17.24
1929	8,480	101	4,190	134	2,040	182	890	1.98	26.18
1930	1,720	39	1,130	42	732	55.1	322	0.698	9.44
1931	5,900	42	2,440	46	934	65	339	0.734	9.95
1932	4,160	12.2	2,300	13.9	911	30.6	308	0.667	9.06
1933	2,660	11	1,699	12	848	14	284	0.623	8.36
1934	14,400	44	3,474	53	1,491	60.4	451	0.976	13.25
1935	5,580	71	2,492	84	1,467	129	558	1.21	16.39
1936	7,040	65	2,913	69	2,303	95.6	750	1.62	22.07

FISHING CREEK NEAR ENFIELD

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
25								31	51		
50	7	82	6			31	6	70	113	8	
75	7	102	44	6		74	71	103	165	64	2
100	20	132	109	20		118	101	131	186	96	25
150	28	172	133	32	12	141	147	171	200	156	85
200	103	207	172	55	26	186	175	199	214	188	124
250	142	219	191	96	43	205	221	223	225	207	150
300	163	224	229	139	69	212	268	241	233	225	172
400	229	263	285	218	140	255	304	279	267	262	204
500	258	295	302	270	177	294	318	311	295	286	244
600	280	303	310	291	217	315	330	320	313	307	271
800	307	322	328	314	266	338	336	337	337	325	298
1,000	323	328	333	330	287	343	344	350	348	334	315
1,500	342	345	345	342	313	361	351	359	356	350	337
2,000	351	352	354	348	330	365	357	361	363	355	345
3,000	364	364	362	358	347		362	363	365	358	361
4,000	365	365	365	361	353		362	365		361	363
8,000				364	364		365	366		363	365
12,000				366	365					364	
15,000										365	

TAR RIVER NEAR NASHVILLE

No. 203

LOCATION: Nash County, Tar River at Cockrell Bridge on Nashville-Wilson State Highway No. 58, 10 miles south of Nashville, 9 miles north of Wilson, and 5 miles above mouth of Sapony Creek.

DRAINAGE AREA: 593 square miles.

RECORDS AVAILABLE: Active station. October 18, 1929 to date.

EXTREMES: *Maximum* 16,900 second-feet, December 3, 1934;
Minimum (observed) 10 second-feet, September 20, 1932.

REMARKS: Automatic recorder installed February 27, 1935; chain gage prior to this date. Slight regulation at low stages caused by grist mills above. No diversions.

TAR RIVER NEAR NASHVILLE

Drainage Area 593 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	900	248	900	271	457	304	360	3 months only	
1929	12,800	186	9,260	266	3,160	336	1,220	2.06	27.92
1930	3,160	38	1,850	52	1,030	82.2	447	0.754	10.13
1931	4,710	67	2,360	88	1,480	113	560	0.945	12.84
1932	4,850	11	3,630	19	1,400	24.3	544	0.917	12.49
1933	4,010	17	2,842	23	1,320	28.8	453	0.772	10.36
1934	15,700	87	5,047	99	2,135	115	803	1.35	18.35
1935	4,630	75	2,793	99	1,925	186	754	1.27	17.26
1936	8,740	111	4,909	125	3,129	247	1,175	1.68	22.87

TAR RIVER NEAR NASHVILLE

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
25								29	12		
50						9		71	44		
100						66	18	97	121	10	6
150						111	74	119	170	65	34
200					1	150	103	134	188	113	67
250					13	179	130	161	196	145	93
300					37	196	169	184	205	164	120
400					87	225	237	226	222	200	199
500					132	258	271	251	250	225	152
600					159	286	294	271	274	245	223
700					191	302	303	289	290	272	253
800					226	316	311	308	307	279	268
900					240	325	316	319	315	286	278
1,000					256	331	324	323	320	297	287
1,500					296	348	337	335	346	319	321
2,000					316	357	343	346	352	339	333
3,000					337	364	353	356	360	351	351
4,000					344	365	360	361	364	356	361
6,000					354		365	365	365	358	365
8,000					357			366		361	
12,000					363					363	
16,000					365					365	

TAR RIVER AT TARBORO

No. 204

LOCATION: Edgecombe County, Tar River at U. S. Highway 64 bridge just southeast of Tarboro.

DRAINAGE AREA: 2,100 square miles.

RECORDS AVAILABLE: Active station. July 26, 1896 to December 31, 1900, and December 9, 1931 to date.

EXTREMES: *Maximum* (estimated) 32,000 second-feet, July 27, 1919; *Minimum* 36 second-feet, October 17-22, 1933.

REMARKS: Automatic recorder installed December 9, 1931; chain gage prior to this date. Slight daily regulation from mills at Rocky Mount. No diversions. Zero of gage is 10.34 feet above mean sea level (preliminary adjustment).

TAR RIVER AT TARBORO

Drainage Area 2,100 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1896	9,460	250	7,534	386	3,739	628	1,414	5 months only	
1897	14,600	170	11,002	188	6,789	295	1,990	0.87	11.64
1898	8,650	360	5,561	396	3,438	816	1,855	0.82	11.12
1899	19,850	350	16,241	387	11,874	711	3,334	1.47	19.71
1900	12,970	87	9,263	141	5,952	210	2,085	0.91	12.19
Station discontinued to 1931.									
1931	1,180	245	966	313	809	325	521	3 months only	
1932	14,600	38	7,290	42	4,290	71.7	1,425	0.678	9.24
1933	9,900	36	6,969	46	4,180	56.7	1,469	0.709	9.47
1934	23,400	168	16,771	243	6,340	253	2,308	1.10	14.91
1935	11,300	224	8,646	290	6,263	482	2,236	1.06	14.45
1936	20,000	205	17,200	263	10,020	532	3,566	1.70	23.09

TAR RIVER AT GREENVILLE

No. 205

LOCATION: Pitt County, Tar River at State Highway No. 11 bridge, on northern edge of Greenville, 200 yards below Atlantic Coast Line Railroad bridge.

DRAINAGE AREA: 2,680 square miles.

RECORDS AVAILABLE: Active station. March 24, 1935, to date.

EXTREMES: *Maximum* stage known 24.5 feet, July 28, 1919;
Minimum of record 174 second-feet, June 18, 1935.

REMARKS: Automatic recorder installed March 24, 1935. Slight daily regulation from hydro plant at Rocky Mount. No diversions. This station has a gage datum below sea level and is seriously affected by wind tides. Because of this inaccuracy records are not published.

CHAPTER 4

THE NEUSE RIVER BASIN

The Neuse River Basin is the second largest river basin lying entirely within the State of North Carolina. It is located in the eastern central part of the state and empties its waters into Pamlico Sound, from which they flow into the Atlantic Ocean. The basin is relatively long and narrow, and extends from its northernmost point in Person County in a southeast direction to the lower end on the coast. It has a straight-line length of approximately 180 miles, with an average width of 30 miles and a maximum width of 50 miles.

The actual drainage area of the Neuse River above a point 10 miles below New Bern is 4,450 square miles. However, if the basin lines are extended and the coastal area included, the total area of the enlarged basin would be 5,640 square miles.

The Neuse River Basin originates in the Piedmont Plateau and traverses the Coastal Plain. It is bounded on the north by the Tar River Basin, touches the Roanoke-Chowan Basin at its upper end, and is bordered on the south by the Cape Fear River Basin.

The Neuse River is formed by the confluence of the Eno and Flat rivers in Durham county. The drainage area of the Neuse at its beginning is about 475 square miles. It flows in a general southeast direction through the Piedmont and Coastal Plain regions, and empties into Pamlico Sound on the coast. The total length of the Neuse River, including Flat River, its longest parent tributary, is about 300 miles. The river has a total fall from its furthermost source to its mouth of about 600 feet. Its fall by long reaches is as follows: from the headwaters of the main tributary to the beginning of the main stream, 360 feet; from this point to the Falls of the Neuse in Wake County, 27 feet; Falls of the Neuse, 23 feet; from the Falls to Smithfield, 88 feet; and from Smithfield to the mouth of the stream, 102 feet. Except at the Falls of the Neuse and at Milburnie, the gradient of the stream is very uniform. The Neuse River has practically no tidal reach, but the portion of the river between New Bern and the mouth is subject to fluctuations in height, caused by winds in Pamlico Sound.

Principal tributaries of the Neuse River are Trent River, drainage area 510 square miles; Contentnea Creek, drainage area 1,000 square miles; Little River, drainage area 316 square miles; and Eno River, drainage area 258 square miles.

The Neuse River watershed consists of approximately 70 per cent forest lands, of which some 42 per cent is farm woodland, including approximately 165,000 acres of woodland pasture. The watershed was once heavily forested, but most of the virgin timber has been cut and second growth now predominates.

The mean annual temperature for the entire basin area is 60.5 degrees. The mean annual rainfall for the basin is 46.87 inches, varying from 55 inches in the lower part to 42 inches in the upper end. The maximum annual rainfall recorded in the basin occurred at New Bern in 1908 and was 90.14 inches, while the minimum occurred at Durham in 1925 and was 25.46 inches.

Principal cities located within the basin are Durham, Raleigh, Goldsboro, Wilson, New Bern, and Kinston.

FLAT RIVER ABOVE DAM NEAR BAHAMA

No. 304

LOCATION: Durham County, Flat River at head of Lake Michie, Durham water supply reservoir, 1¼ miles above mouth of Dial Creek and 1 mile north of Bahama.

DRAINAGE AREA: 150 square miles.

RECORDS AVAILABLE: Active station. July 16, 1925 to date.

EXTREMES: *Maximum* 13,600 second-feet, September 8, 1934;
Minimum 0.37 second-feet, September 26-27, 1932.

REMARKS: Automatic recorder installed October 12, 1925; staff gage prior to this date. Slight regulation caused by operation of small mill 5 miles upstream. No diversions. Zero of gage is 255.05 feet above mean sea level.

FLAT RIVER ABOVE DAM NEAR BAHAMA

Drainage Area 150 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	145	0.6	41	0.7	23.9	4.87	8.84	5½ months only	
1926	2,250	1.9	622	2	360	2.8	93.2	0.621	8.43
1927	1,780	6.2	928	10	384	22.2	113	0.753	10.24
1928	4,580	6.0	1,226	2.8	449	20.5	144	0.96	13.07
1929	9,900	17	2,037	21	506	25.8	210	1.40	19.00
1930	2,790	1.5	587	1.6	243	2.7	80.6	0.537	7.20
1931	3,450	3.0	834	4.0	327	7.3	116	0.774	10.49
1932	4,060	0.37	993	0.5	377	0.75	142	0.947	12.94
1933	1,740	0.47	619	0.61	256	0.708	87.9	0.653	7.74
1934	4,950	3.05	1,569	3.82	482	4.29	195	1.30	17.65
1935	3,280	5.5	951	6.4	543	19.4	147	0.980	13.33
1936	4,980	8.9	1,723	9.8	761	18.7	238	1.59	21.59

FLAT RIVER ABOVE DAM NEAR BAHAMA

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
1								25	45		
5		58				45	10	73	100	27	
10		120	13	15		103	57	86	123	46	30
20		187	92	52	12	142	112	125	175	82	88
30		213	127	126	55	180	146	148	196	139	119
50		242	201	175	130	224	219	190	213	187	174
75		275	252	238	180	278	264	235	239	229	200
100		293	278	261	221	304	289	264	273	255	242
250		337	327	329	313	344	334	320	337	318	321
500		351	346	351	343	356	350	342	358	336	346
1,000		357	360	356	354	361	358	356	361	351	356
2,500		365	365	364	360	364	364	364	365	359	363
5,000				366	363	365	365	366		365	365
10,000					365						

DIAL CREEK NEAR BAHAMA

No. 307

LOCATION: Durham County, Dial Creek three-eighths mile upstream from confluence with Lake Michie on Flat River, 1½ miles northeast of Bahama.

DRAINAGE AREA: 4.9 square miles.

RECORDS AVAILABLE: Active station. October 29, 1925 to date.

EXTREMES: *Maximum* 575 second-feet, April 27, 1928.
Zero flow at times in 1926, 1930, and 1933.

REMARKS: Automatic recorder entire record. Diurnal fluctuations pronounced at low water stages during growing season. No diversions.

DIAL CREEK NEAR BAHAMA

Drainage Area 4.9 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	8.7	0.35	3.43	0.36	1.34	0.57	0.94	2 months only	
1926	156	0.00	31.4	0.00	14.3	0.054	2.68	0.547	7.40
1927	25.0	0.04	12.0	0.05	6.29	0.764	2.44	0.50	6.71
1928	197	0.11	43.02	0.47	13.8	1.06	4.54	0.93	12.49
1929	184	0.58	51.0	1.08	13.2	1.22	5.90	1.20	16.33
1930	40.0	0.00	11.0	0.00	6.34	0.07	2.35	0.48	6.49
1931	59	0.00	14.4	0.01	6.36	0.012	1.93	0.394	5.34
1932	93	0.00	19.2	0.00	8.02	0.00	2.95	0.602	8.20
1933	25	0.00	10.3	0.00	5.96	0.00	1.97	0.407	5.46
1934	169	0.12	45.2	0.25	11.5	0.31	4.75	0.969	13.16
1935	96	0.08	30.9	0.22	14.9	0.818	4.48	0.914	12.39
1936	151	0.33	51	0.55	18.6	1.70	7.68	1.57	21.34

NEUSE RIVER NEAR NORTHSIDE

No. 308

LOCATION: Durham County, Neuse River at Fishdam Bridge, 1½ miles below Seaboard Air Line Railroad bridge, 2 miles south of Northside.

DRAINAGE AREA: 574 square miles. Revised to 526 square miles.

RECORDS AVAILABLE: Active station. July 27, 1927 to date.

EXTREMES: *Maximum* 26,600 second-feet, October 3, 1929.
Minimum 3.1 second-feet, September 20, 1932.

REMARKS: Automatic recorder installed May 30, 1928; staff and chain gage prior to this date. Marked daily regulation from operation of Durham hydro plant on Flat River. No diversions. Zero of gage is 226.32 feet above mean sea level.

NEUSE RIVER NEAR NORTHSIDE

Drainage Area 574 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	3,160	29	1,780	44	911	96.4	341	5 months only	
1928	12,500	28	4,200	36	1,670	93.1	500	0.871	11.86
1929	24,700	57	9,580	68	2,370	112	796	1.39	18.83
1930	3,120	11	1,290	13	771	22.8	274	0.478	6.48
1931	5,250	14	2,360	19	1,040	24.9	362	0.631	8.54
1932	7,320	3.1	2,700	3.8	1,260	7.5	467	0.814	10.96
1933	3,330	5.9	1,589	6.5	779	8.89	274	0.483	6.48
1934	9,870	10	3,688	17	1,460	18	580	1.01	13.68
1935	5,190	17	2,216	24	1,585	39.5	493	0.859	11.62
1936	9,620	34	4,507	65	2,514	114	858	1.63	22.19

NEUSE RIVER NEAR CLAYTON

No. 309

LOCATION: Johnston County, at steel bridge 3 miles east of Clayton.

DRAINAGE AREA: 1,180 square miles. Revised to 1,140 square miles.

RECORDS AVAILABLE: Active station. July 20, 1927 to date.

EXTREMES: *Maximum* 28,100 second-feet, October 3, 1929.
Minimum 44 second-feet, September 15, 1932.

REMARKS: Automatic recorder installed at beginning of record. Slight diurnal fluctuation at low stages and notable natural upstream storage during severe floods. No diversions. Zero of gage is 128.12 feet above mean sea level.

NEUSE RIVER NEAR CLAYTON

Drainage Area 1,180 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	8,340	155	5,250	232	2,450	342	1,031	5½ months only	
1928	11,800	98	8,900	153	6,100	404	1,500	1.22	16.56
1929	27,400	308	16,581	370	5,370	479	2,000	1.63	22.11
1930	4,700	87	3,280	132	1,730	184	715	0.592	7.98
1931	10,600	125	4,690	156	3,050	167	974	0.825	11.20
1932	9,350	45	5,980	56	2,700	71.6	1,090	0.924	12.57
1933	7,500	48	4,414	54	1,940	76.5	706	0.604	8.10
1934	17,500	80	7,528	106	3,328	133	1,322	1.12	15.23
1935	5,800	109	4,276	148	3,058	195	1,112	0.942	12.77
1936	12,300	237	8,191	263	5,149	502	2,032	1.78	23.55

NEUSE RIVER NEAR CLAYTON

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50								4	2		
100						3		41	47	7	
150				5		22	19	82	110	39	7
200				10		48	52	90	134	48	30
250				14		90	72	99	162	57	48
300				19		114	86	107	181	88	76
400				44	13	143	118	137	201	142	110
500				110	49	183	175	154	216	169	146
600				141	77	213	207	182	230	180	170
700				170	110	243	230	198	245	199	182
800				191	132	261	245	216	256	208	202
900				208	159	283	264	237	264	223	221
1,000				223	175	303	282	244	272	235	243
1,250				274	232	323	301	280	302	273	280
1,500				295	254	332	311	302	320	287	298
2,000				313	279	342	325	317	341	303	314
3,000				322	305	356	335	338	356	323	328
4,000				338	324	360	346	344	361	338	343
6,000				344	340	365	362	356	363	352	365
8,000				346	345		363	364	365	356	
12,000				366	358		365	366		362	
18,000					362					365	
28,000					365						

FLAT RIVER BELOW DAM NEAR BAHAMA

No. 310

LOCATION: Durham County, Flat River just below Lake Michie, Durham municipal dam, 3 miles southeast of Bahama, and 4 miles above junction with Eno River.

DRAINAGE AREA: 171 square miles.

RECORDS AVAILABLE: Active station. August 19, 1927 to date.

EXTREMES: *Maximum* 11,400 second-feet, October 2, 1929.
Minimum 0.14 second-feet, December 5, 1933.

REMARKS: Automatic recorder installed August 13, 1929; staff gage prior to this date. Large diurnal fluctuation from power plant operations immediately upstream. Considerable regulation from Lake Michie where water is also diverted for Durham water supply.

FLAT RIVER BELOW DAM NEAR BAHAMA

Drainage Area 171 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	906	0.8	609	1.17	339	23.3	184	4½ mon	ths only
1928	4,890	0.4	1,161	0.5	410	22.8	158	0.924	12.47
1929	9,250	0.8	1,880	0.5	530	17.8	214	These	figures
1930	1,250	0.7	427	0.7	286	2.25	87	not	truly
								indicativ	e because
1931	2,230	0.9	696	2.3	341	5.64	116	of infl	uence
1932	2,240	0.8	750	1.1	349	2.59	1.37	of	dam
1933	1,250	0.2	459	0.42	265	3.6	92.8	0.55	7.38
1934	5,420	0.65	1,181	1.15	482	1.2	193	1.13	15.33
1935	2,790	2.4	984	3.5	620	5.39	161	0.942	12.81
1936	3,600	1.6	1,671	3.9	743	28.9	255	1.49	20.35

ENO RIVER AT HILLSBORO

No. 311

LOCATION: Orange County, Eno River about one-fourth mile downstream from crossing of U. S. Highway 70 at Hillsboro, and 2 miles below Seven Mile Creek.

DRAINAGE AREA: 66.5 square miles.

RECORDS AVAILABLE: Active station. November 21, 1927, to January 5, 1929; and July 8, 1929 to date.

EXTREMES: *Maximum* 4,650 second-feet, October 2, 1929.
Minimum 1.2 second-feet, September 24-26, 1932.

REMARKS: Automatic recorder installed June 29, 1937; staff gage prior to this date. Operation of cotton mills one mile upstream causes considerable daily regulation. No. diversions.

ENO RIVER AT HILLSBORO

Drainage Area 66.5 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	870	18	424	41			139	1½ months only	
1928	5,120	5.2	1,021	7	468	16.5	106	1.60	21.76
1929	3,470	12	671	15	181	16.6	77.1	6 months only	
1930	1,290	2.7	267	3.9	84.2	4.5	27.3	9 months only	
1931	2,240	3.2	486	3.9	165	4.27	56.5	0.850	11.53
1932	1,820	1.2	781	1.4	212	4.51	69.6	1.05	14.26
1933	463	1.5	196	1.8	108	2.58	34	0.519	6.05
1934	2,380	5.2	505	6.1	144	7.3	71.8	1.08	14.66
1935	1,030	3.2	280	4.3	187	6.4	55.7	0.838	11.38
1936	2,100	8.0	740	9.0	326	14.5	111	1.67	22.66

CONTENTNEA CREEK AT HOOKERTON

No. 312

LOCATION: Greene County, Contentnea Creek at Hookerton, about 300 feet below highway bridge, 2½ miles above mouth of Wheat Swamp Creek and about 7 miles above mouth of Little Contentnea Creek.

DRAINAGE AREA: 691 square miles. Revised to 789 square miles.

RECORDS AVAILABLE: Active station. November 23, 1928 to date.

EXTREMES: *Maximum* 11,100 second-feet, October 6, 1929;
Minimum 13 second-feet, September 16-17, 1932.

REMARKS: Automatic recorder installed November 26, 1934; staff gage prior to this date. Practically no regulation. No diversions.

CONTENTNEA CREEK AT HOOKERTON

Drainage Area 691 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	1,840	318	1,410	351			623	1 month	only
1929	11,000	302	5,940	445	3,670	829	1,820	2.63	35.79
1930	2,790	67	2,570	67	1,550	72.5	546	0.791	10.75
1931	2,050	61	1,897	77	1,480	99.8	515	0.745	10.12
1932	1,920	13	1,355	15	1,090	23.7	414	0.598	8.15
1933	2,570	15	2,097	22	1,810	38.4	553	0.813	10.87
1934	2,480	50	2,033	72	1,360	92.5	687	0.994	13.28
1935	2,980	100	2,540	115	1,395	150	768	1.11	15.09
1936	6,670	116	5,560	122	2,659	181	1,366	1.73	23.55

NEUSE RIVER NEAR GOLDSBORO

No. 313

LOCATION: Wayne County, Neuse River one-fourth mile above U. S. Highway 117 bridge, 2½ miles above Stony Creek, 3 miles below Little River and 3 miles south of Goldsboro.

DRAINAGE AREA: 2,380 square miles. Revised to 2,370 square miles.

RECORDS AVAILABLE: Active station. February 25, 1930 to date.

EXTREMES: *Maximum* 27,300 second-feet, October 5, 1929;
Minimum 85 second-feet, September 14, 1932.

REMARKS: Automatic recorder installed July 22, 1931; chain gage prior to this date. Slight diurnal fluctuation. No diversions.

NEUSE RIVER NEAR GOLDSBORO

Drainage Area 2,380 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1930	5,290	180	3,530	180	2,450	217	1,117	10 months only	
1931	11,200	259	9,780	293	7,280	303	2,100	0.882	11.99
1932	10,900	90	8,740	104	4,630	116	1,907	0.801	10.89
1933	9,660	138	6,873	147	5,120	169	1,790	0.762	10.22
1934	21,800	254	15,830	274	6,749	319	2,471	1.04	14.09
1935	7,600	254	6,129	289	4,983	363	2,211	0.929	12.63
1936	26,300	452	20,929	504	9,725	1,023	4,684	1.98	26.95

NEUSE RIVER AT KINSTON

No. 314

LOCATION: Lenoir County, Neuse River two blocks below bridge on State Highway 11 at Kinston.

DRAINAGE AREA: 2,700 square miles.

RECORDS AVAILABLE: Active station. February 26, 1930 to date.

EXTREMES: *Maximum* about 39,000 second-feet, July 1919;
Minimum 124 second-feet, September 26, 1932.

REMARKS: Automatic recorder installed November 25, 1934; chain gage prior to this date. Elevation of zero of gage 10.80 feet above mean sea level. No regulation. No diversions.

NEUSE RIVER AT KINSTON

Drainage Area 2,700 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1930	4,780	290	3,700	312	2,740	383	1,297	10 mont	hs only
1931	11,200	378	10,599	386	7,990	437	2,360	0.874	11.87
1932	11,600	126	9,050	152	4,980	166	2,180	0.808	10.99
1933	9,640	174	8,867	191	6,350	248	2,206	0.827	11.09
1934	18,200	280	12,047	323	7,181	380	2,811	1.04	14.11
1935	8,660	490	6,943	540	5,535	754	2,660	0.985	13.38
1936	24,000	660	18,000	786	10,930	1,395	5,391	2.00	27.22

CONTENTNEA CREEK NEAR WILSON

No. 315

LOCATION: Wilson County, Contentnea Creek at bridge on U. S. Highway 301, just below municipal hydro plant, 3 miles southwest of Wilson.

DRAINAGE AREA: 245 square miles. Revised to 236 square miles.

RECORDS AVAILABLE: Active station. February 27, 1930 to date.

EXTREMES: *Maximum* 2,580 second-feet, December 2, 1934;
Minimum about 0.2 second-feet for several days in October, 1932 and December, 1933.

REMARKS: Automatic recorder installed June 23, 1934; staff gage prior to this date. Pronounced daily regulation from operation of municipal hydro plant above. No diversions.

CONTENTNEA CREEK NEAR WILSON

Drainage Area 245 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1930	1,260	1.4	602	1.6	306	1.6	112	10 months only	
1931	2,020	1.6	1,080	14.3	596	17.6	222	0.906	12.32
1932	987	0.2	564	0.2	393	2.2	156	0.637	8.64
1933	1,400	0.2	728	0.2	497	0.3	149	0.615	8.23
1934	2,220	0.4	965	0.8	475	9.4	222	0.906	12.27
1935	1,530	4.2	900	9.8	553	27.0	234	0.955	12.98
1936	3,850	13.0	1,788	13.0	921	26.8	430	1.82	24.77

LITTLE RIVER NEAR PRINCETON

No. 316

LOCATION: Johnston County, Little River one-fourth mile above county bridge, one-half mile above Little Creek, 1 mile west of Raynes Crossroads, and 3 miles north of Princeton.

DRAINAGE AREA: 221 square miles. Revised to 229 square miles.

RECORDS AVAILABLE: Active station. February 28, 1930 to September 30, 1933; and January 17, 1934 to date.

EXTREMES: *Maximum* 4,030 second-feet, December 2, 1934;
Minimum 1.0 second-foot several times in September, 1932.

REMARKS: Automatic recorder installed November 16, 1934; staff gage prior to this date. Daily regulation caused by power plant five miles upstream. No diversions.

LITTLE RIVER NEAR PRINCETON

Drainage Area 221 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1930	2,070	7.2	632	8.4	336	12.2	111	10 months only	
1931	2,280	13	1,289	20	783	22	235	1.07	14.46
1932	1,160	1	755	1.3	401	3.21	166	0.75	10.23
1933	1,340	5.4	678	13	455	31.8	188	9 months only	
1934	3,820	9.2	1,158	34	631	29.1	238	1.03	13.93
1935	1,620	3.8	723	27	485	37.9	227	1.03	13.95
1936	3,270	12.0	1,834	35	985	71.6	472	2.06	28.04

NEUSE RIVER NEAR SELMA

No. 301

LOCATION: Johnston County, Neuse River at Southern Railway bridge about 3 miles from Selma.

DRAINAGE AREA: 1,240 square miles.

RECORDS AVAILABLE: Discontinued station. July 29, 1896 to December 31,1900.

EXTREMES: *Maximum* 12,000 second-feet, February 9, 1899;
Minimum 73 second-feet, October 17-18, 1897.

REMARKS: Wire gage. No regulations; no diversions.

NEUSE RIVER NEAR SELMA

Drainage Area 1,240 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1896	3,460	123	1,756	138	975	218	469	5 months only	
1897	8,840	73	7,540	84	3,110	110	934	0.75	10.12
1898	5,950	153	2,951	189	1,460	343	844	0.68	9.26
1899	12,600	194	9,953	234	6,990	287	1,850	1.49	19.90
1900	10,000	138	7,489	177	3,200	199	1,213	0.98	13.12

MOCCASIN CREEK NEAR MIDDLESEX

No. 302

LOCATION: Nash County, Moccasin Creek at highway crossing just below dam at Taylor's Mill, 3 miles west of Middlesex.

DRAINAGE AREA: 42 square miles.

RECORDS AVAILABLE: Discontinued station. January 4, 1924 to September 30, 1926.

EXTREMES: *Maximum* 1,600 second-feet, January 20, 1925;
Minimum 0.2 second-feet, September 30, 1926.

REMARKS: Staff gage. Considerable regulation due to operation of grist mill directly above. No diversions.

MOCCASIN CREEK NEAR MIDDLESEX

Drainage Area 42 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	3,480	3	859	7.4	238	31.4	81.8	1.95	26.24
1925	1,560	0.6	480	1.0	231	2.47	50.3	1.20	16.25
1926	930	0.3	287	0.6	144	1.64	42.6	9 months only	

LITTLE CREEK NEAR ZEBULON

No. 303

LOCATION: Wake County, Little Creek one-half mile above Moccasin Creek, near Southern Railway, one-half mile above Johnston County Line and about 2 miles from Zebulon.

DRAINAGE AREA: 5.2 square miles.

RECORDS AVAILABLE: Discontinued station. December 8, 1924 to September 30, 1926.

EXTREMES: *Maximum* stage recorded 4.35 feet, March 1, 1925 (discharge not determined);
Minimum zero flow, several periods in July, August, and September, 1926.

REMARKS: Staff gage. No regulation; no diversions.

LITTLE CREEK NEAR ZEBULON

Drainage Area 5.2 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	14	2	7.9	3.1			5.2	24 days	only
1925	74	0.1	25	0.3	18.9	0.78	5.51	1.06	14.39
1926	94	0	22	0.00	14.9	0.16	5.0	8 months	only

ROCKY CREEK NEAR BAHAMA

No. 305

LOCATION: Durham County, Rocky Creek 1¼ miles above confluence with Flat River, 2 miles above dam of Durham water supply, and 3 miles east of Bahama.

DRAINAGE AREA: 2.7 square miles.

RECORDS AVAILABLE: Discontinued station. October 4, 1925 to December 31, 1931.

EXTREMES: *Maximum* 186 second-feet, April 27, 1928;
Minimum 0.00 second-feet, 1926, 1930, 1931.

REMARKS: Staff gage. No regulation; no diversions.

ROCKY CREEK NEAR BAHAMA

Drainage Area 2.7 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	5.3	0.0	1.45	0.05	0.476	0.063	0.21	3 months only	
1926	41	0.00	12.4	0.00	5.08	0.07	1.17	0.433	5.87
1927	21	0.05	8.81	0.05	3.27	0.155	1.44	0.533	7.23
1928	65	0.05	12.76	0.05	6.27	0.22	1.97	0.73	9.94
1929	68	0.15	12.0	0.19	4.77	0.28	1.93	0.714	9.69
1930	24	0.00	6.27	0.00	2.54	0.003	0.815	0.302	4.11
1931	18.5	0.00	6.9	0.00	3.02	0.006	1.06	0.392	5.29

DRY CREEK NEAR BAHAMA

No. 306

LOCATION: Durham County. Dry Creek between Dial Creek and Rocky Creek.

DRAINAGE AREA: 2.1 square miles.

RECORDS AVAILABLE: Discontinued station. October 9, 1925 to June 30, 1930.

REMARKS: Record considered practically worthless due to poor installation and unreliable observer. Discharge record has not been computed.

CHAPTER 5

THE CAPE FEAR RIVER BASIN

The Cape Fear River basin is the largest river basin lying entirely within the borders of North Carolina. The watershed of the Cape Fear River proper covers an area of approximately 8,500 square miles, and extends in an oblong shape from its northernmost point in Rockingham County, in a southeasterly direction to the mouth of the river in the Atlantic ocean at Cape Fear, about 25 miles south of Wilmington. The area has a straight line length of about 200 miles and an average width of about 45 miles. If the basin lines are extended to include the coastal area lying east of the lower end of the basin proper, the total drainage area will be increased to 9,870 square miles.

The Cape Fear River basin lies parallel to and adjoins the Neuse River basin on its northeast side, touches the Roanoke River basin on the north or upper end, and is bounded on its southwest side by the Yadkin River Basin.

The basin originates in the Piedmont Plateau, crosses the Sand Hills region, and continues through the Coastal Plain to the Atlantic ocean. Elevations in the Piedmont Plateau vary from 1,000 feet at the upper end of the basin to 300 feet where it joins the Sand Hills region. In the Sand Hills region, which is in reality a subdivision of the Coastal Plain, elevations decrease from 300 feet to about 150 feet at the border of the Coastal Plain proper. From this border the topography of the land slopes gradually down to sea level at the coast.

The main stream of the basin, the Cape Fear River, is formed by the junction of the Haw and Deep rivers in the southeastern corner of Chatham County. From this point it flows in a general southeast direction to the mouth in the Atlantic Ocean, a distance of about 200 miles by river. The river has a rather steep gradient from its beginning to Fayetteville, but below this point, its characteristics change and it becomes a typical flat-gradient coastal stream. Its fall by long reaches is as follows: from the headwaters of its source tributary to Buckhorn Falls (which are a short distance below the beginning of the main stream), 840 feet; Buckhorn Falls, 21 feet; from these falls to the head of Smileys Falls, 47 feet; Smileys Falls, 35 feet; from this point to Fayetteville, 30 feet; from Fayetteville to the mouth of the stream, 21 feet. There are three government navigation dams on the river below Fayetteville. Tidal fluctuations from the ocean affect the stage of the river for a distance of about 70 miles above its mouth.

Principal tributaries of the main stream are the Haw and Deep rivers. These rivers, rising within a few miles of each other in the eastern part of Forsyth County, have rather steep gradients, falling from 1,000 feet at the headwaters to about 160 feet at their junction. Each has a total length of between 110 and 120 miles. The drainage area of the Haw River is 1,760 square miles, while that of the Deep River is 1,390 square miles. Other important tributaries, with their drainage areas, are as follows: Lower Little River, 303 square miles; Black River, 1,410 square miles; Northeast Cape Fear River, 1,710 square miles.

Mean annual temperature for the Cape Fear River basin is 61.1 degrees. The mean annual rainfall for the entire area is 47.05 inches, varying from 45 inches to 48 inches in different sections of the basin. The area covered by the basin consists of approximately 70 per cent of forest land.

Principal cities within the basin are Greensboro, Durham (on the Cape Fear-Neuse divide), High Point, Wilmington, and Fayetteville.

CAPE FEAR RIVER AT FAYETTEVILLE

No. 401

LOCATION: Cumberland County, Cape Fear River at highway bridge, 700 feet above Atlantic Coast Line R. R. bridge, just below mouth of Cross Creek and one mile east of center of Fayetteville.

DRAINAGE AREA: 4,290 square miles. Revised to 4,370 square miles.

RECORDS AVAILABLE: Active station. January 1, 1889 to August 24, 1917; and September 1, 1928 to date.

EXTREMES: *Maximum* 133,000 second-feet, August 29, 1908;
Minimum 73 second-feet, October 6, 1930.

REMARKS: Automatic recorder installed March 11, 1929; chain gage prior to this date. Elevation zero of gage 20.23 feet above mean sea level. Daily regulation caused by operation of Buckhorn Shoals hydro plant. No diversions. The construction of Lock and Dam No. 3 at Tolars Landing, about 20 miles downstream, created about 10 feet of backwater at this gage, which became noticeable August 10, 1935.

CAPE FEAR RIVER AT FAYETTEVILLE

Drainage Area 4,290 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1889	45,000	1,070	34,343	1,169	17,400	2,040	8,186	1.91	25.81
1890	24,200	550	12,366	929	8,920	1,990	4,348	1.01	13.76
1891	45,200	1,220	28,640	1,403	14,200	1,720	6,677	1.56	21.13
1892	52,200	440	23,859	497	12,400	606	4,289	1.00	13.60
1893	40,800	520	34,243	601	14,900	1,020	5,283	1.23	16.48
1894	49,600	490	26,424	696	9,770	980	4,499	1.05	14.24
1895	67,200	415	39,424	493	16,100	604	6,741	1.57	21.29
1896	52,200	440	37,471	817	14,200	1,090	4,702	1.10	14.84
1897	34,000	295	26,843	344	12,900	483	4,156	0.97	12.97
1898	22,900	490	13,633	704	5,500	1,120	2,828	0.66	8.98
1899	56,500	610	39,243	696	23,200	1,080	5,988	1.40	18.58
1900	43,400	315	21,271	420	10,800	540	3,865	0.90	12.09
1901	68,100	1,140	37,311	1,277	16,400	1,510	6,780	1.58	21.55
1902	40,000	365	34,271	429	13,600	837	4,235	0.99	13.22
1903	54,000	440	26,300	521	15,300	1,130	5,080	1.18	15.88
1904	53,100	760	19,556	1,023	9,430	1,590	4,340	1.01	13.71
1905	47,200	730	29,064	814	15,300	981	6,373	1.48	20.03
1906	38,200	1,000	28,200	1,064	12,000	1,410	5,519	1.29	17.48
1907	33,500	415	13,791	546	9,360	794	4,132	0.96	13.02
1908	85,600	1,140	59,986	1,414	18,000	2,110	6,912	1.61	21.97
1909	49,200	490	18,884	814	10,000	906	4,094	0.95	12.93
1910	35,300	825	16,727	956	6,900	1,340	3,422	0.80	10.78
1911	31,200	490	16,139	741	7,760	978	3,201	0.75	10.10
1912	53,100	465	26,557	645	17,300	786	4,891	1.14	15.46
1913	33,300	610	16,347	1,301	9,330	1,960	4,035	0.94	12.76
1914	38,900	415	22,474	658	9,710	944	3,854	0.90	12.10
1915	37,700	670	21,929	821	14,400	1,540	4,861	1.13	15.29
1916	43,400	670	19,893	741	9,050	964	3,952	0.92	12.47
1917	38,300	1,180	24,454	1,486	13,000	3,230	5,741	9 months only	
Station discontinued August 24, 1917; re-established September 1, 1928									
1928	106,000	1,040	62,100	1,280	31,400	1,580	9,502	4 months only	
1929	107,000	1,080	65,400	1,340	21,100	2,060	7,900	1.84	24.99
1930	24,100	110	13,200	163	7,300	276	2,600	0.606	8.23
1931	34,700	250	20,000	325	10,500	354	3,560	0.83	11.28
1932	44,400	190	25,300	248	11,500	420	4,567	1.07	14.47
1933	13,600	184	11,780	254	8,180	261	2,589	0.611	8.16
1934	38,600	375	14,839	620	7,025	717	3,620	0.844	11.45
1935	27,900	200	15,179	294	9,773	489	4,037	0.941	12.78
1936	72,300	400	36,197	700	18,530	1,457	7,984	1.83	24.91

WEST FORK DEEP RIVER NEAR HIGH POINT

No. 402

LOCATION: Guilford County, West Fork Deep River one-fourth mile above highway bridge at head of High Point reservoir, about 2 miles northwest of Jamestown and 3½ miles northeast of High Point.

DRAINAGE AREA: 33 square miles.

RECORDS AVAILABLE: Active station. June 14, 1923 to September 30, 1926; and July 25, 1928 to date.

EXTREMES: *Maximum* 1,740 second-feet, October 17, 1932;
Minimum 0.3 second-feet, September 1, 1932.

REMARKS: Automatic recorder installed July 25, 1928; staff gage prior to this date. Slight regulation caused by operation of grist mill 5 miles upstream. No diversions.

WEST FORK DEEP RIVER NEAR HIGH POINT

Drainage Area 33 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1923	556	4.6	120.7	5.7	37.5	7.46	26.8	5½ months only	
1924	759	4.6	158	6.2	59.0	17.0	39	1.18	16.10
1925	870	2	205	3	113	5.8	31.2	0.947	12.77
1926	885	3	190	3	75.3	4.43	30.7	9 months only	
Station discontinued September 30, 1926; re-established July 25, 1928									
1928	1,060	5.6	248	7.1	103	13.3	40.8	5 months only	
1929	960	6.6	281	7.6	92.9	9.1	41.2	1.26	16.98
1930	245	1.8	71	2.7	41.1	4.2	20.0	0.606	8.23
1931	395	2.7	144	3.2	63.7	3.5	25.8	0.782	10.61
1932	1,120	0.6	198	1.1	83.1	3.1	32.3	0.979	13.32
1933	276	2.5	141	3.1	48.1	3.9	20.9	0.637	8.59
1934	696	4.4	256	5.6	67.9	8.8	31.8	0.964	13.08
1935	514	3.0	167	4.6	66.6	5.3	27.0	0.818	11.09
1936	1,520	4.6	363	6.4	156	10.1	53.1	1.61	21.93

DEEP RIVER AT RAMSEUR

No. 405

LOCATION: Randolph County, Deep River, 1,000 feet below Columbia Cotton Mill at Ramseur, 1½ miles below mouth of Sandy Creek.

DRAINAGE AREA: 343 square miles. Revised to 346 square miles.

RECORDS AVAILABLE: Active station. November 24, 1922 to date.

EXTREMES: *Maximum* 21,100 second-feet, September 19, 1928;
Minimum 6 second-feet, several times in October and November, 1931

REMARKS: Automatic recorder entire record. Considerable daily fluctuation caused by operation of cotton mills above. No diversions. Zero of gage is 419.50 feet above mean sea level.

DEEP RIVER AT RAMSEUR

Drainage Area 343 Square miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1922	800	50	450	71			208	1 month	only
1923	11,800	16	4,271	41	1,540	49.3	394	1.15	15.61
1924	5,000	19	1,436	43	671	115	354	1.03	14.03
1925	8,340	10	2,951	13	1,770	32.2	290	0.844	11.49
1926	5,520	10	1,579	11	740	13.3	281	0.819	11.01
1927	6,770	35	2,477	58	918	113	380	1.11	15.05
1928	19,000	54	4,755	77	1,930	124	521	1.52	20.54
1929	15,500	49	4,210	86	1,340	92.1	569	1.66	22.49
1930	3,480	8	1,310	9	577	16.8	210	0.612	8.27
1931	3,060	6	1,270	9	558	15.3	222	0.646	8.82
1932	9,600	16	2,480	24	1,050	50.3	401	1.17	15.92
1933	1,540	8	810	14	569	19.7	181	0.535	7.18
1934	6,000	10	2,171	58	875	79.3	366	1.07	14.50
1935	5,560	10	1,688	23	813	33.9	312	0.910	12.35
1936	10,900	16	4,252	46	1,514	72	595	1.72	23.41

DEEP RIVER AT RAMSEUR

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
15	13	28				23	21		15	4	11
20	23	41				47	49	6	31	8	21
30	50	59	1			64	79	22	99	11	57
40	93	82	5			82	87	58	123	15	71
50	126	114	14	2	1	100	93	82	144	30	81
60	148	132	21	6	6	113	103	98	166	45	92
80	169	158	52	21	14	150	131	125	191	86	121
100	191	197	85	38	41	182	160	142	207	128	143
150	229	231	166	105	97	221	215	184	230	206	193
200	256	255	226	171	142	252	257	222	257	247	214
250	282	277	259	206	188	283	283	253	276	269	251
300	298	297	274	235	216	298	299	268	303	289	280
400	309	314	293	271	253	323	317	299	325	300	308
600	338	331	316	307	297	343	336	320	341	319	326
800	347	341	325	325	319	350	343	331	349	324	340
1,000	351	344	336	334	330	354	348	337	357	338	345
2,000	357	355	347	352	351	361	363	352	365	351	355
4,000	360	362	360	361	357	365	365	361		360	364
8,000	364	365	365	363	362			364		365	365
12,000	365			365	363			366			
20,000				366	365						

CAPE FEAR RIVER AT LILLINGTON

No. 408

LOCATION: Harnett County, Cape Fear River at highway bridge just below Norfolk-Southern R. R. bridge, 1 mile below Neill Creek and one-fourth mile north of Lillington.

DRAINAGE AREA: 3,530 square miles. Revised to 3,440 square miles.

RECORDS AVAILABLE: Active station. December 6, 1923 to date.

EXTREMES: *Maximum* 101,000 second-feet, October 2, 1929;
Minimum 8 second-feet, October 8, 1926.

REMARKS: Automatic recorder installed May 28, 1931; chain and staff gage prior to this date. Considerable diurnal fluctuation caused by operation of Buckhorn power plant 14 miles above. No diversions. Zero of gage is 105.71 feet above mean sea level.

CAPE FEAR RIVER AT LILLINGTON

Drainage Area 3,530 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1923	3,730	375	1,399	956			1,380	1 month	only
1924	49,200	71	15,836	242	5,890	1,380	3,730	1.06	14.36
1925	43,700	57	21,679	85	14,700	142	2,400	0.680	9.25
1926	25,800	8	10,996	38	8,060	79.8	2,213	0.627	8.37
1927	37,300	114	21,084	270	7,420	716	2,927	0.829	11.26
1928	83,300	220	47,024	356	23,000	890	4,846	1.37	18.53
1929	96,100	535	54,600	682	16,600	1,060	5,880	1.67	22.59
1930	24,000	48	9,870	69	5,380	101	1,750	0.496	6.73
1931	24,800	73	12,900	132	7,360	195	2,480	0.702	9.51
1932	47,700	48	21,700	126	9,350	360	3,589	1.02	13.79
1933	13,200	68	8,429	80	5,620	132	1,776	0.510	6.83
1934	37,300	90	15,685	309	6,140	458	3,116	0.883	11.99
1935	30,100	68	12,474	172	7,553	304	3,012	0.853	11.59
1936	62,900	140	32,063	405	14,940	782	5,863	1.70	22.72

CAPE FEAR RIVER AT LILLINGTON

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
100	20	31				34	14	16	65	2	10
200	65	84	4			56	33	39	80	2	18
400	137	158	41	6		108	74	74	133	26	59
600	171	190	72	17	3	144	100	97	165	69	102
800	192	204	110	58	20	175	124	108	181	110	134
1,000	209	221	144	103	35	194	148	124	198	134	153
1,500	237	238	200	169	91	227	203	170	232	196	182
2,000	269	262	234	203	128	270	237	207	252	234	213
3,000	301	295	292	252	197	308	286	260	294	275	268
4,000	322	314	308	283	245	328	311	289	318	296	295
6,000	341	330	327	312	291	345	338	317	341	322	320
8,000	344	340	336	325	314	353	344	327	354	333	334
10,000	349	342	341	330	322	357	349	335	360	343	337
15,000	352	354	349	344	336	361	354	346	365	353	354
20,000	355	361	356	348	347	364	359	354		356	357
30,000	360	365	362	352	353	365	365	362		363	364
50,000	365		365	360	358			366		365	365
100,000				366	365						

HORSEPEN CREEK AT BATTLEGROUND

No. 410

LOCATION: Guilford County, Horsepen Creek at bridge on U. S. Highway 411, three-fourths mile northwest of Battleground and about one mile above Greensboro storage reservoir, and 2 ½ miles above junction with Reedy Fork.

DRAINAGE AREA: 15.9 square miles.

RECORDS AVAILABLE: Active station. November 9, 1925 to July 29, 1931; and May 15, 1934 to date.

EXTREMES: *Maximum* 980 second-feet, January 19, 1936;
Minimum 0.7 second-feet, July 24, 1926.

REMARKS: Automatic recorder entire record. Records incomplete at times. Pronounced diurnal fluctuation. No diversions.

HORSEPEN CREEK AT BATTLEGROUND

Drainage Area 15.9 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	41	4.8	17	5			7.7	1½ mon	ths only
1926	157	2.4	85	2.1	35.2	3.65	15.5	5 month	s only
1927	179	3.2	59	3.3	26.8	4.81	15.9	10 mont	hs only
1928	115	3.7	47	4.3	20.1	6.65	12.9	9 month	s only
1929	518	4.3	131	5.3	41.8	5.62	19.3	1.21	16.51
1930	98	1.9	33	2.3	20.6	3.40	8.94	0.562	7.66
1931	185	3.1	72	3.5	30.4	5.50	13.3	7 month	s only
Station disc	ontinued	July 29,	1931; re-	establish	ed May	15, 1934.			
1934	286	3.4	78	4.2	29.0	5.97	16.2	7½ mon	ths only
1935	287	2.2	95	2.7	35.7	3.37	13.9	0.874	11.91
1936	598	2.5	143	3.2	67.1	6.74	26.1	1.64	22.33

EAST FORK DEEP RIVER NEAR HIGH POINT

No. 411

LOCATION: Guilford County, East Fork of Deep River at highway bridge, one-fourth mile above High Point reservoir, one mile northeast of Deep River Church and about six miles northeast of High Point.

DRAINAGE AREA: 13.9 square miles.

RECORDS AVAILABLE: Active station. July 27, 1928 to date.

EXTREMES: *Maximum* about 1,660 second-feet, June 8, 1934;
Minimum 1.3 second-feet, December 17, 1930.

REMARKS: Automatic recorder entire record. No regulation and no diversions.

EAST FORK DEEP RIVER NEAR HIGH POINT

Drainage Area 13.9 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	510	5.2	120	3.4	49.2	5.9	16.8	5 months only	
1929	464	4.2	129	4.8	43.7	5.2	20.1	1.45	19.64
1930	150	2.2	45	2.4	24.6	2.8	10.5	0.755	10.23
1931	205	3.2	62	3.3	27.3	3.5	11.5	0.827	11.20
1932	509	1.5	109	1.6	48.6	4.1	17.5	1.26	17.13
1933	162	2.5	69	2.6	31.3	2.8	11.5	0.828	11.26
1934	702	2.6	154	3.2	35.2	3.96	16.2	1.17	15.83
1935	203	2.9	79	3.1	34.1	3.7	13.5	0.971	13.16
1936	789	3.1	178	3.4	67.2	5.88	24.4	1.76	23.87

NORTH BUFFALO CREEK NEAR GREENSBORO

No. 412

LOCATION: Guilford County, North Buffalo Creek at county highway bridge, 3 miles above junction with South Buffalo Creek and 6 miles northeast of Greensboro.

DRAINAGE AREA: 36.4 square miles.

RECORDS AVAILABLE: Active station. August 27, 1928 to date.

EXTREMES: *Maximum* 1,750 second-feet, January 19, 1936;
Minimum 1.6 second-feet, August 28, 1932.

REMARKS: Automatic recorder entire record. Diurnal fluctuation from operation of mills above. No diversions.

NORTH BUFFALO CREEK NEAR GREENSBORO

Drainage Area 36.4 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	1,380	12.4	25	14.3	147	16.4	48.4	4 months only	
1929	1,210	7.5	368	10.4	122	11.8	53.5	1.47	19.95
1930	634	4.1	165	6.3	80.7	7.7	29.9	0.822	11.15
1931	454	5.0	192	7.7	74.7	8.6	31.7	0.871	11.85
1932	1,230	3.4	232	7.0	104	7.8	48.6	1.34	18.13
1933	408	4.8	120	8.1	65.4	9.2	26.1	0.723	9.73
1934	900	6.4	292	13.5	88.2	16.8	49.0	1.35	18.30
1935	825	6.9	275	11.3	118	12.7	46.0	1.26	17.16
1936	1,350	6.3	428	10.0	183	20.0	73.1	2.01	27.33

SOUTH BUFFALO CREEK NEAR GREENSBORO

No. 413

LOCATION: Guilford County, South Buffalo Creek at McConnell road crossing, 3 miles east of Greensboro and 6 miles above confluence with North Buffalo Creek.

DRAINAGE AREA: 32.8 square miles.

RECORDS AVAILABLE: Active station. August 30, 1928 to date.

EXTREMES: *Maximum* 1,870 second-feet, February 28, 1929;
Minimum 0.2 second-feet, October 2, 1930.

REMARKS: Automatic recorder entire record. No regulation and no diversion.

SOUTH BUFFALO CREEK NEAR GREENSBORO

Drainage Area 32.8 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	1,170	6.7	320	7.2	142	8.66	42.8	4 months only	
1929	1,180	2.7	340	4.4	105	6.36	46.3	1.41	19.14
1930	516	0.5	163	0.8	62.3	1.82	19.9	0.607	8.24
1931	535	1.9	61	2.1	74.5	2.8	33.7	5 months only	
1932	1,020	1.1	240	1.4	108	2.32	42.8	1.31	17.71
1933	249	1.4	104	1.8	61.6	4.03	18.8	0.581	7.80
1934	799	2.6	337	5.2	98.3	10.1	46.0	1.67	19.04
1935	705	1.9	171	2.5	90.4	4.63	36.0	1.10	14.93
1936	900	3.3	371	4.2	168	6.52	58.4	1.78	24.25

REEDY FORK CREEK NEAR GIBSONVILLE

No. 414

LOCATION: Guilford County, Reedy Fork Creek one-fourth mile below county bridge at Huffines Mill, 1¼ miles above Buffalo Creek, 6 miles northwest of Gibsonville and about 7 miles above confluence with Haw River.

DRAINAGE AREA: 133 square miles.

RECORDS AVAILABLE: Active station. September 7, 1928 to date.

EXTREMES: *Maximum* 4,390 second-feet, January 20, 1936;
Minimum 0.8 second-feet, August 27, 1932.

REMARKS: Automatic recorder entire record. Small local regulation from Huffines Mill. Distant regulation from storage and hydro-electric pumping from Greensboro water supply at mouth of Horsepen Creek. Greensboro water supply, 14 miles above, diverts an average daily discharge of 8.1 second-feet.

REEDY FORK CREEK NEAR GIBSONVILLE

Drainage Area 133 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	2,060	36	922	39	79	39.3	133	4 months only	
1929	3,550	9.5	1,220	28	342	38.5	170	1.28	17.34
1930	443	1.8	305	7	181	10.7	72.5	0.545	7.40
1931	709	4.5	389	12.8	201	15.0	85.5	0.643	8.70
1932	2,200	2.0	723	7.1	275	11.2	122	0.914	12.45
1933	683	3.2	276	12.9	200	15.2	76.1	0.575	7.76
1934	1,310	13.9	549	23	252	45.7	131	0.985	13.02
1935	1,100	12	511	17	339	21.9	115	0.865	11.72
1936	3,710	5	1,214	13	600	26.4	207	1.56	21.18

DEEP RIVER NEAR RANDLEMAN

No. 415

LOCATION: Randolph County, Deep River one-fourth mile below Coltrane's Mill, one-half mile south Guilford County Line and about 7 miles north of Randleman.

DRAINAGE AREA: 124 square miles.

RECORDS AVAILABLE: Active station. September 8, 1928 to date.

EXTREMES: *Maximum* 8,470 second-feet, February 28, 1929;
Minimum 0.5 second-feet, November 28, 1931.

REMARKS: Automatic recorder entire record. Considerable diurnal regulation due to power plants upstream. No diversions. Zero of gage is 638.11 feet above mean sea level.

DEEP RIVER NEAR RANDLEMAN

Drainage Area 124 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	214	13	119	27	75.1	38	51.5	3 months only	
1929	4,650	12	1,730	18	413	26	185	1.48	20.26
1930	1,350	3	460	4.1	231	5.8	77.2	0.622	8.43
1931	1,300	1.6	608	6.9	237	9.6	91.5	0.738	10.03
1932	4,700	2.7	989	6.8	389	14.3	146	1.18	16.01
1933	854	1.2	342	4.5	184	9.6	68.7	0.560	7.54
1934	2,560	6.4	921	9.3	271	21.7	124	1.00	13.57
1935	2,230	4.0	574	10.7	286	12.6	110	0.887	11.99
1936	4,390	4.9	1,624	8.0	594	34.1	209	1.69	23.00

HAW RIVER NEAR BENAJA

No. 416

LOCATION: Rockingham County, Haw River at site of High Rock Mill, about 6 miles above junction with Reedy Fork Creek and 6 miles east of Benaja.

DRAINAGE AREA: 168 square miles.

RECORDS AVAILABLE: Active station. October 5, 1928 to date.

EXTREMES: *Maximum* 5,020 second-feet, October 3, 1929;
Minimum 6.3 second-feet, September 1, 1932.

REMARKS: Automatic recorder entire record. Slight daily regulation. No diversions.

HAW RIVER NEAR BENAJA

Drainage Area 168 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	200	61	126	67	91.1	75.8	81.8	3 months only	
1929	4,640	54	1,730	64	479	77.5	237	1.41	19.12
1930	583	10.1	434	14	231	25.4	103	0.614	8.31
1931	1,450	21	599	28	314	31.2	125	0.767	10.14
1932	1,610	7.0	810	8.4	341	20.8	161	0.988	13.07
1933	508	14.6	328	21	238	29.2	105	0.631	8.49
1934	1,540	27	826	39	401	64.8	185	1.10	14.97
1935	1,050	20	612	24	380	32.1	151	0.899	12.19
1936	2,150	24	1,026	31	700	43.9	267	1.59	21.61

HAW RIVER NEAR BENAJA

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
20						34		46	12		2
25						50	5	52	31		9
30						74	33	71	64	2	20
35						86	68	85	91	7	45
40						104	96	99	115	25	68
50						134	124	114	163	48	88
60					7	160	139	125	186	88	110
80					52	192	178	147	206	160	149
100					102	218	218	188	220	193	170
125					154	260	262	235	253	223	199
150					201	294	281	251	285	236	239
200					260	323	300	284	313	263	286
250					296	341	320	311	328	285	310
300					311	351	340	330	343	306	319
500					343	361	355	347	364	338	352
1,000					352	365	363	356	365	358	363
2,000					361		365	366		365	365
5,000					365						

HAW RIVER AT HAW RIVER

No. 417

LOCATION: Alamance County, Haw River 400 feet below Southern R. R. bridge at Haw River, 3 miles below Stony Creek, 5 miles above Alamance Creek.

DRAINAGE AREA: 592 square miles.

RECORDS AVAILABLE: Active station. October 1, 1928 to date.

EXTREMES: *Maximum* 17,000 second-feet, February 28, 1929;
Minimum 3 second-feet, September 5, 1930.

REMARKS: Automatic recorder entire record. Considerable daily fluctuation from distant mill operation. No diversions.

HAW RIVER AT HAW RIVER

Drainage Area 592 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	450	182	450	208	302	224	253	3 months only	
1929	15,300	135	6,090	204	7,620	246	833	1.41	19.07
1930	3,260	5	1,800	21	871	59.3	357	0.603	8.19
1931	5,080	19	2,510	57	1,180	59.6	433	0.732	9.94
1932	8,360	20	3,360	27	1,460	70.9	609	1.14	13.99
1933	3,200	10	1,512	46	903	56.2	344	0.587	7.90
1934	9,670	43	3,498	108	1,330	176	627	1.06	14.38
1935	8,330	57	2,758	81	1,593	102	525	0.887	12.05
1936	10,600	22	5,844	83	2,794	124	980	1.64	22.32

LOWER LITTLE RIVER AT LINDEN

No. 419

LOCATION: Harnett County, Lower Little River at bridge on State Highway No. 21, 1 mile west of Linden, 2 miles above Stewart Creek and 4½ miles above confluence with Cape Fear River.

DRAINAGE AREA: 450 square miles. Revised to 460 square miles.

RECORDS AVAILABLE: Active station. November 22, 1928 to date.

EXTREMES: *Maximum* 10,300 second-feet, October 2, 1929;
Minimum 33 second-feet, September 14, 1932.

REMARKS: Automatic recorder installed August 26, 1934; chain gage prior to this date. Slight daily regulation at low water due to hydro-electric plant operation. No diversions. Zero of gage is 71.37 feet above mean sea level.

LOWER LITTLE RIVER AT LINDEN

Drainage Area 450 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min	Max.	Min.			
1928	570	320	435	361			376	1½ mon	ths only
1929	12,400	148	5,830	291	2,500	480	1,082	2.40	32.74
1930	1,920	57	1,170	75	901	113	399	0.887	12.02
1931	4,850	71	2,790	96	1,140	102	462	1.03	3.95
1932	3,540	39	1,830	50	871	56.2	448	0.995	13.55
1933	1,670	37	1,232	42	993	60.7	373	0.838	11.28
1934	2,060	52	1,155	82	737	115	373	0.829	11.23
1935	2,200	40	1,166	54	866	102	505	1.12	15.22
1936	5,500	103	2,946	146	1,910	295	1,081	2.35	31.99

HAW RIVER NEAR BENAJA

No. 416

LOCATION: Rockingham County, Haw River at site of High Rock Mill, about 6 miles above junction with Reedy Fork Creek and 6 miles east of Benaja.

DRAINAGE AREA: 168 square miles.

RECORDS AVAILABLE: Active station. October 5, 1928 to date.

EXTREMES: *Maximum* 5,020 second-feet, October 3, 1929;
Minimum 6.3 second-feet, September 1, 1932.

REMARKS: Automatic recorder entire record. Slight daily regulation. No diversions.

HAW RIVER NEAR BENAJA

Drainage Area 168 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	200	61	126	67	91.1	75.8	81.8	3 months only	
1929	4,640	54	1,730	64	479	77.5	237	1.41	19.12
1930	583	10.1	434	14	231	25.4	103	0.614	8.31
1931	1,450	21	599	28	314	31.2	125	0.767	10.14
1932	1,610	7.0	810	8.4	341	20.8	161	0.988	13.07
1933	508	14.6	328	21	238	29.2	105	0.631	8.49
1934	1,540	27	826	39	401	64.8	185	1.10	14.97
1935	1,050	20	612	24	380	32.1	151	0.899	12.19
1936	2,150	24	1,026	31	700	43.9	267	1.59	21.61

LOWER LITTLE RIVER AT LINDEN

No. 419

LOCATION: Harnett County, Lower Little River at bridge on State Highway No. 21, 1 mile west of Linden, 2 miles above Stewart Creek and 4½ miles above confluence with Cape Fear River.

DRAINAGE AREA: 450 square miles. Revised to 460 square miles.

RECORDS AVAILABLE: Active station. November 22, 1928 to date.

EXTREMES: *Maximum* 10,300 second-feet, October 2, 1929;
Minimum 33 second-feet, September 14, 1932.

REMARKS: Automatic recorder installed August 26, 1934; chain gage prior to this date. Slight daily regulation at low water due to hydro-electric plant operation. No diversions. Zero of gage is 71.37 feet above mean sea level.

LOWER LITTLE RIVER AT LINDEN

Drainage Area 450 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min	Max.	Min.			
1928	570	320	435	361			376	1½ mon	ths only
1929	12,400	148	5,830	291	2,500	480	1,082	2.40	32.74
1930	1,920	57	1,170	75	901	113	399	0.887	12.02
1931	4,850	71	2,790	96	1,140	102	462	1.03	3.95
1932	3,540	39	1,830	50	871	56.2	448	0.995	13.55
1933	1,670	37	1,232	42	993	60.7	373	0.838	11.28
1934	2,060	52	1,155	82	737	115	373	0.829	11.23
1935	2,200	40	1,166	54	866	102	505	1.12	15.22
1936	5,500	103	2,946	146	1,910	295	1,081	2.35	31.99

HAW RIVER NEAR PITTSBORO

No. 420

LOCATION: Chatham County, Haw River 1,000 feet below Moores Bridge crossing on old Pittsboro-Raleigh road, 100 feet above Robinson Creek, 5 miles above New Hope River and 5 miles east of Pittsboro.

DRAINAGE AREA: 1,340 square miles. Revised to 1,310 square miles.

RECORDS AVAILABLE: Active station. November 26, 1928 to date.

EXTREMES: *Maximum* 47,300 second-feet, October 2, 1929;
Minimum 9 second-feet, October 13, 1930.

REMARKS: Automatic recorder installed October 14, 1929; staff gage prior to this date. Considerable daily regulation from mills upstream. No diversions. Zero of gage is 180.06 feet above mean sea level.

HAW RIVER NEAR PITTSBORO

Drainage Area 1,340 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	540	276	460	360			411	1 month	only
1929	41,000	190	13,400	358	4,350	417	1,820	1.36	18.46
1930	8,400	21	3,830	50	1,900	59.5	692	0.516	7.00
1931	11,900	24	3,520	56	2,590	83.9	913	0.682	9.24
1932	21,900	30	7,450	45	3,370	130	1,365	1.02	13.86
1933	6,360	18	3,044	43	2,010	68.5	669	0.506	6.78
1934	25,000	38	6,950	175	2,780	270	1,360	1.01	13.76
1935	12,700	40	5,107	84	3,366	135	1,198	0.894	12.15
1936	35,200	33	13,161	123	6,456	241	2,240	1.71	23.27

DEEP RIVER AT MONCURE

No. 421

LOCATION: Chatham County, Deep River 1½ miles northwest of Moncure, at Gurley Shoals above Locksville power development.

DRAINAGE AREA: 1,340 square miles. Revised to 1,410 square miles.

RECORDS AVAILABLE: Active station. May 5, 1898 to December 31, 1899; and July 17, 1930 to date.

EXTREMES: *Maximum* 27,000 second-feet, April 7, 1936;
Minimum 13 second-feet, December 5, 1933.

REMARKS: Automatic recorder installed July 17, 1930; staff gage prior to this date. Considerable daily regulation from operation of power plants. No diversions. Zero of gage is 185.88 feet above mean sea level.

DEEP RIVER AT MONCURE

Drainage Area 1,340 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1898	17,000	238	8,131	283	3,160	355	1,295	8 months only	
1899	24,600	180	17,786	221	10,100	378	2,519	1.80	23.97
Station discontinued December 31, 1899; re-established July 17, 1930.									
1930	5,350	23	2,140	27	877	33.3	268	5 months only	
1931	16,800	21	8,020	28	4,010	37.8	1,160	0.866	11.80
1932	19,200	49	10,500	75	4,680	162	1,676	1.25	16.48
1933	7,560	13	3,643	25	2,420	38.5	733	0.556	7.43
1934	15,500	60	7,597	106	2,480	130	1,270	0.948	12.88
1935	16,700	43	6,167	93	3,030	150	1,314	0.980	13.29
1936	25,300	73	14,413	157	6,397	339	2,514	1.78	24.26

MUDDY CREEK NEAR ARCHDALE

No. 422

LOCATION: Randolph County, Muddy Creek 7 miles southeast of Archdale, 2 miles east of Glenola brick plant, 3 miles southwest of Coltrane's Mill and 600 feet above county highway bridge.

DRAINAGE AREA: 14.2 square miles.

RECORDS AVAILABLE: Active station. May 19, 1934 to date.

EXTREMES: *Maximum* 637 second-feet, June 7, 1934;
Minimum 0.05 second-feet, September 4, 1934. No flow at times during 1930.

REMARKS: Automatic recorder entire record. Natural diurnal fluctuation noticeable. No diversions.

MUDDY CREEK NEAR ARCHDALE

Drainage Area 14.2 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	353	0.05	102	0.14	30.7	0.3	13.1	7½ mon	ths only
1935	235	0.06	103	0.13	51.4	0.35	14.9	1.05	14.22
1936	652	0.26	211	0.41	82.6	1.83	32.3	2.27	31.01

HAW RIVER AT MONCURE

No. 403

LOCATION: Chatham County, Haw River at Seaboard Air Line R. R. bridge, 1¾ miles north of Moncure and about 2 miles above junction with the Deep River.

DRAINAGE AREA: 1,800 square miles.

RECORDS AVAILABLE: Discontinued station. May 6, 1898 to December 31,1899.

EXTREMES: *Maximum* 24,200 second-feet, February 9, 1899;
Minimum stage recorded 0.82 feet, October 3 and 4, 1899 (discharge not determined).

REMARKS: Wire gage. Some regulation from four hydro-electric plants above. No diversions.

HAW RIVER AT MONCURE

Drainage Area 1,800 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1898	13,250	290	6,278	428	2,545	613	1,436	8 months only	
1899	24,200	270	18,479	291	9,860	464	2,590	1.44	19.20

DEEP RIVER AT CUMNOCK

No. 404

LOCATION: Lee County, Deep River at Southern R. R. bridge 300 yards northwest of railroad station at Cumnock.

DRAINAGE AREA: 1,110 square miles.

RECORDS AVAILABLE: Discontinued station. July 1, 1900 to June 28, 1902.

EXTREMES: *Maximum* 27,100 second-feet, March 26, 1901;
Minimum 72 second-feet, August 19, 1900.

REMARKS: Wire gage. Some diurnal regulation from operation of mills above. No diversions.

DEEP RIVER AT CUMNOCK

Drainage Area 1,110 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1900	5,190	72	1,525	99	878	138	332	6 months only	
1901	27,100	80	15,184	132	4,179	286	1,763	1.60	21.82
1902	15,200	126	9,146	165	4,597	276	1,506	6 months only	

MORGAN CREEK NEAR CHAPEL HILL

No. 406

LOCATION: Orange County, Morgan Creek about 3 miles northwest of Carrboro, 5 miles northwest of Chapel Hill and about 7 miles above mouth of creek.

DRAINAGE AREA: 27 square miles.

RECORDS AVAILABLE: Discontinued station. January 20, 1923 to June 2, 1932.

EXTREMES: *Maximum* about 30,000 second-feet, August 4, 1924;
Minimum 0.47 second-feet, September 11, 1925.

REMARKS: Automatic recorder. No regulation; no diversion.

MORGAN CREEK NEAR CHAPEL HILL

Drainage Area 27 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1923	874	2.8	255	4	99.8	4.35	24.5	11½ mo	nths only
1924	6,240	7.2	925	10.9	227	26.3	61.1	2.26	30.90
1925	624	0.47	230	0.79	134	2.1	20.5	0.759	10.30
1926	537	1.1	120	1.4	54.9	1.8	18.9	0.70	9.47
1927	477	2.3	141	3.1	55.9	6.9	24.3	0.90	12.22
1928	910	3.8	289	4.6	140	10.4	40.8	1.51	20.54
1929	1,910	6.9	537	8.1	138	9.9	52.9	1.96	26.62
1930	687	1.08	107	1.2	47.2	2.3	18.8	0.64	9.71
1931	952	1.5	209	2.3	78.9	2.8	21.7	0.804	10.90
1932	796	2.6	190	7.5	63.2	10.1	35.5	5 month	s only

REEDY FORK CREEK NEAR SUMMERFIELD

No. 409

LOCATION: Guilford County, Reedy Fork Creek 50 feet below highway bridge on Greensboro-Summerfield road, one-half mile above mouth of Brush Creek and 1 mile above head of Greensboro waterworks reservoir.

DRAINAGE AREA: 34.1 square miles.

RECORDS AVAILABLE: Discontinued station. March 1, 1926 to April 21, 1928.

EXTREMES: *Maximum* 690 second-feet, January 19, 1926;
Minimum 4.4 second-feet, August 30, 1926.

REMARKS: Automatic recorder. Diurnal fluctuation caused by operation of mill at Summerfield. No diversions.

REEDY FORK CREEK NEAR SUMMERFIELD

Drainage Area 34.1 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max	Min.	Max.	Min.			
1926	370	5.1	107	6.6	45.2	8.35	21.6	10 months only	
1927	347	11	98	11	51.1	16.5	32.1	10 months only	
1928	167	17	60	18	35.3	25.8	28.7	3½ months only	

ROCKFISH CREEK NEAR FAYETTEVILLE

No. 418

LOCATION: Cumberland County, Rockfish Creek at steel highway bridge on Fayetteville-Elizabethtown road, 3 miles above confluence with Cape Fear River and 2 miles below confluence of Rockfish and Little Rockfish creeks.

DRAINAGE AREA: 292 square miles.

RECORDS AVAILABLE: Discontinued station. November 20, 1928 to December 31, 1931.

EXTREMES: *Maximum* 5,200 second-feet (estimated), October 4, 1929 (stage affected by backwater of Cape Fear River);
Minimum 29 second-feet (estimated), September 28, 1930.

REMARKS: Chain gage. Regulation present from mills on both branches of creek above. No diversions.

ROCKFISH CREEK NEAR FAYETTEVILLE

Drainage Area 292 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	681	266	481	390			432	1½ mon	ths only
1929	4,900	198	2,540	374	1,590	478	858	2.94	39.90
1930	1,400	29	997	142	758	196	419	1.43	19.47
1931	4,000	34	2,090	134	1,010	163	414	1.42	19.22

CHAPTER 6

THE YADKIN RIVER BASIN

The Yadkin River Basin extends in a northwest-southeast direction across the central part of North Carolina. This river, known as the Pee Dee and Great Pee Dee in its lower reaches, originates in North Carolina, flows through this state and South Carolina, to enter the Atlantic Ocean at Winyah Bay, near Georgetown, S. C. The total actual drainage area of the entire basin is 16,320 square miles, of which 9,300 square miles lie in North Carolina. Including a portion of the coastal drainage area, the total drainage area of the Yadkin River Basin in North Carolina is 10,650 square miles. The basin is bordered on the east by the Cape Fear River Basin, on the north by the basins of the Roanoke and New rivers, and on the west by the Catawba River Basin.

Within North Carolina the basin extends for a distance of about 235 miles across three distinct physiographic regions. Originating in the Mountain Region, it crosses the Piedmont Plateau and continues through the Coastal Plain to the Atlantic Ocean.

The Yadkin River rises on the eastern slope of the Blue Ridge Mountains and flows northeasterly for approximately 100 miles. At this point, known as the Great Bend of the Yadkin, the river turns and flows southeasterly across North Carolina and into South Carolina. In its upper and lower reaches the stream has a rather uniform gradient; however, at its crossing of the "fall line" the slope of the stream is quite steep, falling 300 feet in 20 miles. Five large hydro-electric plants located along this reach of the river develop over 275,000 horse power.

Principal tributaries to the main stream in North Carolina are: Rocky River, drainage area 1,430 square miles; Uharie River, drainage area 350 square miles; and South Yadkin River, drainage area 908 square miles. The name of the main stream changes to the Pee Dee below the mouth of the Uharie River, in Montgomery County.

In the lower or coastal part of the basin are located the Lumber or Lumbee and Waccamaw rivers. Both of these rivers are typical Coastal Plain streams in that they have very flat gradients and are bordered throughout their length with swamp and marsh land.

Approximately 65 per cent of the area of the Yadkin River Basin consists of forest lands, of which about 45 per cent is farm woodland. A total of over 400 square miles of the basin area is covered by woodland pasture.

Mean annual temperature for the entire basin area is slightly over 60 degrees, varying from 64 degrees on the coast to 54 degrees in the northern end of the basin.

Mean annual rainfall varies from 46 inches to 51 inches in different sections of the basin, with an overall mean of 47.6 inches.

Principal cities located within the basin are: Winston-Salem, Salisbury, Concord, Statesville, Thomasville, Lexington, and Mt. Airy.

PEE DEE RIVER NEAR ROCKINGHAM

No. 510

LOCATION: Richmond County, Pee Dee River 6 miles west of Rockingham, just below U. S. Highway No. 74, 1 mile above mouth of Falling Creek and 4 miles below Blewett Falls hydro-electric plant of Carolina Power and Light Company.

DRAINAGE AREA: 6,910 square miles. Revised to 6,870 square miles.

RECORDS AVAILABLE: Active station. September 27, 1927 to date.

EXTREMES: *Maximum* 212,000 second-feet, September 19, 1928;
Minimum 170 second-feet, October 9, 1932, May 28, 1934, September 30, 1935.

REMARKS: Automatic recorder entire record. Daily regulation present due to operation of Blewett Falls power plant. No diversions. Former flood crests not comparable with present conditions because of increased storage. Zero of gage is 81.81 feet above mean sea level.

PEE DEE RIVER NEAR ROCKINGHAM

Drainage Area 6,910 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	54,200	1,040	24,400	2,850	12,400	3,110	7,447	3 months only	
1928	182,000	986	77,400	2,680	35,700	4,230	10,800	1.57	21.27
1929	159,000	1,180	77,900	4,640	33,000	5,490	12,400	1.80	24.42
1930	36,400	251	18,300	579	11,100	1,410	5,550	0.803	10.90
1931	48,100	120	21,200	1,140	11,000	2,500	5,860	0.848	11.50
1932	76,000	40	37,625	2,260	20,300	2,640	8,971	1.30	17.69
1933	48,700	45	20,657	1,444	11,300	2,630	5,663	0.823	11.11
1934	45,800	56	24,140	1,586	11,200	2,530	6,188	0.885	12.04
1935	61,000	188	31,429	2,524	16,190	3,746	7,681	1.11	15.06
1936	166,000	332	78,729	3,119	31,350	4,218	12,790	1.86	25.32

PEE DEE RIVER NEAR ROCKINGHAM

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50								1	1		
75								2	3	2	
100								2	4	4	
500						8	13	4	10	12	7
1,000				1		25	20	10	16	19	14
2,000				18	3	67	45	26	47	48	32
3,000				30	6	108	82	61	112	111	46
4,000				57	26	149	151	115	181	153	82
5,000				94	54	204	202	152	221	208	133
6,000				148	107	236	246	180	232	253	192
7,000				208	143	268	271	210	259	267	229
8,000				250	174	286	297	239	279	297	257
9,000				278	212	304	317	261	308	308	274
10,000				296	252	329	329	294	323	327	297
12,000				311	287	348	341	314	339	333	319
15,000				323	309	355	351	324	352	345	333
20,000				338	327	359	355	339	362	349	347
30,000				345	344	363	360	345	363	358	359
40,000				353	352	365	363	354	363	361	362
50,000				354	355		365	359	365	365	363
60,000				356	355			361			364
100,000				362	360			366			365
182,000				366	365						

YADKIN RIVER AT YADKIN COLLEGE

No. 511

LOCATION: Davidson County, Yadkin River just below U. S. Highway 64 bridge, midway between Mocksville and Lexington, 1 mile southwest of Yadkin College and almost 16 miles above junction with South Yadkin.

DRAINAGE AREA: 2,250 square miles. Revised to 2,280 square miles.

RECORDS AVAILABLE: Active station. July 9, 1928 to date.

EXTREMES: *Maximum* 67,800 second-feet, October 3, 1929;
Minimum 395 second-feet, September 20, 1932.

REMARKS: Automatic recorder entire record. Slight daily regulation. No diversions.

YADKIN RIVER AT YADKIN COLLEGE

Drainage Area 2,250 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	46,900	1,380	10,500	1,710	7,860	2,280	4,282	6 months only	
1929	64,100	1,580	23,000	1,840	8,120	2,190	3,950	1.76	23.86
1930	9,820	638	4,730	756	3,280	845	1,903	0.846	11.45
1931	12,600	647	4,783	719	3,940	819	1,990	1.06	12.03
1932	48,800	584	16,450	758	5,710	1,150	3,237	1.44	19.59
1933	9,000	782	5,069	820	4,040	1,060	2,297	1.03	13.87
1934	24,400	919	11,817	1,099	4,600	1,370	2,701	1.20	16.28
1935	17,300	1,170	7,463	1,329	4,853	1,606	2,845	1.26	17.16
1936	45,000	1,000	14,800	1,136	8,636	1,441	3,818	1.67	22.73

SOUTH YADKIN RIVER AT COOLEEMEE

No. 512

LOCATION: Davie County, South Yadkin River just below tailrace of Erwin Cotton Mills at Cooleemee and at head of full reservoir level of High Rock dam.

DRAINAGE AREA: 560 square miles. Revised to 569 square miles.

RECORDS AVAILABLE: June 16, 1928 to date.

EXTREMES: *Maximum* (estimated) 24,800 second-feet, October 3, 1929; *Minimum* 10 second-feet, November 25, 1931.

REMARKS: Automatic recorder entire record. Heavy daily regulation due to operation of Erwin Cotton Mills. No diversions.

SOUTH YADKIN RIVER AT COOLEEMEE

Drainage Area 560 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	11,000	112	5,800	187	2,140	333	927	6½ months only	
1929	6,870	190	3,550	280	1,790	403	878	8 months only	
1930	2,790	54	1,210	145	856	177	441	0.787	10.69
1931	4,250	61	2,420	124	1,170	151	452	0.807	10.95
1932	13,800	46	4,551	133	1,590	171	801	1.43	19.47
1933	2,460	111	1,193	213	960	223	512	0.917	12.38
1934	5,090	117	2,301	254	1,110	313	581	1.04	14.08
1935	4,170	133	2,008	238	1,188	291	580	1.04	14.06
1936	8,710	148	4,296	253	2,228	437	995	1.75	23.82

SOUTH YADKIN RIVER AT COOLEEMEE

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50								1			
100						10	16	5			
150						27	31	15	8	4	2
200						63	75	37	23	17	6
250						113	119	60	85	53	47
300						155	147	84	140	127	100
350						184	200	109	171	177	143
400						203	233	131	187	217	173
500						235	291	201	218	265	217
600						274	313	238	247	289	275
700						312	326	263	291	304	299
800						334	329	284	310	314	313
1,000						351	334	304	336	329	328
1,500						355	343	326	354	344	346
2,000						363	358	335	363	350	352
4,000						365	364	358	365	360	364
8,000							365	364		365	365
14,000								366			

YADKIN RIVER AT WILKESBORO

No. 513

LOCATION: Wilkes County, Yadkin River at steel bridge on highway between Wilkesboro and North Wilkesboro, 25 feet below mouth of Reddies River.

DRAINAGE AREA: 480 square miles. Revised to 493 square miles.

RECORDS AVAILABLE: Active station. April 12, 1929 to date.

EXTREMES: *Maximum* about 23,000 second-feet, October 2, 1929; *Minimum* 130 second-feet, January 31, 1934.

REMARKS: Automatic recorder installed January 9, 1930; chain gage prior to this date. Some regulation due to mills on Reddies River. Records at this station are supplemental to a prior 12-year record of Yadkin River at North Wilkesboro, Station No. 503, now discontinued.

YADKIN RIVER AT WILKESBORO

Drainage Area 480 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1929	20,700	417	4,490	479	1,840	603	1,040	8 months only	
1930	2,730	215	1,410	252	891	288	535	1.12	15.13
1931	3,680	193	1,341	209	958	232	492	1.02	13.93
1932	15,300	185	3,420	222	1,210	309	768	1.60	21.76
1933	2,940	255	1,987	273	1,230	300	676	1.41	19.09
1934	7,130	233	2,769	271	1,110	349	656	1.37	18.57
1935	6,820	372	2,081	388	1,362	477	806	1.68	22.77
1936	9,840	300	3,295	340	1,820	429	953	1.93	26.27

LUMBER RIVER AT BOARDMAN

No. 514

LOCATION: Columbus County, Lumber River at bridge on State Highway No. 20, 1½ miles below Big Swamp and 1 mile below Atlantic Coast Line R. R. crossing at Boardman.

DRAINAGE AREA: 1,240 square miles.

RECORDS AVAILABLE: Active station. September 28, 1929 to date.

EXTREMES: *Maximum* 10,800 second-feet, April 13, 1936;
Minimum 132 second-feet, October 12, 1930.

REMARKS: Staff gage entire record. No regulation; no diversions.

LUMBER RIVER AT BOARDMAN

Drainage Area 1,240 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1929	7,430	1,360	5,940	1,660	3,250	2,130	2,874	3 months only	
1930	4,600	132	4,200	151	2,790	236	1,070	0.863	11.66
1931	3,110	194	2,980	204	2,080	226	1,010	0.814	11.05
1932	4,400	170	4,093	181	3,090	208	1,127	0.909	12.37
1933	5,230	140	4,811	147	3,960	170	1,033	0.847	11.19
1934	2,120	238	1,739	253	1,132	262	641	0.517	7.01
1935	7,080	150	5,823	156	3,182	237	1,153	0.930	12.63
1936	10,800	315	9,483	357	5,688	476	1,891	1.52	20.77

ROCKY RIVER NEAR NORWOOD

No. 515

LOCATION: Stanly County, Rocky River 6 miles southwest of Norwood, 6 miles above Winston-Salem Southbound R. R. bridge, and 1,000 feet below Lane's Creek.

DRAINAGE AREA: 1,380 square miles. Revised to 1,370 square miles.

RECORDS AVAILABLE: Active station. September 30, 1929 to date.

EXTREMES: *Maximum* 52,800 second-feet, April 7, 1936;
Minimum 19 second-feet, October 28, 1931, November 13, 1933.

REMARKS: Automatic recorder entire record. No regulation; no diversions.

ROCKY RIVER NEAR NORWOOD

Drainage Area 1,380 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1929	58,200	213	20,100	249	5,410	2,090	3,321	3 months only	
1930	10,900	31	4,800	40	1,960	45.9	860	0.623	8.46
1931	20,000	19	6,240	42	2,830	67.7	1,110	0.804	10.90
1932	38,600	39	11,300	72	4,560	249	1,707	1.24	16.82
1933	7,510	26	3,264	46	2,140	67.4	704	0.516	6.92
1934	11,200	76	7,440	95	2,240	152	926	0.671	9.10
1935	22,900	70	8,219	88	3,199	145	1,146	0.830	11.28
1936	51,500	58	23,066	85	7,263	183	2,693	1.97	26.81

FISHER RIVER NEAR COPELAND

No. 516

LOCATION: Surry County, Fisher River 2 miles west of Copeland, 300 feet above bridge on State Highway No. 268, about one-half mile above Cody Creek.

DRAINAGE AREA: 125 square miles. Revised to 121 square miles.

RECORDS AVAILABLE: Active station. October 8, 1931 to date.

EXTREMES: *Maximum* 7,600 second-feet, October 6, 1934;
Minimum 21 second-feet, September 18, 1932.

REMARKS: Automatic recorder installed September 5, 1936; staff gage prior to this date. May be slight regulation from grist mills. No diversions.

Records at this station are supplemental to a prior 12-year record of the Fisher River near Dobson, Station No. 509, now discontinued.

FISHER RIVER NEAR COPELAND

Drainage Area 125 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1931	432	39	138	43	98.6	51	67.9	3 months only	
1932	3,210	23	666	32	306	65.3	172	1.38	18.76
1933	780	36	347	39	221	55.6	132	1.06	14.38
1934	5,050	50	1,265	56	344	68.8	201	1.61	21.84
1935	3,790	70	1,235	73	372	120	202	1.62	21.97
1936	3,620	52	939	69	526	107	234	1.93	26.27

UHARIE RIVER NEAR TRINITY

No. 517

LOCATION: Randolph County, Uharie River 500 feet below county highway bridge, 2 miles south of Trinity.

DRAINAGE AREA: 11.3 square miles.

RECORDS AVAILABLE: Active station. May 16, 1934 to date.

EXTREMES: *Maximum* 1,540 second-feet, October 8, 1936;
Minimum 0.17 second-feet, July 29, 1936.

REMARKS: Automatic recorder installed July 16, 1934; staff gage prior to this date. Slight diurnal fluctuation noticeable at low water during growing season. No diversions.

UHARIE RIVER NEAR TRINITY

Drainage Area 11.3 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	151	0.42	59.4	0.66	21.3	1.16	9.4	7½ mon	ths only
1935	209	0.39	55.6	0.53	29.5	0.88	9.51	0.842	11.43
1936	455	0.23	134	1.3	51.9	2.45	19.1	1.69	23.02

LITTLE BROWN CREEK NEAR POLKTON

No. 518

LOCATION: Anson County, Little Brown Creek one mile southwest State Convict Camp on U. S. Highway No. 74, 1½ miles above confluence with Brown Creek and 2 miles southeast of Polkton.

DRAINAGE AREA: 13.5 square miles.

RECORDS AVAILABLE: Active station. March 19, 1935 to date.

EXTREMES: *Maximum* 1,170 second-feet, March 26, 1936;
Minimum zero flow several times during 1936 and 1937.

REMARKS: Automatic recorder entire record. No regulation; no diversions.

LITTLE BROWN CREEK NEAR POLKTON

Drainage Area 13.5 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1935	220	0.02	42	0.02	32.6	0.998	9.89	9½ mon	ths only
1936	484	0.00	191	0.00	64.3	0.339	23.4	1.73	23.64

BROWN CREEK NEAR POLKTON

No. 519

LOCATION: Anson County, Brown Creek 150 feet below bridge on State Highway No. 742 at Medley's Mill, 4 miles northeast of Polkton.

DRAINAGE AREA: 110 square miles.

RECORDS AVAILABLE: Active station. May 9, 1935 to date.

EXTREMES: (See remarks.)

REMARKS: Automatic recorder entire record. May be regulation from Medley's Mill if mill is repaired and operation resumed. No diversions. High and low water records are subject to serious error, therefore no records are published for this station.

NORTH FORK JONES CREEK NEAR WADESBORO

No. 520

LOCATION: Anson County, North Fork Jones Creek 350 feet below county highway bridge, 3½ miles south of Wadesboro, and 5½ miles above confluence with Jones Creek.

DRAINAGE AREA: 10.0 square miles.

RECORDS AVAILABLE: Active station. March 22, 1935 to date.

EXTREMES: *Maximum* 2,290 second-feet, June 4, 1937;
Minimum 0.3 second-feet, August 26-27, 1935.

REMARKS: Automatic recorder entire record. No regulation; no diversions.

NORTH FORK JONES CREEK NEAR WADESBORO

Drainage Area 10.0 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1935	174	0.3	40.1	0.4	32.5	2.49	8.7	9 months only	
1936	201	0.5	104	0.7	41.9	2.21	16.3	1.63	22.13

PEE DEE RIVER NEAR ANSONVILLE

No. 521

LOCATION: Anson County, Pee Dee River at highway bridge on U. S. 151, at site of old Dumas Ferry, 1 mile below mouth of Brown Creek, 6 miles below mouth of Rocky River, 16 miles above Blewett Falls dam and 6 miles east of Ansonville.

DRAINAGE AREA: 6,330 square miles.

RECORDS AVAILABLE: Active station. February 19, 1938 to date.

REMARKS: Automatic recorder entire record. Daily regulation caused by operation of Tillery hydro-electric plant of Carolina Power and Light Company. No diversions. Station has been in operation only several months, therefore no records are published.

YADKIN RIVER NEAR SALISBURY

No. 501

LOCATION: Rowan County, Yadkin River at highway bridge, 1,000 feet above Southern R. R. bridge, 5 miles below mouth of South Yadkin River and 6 miles east of Salisbury.

DRAINAGE AREA: 3,400 square miles.

RECORDS AVAILABLE: Discontinued station. September 24, 1895 to December 31, 1927.

EXTREMES: *Maximum* 121,000 second-feet, July 18, 1916;
Minimum 700 second-feet, August and September, 1925.

REMARKS: Chain gage. May be some regulation at low stages due to operation of hydro-electric plants above. No diversions.

YADKIN RIVER NEAR SALISBURY

Drainage Area 3,400 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1895	10,160	1,310	4,702	1,400	2,683	1,426	2,038	3 months only	
1896	64,200	1,000	35,357	1,224	11,584	2,411	4,844	1.42	19.31
1897	34,924	900	15,212	1,191	11,513	1,785	5,347	1.57	21.21
1898	79,998	1,100	24,353	1,536	8,297	1,855	3,570	1.05	14.30
1899	107,400	1,450	43,243	1,593	23,899	2,120	6,864	2.02	27.15
1900	48,298	1,430	20,459	1,621	9,182	2,415	5,053	1.48	20.08
1901	104,640	2,420	30,292	2,682	16,509	3,507	8,636	2.54	34.64
1902	55,700	1,350	19,638	1,789	9,759	2,871	5,503	1.62	21.88
1903	76,200	1,500	29,014	1,869	15,798	2,260	6,850	2.01	27.17
1904	19,320	1,050	7,112	1,190	4,770	1,268	3,123	0.92	12.42
1905	33,820	1,235	15,276	1,770	7,835	1,818	4,539	1.34	18.12
1906	38,800	2,340	25,774	2,576	10,900	3,460	6,620	1.95	26.54
1907	38,000	1,570	12,930	1,904	8,210	2,260	4,485	1.32	17.91
1908	67,800	2,150	24,083	2,519	10,500	4,540	6,483	1.91	25.95
1909	54,400	1,570	22,377	2,403	12,200	2,580	5,708	1.68	22.77
1910	40,000	1,600	16,457	1,800	6,460	1,973	3,922	1.15	15.59
1911	24,800	1,000	9,314	1,221	5,860	1,627	3,424	1.01	13.66
1912	103,000	1,440	34,260	1,817	13,900	2,180	4,945	1.45	19.84
1913	77,200	1,530	30,827	2,011	12,000	2,600	4,821	1.42	19.32
1914	50,200	1,130	21,773	1,420	12,000	1,680	4,274	1.26	17.04
1915	54,400	1,630	19,097	2,073	11,300	2,540	5,714	1.68	22.78
1916	107,000	2,060	54,386	2,470	20,700	2,790	6,034	1.77	24.19
1917	43,400	1,340	16,290	1,843	11,100	2,110	4,369	1.29	17.43
1918	42,200	1,360	16,946	1,503	9,370	2,290	4,359	1.28	17.46
1919	72,200	1,870	30,860	2,091	11,500	2,410	6,010	1.77	24.05
1920	37,400	1,420	21,223	2,009	9,780	2,980	5,388	1.58	21.58
1921	42,800	1,400	13,597	1,503	10,100	1,850	4,543	1.34	17.98
1922	25,000	1,640	11,577	1,771	8,390	2,000	4,802	1.41	19.33
1923	66,000	1,260	22,643	1,540	11,000	1,700	3,984	1.18	16.24
1924	62,400	1,560	16,731	1,771	6,600	2,650	4,700	1.38	18.88
1925	24,400	700	11,351	892	9,170	1,260	3,030	0.89	12.07
1926	33,600	816	11,206	980	5,930	1,200	2,970	0.875	11.85
1927	24,400	922	13,753	1,086	6,030	1,550	3,033	11 months only	

YADKIN RIVER AT NORWOOD

No. 502

LOCATION: Stanly County, Yadkin River at Blalock's Ferry, 1 mile above Richland Creek and about 2 miles from Norwood.

DRAINAGE AREA: 4,614 square miles.

RECORDS AVAILABLE: Discontinued station. September 1, 1896 to December 31, 1899.

EXTREMES: *Maximum* stage recorded 11.0 feet, September 25, 1898 (discharge not determined);
Minimum 1,310 second-feet, September 17, 1897.

REMARKS: Staff gage. Slight diurnal regulation. No diversions.

YADKIN RIVER AT NORWOOD

Drainage Area 4,614 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1896	26,100	1,450	7,724	1,833	4,885	2,409	3,679	4 months only	
1897	50,120	1,310	22,161	1,520	13,760	1,774	6,193	1.34	18.05
1898	63,260	1,380	22,719	1,986	8,887	2,755	5,484	1.19	16.18
1899	66,750	1,790	34,656	2,204	24,572	2,840	7,721	10 months only	

YADKIN RIVER AT NORTH WILKESBORO

No. 503

LOCATION: Wilkes County, Yadkin River 4,000 feet below Southern R. R. station at North Wilkesboro.

DRAINAGE AREA: 500 square miles.

RECORDS AVAILABLE: Discontinued station. April 10, 1903 to December 31, 1908; and October 1, 1920 to September 30, 1928.

EXTREMES: *Maximum* 22,300 second-feet, November 19, 1906;
Minimum 161 second-feet, July 25, 1926.

REMARKS: Chain gage. Slight regulation from small mills upstream. No diversions.

YADKIN RIVER AT NORTH WILKESBORO

Drainage Area 500 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1903	5,790	386	2,459	475	2,330	504	1,003	8½ mon	ths only
1904	9,250	309	2,361	372	1,330	389	777	1.55	21.21
1905	12,900	184	4,220	419	1,640	432	883	1.77	24.02
1906	22,300	588	6,817	857	3,130	1,080	1,912	3.82	52.08
1907	3,040	755	1,861	853	1,330	925	1,161	5 month	s only
1908	12,000	612	5,493	638	2,320	836	1,370	2.74	37.20
Station disc	ontinued	Decemb	er 31, 19	08; re-es	tablished	October	1, 1920.		
1920	7,240	452	2,489	472	1,490	649	974	3 month	s only
1921	6,180	358	1,814	366	1,440	506	880	1.76	23.80
1922	5,080	395	2,146	458	1,670	474	1,004	2.01	27.27
1923	7,000	290	3,096	335	1,530	361	706	1.41	19.19
1924	6,480	376	2,844	387	1,280	547	863	1.73	23.52
1925	3,990	173	1,493	182	1,160	247	500	1.00	13.65
1926	7,810	162	2,090	170	855	286	551	1.10	14.89
1927	2,490	226	1,203	253	716	289	470	0.94	12.76
1928	19,600	410	4,523	615	2,460	690	1,085	2.17	29.54

YADKIN RIVER NEAR PEE DEE

No. 504

LOCATION: Anson County, Yadkin River, one-half mile below mouth of Smith Creek, 1 mile above Partridge Creek and 2 miles northeast of Pee Dee.

DRAINAGE AREA: 6,830 square miles.

RECORDS AVAILABLE: Discontinued station. August 9, 1906 to January 21,1912.

EXTREMES: *Maximum* 124,000 second-feet, August 27, 1908;
Minimum 1,560 second-feet, August 1, 2, 1911.

REMARKS: Staff gage. The power plant of the Rockingham Power Company began operation January 21, 1912, when station was discontinued. Practically no regulation prior to this date.

YADKIN RIVER NEAR PEE DEE

Drainage Area 6,830 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1906	52,700	4,940	32,443	5,191	16,300	6,450	9,585	5 months only	
1907	41,700	2,210	23,008	2,534	14,000	3,090	7,145	1.05	14.17
1908	124,000	3,500	39,906	3,843	20,000	6,200	11,063	1.62	22.08
1909	51,000	2,740	27,871	3,201	16,300	3,460	8,136	1.19	16.16
1910	44,100	2,560	21,440	2,769	9,460	2,920	5,973	0.87	11.84
1911	37,400	1,560	17,870	1,870	10,100	2,600	5,530	0.81	11.01
1912	11,300	4,730	9,051	7,723			6,659	½ month only	

THIRD CREEK NEAR STATESVILLE

No. 505

LOCATION: Iredell County, Third Creek at highway crossing known as McHenry's Bridge, 3 miles above Rowan County Line and 6 miles east of Statesville.

DRAINAGE AREA: 69 square miles.

RECORDS AVAILABLE: Discontinued station. March 17, 1913 to August 31,1923.

EXTREMES: *Maximum* 1,960 second-feet, August 31, 1917;
Minimum 30 second-feet, July 21, 1914.

REMARKS: Staff gage. Slight regulation by grist mills above. No diversiόns.

THIRD CREEK NEAR STATESVILLE

Drainage Area 69 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1913	1,180	37	251	39	169	55.9	87.3	9½ months only	
1914	1,060	30	303	36	197	46.3	84.8	1.23	16.69
1915	1,290	41	433	41	185	55	113	1.64	22.21
1916	1,510	56	513	56	358	63.3	118	1.71	23.35
1917	1,960	43	548	43	250	48.7	107	1.55	21.07
1918	1,180	48	398	58	217	73.9	107	1.55	21.11
1919	1,230	65	513	80	208	92.5	140	2.03	27.46
1920	1,160	57	463	65	265	104	156	2.26	30.75
1921	1,360	81	505	89	275	96.9	147	2.12	28.83
1922	1,240	15	193	20	129	31	75.8	1.10	14.89
1923	1,140	24	455	40	206	47.7	102	8 months only	

YADKIN RIVER AT DONNAHA

No. 506

LOCATION: Forsyth County, Yadkin River 6 miles below mouth of Ararat River and one-fourth mile above railroad station at Donnaha.

DRAINAGE AREA: 1,600 square miles.

RECORDS AVAILABLE: Discontinued station. April 11, 1913 to September 30, 1923.

EXTREMES: *Maximum* stage recorded 40.0 feet, July 16, 1916 (discharge not determined);
Minimum 678 second-feet, September 30, 1914. (See remarks.)

REMARKS: Staff gage. No regulation; no diversions. Observer falsified gage height records at times. It is impossible to separate the false from the true, therefore the records have been discarded.

YADKIN RIVER AT HIGH ROCK

No. 507

LOCATION: Davidson County, Yadkin River just above Brinkles Ferry at High Rock and about 15 miles above Badin Dam of Carolina Aluminum Company.

DRAINAGE AREA: 3,930 square miles.

RECORDS AVAILABLE: Discontinued station. January 8, 1919 to November 30, 1927.

EXTREMES: *Maximum* 104,000 second-feet, July 21, 1919;
Minimum 866 second-feet, October 11, 1926.

REMARKS: Automatic recorder. Slight regulation at low water from power plants on tributaries above. No diversions.

YADKIN RIVER AT HIGH ROCK

Drainage Area 3,930 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1919	86,000	2,290	30,484	2,382	12,000	2,670	6,143	11¾ mo	nths only
1920	42,000	1,900	24,143	2,297	11,100	3,460	6,120	1.56	21.19
1921	52,500	1,300	17,249	1,413	12,300	1,680	5,240	1.33	17.89
1922	28,400	1,780	13,734	1,883	9,990	2,230	5,770	1.47	19.90
1923	65,200	1,170	21,219	1,304	12,300	1,410	4,710	1.20	16.27
1924	46,600	1,310	19,827	1,607	7,430	3,120	5,450	1.40	18.90
1925	30,800	916	15,076	1,011	11,700	1,430	3,822	11 mont	hs only
1926	20,800	940	10,669	1,059	7,420	1,160	3,316	11 mont	hs only
1927	13,300	1,020	16,986	1,079	7,140	1,530	3,324	11 mont	hs only

ARARAT RIVER NEAR PILOT MOUNTAIN

No. 508

LOCATION: Surry County, Ararat River, 1 mile below mouth of Tom's Creek, 1½ miles above old Douglas Ford and 5 miles west of Pilot Mountain.

DRAINAGE AREA: 250 square miles.

RECORDS AVAILABLE: Discontinued station. July 28, 1920 to October 31, 1922.

EXTREMES: *Maximum* 5,520 second-feet, May 19, 1922;
Minimum 70 second-feet, September 20, 1921.

REMARKS: Staff gage. Regulation from two hydro-electric plants above. No diversions.

ARARAT RIVER NEAR PILOT MOUNTAIN

Drainage Area 250 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min			
1920	3,860	176	1,220	221	682	253	466	5 months only	
1921	3,420	97	1,003	140	726	205	408	1.63	22.06
1922	3,750	127	1,521	167	871	267	551	9 months only	

FISHER RIVER NEAR DOBSON

No. 509

LOCATION: Surry County, Fisher River at steel highway bridge on Dobson-Ararat highway, about 2 miles east of Dobson.

DRAINAGE AREA: 109 square miles.

RECORDS AVAILABLE: Discontinued station. September 1, 1920 to December 31, 1932.

EXTREMES: *Maximum* (estimated) 8,300 second-feet, October 2, 1929; *Minimum* 16 second-feet, August 30, 1925.

REMARKS: Staff gage. No regulation.

FISHER RIVER NEAR DOBSON

Drainage Area 109 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1920	2,050	119	677	143	308	153	220	4 months only	
1921	1,500	65	483	70	350	86.6	178	1.64	22.10
1922	1,980	82	1,034	98	519	104	237	2.18	29.54
1923	4,100	42	1,006	51	396	81.5	166	1.52	20.65
1924	2,950	76	717	85	336	128	192	1.76	23.99
1925	841	17	263	21	239	32.6	108	0.993	13.40
1926	1,850	22	520	38	196	55.4	121	1.11	14.99
1927	1,240	33	599	45	280	78.3	132	1.21	16.36
1928	5,550	66	1,410	94	485	127	209	1.92	26.05
1929	5,060	85	1,090	102	415	124	228	2.09	28.40
1930	1,100	23	394	25	208	35.4	102	0.936	12.65
1931	1,620	34	519	39	208	42.1	113	1.04	14.07
1932	3,090	19	599	27	310	53	153	1.40	19.14

CHAPTER 7

THE CATAWBA AND BROAD RIVER BASINS

The Catawba and Broad River basins, located in the western central part of North Carolina, form the upper part of the Santee River Basin of South Carolina. In the North Carolina sections the drainage area of the Catawba River Basin is 3,250 square miles and that of the Broad River Basin is 1,450 square miles. These basins are bordered on the east by the Yadkin River Basin, on the north by the Watauga River Basin, and on the west by the basin of the French Broad River.

The Catawba River rises on the eastern slope of the Blue Ridge Mountains in North Carolina. It flows first in an easterly direction for about 80 miles, then turns abruptly and flows almost due south for about 215 miles to its junction with the Congaree River in South Carolina. It is known as the Catawba River throughout its length in North Carolina, and as the Wateree River in South Carolina, below its junction with the Big Wateree Creek. From the headwaters of Lake James, on the upper part of the stream, to the South Carolina state line, the river has a total length of about 150 miles. The elevation of the former point is about 1,200 feet, and of the latter approximately 510 feet, making a total fall of 690 feet in 150 miles, or an average slope of 4.6 feet per mile. Principal tributaries to the Catawba River in North Carolina are Warrior Fork River, Little River, South Fork River, and Johns River.

The Broad River rises on the eastern slope of the Blue Ridge Mountains near Hickory Nut Gap, at an elevation of about 4,000 feet. It flows in a general southeasterly direction to its junction with the Saluda River, at Columbia, South Carolina. At the headwaters of Lake Lure the river has an elevation of 1,000 feet, and 51 miles below, where it crosses into South Carolina, it has an elevation of about 580 feet, making an average fall of 8.2 feet per mile for this reach.

Both the Catawba and Broad rivers have been extensively developed for hydro-electric power. Within the North Carolina sections of these basins there is a total of 219,730 horse power developed on the two main streams alone, with an additional 17,765 horse power developed on tributaries.

The watershed area covered by these two basins consists of approximately 57 per cent forest lands, of which about 56 per cent is forest woodland, including over 200,000 acres of woodland pasture.

The mean annual temperature of the Catawba and Broad River basins is 58.9 degrees. Mean annual rainfall for the area is slightly less than 52 inches, varying from 47 inches to 65 inches in different sections of the basins.

Principal cities located in the Catawba River Basin are Charlotte, Gastonia, Hickory, Lenoir, and Morganton, while those of the Broad River Basin are Shelby, Kings Mountain, Forest City, and Spindale.

CATAWBA RIVER AT CATAWBA

No. 601

LOCATION: Catawba County, Catawba River just below bridge on U. S. Highway No. 70, one-fourth mile above Lyle Creek, one-half mile above Southern R. R. bridge, and 1 mile northeast of Catawba.

DRAINAGE AREA: 1,540 square miles. (Including Lyle Creek.)

RECORDS AVAILABLE: Active station. July 4, 1896 to December 31, 1901; and November 15, 1934 to date.

EXTREMES: *Maximum* 81,500 second-feet, May 22, 1901;
Minimum 124 second-feet, August 1, 1937.

REMARKS: Automatic recorder installed November 14, 1934; staff gage prior to this date. Flow largely regulated by several reservoirs of Duke Power Company hydro stations. No diversions.

Old station (1896-1901) was located one-half mile downstream from present site.

CATAWBA RIVER AT CATAWBA

Drainage Area 1,540 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1896	16,100	770	9,929	789	4,466	865	1,939	6 months only	
1897	40,525	850	12,364	850	7,006	1,017	2,683	1.75	23.45
1898	52,600	1,000	12,498	1,120	7,250	1,322	3,245	2.11	28.67
1899	61,050	1,150	22,515	1,229	13,127	1,384	4,098	2.67	36.24
1900	No discharge records available for 1900.								
1901	79,625	2,000	22,109	2,135	10,326	2,311	5,933	3.44	44.48
Station discontinued December 31, 1901; re-established November 15, 1934.									
1934	4,850	155	3,253	1,435			2,523	1½ months only	
1935	9,830	140	5,544	1,456	3,860	1,524	2,269	7½ months only	
1936	19,300	136	10,021	946	5,393	1,184	2,681	1.74	23.68

LINVILLE RIVER AT BRANCH

No. 611

LOCATION: Burke County, Linville River at steel highway bridge at Branch, one-fourth mile above Lake James, 2 miles below mouth of Linville Gorge and 12 miles from Nebo.

DRAINAGE AREA: 65 square miles.

RECORDS AVAILABLE: Active station. June 7, 1922 to date.

EXTREMES: *Maximum* (estimated) 16,800 second-feet, August 15, 1928; *Minimum* 7 second-feet, September 8, 1925.

REMARKS: Automatic recorder installed July 5, 1937; staff gage prior to this date. No regulation and no diversions.

LINVILLE RIVER AT BRANCH

Drainage Area 65 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1922	430	31	189	38	164	42.4	91.2	6½ months only	
1923	1,620	29	597	37	310	45.7	144	2.21	29.99
1924	2,860	26	885	32	331	65.1	171	2.63	35.89
1925	380	8	230	12	185	13.8	72.2	1.11	15.06
1926	1,260	10	361	13	200	33.9	117	1.80	24.44
1927	1,780	23	450	25	240	37.0	124	1.91	25.84
1928	6,640	50	1,855	67	601	71.4	194	2.98	40.66
1929	2,620	28	844	39	411	64.1	196	3.02	40.97
1930	446	13	222	15	135	23.0	70.4	1.08	14.75
1931	868	20	511	24	283	27.7	101	1.55	21.03
1932	2,860	10	828	13	268	26.6	142	2.18	29.81
1933	2,730	28	781	36	299	44.3	126	1.94	26.31
1934	1,390	33	610	44	286	66.1	144	2.22	30.04
1935	3,280	35	835	42	348	56.0	156	2.40	32.49
1936	5,000	30	1,172	37	396	45.3	183	2.82	38.20

LINVILLE RIVER AT BRANCH

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
5											
10	8	1						3			
15	45	8				10		14			
25	89	23	5			61	20	57			
35	121	50	23		3	107	62	78	16	4	3
50	168	106	88	1	20	154	104	98	92	39	44
75	220	169	145	31	53	223	184	125	142	122	114
100	267	202	189	119	96	293	260	185	185	204	173
125	312	245	250	187	176	327	301	230	241	256	229
150	332	281	278	233	220	349	318	265	277	284	259
200	348	316	316	282	281	358	334	305	315	313	294
400	365	358	353	348	340	362	354	349	357	347	350
600		362	361	357	353	365	362	358	363	353	358
1,000		363	364	362	358		365	363	364	361	360
2,000		365	365	364	362			365	364	365	364
4,000				365	365			366	365		365
7,000				366							

LITTLE SUGAR CREEK NEAR CHARLOTTE

No. 613

LOCATION: Mecklenburg County, Little Sugar Creek, 400 feet above Charlotte sewage disposal plant, one-half mile below Brier Creek and 5 miles south of Charlotte.

DRAINAGE AREA: 41.4 square miles.

RECORDS AVAILABLE: Active station. July 3, 1924 to date.

EXTREMES: *Maximum* 8,370 second-feet, April 6, 1936;
Minimum 1.6 second-feet, July 30, August 1, 1925.

REMARKS: Automatic recorder installed April 21, 1927; staff gage prior to this date. Some regulation caused by Charlotte storm sewers and industrial wastes. No diversions. Zero of gage is 571.6 feet above mean sea level.

LITTLE SUGAR CREEK NEAR CHARLOTTE

Drainage Area 41.4 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	452	7.2	310	10.5	107	12	43.0	5½ mon	ths only
1925	1,780	1.6	392	2.2	194	3.1	34	0.82	11.17
1926	1,340	3.2	216	3.5	92.8	3.9	30.1	0.739	9.75
1927	832	3.2	292	4.3	135	8.2	32.6	0.79	10.72
1928	2,770	6.9	586	7.8	229	15.3	66.8	1.61	21.87
1929	1,860	7.9	525	11	183	19	67	1.62	21.78
1930	344	4.6	123	5	63.5	6.1	29.8	0.72	9.76
1931	844	4.6	180	5	108	5.7	37.8	0.913	12.39
1932	1,200	5.0	317	6.1	113	13.2	59.1	1.43	19.41
1933	2,070	6.3	476	8.1	121	10.6	37.3	0.905	12.21
1934	1,080	6.3	288	7.9	128	17.1	38.3	0.925	12.56
1935	760	6.6	192	7.8	91.5	9.8	40.7	0.983	13.35
1936	3,580	6.6	968	8.4	283	17.4	95.4	2.30	31.38

LITTLE SUGAR CREEK NEAR CHARLOTTE

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
2	17										
3	54										
4	80	39	4								
5	94	65	25			10	9	2			
6	106	105	57			38	54	17			
7	138	128	98	2		63	73	34	13	12	4
8	159	143	117	9	2	74	85	45	36	21	14
10	186	184	169	19	18	115	120	72	130	71	77
12	196	205	202	34	41	144	136	91	167	125	120
15	221	225	234	76	65	179	152	109	185	180	153
20	241	254	282	143	129	216	214	154	213	240	197
25	274	292	302	194	166	238	254	202	242	262	244
30	297	312	311	229	200	272	268	227	275	285	273
40	323	331	320	269	239	299	298	274	303	303	293
50	336	340	329	290	266	317	311	287	316	318	310
75	345	349	338	315	307	336	330	317	344	330	328
100	347	351	347	327	320	346	340	325	348	339	338
200	354	357	355	350	344	361	355	346	357	355	353
400	361	360	358	357	357	365	361	357	362	360	360
600	362	362	362	362	360		362	359	363	363	363
1,000	364	364	365	362	362		365	364	364	364	365
2,800	365	365		366	365			366	365	365	

JOHNS RIVER NEAR MORGANTON

No. 602

LOCATION: Burke County, Johns River at highway bridge on road from Morganton to Lenoir.

DRAINAGE AREA: 213 square miles.

RECORDS AVAILABLE: Discontinued station. June 19, 1900 to December 31, 1901.

EXTREMES: *Maximum* stage 20.5 feet, May 22, 1901 (discharge not determined); *Minimum* 80 second-feet, September 10 to 13, 1900.

REMARKS: Wire gage. No regulation.

JOHNS RIVER NEAR MORGANTON

Drainage Area 213 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1900	7,740	80	1,838	118	872	168	424	6 months only	
1901	11,200	233	3,894	281	1,910	352	1,000	4.69	63.75

LINVILLE RIVER NEAR BRIDGEWATER

No. 603

LOCATION: Burke County, Linville River at Poole's Mill just above the ford on road from Morganton to Marion, and about 4 miles from Bridgewater.

DRAINAGE AREA: 86.2 square miles.

RECORDS AVAILABLE: Discontinued station. July 3, 1900 to October 14, 1900.

EXTREMES: *Maximum* stage 10.33 feet, September 12 and 13, 1900;
Minimum stage 7.5 feet, September 16, 1900. (Discharge not determined in either case.)

REMARKS: Staff gage. Negligible regulation.

LINVILLE RIVER NEAR BRIDGEWATER

Drainage Area 86.2 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1900	1,040	59	215	68	199	85.9	140	3 months only	

CATAWBA RIVER NEAR MORGANTON

No. 604

LOCATION: Burke County, Catawba River at highway bridge on road from Morganton to Hartland, 200 yards below mouth of Upper Creek and one mile north of Morganton.

DRAINAGE AREA: 758 square miles.

RECORDS AVAILABLE: Discontinued station. May 6, 1903 to June 30, 1906 and January 16, 1907 to June 30, 1909.

EXTREMES: *Maximum* stage 16.3 feet, May 21, 1909;
Minimum stage 0.85 feet, October 17, 1904. (Discharge not determined in either case.)

REMARKS: Chain gage. Some regulation at low water from operation of mills above.

CATAWBA RIVER NEAR MORGANTON

Drainage Area 758 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1903	17,040	367	6,788	526	3,476	579	1,199	8 months only	
1904	15,480	280	4,239	312	1,878	338	962	1.27	17.32
1905	19,965	435	8,136	465	3,290	476	1,581	11 months only	
1906	24,200	740	6,917	903	3,360	1,180	2,088	6 months only	
1907	16,400	435	3,970	499	2,120	585	1,189	11 months only	
1908	28,400	740	11,677	820	4,710	1,250	2,400	3.17	43.20
1909	32,200	840	11,043	1,077	4,310	1,930	2,772	6 months only	

LINVILLE RIVER AT FONTA FLORA

No. 605

LOCATION: Burke County, Linville River at footbridge one-half mile east of Fonta Flora.

DRAINAGE AREA: 67 square miles.

RECORDS AVAILABLE: Discontinued station. May 20, 1907 to December 31, 1908.

EXTREMES: *Maximum* stage 5.3 feet, February 15, 1908 (discharge not determined);
Minimum 40 second-feet, September 4 and 5, 1907.

REMARKS: Staff gage. No regulation.

LINVILLE RIVER AT FONTA FLORA

Drainage Area 67 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	1,390	40	424	47	277	71	141	8 months only	
1908	2,700	40	884	82	384	123	234	11 months only	

CATAWBA RIVER AT OLD FORT

No. 606

LOCATION: McDowell County, Catawba River, one-fourth mile above mouth of Brevard Creek, 1 mile below mouth of Curtis Creek and 2½ miles downstream from Old Fort.

DRAINAGE AREA: 57.1 square miles.

RECORDS AVAILABLE: Discontinued station. May 24, 1907 to December 31, 1907; and August 13, 1930 to July 31, 1931.

EXTREMES: *Maximum* 870 second-feet, April 4, 1931;
Minimum 16 second-feet, October 20, 1930.

REMARKS: Staff gage. Slight regulation from operation of processing plants above. No diversions. Description above is for station 1930-1931. Old station, 1907, was one-fourth mile above mouth of Mill Creek, one-half mile south of Old Fort, and had a drainage area of 14.7 square miles.

CATAWBA RIVER AT OLD FORT

Drainage Area 57.1 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	60	8	33	13	25	22	25	7 month	s only
Station disc	ontinued	Decemb	er 31, 19	07; re-es	tablished	August	13, 1930.		
1930	270	16	92	19	62.8	20.5	36.8	4½ mon	ths only
1931	515	33	279	37	160	42.4	76	7 month	s only

MILL CREEK AT OLD FORT

No. 607

LOCATION: McDowell County, Mill Creek at highway bridge 700 feet above Southern R. R. bridge and three-fourths mile upstream from Old Fort and confluence with Catawba River.

DRAINAGE AREA: 20.7 square miles.

RECORDS AVAILABLE: Discontinued station. May 24, 1907 to December 31, 1907; and August 13, 1930 to July 31, 1931.

EXTREMES: *Maximum* 248 second-feet, April 4, 1931;
Minimum 4.7 second-feet, September 3 and 4, 1930.

REMARKS: Staff gage. No regulation; no diversions. Description above is for 1930-1931 location of station. Old location, 1907, was a short distance above the mouth of Mill Creek at Old Fort, drainage area 21.2 square miles.

MILL CREEK AT OLD FORT

Drainage Area 20.7 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	200	5	72	6	47	20	34	7 months only	
Station discontinued December 31, 1907; re-established August 12, 1930.									
1930	79	4.7	29	5.6	19.5	6.38	12	4½ months only	
1931	207	12	91	13.8	56.6	14.4	27.7	7 months only	

JOHNS RIVER AT COLLETTSVILLE

No. 608

LOCATION: Caldwell County, Johns River just above mouth of Mulberry Creek in Collettsville.

DRAINAGE AREA: 69 square miles.

RECORDS AVAILABLE: Discontinued station. May 25, 1907 to July 31, 1907.

EXTREMES: *Maximum* stage 7.5 feet, June 1, 1907 (discharge not determined); *Minimum* 98 second-feet, several times during May, 1907.

REMARKS: Staff gage. No regulation.

JOHNS RIVER AT COLLETTSVILLE

Drainage Area 69 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	1,320	98	363	126	209	136	163	2 months only	

CATAWBA RIVER AT RHODHISS

No. 609

LOCATION: Caldwell County, Catawba River at Highway bridge, 1,000 feet below dam of Rhodhiss Manufacturing Company and one mile from Rhodhiss.

DRAINAGE AREA: 1,180 square miles.

RECORDS AVAILABLE: Discontinued station. April 13, 1917 to March 31, 1920.

EXTREMES: *Maximum* 52,900 second-feet, October 26, 1918;
Minimum 100 second-feet, November 16, 17, and December 6, 1919.

REMARKS: Chain gage. Regulation during low flow from operation of mill just above.

CATAWBA RIVER AT RHODHISS

Drainage Area 1,180 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1917	15,400	600	3,263	838	1,920	921	1,349	8½ mon	ths only
1918	39,800	685	11,331	756	5,070	1,060	2,350	1.99	27.12
1919	20,600	100	9,204	758	4,340	1,080	2,473	2.10	28.52
1920	8,280	630	2,164	1,007	1,750	1,430	1,601	3 month	s only

WILSON CREEK NEAR ADAKO

No. 610

LOCATION: Caldwell County, Wilson Creek, 3 miles above junction with Johns River, 4½ miles below mouth of Harpers Creek and 2½ miles northwest of Adako.

DRAINAGE AREA: 66 square miles.

RECORDS AVAILABLE: Discontinued station. July 27, 1921 to May 31, 1922.

EXTREMES: *Maximum* 7,500 second-feet, July 1916;
Minimum 52 second-feet, October 21 to 27, 1921.

REMARKS: Staff gage. No regulation.

WILSON CREEK NEAR ADAKO

Drainage Area 66 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1921	385	52	231	52	143	81.9	104	5 months only	
1922	473	72	305	86	207	110	166	5 months only	

LONG CREEK NEAR GASTONIA

No. 612

LOCATION: Gaston County, Long Creek at Gastonia water supply pumping station, 1,000 feet below Carolina and Northwestern R. R. bridge, about 5 miles above the mouth of the creek and about 2 miles north of Gastonia.

DRAINAGE AREA: 41.9 square miles.

RECORDS AVAILABLE: Discontinued station. November 28, 1923 to September 30, 1924.

EXTREMES: *Maximum* 1,390 second-feet, September 30, 1924;
Minimum 16 second-feet, several times in September, 1924.

REMARKS: Staff gage. No regulation and no diversions.

LONG CREEK NEAR GASTONIA

Drainage Area 41.9 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1923	300	19	85	31			47	1 month	only
1924	1,190	19	309	21	109	28.4	72	9 months	only

HENRY FORK NEAR HENRY RIVER

No. 614

LOCATION: Burke County, Henry Fork at highway bridge on Hickory-Shelby county road, at site of old Link Ford, 2 miles downstream from Henry River village.

DRAINAGE AREA: 80 square miles.

RECORDS AVAILABLE: Discontinued station. July 26, 1925 to November 30, 1931.

EXTREMES: *Maximum* 20,300 second-feet, October 2, 1929;
Minimum 4.1 second-feet, July 19, 20, 1926.

REMARKS: Automatic recorder. Completely regulated by dam of Henry River Manufacturing Company. Water supply of Morganton and part of supply of State Hospital for Insane taken from headwaters of Henry Fork and wasted into Catawba drainage. Daily diversion estimated as 5 second-feet.

HENRY FORK NEAR HENRY RIVER

Drainage Area 80 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	242	7.7	104	18	55.4	30.5	40.9	5 months only	
1926	2,330	4.1	467	19	162	25.6	72	0.90	12.14
1927	1,040	8.1	360	28	160	35.3	67	0.838	11.32
1928	8,080	23	1,583	57	614	72.2	155	1.94	26.37
1929	12,600	47	2,400	61	645	81.9	198	2.48	33.63
1930	978	6.2	240	23	134	27.6	77	0.962	13.07
1931	1,160	13	480	26	210	34.5	94.9	11 months only	

CATAWBA CREEK AT GASTONIA

No. 615

LOCATION: Gaston County, Catawba Creek just upstream from sewage disposal plant, 1 mile south of Gastonia.

DRAINAGE AREA: 2.4 square miles.

RECORDS AVAILABLE: Discontinued station. October 28, 1928 to February 28, 1929.

EXTREMES: *Maximum* 109 second-feet, February 6, 1929;
Minimum 0.3 second-feet, November 7 and 30, 1928.

REMARKS: Staff gage. Most of drainage area lies within the city of Gastonia and the run-off is partly diverted by storm sewers.

CATAWBA CREEK AT GASTONIA

Drainage Area 2.4 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	15.0	0.6	3.1	0.7	1.52	0.814	1.21	2 months only	
1929	76	1.2	15.7	2.5	12.7	2.94	7.55	2 months only	

SECOND BROAD RIVER AT CLIFFSIDE

No. 706

LOCATION: Rutherford County, Second Broad River at Cliffside, one-fourth mile below dam of Cliffside mills and 2 miles above mouth of river.

DRAINAGE AREA: 230 square miles.

RECORDS AVAILABLE: Active station. June 20, 1925 to date.

EXTREMES: *Maximum* 15,000 second-feet, August 16, 1928;
Minimum 8 second-feet, July 26, 1934.

REMARKS: Automatic recorder entire record. Large diurnal fluctuation caused by operation of Cliffside mills. No diversions.

SECOND BROAD RIVER AT CLIFFSIDE

Drainage Area 230 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	887	32	348	67	178	123	127	6½ mon	ths only
1926	1,670	26	948	41	375	66.8	200	0.87	11.82
1927	1,340	18	721	81	344	106	196	0.852	11.58
1928	13,200	43	3,725	145	1,420	189	360	1.56	21.30
1929	9,620	74	2,750	163	928	212	449	1.95	26.47
1930	915	29	524	102	353	120	229	0.996	13.49
1931	2,290	11	808	62	575	79	258	1.12	15.22
1932	4,790	14	1,553	78	692	108	355	1.54	20.95
1933	1,500	20	625	129	454	155	271	1.18	16.02
1934	3,450	75	1,151	143	613	190	322	1.40	19.07
1935	1,910	41	775	101	506	124	269	1.17	15.86
1936	6,240	76	2,704	155	1,044	166	469	2.04	27.74

SECOND BROAD RIVER AT CLIFFSIDE

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
25		4	5				7	5	1		
50		33	22	2		7	16	11	1		2
75		61	32	4	1	20	30	16	2	1	5
100		104	65	10	1	34	59	35	23	6	19
125		165	123	22	6	58	97	62	35	26	40
150		203	186	41	16	97	136	87	63	51	81
175		235	233	77	30	136	163	119	109	93	131
200		254	259	133	47	175	190	141	151	138	166
225		270	282	188	73	203	234	174	182	180	188
250		286	302	214	103	232	263	204	200	222	211
300		311	322	272	171	283	284	255	241	274	269
400		336	340	316	268	339	320	295	302	310	324
500		348	346	330	299	357	333	315	344	328	340
600		354	350	338	319	360	342	326	353	336	348
800		357	356	352	338	362	349	340	362	343	355
1,000		360	362	355	347	365	352	346	363	347	360
2,000		363	365	361	358		364	359	365	360	365
4,000		365		361	363		365	364		365	
8,000				365	364			366			
14,000				366	365						

BROAD RIVER NEAR BOILING SPRINGS

No. 707

LOCATION: Cleveland County, Broad River, one-half mile above mouth of Sandy Run Creek and 3½ miles southwest of Boiling Springs.

DRAINAGE AREA: 815 square miles.

RECORDS AVAILABLE: Active station. June 26, 1925 to date.

EXTREMES: *Maximum* 56,800 second-feet, August 16, 1928;
Minimum 186 second-feet, September 21-22, 1925.

REMARKS: Automatic recorder entire record. Considerable diurnal fluctuation caused by operation of Cliffside Mills and Tuxedo hydro plant of Duke Power Company above. No diversions.

BROAD RIVER NEAR BOILING SPRINGS

Drainage Area 815 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max	Min.	Max.	Min.	Max.	Min.			
1925	4,050	232	1,470	281	835	357	566	6 months only	
1926	8,440	249	3,339	331	1,540	408	920	1.13	15.36
1927	4,980	330	2,780	361	1,540	505	925	11½ months only	
1928	51,200	550	17,300	795	6,260	880	1,840	2.26	30.72
1929	28,500	658	8,930	813	3,680	1,020	2,140	2.63	35.62
1930	3,760	283	2,180	380	1,720	429	1,020	1.25	17.00
1931	7,440	247	2,880	313	1,960	362	1,060	1.30	17.60
1932	22,100	312	7,555	411	2,640	547	1,594	1.96	26.55
1933	5,280	355	2,756	505	2,070	604	1,277	1.57	21.27
1934	9,220	530	3,861	757	2,640	829	1,413	1.73	23.57
1935	9,440	322	4,617	563	2,680	635	1,393	1.71	23.17
1936	21,700	511	10,231	784	4,525	1,010	2,177	2.67	36.35

BROAD RIVER NEAR BOILING SPRINGS

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
250		1					1				
300		6				3	15				
350		24				27	35	3			2
400		57				32	52	9	5		6
450		71				70	70	18	11		9
500		102				70	81	29	13		11
600		145		2		103	103	40	45	11	19
700		185		15	3	142	129	62	75	26	49
800		209		21	6	161	160	80	109	65	67
900		235		54	20	185	196	107	135	116	93
1,000		254		90	29	201	222	131	170	148	125
1,200		296		143	66	236	267	183	201	213	186
1,400		316		214	109	267	298	225	238	257	225
1,600		327		261	161	302	315	262	266	285	283
1,800		339		288	211	333	327	289	293	303	303
2,000		343		314	247	351	334	302	309	313	318
2,500		355		326	292	360	346	325	346	334	342
3,000		356		339	322	361	352	336	357	344	350
4,000		362		353	345	365	357	347	362	353	359
6,000		363		358	353		364	362	365	360	362
10,000		365		361	361		365	363		365	365
25,000				364	364			366			
52,000				366	365						

BROAD RIVER NEAR CHIMNEY ROCK

No. 708

LOCATION: Rutherford County, Broad River just below Lake Lure Dam, 3 miles east of Chimney Rock and 1½ miles above former gaging station at Uree (No. 703).

DRAINAGE AREA: 97 square miles.

RECORDS AVAILABLE: Active station. March 10, 1927 to date.

EXTREMES: *Maximum* 20,500 second-feet, August 15, 1928;
Minimum 0.7 second-feet, September 13, 1928.

REMARKS: Automatic recorder entire record. Daily regulation caused by operation of power plant just above. Low flow regulated considerably by storage in Lake Lure. No diversions.

BROAD RIVER NEAR CHIMNEY ROCK

Drainage Area 97 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	417	1.2	256	25	163	54.7	94.9	9½ mon	ths only
1928	9,460	0.8	3,000	1.8	925	106	229	2.36	32.32
1929	1,950	3.3	904	99	461	132	261	2.69	36.48
1930	478	1.3	261	26	210	42.5	116	1.20	16.18
1931	452	1.2	315	21	216	32.9	95.2	0.981	13.31
1932	2,100	1.5	727	18	275	46.3	156	1.61	21.75
1933	1,040	1.9	514	51	259	65.7	143	1.48	19.99
1934	816	2.0	391	63	234	94.3	147	1.52	20.62
1935	1,450	2.4	649	70	320	90.7	178	1.84	24.86
1936	5,420	2.2	1,289	87	556	113	267	2.75	37.51

SECOND BROAD RIVER NEAR LOGANS STORE

No. 701

LOCATION: Rutherford County, Second Broad River, 2 miles above the mouth of Catheys Creek, 2 miles south of Logans Store and 6 miles northeast of Rutherfordton.

DRAINAGE AREA: 98 square miles.

RECORDS AVAILABLE: Discontinued station. May 16, 1907 to June 30, 1908.

EXTREMES: *Maximum* stage 9.0 feet, December 23, 1907 (discharge not determined);
Minimum 60 second-feet, September 20 to 22, 1907.

REMARKS: Staff gage. No regulation.

SECOND BROAD RIVER NEAR LOGANS STORE

Drainage Area 98 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	190	60	146	65	120	74	93.6	6½ mon	ths only
1908	190	82	164	101	142	113	131	6 month	s only

GREEN RIVER NEAR SALUDA

No. 702

LOCATION: Henderson County, Green River, one mile above mouth of Hungry Creek at steel bridge 3 miles west of Saluda and 5 miles southeast of Hendersonville.

DRAINAGE AREA: 51 square miles.

RECORDS AVAILABLE: Discontinued station. May 9, 1907 to June 30, 1909.

EXTREMES: *Maximum* 3,920 second-feet, February 15, 1908;
Minimum 40 second-feet, several times in August, September, and November, 1907.

REMARKS: Chain gage. No regulation.

GREEN RIVER NEAR SALUDA

Drainage Area 51 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max	Min.	Max.	Min.	Max.	Min.			
1907	1,340	40	486	47	299	57.5	122	7½ mon	ths only
1908	3,920	66	1,014	87	424	116	205	4.01	54.44
1909	2,630	130	1,029	142	487	189	282	6 month	s only

BROAD RIVER AT UREE

No. 703

LOCATION: Rutherford County, Broad River at Uree, 3 miles below mouth of Buffalo Creek and 4 miles above mouth of Cove Creek.

DRAINAGE AREA: 100 square miles.

RECORDS AVAILABLE: Discontinued station. May 17, 1907 to June 30, 1909.

EXTREMES: *Maximum* (estimated) 5,400 second-feet, August 25, 1908; *Minimum* 117 second-feet, a number of times in 1907.

REMARKS: Staff gage. No regulation.

BROAD RIVER AT UREE

Drainage Area 100 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max	Min.	Max.	Min.			
1907	910	62	286	75	205	79	135	7 months only	
1908	5,400	149	1,235	159	508	191	276	2.76	37.61
1909	2,340	183	592	223	434	260	338	6 months only	

NORTH PACOLET RIVER NEAR TRYON

No. 704

LOCATION: Polk County, North Pacolet River below mouth of Horseshoe Creek, 1½ miles above South Carolina State Line and 4 miles from Tryon.

DRAINAGE AREA: 49 square miles.

RECORDS AVAILABLE: Discontinued station. May 16, 1924 to December 12, 1925.

EXTREMES: *Maximum* 610 second-feet, November 12, 1925;
Minimum 8 second-feet, September 5 and 17, 1925.

REMARKS: Staff gage. Regulation at low stages from operation of mills above. No diversions.

NORTH PACOLET RIVER NEAR TRYON

Drainage Area 49 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	290	34	151	41	86.1	52.9	69.9	7½ mon	ths only
1925	356	8	183	14	126	16.8	53.8	1.10	14.15

SANDY RUN RIVER NEAR BOILING SPRINGS

No. 705

LOCATION: Cleveland County, Sandy Run River at highway bridge, one-half mile below mouth of Gray Creek, 1½ miles above confluence with Broad River and 2½ miles southwest of Boiling Springs.

DRAINAGE AREA: 67 square miles.

RECORDS AVAILABLE: Discontinued station. May 5, 1925 to December 31, 1928.

EXTREMES: *Maximum* 6,400 second-feet (estimated), August 16, 1928; *Minimum* 14 second-feet, several times in September and November, 1926.

REMARKS: Staff gage. May be slight regulation from operation of small grist mills above. No diversions.

SANDY RUN RIVER NEAR BOILING SPRINGS

Drainage Area 67 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	679	14	139	17	62.8	26	42.9	8 months only	
1926	898	14	258	15	148	25.2	79.9	1.19	16.19
1927	725	15	330	20	163	28.4	66.1	0.986	13.40
1928	3,520	36	819	39	347	45.5	92.5	1.38	18.80

CHAPTER 8

THE NEW AND WATAUGA RIVER BASINS

The New and Watauga River basins are located in the extreme northwestern part of North Carolina. These basins, both on the western side of the Divide, empty their waters ultimately into the Gulf of Mexico, the New River through the Ohio River system, and the Watauga River through the Holston River and Tennessee River system. The New River Basin has a drainage area of 760 square miles and the Watauga, a drainage area of 220 square miles.

The topography of the New and Watauga River basins is characterized by numerous high mountains with steep slopes, interspersed with lower mountains with more gentle slopes, and smooth, gently rolling country between. The highest elevation is that of Peak Mountain, in Ashe County, which is 5,195 feet.

The South Fork of the New River rises on the northwest slope of the Blue Ridge Mountains in the east central part of Watauga County. It flows in a general northeasterly and then northerly course to join the North Fork of the New River about 5 miles south of the North Carolina-Virginia State Line. From this point, known as the New River, it flows northwardly through Virginia to join the Kanawha River, which in turn flows into the Ohio River. The South Fork is the principal tributary of the main stream.

The North Fork of the New River originates in the western part of Ashe County and flows northeasterly to join the South Fork. The principal tributary of the North Fork of the New River is Horse Creek, which joins the river near Berlin in Ashe County.

At the state line the New River has an elevation of about 2,435 feet. Five miles above, at the confluence of the North and South Forks, the river has an elevation of approximately 2,460 feet. Ninety miles above this point, the South Fork has an elevation of 2,850 feet. Both streams have a rather uniform gradient throughout their entire length.

The Watauga River rises on the north slope of Grandfather Mountain in the central part of Watauga County. The river flows northwestwardly into Tennessee to join the Holston River. At the Tennessee State Line the Watauga River has an elevation of about 2,130 feet, and 30 miles above this point it has an elevation of approximately 2,950 feet. The gradient of the upper portion of this stream is quite steep.

The area covered by these basins consists of approximately 50 per cent forest lands. The remainder is cultivated land, farm woodland and woodland pasture.

The mean annual temperature varies from 50 to 53 degrees, with a mean for the area of 52 degrees. Mean annual rainfall for the area is about 50 inches.

NORTH FORK NEW RIVER AT CRUMPLER

No. 902

LOCATION: Ashe County, North Fork New River, one-fourth mile below bridge on State Highway at Crumpler, 6 miles above confluence with South Fork New River and 10 miles north of Jefferson.

DRAINAGE AREA: 277 square miles.

RECORDS AVAILABLE: Active station. August 12, 1908 to September 30, 1916; and July 11, 1928 to date.

EXTREMES: *Maximum* 24,000 second-feet, July 15, 1916;
Minimum 38 second-feet, September 19, 1932.

REMARKS: Automatic recorder installed November 16, 1930; chain and staff gages prior to this date. Some regulation at low flow due to operation of small hydro plant at Creston. No diversions.

NORTH FORK NEW RIVER AT CRUMPLER

Drainage Area 277 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1908	4,320	200	1,390	208	920	294	455	4½ mon	ths only
1909	3,930	166	1,580	185	969	207	580	2.08	28.12
1910	2,150	138	1,273	187	663	210	394	1.41	19.13
1911	3,180	130	1,567	142	1,070	200	461	1.65	22.39
1912	2,940	147	1,620	169	1,010	189	424	1.52	20.69
1913	7,110	156	2,192	178	1,170	243	436	1.56	21.30
1914	3,930	108	1,872	128	1,130	146	443	1.58	21.55
1915	4,980	147	1,632	184	855	233	489	1.75	23.74
1916	17,700	166	5,782	202	2,120	288	739	9 month	s only
Station disc	ontinued	Septemb	er 30, 19	16; re-es	tablished	July 11,	1928.		
1929	5,600	220	1,560	306	870	663	859	5 month	s only
1930	2,080	56	1,070	84	761	105	321	1.16	15.69
1931	2,040	90	1,406	110	785	116	361	1.30	17.72
1932	2,940	53	1,564	76	842	98	470	1.70	23.11
1933	2,200	88	1,375	94	963	117	407	1.48	19.95
1934	2,810	100	1,544	115	863	156	394	1.42	19.32
1935	5,270	165	1,955	195	1,183	234	581	2.10	28.47
1936	3,170	114	1,735	139	1,147	195	544	1.96	26.72

NORTH FORK NEW RIVER AT CRUMPLER

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50											
75						17		14			
100						54	3	29	23	2	
125						88	35	50	74	14	
150						115	60	64	94	40	
175						146	83	73	116	70	3
200						159	108	85	136	104	25
250						190	153	113	167	161	62
300						216	195	148	186	203	107
350						247	236	175	198	238	138
400						270	267	207	211	271	166
450						296	278	226	241	290	201
500						312	293	242	258	301	222
600						328	320	272	289	322	257
700						336	334	298	310	331	282
800						344	338	315	327	334	300
900						349	346	331	339	339	313
1,000						351	348	338	344	342	326
1,500						361	361	357	357	355	349
2,000						364	362	360	364	359	354
2,500						365	365	363	365	361	359
3,000								366		365	361
4,000											363
6,000											365

SOUTH FORK NEW RIVER NEAR JEFFERSON

No. 904

LOCATION: Ashe County, South Fork New River, 400 feet above bridge on State Highway, one-fourth mile below Bear Creek, 1½ miles above Roan and Naked creeks, 26 miles above confluence with North Fork New River and 4 miles southeast of Jefferson.

DRAINAGE AREA: 207 square miles.

RECORDS AVAILABLE: Active station. October 23, 1924 to September 30, 1926; July 1, 1928 to December 31, 1928; and October 1, 1929 to date.

EXTREMES: *Maximum* 6,930 second-feet, January 9, 1935;
Minimum 65 second-feet, September 9, 1925.

REMARKS: Automatic recorder installed August, 1934; chain gage prior to this date. Slight diurnal fluctuation due to operation of minor power plants above. No diversions.

SOUTH FORK NEW RIVER NEAR JEFFERSON

Drainage Area 207 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max	Min.	Max.	Min.			
1924	2,490	278	815	299	522	322	428	2 months only	
1925	1,440	65	581	74	495	93.7	256	1.24	16.15
1926	2,660	82	1,203	102	544	183	359	9 months only	
Station discontinued September 30, 1926, re-established July 1, 1928.									
1928	6,310	225	2,175	276	1,190	365	701	6 months only	
1929	3,740	177	1,611	211	1,060	281	588	2.84	38.60
1930	1,320	74	745	89	501	111	277	1.34	18.14
1931	1,920	111	793	115	549	124	304	1.47	19.94
1932	5,310	94	1,643	112	696	169	431	2.08	28.33
1933	2,600	120	1,482	134	888	146	429	2.08	28.12
1934	2,820	131	1,472	164	658	197	402	1.94	26.41
1935	4,350	195	1,475	221	842	293	501	2.42	32.84
1936	2,460	128	1,112	155	773	195	440	2.13	28.97

SOUTH FORK NEW RIVER NEAR JEFFERSON

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50											
75	9					2					
100	54					29		4			
125	82					67	36	26	3		
150	104					108	63	41	35	3	
175	121					132	84	62	76	29	
200	138					162	121	79	100	45	1
250	199					196	191	106	139	122	33
300	251					229	245	148	164	180	98
350	293					260	277	180	189	221	144
400	320					286	303	215	197	263	174
450	334					312	316	245	218	287	206
500	343					330	331	280	239	296	241
600	355					351	343	304	281	321	281
700	362					357	344	322	319	334	307
800	363					361	346	334	328	341	329
900	364					361	352	344	347	345	338
1,000	364					361	355	347	349	349	348
1,500	365					365	363	359	363	356	358
2,000							365	364	364	360	362
2,500								365	364	363	362
3,000								365	365	365	364
6,000								366			365

SOUTH FORK NEW RIVER NEAR CRUMPLER

No. 901

LOCATION: Ashe County, South Fork New River, 1.6 miles above confluence with North Fork, and 4 miles from Crumpler.

DRAINAGE AREA: 325 square miles.

RECORDS AVAILABLE: Discontinued station. August 12, 1908 to September 30, 1916.

EXTREMES: *Maximum* 46,000 second-feet, July 15, 1916;
Minimum 205 second-feet, July 27, 1911.

REMARKS: Chain gage.

SOUTH FORK NEW RIVER NEAR CRUMPLER

Drainage Area 325 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1908	8,540	420	2,833	455	1,250	604	690	4½ months only	
1909	9,200	340	3,210	344	1,610	381	816	2.51	34.03
1910	3,020	318	1,490	337	747	374	544	1.67	22.71
1911	3,540	205	1,336	214	1,030	297	515	1.58	21.48
1912	2,530	275	1,680	305	1,030	359	579	1.78	24.28
1913	8,320	340	2,810	355	1,420	426	688	2.12	28.79
1914	5,820	220	2,967	256	1,710	288	652	2.01	27.21
1915	5,620	295	2,119	375	1,260	460	815	2.51	33.95
1916	30,500	391	9,443	459	4,220	559	1,239	9 months only	

NORTH FORK NEW RIVER NEAR WARRENVILLE

No. 903

LOCATION: Ashe County, North Fork New River at highway bridge, 2 miles west of Warrenville, just above mouth of Stagg Creek, 2½ miles above Buffalo Creek and 22 miles above confluence with South Fork New River.

DRAINAGE AREA: 113 square miles.

RECORDS AVAILABLE: Discontinued station. October 24, 1924 to September 30, 1926.

EXTREMES: *Maximum* (estimated) 1,790 second-feet, January 18, 1926; *Minimum* 25 second-feet, September 29, 30, 1925.

REMARKS: Chain gage. May be slight regulation due to operation of grist mills above. No diversions.

NORTH FORK NEW RIVER NEAR WARRENVILLE

Drainage Area 113 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	530	119	279	124	240	140	188	2 months only	
1925	590	26	311	28.4	258	35.2	134	1.19	16.14
1926	1,240	89	442	91.6	270	94.6	168	9 months only	

SOUTH FORK NEW RIVER AT BOWIE

No. 905

LOCATION: Ashe County, South Fork New River about 300 feet from Fleetwood Post Office at Bowie, one-fourth mile above mouth of Old Field Creek.

DRAINAGE AREA: 129 square miles.

RECORDS AVAILABLE: Discontinued station. August 17, 1925 to September 30, 1926.

EXTREMES: *Maximum* stage 5.47 feet, January 18, 1926;
Minimum stage 1.38 feet, August 23, 1925.

REMARKS: Staff gage. Daily regulation from operation of grist mills and small power plant for Boone above. No diversions. This station maintained for gage height records only. Discharge records have not been computed.

ELK CREEK NEAR ELK PARK

No. 1001

LOCATION: Avery County, Elk Creek, 1 mile below Little Elk Creek, 2 miles northeast of Elk Park, and 3 miles upstream from State Line.

DRAINAGE AREA: 42.7 square miles. Revised to 42.0 square miles.

RECORDS AVAILABLE: Active station. October 9, 1934 to date.

EXTREMES: *Maximum* 3,460 second-feet, January 9, 1935;
Minimum 9.5 second-feet, August 20, 1937.

REMARKS: Automatic recorder entire record. Slight regulation due to operation of two small power plants above. No diversions.

ELK CREEK NEAR ELK PARK

Drainage Area 42.7 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	555	26	245	32	95.5	40.9	73.9	3 months only	
1935	1,350	21	417	25	237	35	96.9	2.27	30.81
1936	1,100	15	421	18	246	30.4	105	2.50	34.03

ELK CREEK NEAR BANNERS ELK

No. 1002

LOCATION: Avery County, Elk Creek about 200 feet south of State Highway No. 194, 2 miles west of Banners Elk.

DRAINAGE AREA: 17.3 square miles. Revised to 17.8 square miles.

RECORDS AVAILABLE: Active station. October 20, 1934 to date.

EXTREMES: *Maximum* 1,930 second-feet, January 9, 1935;
Minimum stage (result of regulation) 0.68 feet, August 5, 1937; discharge not determined.

REMARKS: Automatic recorder entire record. Considerable fluctuation due to operation of Banners Elk power plant. No diversions.

ELK CREEK NEAR BANNERS ELK

Drainage Area 17.3 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	263	13	114	16	45.5	19.9	35.8	3 months only	
1935	610	11	198	14	96.2	18	45.1	2.61	35.45
1936	622	7	185	8	109	13.2	48.9	2.75	37.43

CHAPTER 9

THE FRENCH BROAD RIVER BASIN

The French Broad River Basin, located in the western part of North Carolina, extends entirely across the State from Tennessee to South Carolina. It is bounded on the east by the Broad and Catawba River basins and on the west by the Little Tennessee River Basin. The drainage area of the French Broad River Basin lying within this state covers 2,825 square miles.

The French Broad River Basin is located entirely in the Mountain Region. The south and east boundaries of the basin are formed by the Blue Ridge Mountains, the west by the Balsam Mountains and Tennessee Ridge, and on the northern part or North Carolina-Tennessee state line, are located the Great Smoky Mountains, through which the streams enter Tennessee. Included in the basin area are the New Found Mountains, Pisgah Ridge, Black, Bald, and Iron Mountains, and other lesser ranges. Highest elevation in the basin is attained at Mount Mitchell, elevation 6,684 feet, which is located near Asheville and has the distinction of being the highest peak east of the Rocky Mountains. The entire area is everywhere mountainous, but the topography is characterized by lower mountains or hills and valley lands lying between the higher ranges. The average elevation of the entire area is between 2,500 and 3,000 feet.

The French Broad River rises on the western slope of the Blue Ridge Mountains in Transylvania County. It flows northwesterly through the central part of the basin to enter Tennessee near Paint Rock in Madison County. From this point it flows for a distance of 102 miles through Tennessee to join the Holston River at Knoxville, to form the Tennessee River.

The stream has a rather uniform gradient from its source, elevation 2,100 feet, to Asheville, elevation 1,960, having an average slope of 2⅓ feet per mile. Below this point the gradient of the river becomes steeper, the average fall being about 16 feet per mile to the Tennessee state line, elevation 1,240 feet.

The Pigeon River, located in the western part of the basin, has a very steep gradient, averaging about 30 feet per mile from Canton to the Tennessee state line. This river joins the French Broad in Tennessee.

In the northeastern part of the basin are located the North and South Toe rivers. They join to form the Toe River near Burnsville in Yancey County, which flows northwestwardly, a distance of about 22 miles, where it is joined by the Cane River to form the Nolichucky River. This stream also joins the French Broad River in Tennessee.

Approximately 66 per cent of the area covered by the French Broad River basin consists of forest land, of which about 44 per cent is farm woodland.

The mean annual temperature varies between the extremes of 45 to 58 degrees, with a mean for the entire area of about 54 degrees. The mean annual rainfall increases from 45 inches in the northwestern part to 65-70 inches along the southeast boundary.

Asheville is the principal city located in the basin.

FRENCH BROAD RIVER AT ASHEVILLE

No. 1101

LOCATION: Buncombe County, French Broad River at Bingham School Bridge, 2¼ miles below Southern R. R. station at Asheville and 3 miles below mouth of Swannanoa River.

DRAINAGE AREA: 949 square miles. Revised to 945 square miles.

RECORDS AVAILABLE: Active station. September 2, 1895 to December 31, 1901; and March 19, 1903 to date.

EXTREMES: *Maximum* 110,000 second-feet, July 16, 1916;
Minimum 239 second-feet, at times in August and September, 1925.

REMARKS: Automatic recorder installed August 10, 1920; chain and staff gages prior to this date. Slight diurnal fluctuation caused by operation of small plants on tributaries. Negligible diversions. Zero of gage is 1950.6 feet above mean sea level.

FRENCH BROAD RIVER AT ASHEVILLE

Drainage Area 949 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1895	5,030	685	1,953	692	1,320	717	953	3½ months only	
1896	21,600	620	6,593	659	3,490	673	1,518	1.60	21.79
1897	12,500	585	6,869	591	4,610	661	1,956	2.06	27.76
1898	15,800	620	6,557	719	4,650	1,030	2,240	2.36	32.27
1899	29,800	660	15,579	743	9,740	925	3,319	3.50	47.33
1900	17,600	585	10,046	727	5,320	1,500	3,292	3.47	46.84
1901	26,900	1,610	14,746	1,783	9,390	1,890	4,626	4.88	66.42
Station discontinued December 31, 1901; re-established March 19, 1903.									
1903	12,400	600	10,056	664	5,670	788	2,585	9 months only	
1904	9,080	275	4,670	289	2,550	404	1,163	1.23	16.69
1905	18,600	600	10,730	790	4,990	819	2,276	2.40	32.69
1906	25,800	1,250	12,899	1,610	6,000	1,930	3,828	4.03	54.80
1907	8,780	460	4,473	476	2,990	570	1,640	1.73	23.47
1908	15,200	1,010	8,864	1,140	4,270	1,460	2,413	2.54	34.59
1909	15,200	1,010	8,923	1,126	5,770	1,180	2,715	2.86	38.80
1910	25,100	920	9,397	1,010	3,470	1,020	1,947	2.05	27.86
1911	9,070	590	4,887	636	3,790	915	1,610	1.70	22.98
1912	9,940	1,010	5,600	1,036	4,010	1,160	2,106	2.22	30.17
1913	16,200	830	9,229	933	5,460	1,150	2,123	2.24	30.43
1914	17,600	590	9,167	670	5,700	729	1,909	2.01	27.37
1915	15,200	1,190	6,917	1,219	4,870	1,700	2,806	2.96	40.04
1916	66,000	980	27,786	1,000	11,496	1,186	3,053	3.22	43.91
1917	9,770	680	5,149	821	4,370	914	1,850	1.95	26.46
1918	25,200	630	11,986	711	5,560	977	2,418	2.55	34.63
1919	9,190	700	6,143	757	4,250	938	2,288	2.41	32.74
1920	17,000	950	10,966	1,014	5,140	1,250	2,433	2.57	34.88
1921	10,200	680	4,759	737	3,910	1,060	2,153	2.27	30.63
1922	7,580	580	5,060	646	3,890	679	2,085	2.20	29.82
1923	8,940	686	5,771	765	3,560	836	1,957	2.06	27.99
1924	8,690	665	5,117	750	3,240	981	2,050	2.16	29.33
1925	7,730	239	5,043	260	3,370	329	1,150	1.21	16.41
1926	8,210	375	4,120	417	2,050	720	1,390	1.47	19.84
1927	6,780	504	4,343	562	2,720	851	1,470	1.55	21.07
1928	34,600	1,220	14,696	1,220	5,760	1,350	2,560	2.70	36.75
1929	14,400	750	8,813	861	5,970	1,120	2,860	3.02	40.99
1930	5,200	412	2,766	454	1,950	523	1,270	1.34	18.14
1931	6,090	375	4,160	394	3,070	449	1,350	1.42	19.36
1932	14,000	528	8,630	593	4,130	814	2,222	2.34	31.91
1933	7,010	650	4,751	654	3,240	762	1,833	1.94	26.22
1934	10,300	827	4,936	853	3,430	1,330	1,948	2.05	27.90
1935	15,200	674	7,766	684	3,926	779	1,880	1.98	26.90
1936	14,400	632	9,871	823	5,517	1,015	2,604	2.76	37.57

FRENCH BROAD RIVER AT ASHEVILLE

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
200											
300	28										
400	54	4					7				
500	89	12				24	56				
600	107	28	10			79	74	10			
700	146	69	44			109	87	17	18		11
800	167	89	56		1	117	103	23	55		34
900	190	134	81		8	129	125	38	79	13	51
1,000	206	158	115		16	155	161	53	97	24	76
1,200	234	191	157		24	190	216	74	143	74	131
1,400	265	242	204	28	39	216	244	108	174	134	161
1,600	286	279	256	92	57	253	268	142	187	185	183
1,800	309	303	296	158	95	300	289	170	195	234	211
2,000	322	313	305	184	114	320	303	209	223	264	248
2,200	334	328	323	227	172	342	322	248	257	281	280
2,400	339	332	328	251	200	347	326	266	279	297	303
2,600	343	335	332	269	220	351	334	283	297	307	316
3,000	350	344	342	295	260	355	340	310	320	326	329
4,000	356	355	356	335	314	362	351	337	348	344	347
5,000	358	358	360	347	336	364	359	348	357	352	353
6,000	363	360	363	352	337	365	362	352	361	358	358
8,000	365	364	365	358	352		365	357	365	362	360
10,000		365		361	359			361		364	363
20,000				364	365			366		365	365
35,000				366							

FRENCH BROAD RIVER AT ROSMAN

No. 1107

LOCATION: Transylvania County, French Broad River at Rosman bridge on State Highway No. 283, one-half mile above East Fork, and 1¼ miles below the junction of North and West Forks.

DRAINAGE AREA: 66 square miles. Revised to 67.9 square miles.

RECORDS AVAILABLE: Active station. May 7, 1907 to June 30, 1909; and January 1, 1936 to date.

EXTREMES: *Maximum* 6,900 second-feet, February 14-15, 1908;
Minimum 63 second-feet, September 28, 1936.

REMARKS: Automatic recorder installed July 6, 1937; staff and wire-weight gages prior to this date. No regulation; no diversions. Zero of gage is 2,173.83 feet above mean sea level.

FRENCH BROAD RIVER AT ROSMAN

Drainage Area 66 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	1,510	90	490	99	355	117	181	7½ mon	ths only
1908	4,760	110	1,339	129	603	179	328	4.96	67.37
1909	4,180	133	1,492	178	882	299	497	6 month	s only
Station disc	ontinued	June 30,	1909; re-	establish	ed Janua	ry 1, 193	6.		
1936	2,150	65	955	74	545	98.2	260	3.83	52.13

PIGEON RIVER AT CANTON

No. 1109

LOCATION: Haywood County, Pigeon River, one-third mile upstream from State Highway bridge at Canton, one-half mile above Southern R. R. bridge and 1 mile above mouth of Beaverdam Creek.

DRAINAGE AREA: 134 square miles. Revised to 133 square miles.

RECORDS AVAILABLE: Active station. May 26, 1907 to June 30, 1909; and December 6, 1928 to date.

EXTREMES: *Maximum* 7,340 second-feet, October 17, 1932;
Minimum 39 second-feet, September 3, 1930.

REMARKS: Automatic recorder installed January 3, 1929; staff gage prior to this date. Slight diurnal fluctuation caused by operation of grist mills at Woodrow. No diversions. Zero of gage is 2,572.51 feet above mean sea level.

PIGEON RIVER AT CANTON

Drainage Area 134 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	2,100	105	439	105	324	125	202	7 months only	
1908	3,650	125	1,097	163	526	248	354	2.65	35.88
1909	3,320	265	1,373	290	884	423	615	6 months only	
Station discontinued June 30, 1909; reestablished December 6, 1928.									
1928	337	118	168	134			156	26 days only	
1929	4,520	76	1,881	86	1,100	129	443	3.30	44.89
1930	1,080	44	458	50	335	61.1	180	1.34	18.19
1931	2,510	46	891	47	653	56.4	221	1.65	22.34
1932	3,840	50	1,752	56	872	80.2	383	2.86	38.92
1933	2,790	77	963	78	543	98.9	281	2.11	28.48
1934	2,780	70	1,182	85	658	112	286	2.13	28.98
1935	2,750	75	1,144	83	564	108	278	2.07	28.20
1936	4,080	75	1,692	85	954	133	423	3.18	43.28

PIGEON RIVER AT CANTON

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
40											
50						10	23	1			
60						39	46	13			
80					4	88	78	38	17	4	3
100					23	119	102	63	94	31	39
125					34	143	142	89	141	68	73
150					46	174	174	99	162	109	120
175					55	203	200	110	179	136	147
200					67	228	225	113	194	167	164
225					84	270	242	121	198	193	182
250					105	292	266	134	203	212	211
300					146	323	296	183	224	253	251
350					190	340	310	220	253	286	291
400					223	352	325	251	276	306	306
500					274	356	341	300	310	332	335
600					303	360	347	317	332	340	346
800					331	363	355	338	354	349	355
1,000					342	364	360	346	361	357	356
2,000					359	365	364	362	364	363	364
3,000					363		365	363	365	365	365
5,000					365			366			

SWANNANOA RIVER AT BILTMORE

No. 1113

LOCATION: Buncombe County, Swannanoa River, 100 feet below Biltmore Avenue bridge, 200 feet above Southern R. R. bridge at Biltmore, 600 feet below mouth of Foster Mill Creek and 1½ miles above confluence with French Broad River.

DRAINAGE AREA: 128 square miles. Revised to 130 square miles.

RECORDS AVAILABLE: Active station. December 4, 1920 to September 30, 1926; and May 8, 1934 to date.

EXTREMES: *Maximum* 4,690 second-feet, May 29, 1923;
Minimum 7.7 second-feet, August 31, 1925.

REMARKS: Automatic recorder installed May 7, 1934; staff gage prior to this date. Marked daily fluctuation due to summer operation of hydro plant at Asheville recreation park. The city of Asheville diverts approximately 7,000,000 gallons daily for water supply from tributaries emptying into reservoir above. Swannanoa sewage emptied into river above station. Zero of gage is 1,976.93 feet above mean sea level.

SWANNANOA RIVER AT BILTMORE

Drainage Area 128 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1920	1,410	100	422	183	257	257	251	1 month	only
1921	1,680	46	632	59	403	72	183	*	*
1922	1,240	26	464	46	353	54.8	177	*	*
1923	2,830	48	947	57	433	65.5	189	*	*
1924	1,460	14	429	43	280	65.1	169	1.32	17.96
1925	760	7.7	419	13	266	15.7	88.5	0.691	9.41
1926	1,810	24	415	25	164	44.3	94.9	9 month	s only
Station disc	ontinued	Septem	ber 30, 1	926; re-e	stablishe	d May 8,	1934.		
1934	753	33	391	58	210	66.9	126	7½ mon	ths only
1935	1,710	33	592	35	302	42.4	153	1.20	16.23
1936	2,500	38	1,222	50	560	63.5	249	1.92	26.13

* Not published due to diversion of water supply to Asheville

DAVIDSON RIVER NEAR BREVARD

No. 1114

LOCATION: Transylvania County, Davidson River at bridge on State Highway No. 284, 1½ miles above confluence with French Broad River, 2 miles below mouth of Avery Creek and 3½ miles northeast of Brevard.

DRAINAGE AREA: 41 square miles. Revised to 40.4 square miles.

RECORDS AVAILABLE: Active station. December 10, 1920 to date.

EXTREMES: *Maximum* 8,400 second-feet, August 15, 1928;
Minimum 15 second-feet, September 19-21, 1925.

REMARKS: Automatic recorder installed May 18, 1934; staff gage prior to this date. Slight diurnal fluctuation; no diversions. Zero of gage is 2,115.52 feet above mean sea level.

DAVIDSON RIVER NEAR BREVARD

Drainage Area 41 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1920	1,160	99	310	199	243	243	243	23 days	only
1921	855	50	327	50	208	61.6	139	3.39	45.96
1922	770	37	405	38	292	39.0	150	3.66	49.68
1923	1,300	46	587	47	293	52	137	3.35	45.53
1924	866	45	340	47	228	52	133	3.24	44.37
1925	560	15	339	18	221	24	79	1.93	26.06
1926	717	30	377	31	181	51.7	110	2.68	36.39
1927	475	38	261	41	194	67.5	109	2.65	36.02
1928	2,440	69	938	72	386	83.4	179	4.37	59.46
1929	655	104	360	128	249	158	211	3 months	only
1930	491	32	208	35	129	41.5	90	2.19	29.81
1931	958	24	307	24	235	28.6	97.5	2.38	32.26
1932	2,860	35	1,001	42	334	54.1	176	4.29	58.23
1933	1,240	40	337	43	232	54.2	127	3.09	41.89
1934	1,000	44	409	53	248	75.2	126	3.07	41.57
1935	1,200	41	546	44	271	49	120	2.93	39.86
1936	1,510	28	603	31	326	53.2	147	3.64	49.54

FRENCH BROAD RIVER AT BLANTYRE

No. 1115

LOCATION: Transylvania County, French Broad River at highway bridge, 700 feet east of Blantyre railroad station, 3 miles below mouth of Little River.

DRAINAGE AREA: 296 square miles.

RECORDS AVAILABLE: Active station. December 11, 1920 to date.

EXTREMES: *Maximum* 26,500 second-feet, August 16, 1928;
Minimum 143 second-feet, September 21, 1925.

REMARKS: Automatic recorder installed July 5, 1930; chain and staff gages prior to this date. Practically no regulation. No diversions. Zero of gage is 2,060.76 feet above mean sea level.

FRENCH BROAD RIVER AT BLANTYRE

Drainage Area 296 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1920	5,340	756	1,506	1,364			1,440	½ month only	
1921	4,630	395	1,984	410	1,570	589	984	3.32	44.92
1922	5,280	239	2,983	275	2,090	283	1,047	3.54	47.99
1923	5,970	353	3,870	383	1,780	419	950	3.21	43.57
1924	4,470	371	2,369	413	1,670	471	1,050	3.55	48.37
1925	3,700	144	2,529	157	1,680	187	571	1.93	26.10
1926	4,960	242	1,958	257	1,010	353	711	2.40	32.47
1927	2,470	242	1,809	244	1,230	343	666	2.25	30.57
1928	17,900	509	5,329	535	2,260	588	1,140	3.85	52.48
1929	13,000	364	5,270	389	2,980	491	1,310	4.42	60.17
1930	3,310	226	1,310	235	857	283	607	2.05	27.87
1931	3,740	202	2,020	207	1,530	244	700	2.37	32.11
1932	9,980	300	4,355	339	2,140	406	1,180	3.99	54.31
1933	3,960	327	2,580	335	1,710	398	935	3.17	42.88
1934	5,840	444	2,623	497	1,800	692	1,036	3.50	47.51
1935	6,600	306	3,540	334	1,879	373	906	3.06	41.57
1936	7,450	220	4,421	302	2,509	385	1,142	3.86	52.51

MILLS RIVER NEAR MILLS RIVER

No. 1118

LOCATION: Henderson County, Mills River, 2 miles above village of Mills River, about 1½ miles below confluence of North and South Forks and 4½ miles northwest of Horse Shoe Post Office.

DRAINAGE AREA: 67.5 square miles. Revised to 66.7 square miles.

RECORDS AVAILABLE: Active station. September 9, 1924 to September 30, 1926; and May 8, 1934 to date.

EXTREMES: *Maximum* 5,820 second-feet, January 9, 1935;
Minimum 20 second-feet, September 20-21, October 7, 1925.

REMARKS: Automatic recorder installed May 8, 1934; staff gage prior to this date. No regulation. Hendersonville draws its water supply from the North Fork of Mills River. Zero of gage is 2,088.42 feet above mean sea level.

MILLS RIVER NEAR MILLS RIVER

Drainage Area 67.5 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	735	51	255	58	155	68	111	3½ mon	ths only
1925	515	20	360	20	247	22.8	88.8	1.32	17.85
1926	1,730	25	375	27	173	57.2	108	9 month	s only
Station disc	ontinued	Septem	ber 30, 1	926; re-e	stablishe	d May 8,	1934.		
1934	576	65	280	86	214	103	146	7½ mon	ths only
1935	2,270	50	795	55	382	62.3	158	2.34	31.71
1936	3,090	45	840	53	415	76.5	209	3.13	42.60

FRENCH BROAD RIVER AT CALVERT

No. 1119

LOCATION: Transylvania County, French Broad River, 1 mile southeast of Calvert R. R. station and 1 mile below East Fork at township bridge.

DRAINAGE AREA: 104 square miles. Revised to 103 square miles.

RECORDS AVAILABLE: Active station. October 15, 1924 to date.

EXTREMES: *Maximum* 16,100 second-feet, August 15, 1928;
Minimum 54 second-feet, September 17-23, 1925.

REMARKS: Automatic recorder installed May 17, 1934; chain and staff gages prior to this date. Slight regulation present due to operation of grist mills. No diversions. Zero of gage is 2,155.03 feet above mean sea level.

FRENCH BROAD RIVER AT CALVERT

Drainage Area 104 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	2,810	153	847	159	448	171	291	3 months only	
1925	1,800	58	843	58	585	68.5	209	2.03	27.34
1926	2,450	81	797	90	412	132	267	2.57	34.76
1927	2,110	88	600	95	468	129	258	2.48	33.73
1928	6,140	203	2,326	210	877	237	432	4.15	56.52
1929	4,060	144	1,820	153	1,090	193	504	4.85	65.79
1930	1,180	67	464	72	332	87.6	217	2.07	28.26
1931	3,040	73	754	76	615	87.1	272	2.62	35.57
1932	5,980	109	2,030	117	773	155	441	4.24	57.69
1933	2,570	103	852	109	627	123	322	3.10	42.00
1934	2,960	124	1,229	135	691	211	377	3.62	49.21
1935	3,100	127	1,348	141	729	155	339	3.26	44.21
1936	3,380	99	1,567	116	894	157	422	4.10	55.81

NOLICHUCKY RIVER AT POPLAR

No. 1120

LOCATION: Mitchell County, Nolichucky River at C. C. & O. Railroad depot at Poplar, 4 miles below junction of Cane and North Toe rivers and 5 miles above North Carolina-Tennessee State Line.

DRAINAGE AREA: 609 square miles. Revised to 608 square miles.

RECORDS AVAILABLE: Active station. July 24, 1925 to date.

EXTREMES: *Maximum* 34,600 second-feet, August 16, 1928;
Minimum 89 second-feet, September 7, 1925.

REMARKS: Automatic recorder installed May 18, 1934; staff gage prior to this date. No regulation and no diversions. Zero of gage is 1,972.16 feet above mean sea level.

NOLICHUCKY RIVER AT POPLAR

Drainage Area 609 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1925	2,850	96	1,241	105	590	140	316	5 months only	
1926	9,200	160	3,283	184	1,650	369	840	1.38	18.74
1927	6,640	264	2,729	309	1,870	420	1,090	1.79	24.24
1928	25,600	472	6,084	686	2,380	748	1,450	2.38	32.36
1929	13,300	410	4,369	483	3,340	741	1,580	2.59	35.19
1930	2,550	210	1,600	263	1,280	317	700	1.15	15.60
1931	6,150	218	3,380	236	2,000	270	809	1.33	18.01
1932	10,900	163	4,160	187	1,980	301	1,122	1.84	25.08
1933	6,890	269	3,209	276	2,400	354	1,051	1.74	23.44
1934	10,100	176	3,825	359	2,020	519	982	1.61	21.88
1935	16,900	308	4,890	332	3,068	422	1,249	2.05	27.84
1936	15,500	302	6,167	381	2,957	546	1,462	2.40	32.67

NORTH FORK SWANNANOA RIVER NEAR BLACK MOUNTAIN

No. 1121

LOCATION: Buncombe County, North Fork Swannanoa River, one-fourth mile below emergency pumping plant of Asheville Water Department, 3 miles below forks of river and 3 miles northwest of Black Mountain.

DRAINAGE AREA: 23 square miles. Revised to 23.8 square miles.

RECORDS AVAILABLE: Active station. January 15, 1926 to date.

EXTREMES: *Maximum* 5,050 second-feet, August 15, 1928;
Minimum 0.73 second-feet, July 20-21, 1926.

REMARKS: Automatic recorder entire record. No regulation. The city of Asheville diverts an average of 4,000,000 gallons daily from the forks, three miles above, and during periods of drought they pump from the emergency station one-fourth mile above practically the entire flow of the river.

Zero of gage is 2,428.08 feet above mean sea level.

NORTH FORK SWANNANOA RIVER NEAR BLACK MOUNTAIN

Drainage Area 23 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1926	778	0.73	213	0.78	94.8	6.0	41.5	1.81	24.51
1927	441	1.91	164	2.55	90.1	4.7	38.9	1.69	22.84
1928	1,930	13.8	675	16.1	200	25.2	67.8	2.95	40.14
1929	750	5.4	289	6.7	191	16.1	84.6	3.68	49.86
1930	197	2.4	97	2.5	57.0	4.2	27.4	1.19	16.16
1931	498	2.52	170	2.8	103	2.9	32.3	1.40	19.03
1932	1,050	2.1	349	2.9	131	6.6	55.4	2.41	32.76
1933	501	3.9	135	4.0	101	5.3	36.07	1.59	21.27
1934	813	7.8	281	9.8	130	18.8	51.0	2.22	30.11
1935	503	4.6	192	5.3	103	6.67	50.4	2.19	29.73
1936	1,100	3.9	318	5.1	165	7.03	71.8	3.02	42.11

BEE TREE CREEK NEAR SWANNANOA

No. 1122

LOCATION: Buncombe County, Bee Tree Creek, 200 feet above upper intake to Asheville water supply, 1,000 feet above Bee Tree Reservoir and 4 miles north of Swannanoa.

DRAINAGE AREA: 5.7 square miles. Revised to 5.46 square miles.

RECORDS AVAILABLE: Active station. February 6, 1926 to date.

EXTREMES: *Maximum* 1,060 second-feet, August 15, 1928;
Minimum 0.67 second-feet, July 22, 1926.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 2,728.29 feet above mean sea level.

BEE TREE CREEK NEAR SWANNANOA

Drainage Area 5.7 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1926	108	0.73	44	0.84	19.6	2.19	8.31	11 months only	
1927	75	0.76	42	0.83	22.3	1.37	9.44	1.66	22.38
1928	318	3.15	117	3.47	35.2	5.08	14.1	2.48	33.78
1929	170	1.90	67	2.23	37.0	4.0	18.0	3.16	42.90
1930	34	0.70	20	0.83	11.9	1.34	6.4	1.12	15.26
1931	84	1.37	37	1.37	24.7	1.64	7.96	1.40	18.95
1932	160	0.92	31	1.05	25.4	1.47	11.1	1.95	26.43
1933	64	1.05	31	1.11	21.0	1.34	8.23	1.46	19.60
1934	106	1.52	32	2.14	22.5	2.5	7.75	1.36	18.48
1935	80	1.52	38	1.8	21.2	2.05	9.37	1.64	22.32
1936	160	0.79	83	1.03	34.2	1.77	15.4	2.82	38.38

SOUTH FORK MILLS RIVER AT THE PINK BEDS

No. 1123

LOCATION: Transylvania County, South Fork Mills River at The Pink Beds in Pisgah National Forest, 400 feet below mouth of Thompson Creek and 9 miles north of Brevard.

DRAINAGE AREA: 9.87 square miles. Revised to 9.99 square miles.

RECORDS AVAILABLE: Active station. February 25, 1926 to date.

EXTREMES: *Maximum* 2,220 second-feet, August 15, 1928;
Minimum 1.6 second-feet, September 3, 1930.

REMARKS: Automatic recorder installed March 31, 1926; staff gage prior to this date. No regulation; no diversions. Zero of gage is 3,138.38 feet above mean sea level.

SOUTH FORK MILLS RIVER AT THE PINK BEDS

Drainage Area 9.87 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1926	137	3.2	82	3.8	37.7	8.09	21.9	10 months only	
1927	161	4.8	80	5.3	54	7.6	22.9	2.32	31.58
1928	614	10.1	226	13.7	84.4	14.6	39.1	3.96	54.03
1929	499	4.8	231	5.5	120	8.7	44.7	4.57	61.40
1930	108	1.9	39	2.2	24.3	2.9	14.2	1.44	19.56
1931	149	4.4	73	4.5	49.5	5.3	22.1	2.24	30.39
1932	421	7.2	170	8.5	72.1	12.9	40.9	4.14	56.40
1933	214	7.8	193	8.7	49.4	11.5	27.4	2.79	37.71
1934	277	6.8	116	8.6	64.8	12.2	30.6	3.10	42.14
1935	280	7.0	135	8.1	68.9	10.8	30.0	3.04	41.24
1936	551	4.1	159	4.9	77.8	10.4	38.6	3.86	52.54

PIGEON RIVER NEAR HEPCO

No. 1124

LOCATION: Haywood County, Pigeon River, 1 mile below Jonathan Creek, 2½ miles above mouth of Fines Creek and 2 miles south of Hepco.

DRAINAGE AREA: 342 square miles. Revised to 350 square miles.

RECORDS AVAILABLE: Active station. July 26, 1927 to date.

EXTREMES: *Maximum* 30,300 second-feet, August 16, 1928;
Minimum 106 second-feet, September 3-4, 1930.

REMARKS: Automatic recorder installed August 9, 1927. Partial regulation from storage at Junaluska and Sunburst. No diversions. Zero of gage is 2,336.24 feet above mean sea level.

PIGEON RIVER NEAR HEPCO

Drainage Area 342 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	3,570	196	1,391	203	1,160	265	511	5 months only	
1928	12,900	343	3,813	348	1,520	389	874	2.56	34.83
1929	6,490	233	3,170	254	2,350	336	964	2.82	38.28
1930	1,760	109	1,090	125	884	172	463	1.35	18.39
1931	3,590	118	1,870	121	1,260	140	463	1.35	18.37
1932	11,200	118	4,343	136	2,030	185	787	2.30	31.34
1933	3,840	174	1,943	180	1,450	210	656	1.93	26.01
1934	6,980	186	2,751	218	1,420	257	575	1.68	22.83
1935	5,040	178	1,770	195	1,041	221	586	1.71	23.24
1936	10,200	186	3,766	236	2,104	329	952	2.72	37.02

JONATHAN CREEK NEAR COVE CREEK

No. 1126

LOCATION: Haywood County, Jonathan Creek, 500 yards below ford, three-fourths mile above confluence with Pigeon River, 2 miles below mouth of Cove Creek and Cove Creek Post Office.

DRAINAGE AREA: 67 square miles. Revised to 65.3 square miles.

RECORDS AVAILABLE: Active station. May 24, 1930 to date.

EXTREMES: *Maximum* 2,270 second-feet, January 19, 1936;
Minimum 22 second-feet, September 19, 1932.

REMARKS: Automatic recorder entire record. Slight regulation from operation of grist mills above. No diversions. Zero of gage is 2,384.07 feet above mean sea level.

JONATHAN CREEK NEAR COVE CREEK

Drainage Area 67 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1930	282	26	123	31	88	40.3	64.6	7 months only	
1931	816	29	379	31	246	35.5	95.4	1.42	19.31
1932	1,510	25	732	27	360	36.2	142	2.12	28.84
1933	634	38	379	41	316	45.2	129	1.95	26.22
1934	1,100	34	448	41	274	44.7	109	1.63	22.05
1935	598	34	339	36	235	41.9	119	1.78	24.04
1936	1,570	34	687	38	401	53.8	178	2.73	37.16

FRENCH BROAD RIVER AT BENT CREEK

No. 1127

LOCATION: Buncombe County, French Broad River at mouth of Bent Creek, 6 miles above mouth of Hominy Creek and 7 miles south of Asheville.

DRAINAGE AREA: 681 square miles. Revised to 676 square miles.

RECORDS AVAILABLE: Active station. May 15, 1934 to date.

EXTREMES: *Maximum* 13,200 second-feet, April 7, 1936;
Minimum 490 second-feet, September 28, 1936.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 1,996.06 feet above mean sea level.

FRENCH BROAD RIVER AT BENT CREEK

Drainage Area 681 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	6,040	925	3,000	1,082	2,210	1,270	1,673	7½ mon	ths only
1935	11,500	542	6,603	567	3,336	642	1,567	2.30	31.22
1936	12,100	490	8,120	644	4,602	781	2,133	3.16	43.01

IVY RIVER NEAR MARSHALL

No. 1128

LOCATION: Madison County, Ivy River, 2 miles above junction with French Broad River, 100 yards below county highway bridge and 4 miles southeast of Marshall.

DRAINAGE AREA: 158 square miles.

RECORDS AVAILABLE: Active station. May 9, 1934 to date.

EXTREMES: *Maximum* 5,850 second-feet, August 8, 1936;
Minimum 14 second-feet, December 21, 1935.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 1,700.65 feet above mean sea level.

IVY RIVER NEAR MARSHALL

Drainage Area 158 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	885	26	312	39	141	52.9	97.4	7½ mon	ths only
1935	1,580	24	635	26	427	38.1	153	0.968	13.11
1936	3,670	38	1,509	44	633	72.4	255	1.61	21.97

BIG LAUREL CREEK NEAR STACKHOUSE

No. 1129

LOCATION: Madison County, Big Laurel Creek midway between Big Hurricane and Little Hurricane creeks, 50 feet west of State Highway 208 and 3 miles north of Stackhouse.

DRAINAGE AREA: 129 square miles. Revised to 126 square miles.

RECORDS AVAILABLE: Active station. May 10, 1934 to date.

EXTREMES: *Maximum* 7,260 second-feet, March 25, 1935;
Minimum 14 second-feet, December 21, 1935.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 1,595.96 feet above mean sea level.

BIG LAUREL CREEK NEAR STACKHOUSE

Drainage Area 129 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	658	39	322	49	178	67.8	119	7½ mon	ths only
1935	3,370	35	1,049	37	632	50.6	209	1.62	21.94
1936	3,700	35	1,427	42	661	72.2	257	2.04	27.77

FRENCH BROAD RIVER AT HOT SPRINGS

No. 1130

LOCATION: Madison County, French Broad River one-fourth mile above bridge on U. S. Highways Nos. 25 and 70, and one-half mile above Spring Creek at Hot Springs.

DRAINAGE AREA: 1,570 square miles. Revised to 1,563 square miles.

RECORDS AVAILABLE: Active station. May 16, 1934 to date.

EXTREMES: *Maximum* 38,600 second-feet, January 19, 1936;
Minimum 170 second-feet, October 6, 1935 and September 28, 1936.

REMARKS: Automatic recorder entire record. Slight regulation at low water due to operation of Carolina Power and Light Company hydro plant below Marshall. No diversions. Zero of gage is 1,311.85 feet above mean sea level.

FRENCH BROAD RIVER AT HOT SPRINGS

Drainage Area 1,570 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min	Max.	Min.	Max.	Min.			
1934	9,410	1,210	4,420	1,541	2,940	1,770	2,330	7½ mon	ths only
1935	21,400	681	10,080	819	5,056	965	2,544	1.62	22.02
1936	30,000	832	15,516	1,148	7,843	1,476	3,717	2.38	32.39

NORTH TOE RIVER NEAR SPRUCE PINE

No. 1131

LOCATION: Mitchell County, North Toe River 1 mile below mouth of Rose Creek, on highway between Spruce Pine and Altapass, 2½ miles above Beaver Creek and 1½ miles east of Spruce Pine.

DRAINAGE AREA: 112 square miles. Revised to 111 square miles.

RECORDS AVAILABLE: Active station. May 19, 1934 to date.

EXTREMES: *Maximum* 4,450 second-feet, January 19, 1935;
Minimum 57 second-feet, September 20, 1936.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 2,529.43 feet above mean sea level.

NORTH TOE RIVER NEAR SPRUCE PINE

Drainage Area 112 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	1,360	70	647	79	277	109	177	7½ months only	
1935	2,830	84	939	95	487	116	262	2.34	31.71
1936	2,140	69	946	81	554	112	276	2.49	33.89

SOUTH TOE RIVER AT NEWDALE

No. 1132

LOCATION: Yancey County, South Toe River at bridge on State Highway 69 at Newdale, 1¼ miles above mouth of Little Crabtree Creek and 6¼ miles east of Burnsville.

DRAINAGE AREA: 58.6 square miles. Revised to 60.8 square miles.

RECORDS AVAILABLE: Active station. May 10, 1934 to date.

EXTREMES: *Maximum* 12,100 second-feet, October 16, 1936;
Minimum 13 second-feet, August 7, 1936.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 2,444.44 feet above mean sea level.

SOUTH TOE RIVER AT NEWDALE

Drainage Area 58.6 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	1,390	40	477	59	244	101	174	7½ mon	ths only
1935	3,590	37	1,013	52	426	65.7	185	3.16	42.88
1936	6,140	30	1,466	39	446	47.8	222	3.65	49.68

CANE RIVER NEAR SIOUX

No. 1133

LOCATION: Yancey County, Cane River, 1.4 miles above mouth of Cane River and about 1¼ miles east of Sioux.

DRAINAGE AREA: 157 square miles.

RECORDS AVAILABLE: Active station. May 26, 1934 to date.

EXTREMES: *Maximum* 9,010 second-feet, July 15, 1934;
Minimum 39 second-feet, September 30, 1935.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 2,045.21 feet above mean sea level.

CANE RIVER NEAR SIOUX

Drainage Area 157 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	3,360	80	759	102	386	119	219	7 months only	
1935	2,690	45	1,136	62	786	76.5	270	1.72	23.37
1936	4,200	58	1,556	85	757	120	352	2.24	30.53

CATALOOCHEE CREEK NEAR CATALOOCHEE

No. 1134

LOCATION: Haywood County, Cataloochee Creek at bridge on State Highway 284, just above Little Cataloochee Creek and 2 miles north of Cataloochee.

DRAINAGE AREA: 50.4 square miles. Revised to 49.2 square miles.

RECORDS AVAILABLE: Active station. May 12, 1934 to date.

EXTREMES: *Maximum* 2,700 second-feet, January 19, 1936;
Minimum 23 second-feet, July 29, 1936.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 2,457.48 feet above mean sea level.

CATALOOCHEE CREEK NEAR CATALOOCHEE

Drainage Area 50.4 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	453	27	168	32	120	34.7	69.9	7½ mon	ths only
1935	812	27	400	28	220	30.9	102	2.02	27.60
1936	1,860	25	635	30	362	40.2	141	2.87	39.06

NORTH FORK MILLS RIVER AT PINK BEDS

No. 1102

LOCATION: Henderson County, North Fork Mills River at the Pink Beds, three-fourths mile below post office and 1 mile above junction of North and South forks.

DRAINAGE AREA: 24 square miles.

RECORDS AVAILABLE: Discontinued station. June 1, 1904 to June 30, 1909.

EXTREMES: *Maximum* 1,150 second-feet, July 12, 1905 and January 22, 1906; *Minimum* 16 second-feet, October, November, and December, 1904.

REMARKS: Staff gage. No regulation; no diversions during record. Subsequent to period of record, city of Hendersonville has drawn its water supply from upper portion of this stream.

NORTH FORK MILLS RIVER AT PINK BEDS

Drainage Area 24 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1904	112	16	61	16	40.6	16	27.2	7 months only	
1905	1,150	24	351	28	160	32.1	67.8	2.82	38.63
1906	1,150	37	457	47	208	59.7	118	4.93	67.03
1907	371	24	97	25	74.6	28.5	51.8	2.16	29.27
1908	775	36	291	36	133	48.5	74	3.08	41.86
1909	626	54	229	61	145	72.6	106	6 months only	

SOUTH FORK MILLS RIVER NEAR SITTON

No. 1103

LOCATION: Henderson County, South Fork Mills River at Sycamore Church, 1 mile below Sitton.

DRAINAGE AREA: 40.5 square miles.

RECORDS AVAILABLE: Discontinued station. June 1, 1904 to June 30, 1909; and January 6, 1926 to September 30, 1926.

EXTREMES: *Maximum* 1,780 second-feet, February 15, 1908;
Minimum 22 second-feet, numerous times in July, 1926.

REMARKS: Staff gage. No regulation; no diversions.

SOUTH FORK MILLS RIVER NEAR SITTON

Drainage Area 40.5 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1904	290	33	130	33	104	36.2	68.8	7 months only	
1905	1,500	46	593	46	294	53.5	143	3.53	47.97
1906	1,660	77	822	90	402	118	247	6.10	82.91
1907	1,000	36	235	48	179	53.2	115	2.83	38.44
1908	1,780	60	565	72	276	91.4	162	4.00	54.41
1909	1,160	86	465	104	292	129	192	6 months only	
Station discontinued June 30, 1909; re-established January 6, 1926.									
1926	968	22	233	23	114	39.3	74.2	9 months only	

DAVIDSON RIVER NEAR DAVIDSON RIVER

No. 1104

LOCATION: Transylvania County, Davidson River at bridge 4 miles from Davidson River, 500 feet above mouth of Avery Creek.

DRAINAGE AREA: 31 square miles.

RECORDS AVAILABLE: Discontinued station. June 1, 1904 to June 30, 1909.

EXTREMES: *Maximum* 2,360 second-feet, January 22, 1906;
Minimum 32 second-feet, several times in September, 1907.

REMARKS: Staff gage. No regulation; no diversions.

DAVIDSON RIVER NEAR DAVIDSON RIVER

Drainage Area 31 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1904	272	38	141	38	117	39.7	65.6	7 months only	
1905	1,220	38	502	38	227	41.3	113	3.66	49.70
1906	2,360	60	733	76	360	102	216	6.98	94.78
1907	985	32	237	38	166	44.1	87.1	2.81	38.16
1908	1,460	60	491	64	237	84.6	141	4.54	61.61
1909	1,260	79			275	124	200	6 months only	

FRENCH BROAD RIVER AT HORSESHOE

No. 1105

LOCATION: Henderson County, French Broad River at highway bridge at Horseshoe.

DRAINAGE AREA: 325 square miles.

RECORDS AVAILABLE: Discontinued station. October 4, 1904 to March 31, 1906.

EXTREMES: *Maximum* 5,950 second-feet, January 23 and 24, 1906;
Minimum 242 second-feet, October 17-25, 1904.

REMARKS: Staff gage.

FRENCH BROAD RIVER AT HORSESHOE

Drainage Area 325 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1904	1,950	242	700	244	480	256	361	3 months only	
1905	5,630	301	3,575	426	1,960	449	1,081	3.33	45.27
1906	5,950	995	4,076	1,181	2,380	1,390	1,841	3 months only	

LITTLE RIVER AT CALHOUN

No. 1106

LOCATION: Transylvania County, Little River at highway bridge one-fourth mile west of Calhoun, one-half mile above mouth of river.

DRAINAGE AREA: 59 square miles.

RECORDS AVAILABLE: Discontinued station. May 1, 1907 to June 30, 1908.

EXTREMES: *Maximum* 2,190 second-feet, February 15, 1908;
Minimum (estimated) 46 second-feet, October and November, 1907.

REMARKS: Staff gage. No regulation.

LITTLE RIVER AT CALHOUN

Drainage Area 59 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	1,700	51	628	46	404	56.9	147	8 months only	
1908	2,190	83	1,051	109	495	123	281	6 months only	

MUD CREEK AT NAPLES

No. 1108

LOCATION: Henderson County, Mud Creek at highway bridge one-half mile east of Naples.

DRAINAGE AREA: 112 square miles.

RECORDS AVAILABLE: Discontinued station. May 10, 1907 to December 31, 1907.

EXTREMES: *Maximum* 1,410 second-feet, December 14, 1907;
Minimum 30 second-feet, September, October and December, 1907.

REMARKS: Staff gage.

MUD CREEK AT NAPLES

Drainage Area 112 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	1,410	30	807	48	471	62.3	125	7½ mon	ths only

IVY RIVER AT DEMOCRAT

No. 1110

LOCATION: Buncombe County, Ivy River at bridge at Democrat, about 4 miles above west fork and 18 miles west of Asheville.

DRAINAGE AREA: 164 square miles.

RECORDS AVAILABLE: Discontinued station. May 26, 1907 to December 21, 1907.

EXTREMES: *Maximum* stage 3.8 feet, September 23, 1907 (discharge not determined);
Minimum stage 0.6 feet, September 14, 20, 21, 1907 (discharge not determined).

REMARKS: Staff gage. Some regulation caused by operation of mill above.

IVY RIVER AT DEMOCRAT

Drainage Area 164 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	88	32	75	33	76	40	55	6 months only	

SWANNANOA RIVER AT SWANNANOA

No. 1111

LOCATION: Buncombe County, Swannanoa River at highway bridge, one-fourth mile from railroad station at Swannanoa, 2 miles below North Fork and 2 miles above Bee Tree Creek.

DRAINAGE AREA: 60 square miles.

RECORDS AVAILABLE: Discontinued station. May 28, 1907 to June 30, 1909; and January 6, 1926 to December 31, 1931.

EXTREMES: *Maximum* (estimated) 10,400 second-feet, August 16, 1928; *Minimum* 7.6 second-feet, July 20-22, 1926.

REMARKS: Staff gage. Slight regulation from operation of sand and gravel plant 2 miles above. City of Asheville diverts about 3,000,000 gallons daily.

SWANNANOA RIVER AT SWANNANOA

Drainage Area 60 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1926	997	7.6	412	8.2	172	24.9	72.6	1.21	14.95
1927	1,010	11	348	11	187	20.7	84	1.40	18.94
1928	5,020	39	1,530	45	469	65.9	155	2.58	35.24
1929	1,600	25	800	29	513	43.4	175	Values n	ot given
1930	277	10	146	13	104	15.4	59.4	due to d	iversion
								above fo	r Ashe-
1931	1,180	8	507	8.6	243	10.6	68.8	ville wat	er supply

NORTH TOE RIVER AT SPRUCE PINE

No. 1112

LOCATION: Mitchell County, North Toe River at highway bridge at Spruce Pine, 600 feet west of C. C. & O. R. R. station, one-half mile below mouth of Beaver Creek and 3 miles above mouth of Bear Creek.

DRAINAGE AREA: 130 square miles.

RECORDS AVAILABLE: Discontinued station. June 19, 1907 to June 30, 1908; April 21, 1920 to October 9, 1920; and January 13, 1921 to September 30, 1926.

EXTREMES: *Maximum* 3,910 second-feet, January 16, 1924;
Minimum 19 second-feet, October 6, 1925.

REMARKS: Staff gage. Some regulation from operation of small power plants above. No diversions.

NORTH TOE RIVER AT SPRUCE PINE

Drainage Area 130 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	320	120	308	120	274	155	200	6 months only	
1908	Records for 1908 are too incomplete.								
1921	1,840	77	803	88	530	144	297	11½ months only	
1922	1,480	58	774	66	572	69.3	301	2.32	31.43
1923	1,840	99	802	111	456	135	293	2.26	30.65
1924	2,120	69	732	80	519	106	257	1.98	26.82
1925	528	19	276	34	231	40.4	124	0.946	12.76
1926	1,880	50	806	54	291	85.7	181	9 months only	

PIGEON RIVER NEAR CRABTREE

No. 1116

LOCATION: Haywood County, Pigeon River at bridge on road from Clyde to Crabtree, about 2 miles south of Crabtree, 4 miles northwest of Clyde, 1½ miles above mouth of Crabtree Creek and 2½ miles above mouth of Richland Creek.

DRAINAGE AREA: 244 square miles.

RECORDS AVAILABLE: Discontinued station. December 16, 1920 to December 31, 1929.

EXTREMES: *Maximum* 23,000 second-feet, August 16, 1928;
Minimum 14 second-feet, November 21, 1922 (due to regulation).

REMARKS: Chain gage. Marked regulation at low stages due to operation of dams above. No diversions.

PIGEON RIVER NEAR CRABTREE

Drainage Area 244 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1920	1,720	525	861	738			811	16 days	only
1921	2,800	64	1,201	133	870	176	478	1.96	26.48
1922	5,350	44	1,596	121	1,320	137	549	2.24	30.41
1923	2,160	103	1,379	139	826	169	495	2.03	27.46
1924	3,200	103	1,118	134	759	175	450	1.84	25.11
1925	1,700	47	1,121	57	757	77.5	276	1.14	15.40
1926	3,620	58	1,512	92	592	122	353	1.45	19.67
1927	2,660	113	1,106	124	795	164	414	1.70	23.02
1928	9,380	200	2,963	247	1,130	332	617	2.52	34.39
1929	5,540	104	2,336	165	1,620	215	646	2.65	35.94

PIGEON RIVER NEAR MT. STERLING

No. 1117

LOCATION: Haywood County, Pigeon River just above mouth of Hurricane Creek, 7 miles above Big Creek and Tennessee State Line, and 5 miles southeast of Mt. Sterling.

DRAINAGE AREA: 453 square miles.

RECORDS AVAILABLE: Discontinued station. September 18, 1924 to April 19, 1930.

EXTREMES: *Maximum* 39,600 second-feet, August 16, 1928;
Minimum 26 second-feet, several times in March, 1930.

REMARKS: Automatic recorder. Slight regulation may be caused from storage dams above. No diversions.

PIGEON RIVER NEAR MT. STERLING

Drainage Area 453 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	4,070	227	1,465	279	881	322	595	3½ mon	ths only
1925	2,690	78	1,811	88	1,340	132	507	1.12	15.18
1926	5,770	171	3,230	217	1,440	270	725	1.60	21.71
1927	4,730	240	2,190	253	1,480	383	791	1.75	23.71
1928	19,100	426	3,980	432	1,780	483	1,110	2.46	33.49
1929	9,170	52	3,690	321	2,820	447	1,150	2.53	34.41
1930	1,960	31	1,150	350	854	628	694	3½ mon	ths only

CHAPTER 10

THE LITTLE TENNESSEE AND HIWASSEE RIVER BASINS

The Little Tennessee and Hiwassee River basins are located in the extreme southwestern corner of North Carolina. These basins, extending from Georgia across North Carolina and into Tennessee, both lie wholly in the Mountain Region and have the following drainage areas within this state: Little Tennessee Basin, 1,875 square miles; Hiwassee Basin, 650 square miles.

The topography of the basins is everywhere mountainous, varying in elevation from 1,500 to 2,000 feet in the stream valleys, to 4,000 to 5,000 feet on the mountain summits. On the east the Little Tennessee Basin is bordered by the Balsam Mountains and Tennessee Ridge, and on the Tennessee state line, the western limit of the basins is marked by the Unaka and Great Smoky Mountains. Included in the area covered by the basins are the Snowbird, Valley River, Yellow, Cheoah, Cowee, and Nantahala mountains, and a number of lesser ranges.

The Little Tennessee River rises on the eastern slope of the Nantahala Mountains. From its source it flows northerly and then westerly across the state to enter Tennessee. The Tuckasegee River drains the upper part of the basin, and joins the main stream from the right bank in the central part. The Nantahala and Cheoah rivers both flow northerly from the lower part of the Little Tennessee Basin to join the main stream from the left bank in Graham County.

The Hiwassee River rises near Hayesville, in Clay County, and flows westwardly through Cherokee County to cross the state line and enter Tennessee. Both the Little Tennessee and Hiwassee rivers join the Tennessee River in Tennessee.

Between 75 and 80 per cent of the area covered by these basins consists of forest lands, the remainder being farm woodland, woodland pasture, and cultivated land. Mean annual temperature for the area covered by the two basins varies from 51 to 57 degrees, with an average for the whole of about 55 degrees.

The mean annual rainfall for the Hiwassee Basin varies between 60 and 70 inches, with a mean of about 60 for the basin. In the Little Tennessee Basin the mean annual rainfall varies from 45 inches to over 80 inches, in the southwestern corner. The latter point has the highest mean annual rainfall of any point in North Carolina. The mean for the entire Little Tennessee Basin is approximately 60 inches.

LITTLE TENNESSEE RIVER AT JUDSON

No. 1201

LOCATION: Swain County, Little Tennessee River one-fourth mile below highway bridge at railroad station at Judson, 4 miles above mouth of Tuckasegee River, 3 miles below mouth of Nantahala River, and ¼ mile above mouth of Sawyer Branch.

DRAINAGE AREA: 668 square miles. Revised to 664 square miles.

RECORDS AVAILABLE: Active station. June 25, 1896 to date.

EXTREMES: *Maximum* 40,800 second-feet, February 28, 1902;
Minimum 165 second-feet, October 10, 1925.

REMARKS: Chain gage from September 16, 1895 to September 13, 1913, at railroad bridge 1 mile downstream from present gage. Staff gage and recorder near present gage, from April 16, 1912 to October 26, 1918, when recorder was destroyed by a flood. Staff gage thereafter until June 5, 1934, when automatic recorder installed. Considerable regulation at low water caused by operation of hydro plant at Franklin. No diversions.

Zero of gage is 1,520.72 feet above mean sea level.

LITTLE TENNESSEE RIVER AT JUDSON

Drainage Area 668 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1896	17,400	545	7,474	609	3,490	736	1,972	6 months only	
1897	18,100	404	13,087	557	8,250	731	2,586	3.86	52.19
1898	33,600	280	13,136	304	5,830	580	2,516	3.76	51.26
1899	31,800	315	17,411	340	7,860	733	2,398	3.58	48.44
1900	26,000	380	5,961	409	2,900	769	1,854	2.77	37.46
1901	35,000	772	12,830	786	6,620	937	3,021	4.51	61.59
1902	43,300	460	10,864	521	4,800	592	2,047	3.06	41.13
1903	23,200	328	11,527	397	7,980	433	2,490	3.72	50.02
1904	7,710	265	3,704	265	2,580	286	1,080	1.61	21.92
1905	14,500	348	4,601	478	3,260	568	1,645	2.46	33.19
1906	17,400	1,100	7,764	1,373	4,010	1,570	2,702	4.03	54.86
1907	6,410	460	3,088	571	2,240	815	1,640	2.45	33.20
1908	13,000	460	5,881	546	3,380	851	1,958	2.92	39.73
1909	11,100	725	7,870	725	4,320	841	2,468	3.68	49.92
1910	5,930	315	3,636	527	2,730	609	1,654	2.47	33.53
1911	11,600	354	7,156	431	5,130	678	1,746	2.61	35.27
1912	14,000	556	5,797	600	4,350	744	1,914	2.86	38.84
1913	14,300	460	7,144	478	4,450	683	1,528	2.28	30.92
1914	9,690	380	5,171	403	3,450	436	1,243	1.86	25.28
1915	11,734	583	4,550	637	3,090	769	1,680	2.51	34.02
1916	15,000	634	8,337	705	4,600	819	1,870	2.79	38.18
1917	30,000	545	8,316	638	6,105	707	1,823	2.73	36.99
1918	19,600	501	5,854	542	2,940	745	1,551	2.32	31.42
1919	8,310	445	4,607	483	2,950	576	1,601	2.40	32.54
1920	15,900	633	8,624	704	4,430	821	2,021	3.02	41.18
1921	10,300	570	4,589	606	3,290	756	1,600	2.40	32.30
1922	16,100	360	5,630	389	4,280	395	2,065	3.09	41.95
1923	6,170	348	4,376	382	2,860	444	1,750	2.63	35.48
1924	7,310	498	4,327	536	2,790	589	1,570	2.36	32.10
1925	6,170	190	4,030	232	2,880	277	1,000	1.50	20.37
1926	9,620	348	6,260	385	2,820	551	1,280	1.91	25.87
1927	7,900	465	4,313	493	2,830	717	1,530	2.28	30.98
1928	11,800	852	4,946	920	2,790	1,020	2,000	2.99	40.72
1929	12,700	374	6,976	685	5,210	851	2,460	3.68	50.02
1930	5,460	335	3,300	395	2,180	446	1,210	1.81	24.58
1931	7,900	293	3,820	352	2,770	409	1,180	1.77	23.91
1932	18,400	445	9,154	515	5,100	666	2,119	3.17	43.16
1933	7,120	210	4,867	370	3,430	441	1,579	2.38	32.09
1934	12,000	550	5,437	607	3,280	675	1,402	2.10	28.50
1935	4,770	372	3,971	398	2,428	449	1,337	2.00	27.15
1936	14,500	400	9,699	468	5,019	612	1,980	2.98	40.56

LITTLE TENNESSEE RIVER AT JUDSON

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
150											
200	4										
300	49						1		5		
400	84	6			1	16	23		18		15
500	100	43	7		1	67	64	4	63		41
600	133	86	38		1	100	88	17	99	14	68
700	154	116	47		9	124	103	38	128	51	105
800	187	145	66		28	149	147	54	148	84	136
900	205	167	101	11	42	162	190	68	168	119	155
1,000	214	189	127	27	49	177	208	73	182	152	175
1,200	257	228	171	71	69	201	245	100	201	196	199
1,400	284	256	199	102	88	226	273	130	212	251	218
1,600	313	285	237	149	109	261	292	181	217	283	241
1,800	329	304	262	189	145	304	314	210	227	309	280
2,000	338	319	293	227	181	324	324	240	247	320	304
2,200	344	332	311	257	203	334	327	252	265	326	317
2,400	346	335	323	281	219	343	333	274	285	332	328
2,600	349	341	328	304	242	350	341	282	297	334	336
3,000	353	348	340	330	274	356	351	299	319	345	349
4,000	359	353	353	353	320	361	355	331	346	355	359
5,000	363	358	359	357	343	364	362	345	357	360	362
6,000	364	361	362	361	352	365	364	352	363	361	364
8,000	365	363	365	364	357		365	362	365	362	365
10,000		365		364	361			364		363	
20,000				366	365			366		365	

TUCKASEGEE RIVER AT BRYSON

No. 1202

LOCATION: Swain County, Tuckasegee River, 400 feet below bridge on State Highway 288 in Bryson, one-half mile below mouth of Deep Creek.

DRAINAGE AREA: 673 square miles. Revised to 655 square miles.

RECORDS AVAILABLE: Active station. November 7, 1897 to date.

EXTREMES: *Maximum* 40,300 second-feet, November 19, 1906;
Minimum 27 second-feet, September 10, 1925.

REMARKS: Automatic recorder installed July 28, 1927; staff gage prior to this date except period of February 3, 1914 to May 18, 1920, during which time weekly recorder was used.

Slight regulation and storage due to operation of plants at mouth of Oconalufty and at Dillsboro. No diversions.

Zero of gage is 1,716.68 feet above mean sea level.

TUCKASEGEE RIVER AT BRYSON

Drainage Area 673 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1897	4,850	300			973	349	701	2 months only	
1898	26,300	450	10,279	547	4,050	649	2,061	3.06	41.77
1899	38,600	300	13,297	300	8,110	424	2,316	3.44	46.16
1900	15,100	515	7,223	549	3,770	880	1,905	2.83	38.17
1901	19,900	610	6,933	639	4,250	708	2,296	3.41	46.48
1902	19,900	365	6,774	431	4,140	493	1,600	2.38	32.13
1903	15,800	365	6,399	390	4,760	446	1,765	2.62	35.23
1904	9,080	332	2,564	346	2,040	368	944	1.40	19.11
1905	11,500	475	3,550	480	2,360	529	1,398	2.08	28.13
1906	20,100	820	5,991	1,026	2,960	1,280	2,172	3.23	43.90
1907	6,440	515	2,912	631	1,970	752	1,430	2.12	28.82
1908	12,000	515	4,826	522	2,860	722	1,636	2.43	33.07
1909	11,700	610	5,314	653	3,660	722	2,099	3.12	42.26
1910	5,290	515	3,030	535	2,190	596	1,397	2.08	28.19
1911	12,700	515	5,189	542	3,520	685	1,421	2.11	28.63
1912	11,500	562	5,220	636	3,650	744	1,781	2.65	36.01
1913	18,400	515	7,244	546	4,300	755	1,585	2.36	31.91
1914	7,250	325	4,008	390	2,790	429	1,176	1.75	23.70
1915	13,130	595	4,758	699	2,810	830	1,632	2.42	32.87
1916	7,140	616	4,539	647	3,130	820	1,753	2.60	33.68
1917	23,200	520	7,170	589	5,320	686	1,805	2.68	36.33
1918	14,630	522	4,754	576	2,553	750	1,605	2.38	32.25
1919	7,315	668	4,120	748	2,643	799	1,599	2.38	32.25
1920	22,500	654	9,180	685	4,840	791	1,950	2.90	39.40
1921	9,320	597	3,953	606	2,930	742	1,582	2.35	31.75
1922	14,200	360	4,593	444	3,990	482	1,870	2.78	37.70
1923	6,340	435	3,794	465	2,850	523	1,723	2.56	34.63
1924	6,920	386	2,960	425	2,310	491	1,370	2.04	27.78
1925	3,750	31	3,000	125	2,180	195	873	1.30	17.57
1926	7,800	386	5,330	446	2,660	529	1,270	1.89	25.58
1927	7,080	466	3,780	501	2,550	705	1,430	2.12	28.77
1928	11,800	778	4,380	834	2,580	903	1,810	2.69	36.64
1929	9,290	651	5,460	707	4,430	1,030	2,150	3.19	43.34
1930	4,380	346	2,950	388	2,120	453	1,130	1.68	22.84
1931	6,340	277	3,790	299	2,650	347	1,115	1.66	22.52
1932	15,600	358	7,259	411	3,700	529	1,733	2.58	35.02
1933	7,020	313	4,123	334	3,370	386	1,464	2.19	29.55
1934	10,300	450	4,894	620	2,940	698	1,292	1.92	26.10
1935	6,570	367	3,827	398	2,338	454	1,316	1.96	26.54
1936	16,400	475	8,759	563	4,632	755	1,964	3.00	40.83

CULLASAJA CREEK AT CULLASAJA

No. 1206

LOCATION: Macon County, Cullasaja Creek 3½ miles above junction with Little Tennessee River, 1 mile below mouth of Ellijay Creek and about 7 miles from Franklin.

DRAINAGE AREA: 87 square miles. Revised to 86.5 square miles.

RECORDS AVAILABLE: Active station. June 13, 1907 to December 31, 1909; and February 12, 1921 to date.

EXTREMES: *Maximum* 9,080 second-feet, August 15, 1928;
Minimum 19 second-feet, September 18-22, 1925.

REMARKS: Automatic recorder installed May 24, 1934; staff gage prior to this date. Slight regulation at low water due to operation of small grist mills and hydro plant near Highlands. No diversions.
Zero of gage is 2,023.50 feet above mean sea level.

CULLASAJA CREEK AT CULLASAJA

Drainage Area 87 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	995	69	468	77	338	86.2	167	6½ mon	ths only
1908	1,900	74	939	78	479	110	257	2.95	40.12
1909	2,880	112	1,117	119	672	124	378	4.35	58.96
Station disc	ontinued	Decemb	er 31, 19	09; re-est	ablished	February	12, 1921	.	
1921	995	78	531	78	415	93.6	208	10½ mo	nths only
1922	1,900	61	1,021	69	674	69.7	298	3.42	46.38
1923	1,670	74	868	78	536	83.1	262	3.01	40.79
1924	1,640	57	614	69	441	86	226	2.60	35.43
1925	1,500	19	702	21	437	25.5	136	1.56	21.14
1926	1,610	39	855	42	389	78	193	2.22	30.10
1927	1,400	54	587	58	461	105	211	2.43	32.96
1928	5,860	111	1,734	124	605	146	310	3.57	48.61
1929	3,640	78	1,630	84	891	116	375	4.20	57.01
1930	1,040	40	474	44	281	53.7	150	1.72	23.34
1931	1,300	33	512	34	395	37.8	150	1.72	23.39
1932	2,800	50	1,378	52	648	82.8	258	2.97	40.36
1933	1,260	39	658	41	428	44.0	189	2.18	29.50
1934	1,940	68	805	81	444	98.4	199	2.29	30.98
1935	1,840	53	792	57	441	64	191	2.20	29.84
1936	3,020	46	1,461	57	719	83.2	287	3.32	45.19

CULLASAJA CREEK AT CULLASAJA

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
10											
20	6										
40	88	3				1	48		8		
60	114	18	11			76	79	19	105		34
80	156	81	38		3	130	118	49	156	18	73
100	189	126	87		22	155	173	74	173	75	114
125	225	151	126	7	43	180	218	98	199	129	155
150	251	177	164	44	55	208	255	126	212	179	180
175	277	215	197	82	74	239	281	167	214	224	194
200	303	248	225	118	99	278	291	198	217	266	224
225	312	272	244	155	120	308	305	229	226	291	256
250	330	292	268	191	150	328	316	251	251	300	284
300	339	312	293	236	200	341	330	286	289	320	322
350	348	327	315	278	231	349	339	304	313	332	337
400	348	337	332	308	264	355	346	313	327	340	346
500	354	350	346	341	294	357	352	332	341	351	354
600	359	356	354	346	315	361	357	343	353	354	355
800	361	359	360	357	345	363	362	352	362	357	361
1,000	363	359	361	360	352	364	362	354	363	363	363
2,000	365	365	365	363	362	365	365	365	365	365	365
3,000				364	364			366			
6,000				366	365						

NANTAHALA RIVER AT ALMOND

No. 1209

LOCATION: Swain County, Nantahala River at highway bridge at Almond, 4 miles below Wesser Creek and one-fourth mile above confluence with Little Tennessee River.

DRAINAGE AREA: 177 square miles. Revised to 174 square miles.

RECORDS AVAILABLE: Active station. April 16, 1912 to date.

EXTREMES: *Maximum* 15,200 second-feet (mean daily), March 4, 1917; *Minimum* 79 second-feet, September 20-22, 1925.

REMARKS: Automatic recorder installed May 1934; staff gage prior to this date. Part of records were obtained at a point several hundred feet downstream from present station location. Slight regulation at low water due to operation of small mills upstream. No diversions.

Zero of gage is 1,595.46 feet above mean sea level.

NANTAHALA RIVER AT ALMOND

Drainage Area 177 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1912	1,217	188	784	220	750	241	395	8½ months only	
1913	5,058	150	2,138	164	1,380	202	462	2.61	35.32
1914	2,959	127	1,401	139	943	154	401	2.26	30.70
1915	5,898	165	1,759	183	835	207	460	2.60	35.25
1916	3,172	180	1,615	192	947	234	498	2.81	38.32
1917	15,240	201	3,713	234	2,610	270	689	3.89	52.69
1918	7,800	190	2,160	201	1,070	270	561	3.17	42.92
1919	4,000	145	1,554	154	1,020	195	572	3.23	43.83
1920	8,000	215	3,514	235	1,690	294	745	4.21	57.33
1921	4,500	182	1,676	191	1,130	245	542	3.06	41.25
1922	12,600	132	3,449	136	1,770	159	794	4.49	60.87
1923	3,660	146	1,724	160	1,290	185	674	3.81	51.38
1924	2,800	125	1,529	152	1,050	164	505	2.86	38.91
1925	2,040	79	1,380	84	1,010	93.7	344	1.94	26.34
1926	5,100	142	3,215	150	1,390	199	492	2.78	37.71
1927	3,920	173	1,819	187	1,120	228	588	3.32	45.06
1928	7,560	280	2,058	286	958	340	681	3.85	52.35
1929	4,360	170	2,030	192	1,640	277	797	4.50	61.06
1930	2,130	107	1,150	115	772	129	378	2.13	28.96
1931	3,080	108	1,270	113	904	131	386	2.18	29.66
1932	13,900	143	4,097	164	2,000	204	711	4.16	54.71
1933	3,270	84	1,717	94	1,270	107	495	2.82	38.02
1934	5,140	158	2,094	183	1,130	223	448	2.53	34.38
1935	2,470	117	1,461	121	898	137	418	2.36	32.02
1936	6,440	108	2,977	120	1,518	159	595	3.42	46.55

OCONALUFTY RIVER AT CHEROKEE

No. 1213

LOCATION: Swain County, Oconalufty River 2 miles above mouth of Soco Creek, at cable footbridge one-fourth mile above Cherokee Indian Reservation and three-fourths mile above Cherokee.

DRAINAGE AREA: 133 square miles. Revised to 131 square miles.

RECORDS AVAILABLE: Active station. January 27, 1921 to date.

EXTREMES: *Maximum* 8,760 second-feet, April 6, 1936;
Minimum 56 second-feet, September 9, 1925.

REMARKS: Automatic recorder installed May 17, 1934; staff gage prior to this date. Slight regulation present when Indian School hydro plant is in use. No diversions.

Zero of gage is 1,938.50 feet above mean sea level.

OCONALUFTY RIVER AT CHEROKEE

Drainage Area 133 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1921	3,030	142	1,297	146	789	195	405	11 months only	
1922	6,490	78	1,628	81	1,150	90.6	491	3.69	49.18
1923	2,300	92	1,363	100	847	108	452	3.40	45.96
1924	2,380	88	992	101	630	113	366	2.76	37.52
1925	2,230	56	720	60	576	69.6	257	1.94	26.27
1926	3,290	136	1,894	159	973	178	387	2.91	39.54
1927	3,000	132	1,081	144	682	188	391	2.94	39.95
1928	3,400	177	1,557	189	875	219	483	3.63	49.45
1929	3,920	137	1,550	162	1,090	288	536	4.03	54.75
1930	1,700	97	910	107	651	132	307	2.31	31.31
1931	3,480	77	1,280	78	756	99.5	320	2.41	32.64
1932	5,660	98	2,066	104	950	133	444	3.34	45.42
1933	2,580	80	1,306	80	944	89.6	325	2.47	33.19
1934	4,520	106	1,820	126	907	160	335	2.52	34.23
1935	2,470	79	1,198	81	711	94.9	354	2.66	36.07
1936	4,450	109	2,124	121	1,038	160	469	3.58	48.73

CULLASAJA CREEK AT HIGHLANDS

No. 1216

LOCATION: Macon County, Cullasaja Creek, one-fourth mile below Highlands municipal power dam, one-half mile below mouth of Big Creek and 2 miles northwest of Highlands.

DRAINAGE AREA: 13.3 square miles. Revised to 14.9 square miles.

RECORDS AVAILABLE: Active station. December 8, 1927 to date.

EXTREMES: *Maximum* 2,420 second-feet, August 15, 1928;
Minimum mean daily, 0.4 second-feet, July 24-30, 1936.

REMARKS: Automatic recorder. Present station was established April 29, 1931. Records were obtained at spillway of power dam one-fourth mile upstream, from December 8, 1927 to August 28, 1931. Flow at station is largely regulated by hydro plant one-fourth mile above. No diversions.
Zero of gage is 3,373.63 feet above mean sea level.

CULLASAJA CREEK AT HIGHLANDS

Drainage Area 13.3 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1927	183	52	112	71			91.8	½ month only	
1928	1,050	23	339	25	112	29.5	58	4.36	59.36
1929	638	15	296	16	151	21.6	65.6	4.93	67.16
1930	223	5.4	91	6.7	49.5	11	31.5	2.37	32.13
1931	363	5.6	146	6.5	103	8.3	39	2.89	39.65
1932	445	6.5	318	7.3	150	16.8	68.6	5.08	68.97
1933	537	7.9	165	8.7	97.3	9.9	41.5	3.08	41.71
1934	475	15	220	23	125	30	59.2	4.39	59.50
1935	410	11	197	15	121	18.1	51.1	3.79	51.39
1936	631	0.4	313	1.1	151	8.24	66.5	4.46	60.71

SCOTT CREEK AT SYLVA

No. 1217

LOCATION: Jackson County, Scott Creek just below Gunter Creek and about 2 miles above confluence with Tuckasegee River.

DRAINAGE AREA: 56 square miles. Revised to 55 square miles.

RECORDS AVAILABLE: Active station. May 16, 1928 to date.

EXTREMES: *Maximum* 4,440 second-feet, July 10, 1929;
Minimum 5 second-feet, January 30, 1934.

REMARKS: Automatic recorder installed July 1, 1928. Slight regulation caused by use of water in processing plants above. Sylva Paperboard Co. diverts about 2,000,000 gallons daily around station.
Zero of gage is 2,033.38 feet above mean sea level.

SCOTT CREEK AT SYLVA

Drainage Area 56 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	1,250	65	504	71	244	77.1	166	7½ mon	ths only
1929	974	51	527	56	413	73.9	176	3.14	42.65
1930	320	24	188	29	136	35.4	80.7	1.44	19.56
1931	482	22	245	24	163	27.8	73.4	1.31	17.76
1932	1,720	26	633	31	275	39.3	113	2.01	27.37
1933	520	26	360	28	313	31.5	119	2.14	28.81
1934	851	22	303	33	160	44.6	76.6	1.37	18.57
1935	404	29	221	31	180	35.7	92.7	1.66	22.45
1936	1,160	37	624	42	388	56.5	155	2.82	38.38

TUCKASEGEE RIVER AT DILLSBORO

No. 1218

LOCATION: Jackson County, Tuckasegee River just above county foot bridge and one-half mile below mouth of Scott Creek at Dillsboro.

DRAINAGE AREA: 348 square miles. Revised to 347 square miles.

RECORDS AVAILABLE: Active station. June 15, 1928 to date.

EXTREMES: *Maximum* 14,000 second-feet, August 15, 1928;
Minimum 86 second-feet, September 21, 1935.

REMARKS: Automatic recorder installed May 22, 1934; staff gage prior to this date. Slight regulation due to operation of small hydro plant three-fourths mile upstream. No diversions. Zero of gage is 1,950.28 feet above mean sea level.

TUCKASEGEE RIVER AT DILLSBORO

Drainage Area 348 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1928	6,120	385	2,510	418	1,200	483	876	6½ mon	ths only
1929	7,530	338	4,010	369	2,730	540	1,240	3.56	48.43
1930	2,410	196	1,760	159	980	238	558	1.60	21.76
1931	4,340	168	1,500	174	1,340	209	537	1.54	20.94
1932	5,080	212	3,804	233	2,200	295	912	2.62	35.65
1933	5,260	156	2,457	165	1,430	205	734	2.12	28.64
1934	4,320	223	2,192	271	1,290	370	654	1.88	25.52
1935	3,750	211	1,739	229	1,141	268	665	1.91	25.92
1936	7,270	236	4,353	277	2,384	373	1,002	2.89	39.34

LITTLE TENNESSEE RIVER AT IOTLA

No. 1219

LOCATION: Macon County, Little Tennessee River just above Iotla Creek and one-fourth mile above bridge on State Highway crossing at Iotla.

DRAINAGE AREA: 326 square miles. Revised to 323 square miles.

RECORDS AVAILABLE: Active station. June 27, 1929 to date.

EXTREMES: *Maximum* 10,900 second-feet, September 30, 1936;
Minimum 31 second-feet, November 26, 1933.

REMARKS: Automatic recorder entire record. Marked fluctuation due to operation of power plant 2½ miles above. No diversions. Zero of gage is 1,958.86 feet above mean sea level.

LITTLE TENNESSEE RIVER AT IOTLA

Drainage Area 326 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1929	9,010	294	3,140	330	1,590	440	937	6 months only	
1930	2,500	160	1,570	190	1,000	232	567	1.74	23.57
1931	3,620	95	1,660	154	1,270	163	538	1.65	23.39
1932	8,030	203	4,381	241	2,340	322	970	2.98	40.52
1933	3,560	31	2,364	175	1,610	220	737	2.27	30.69
1934	6,130	261	2,453	299	1,450	329	669	2.05	27.85
1935	4,170	243	2,090	253	1,333	284	705	2.16	29.36
1936	7,910	240	4,784	274	2,503	357	1,028	3.18	43.28

TUCKASEGEE RIVER AT TUCKASEIGEE

No. 1220

LOCATION: Jackson County, Tuckasegee River at Tuckaseigee, three-fourths mile below East Fork of Tuckasegee River.

DRAINAGE AREA: 144 square miles. Revised to 143 square miles.

RECORDS AVAILABLE: Active station. June 18, 1934 to date.

EXTREMES: *Maximum* 6,330 second-feet, September 30, 1936;
Minimum 107 second-feet, July 29 and August 22, 1936.

REMARKS: Automatic recorder entire record. No regulation; no diversions. Zero of gage is 2,124.61 feet above mean sea level.

TUCKASEGEE RIVER AT TUCKASEIGEE

Drainage Area 144 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	1,660	147	896	187	520	207	351	6½ mon	ths only
1935	2,560	109	1,218	118	713	136	327	2.27	30.81
1936	3,990	111	2,231	119	1,172	167	497	3.48	47.37

NOLAND CREEK NEAR BRYSON

No. 1221

LOCATION: Swain County, Noland Creek, 1.1 miles below Mill Creek, 7 miles above railroad station at Noland, and 15 miles by highway from Bryson.

DRAINAGE AREA: 13.8 square miles (revised).

RECORDS AVAILABLE: Active station. October 1, 1935 to date.

EXTREMES: *Maximum* 748 second-feet, April 6, 1936;
Minimum 7 second-feet, September 1, 2, 3, 1936.

REMARKS: Automatic recorder entire record. No regulation; no diversions.

NOLAND CREEK NEAR BRYSON

Drainage Area 13.9 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1935	92	7.3	49	7.5	25.2	9.68	17.6	3 months only	
1936	464	7.0	230	8.7	125	11.8	49.6	3.59	48.86

NANTAHALA RIVER NEAR NANTAHALA

No. 1203

LOCATION: Swain County, Nantahala River just above Nelsons Creek and about 1 mile up the river from Nantahala.

DRAINAGE AREA: 144 square miles.

RECORDS AVAILABLE: Discontinued station. May 22, 1907 to December 31, 1909.

EXTREMES: *Maximum* stage 4.4 feet, June 4, 1909 (discharge not determined); *Minimum* 152 second-feet, several times in November and December, 1909.

REMARKS: Staff gage. No regulation.

NANTAHALA RIVER NEAR NANTAHALA

Drainage Area 144 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	470	165	460	177	409	238	381	7 months only	
1908	470	165	470	167	432	218	321	8 months only	
1909	710	152	680	152	567	172	368	9 months only	

TUCKASEGEE RIVER NEAR EAST LA PORTE

No. 1204

LOCATION: Jackson County, Tuckasegee River at highway bridge on road between Sylva, Cullowhee, and East La Porte, 1 mile southeast of Cullowhee and 1½ miles below mouth of Caney Fork.

DRAINAGE AREA: 200 square miles.

RECORDS AVAILABLE: Discontinued station. May 27, 1907 to December 31, 1909; and December 21, 1920 to September 30, 1926.

EXTREMES: *Maximum* 10,200 second-feet, July 6, 1924;
Minimum 36 second-feet, August and September, 1925.

REMARKS: Chain gage. No regulation.

TUCKASEGEE RIVER NEAR EAST LA PORTE

Drainage Area 200 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	2,380	170	924	195	691	241	392	7 months only	
1908	8,000	195	2,137	213	1,020	287	569	2.84	38.60
1909	5,700	152	2,411	171	1,230	246	751	3.75	50.88
Station discontinued December 31, 1909; re-established December 21, 1920.									
1920	1,860	488						8 days only	
1921	2,370	147	1,089	151	933	235	488	2.44	32.95
1922	4,220	103	1,659	120	1,250	127	591	2.96	40.04
1923	3,890	157	1,864	235	1,030	260	595	2.98	40.32
1924	6,420	171	2,255	196	1,020	222	619	3.10	42.14
1925	2,260	36	1,105	39	907	85	338	1.69	22.83
1926	3,350	109	930	130	701	246	428	9 months only	

LITTLE TENNESSEE RIVER AT FRANKLIN

No. 1205

LOCATION: Macon County, Little Tennessee River at highway bridge one-fourth mile northeast Southern R. R. station at Franklin, 1 mile below mouth of Cullasaja River.

DRAINAGE AREA: 297 square miles.

RECORDS AVAILABLE: Discontinued station. June 12, 1907 to July 12, 1910; and February 9, 1921 to November 11, 1925.

EXTREMES: *Maximum* 7,950 second-feet, June 4, 1909;
Minimum 65 second-feet, September 22, 1925.

REMARKS: Chain gage. May be slight regulation from operation of small plants on tributaries above.

LITTLE TENNESSEE RIVER AT FRANKLIN

Drainage Area 297 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	4,650	250	1,571	288	1,230	344	634	6 months only	
1908	7,650	345	2,964	356	1,700	505	981	3.30	44.87
1909	7,950	325	3,843	402	2,140	427	1,190	4.01	54.31
1910	3,500	420	1,919	573	1,340	712	951	6 months only	
Station discontinued July 12, 1910; re-established February 9, 1921.									
1921	4,450	242	1,636	257	1,880	319	722	10½ months only	
1922	6,350	210	2,577	238	1,940	240	942	3.17	42.98
1923	3,950	225	2,526	245	1,480	276	808	2.72	36.82
1924	4,150	195	1,797	235	1,340	263	729	2.46	33.45
1925	3,320	70	2,149	91	1,400	110	497	10½ months only	

CHEOAH RIVER AT MILLSAPS

No. 1207

LOCATION: Graham County, Cheoah River at boat landing at Millsaps, 500 feet above mouth of Snowbird Creek.

DRAINAGE AREA: Not determined.

RECORDS AVAILABLE: Discontinued station. September 1, 1907 to June 30,1908.

EXTREMES: *Maximum* stage 6.0 feet, February 15, 1908 (discharge not determined);
Minimum 40 second-feet, September 17-20, 1907.

REMARKS: Staff gage. No regulation. Records very incomplete.

CHEOAH RIVER AT MILLSAPS

Drainage Area Not Determined

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	115	40	104	52	95	65	80	4 months only	
1908	Records for 1908 too incomplete								

SCOTTS CREEK NEAR DILLSBORO

No. 1208

LOCATION: Jackson County, Scotts Creek at foot bridge about 1 mile from Dillsboro, and about 1 mile from the mouth of the creek which is tributary to Tuckasegee River.

DRAINAGE AREA: 59 square miles.

RECORDS AVAILABLE: Discontinued station. September 1, 1907 to June 30,1908.

EXTREMES: *Maximum* stage 3.0 feet, February 15, 1908 (discharge not determined);
Minimum 78 second-feet, September, October, and November, 1907.

REMARKS: Staff gage. No regulation.

SCOTTS CREEK NEAR DILLSBORO

Drainage Area 59 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	210	78	138	78	125	89	107	4 months only	
1908	210	92	196	101	173	123	156	6 months only	

LITTLE TENNESSEE RIVER AT ALMOND

No. 1210

LOCATION: Swain County, Little Tennessee River at old foot bridge one-fourth mile above mouth of Nantahala River, one-half mile east of R. R. station at Almond and 3 miles above Judson.

DRAINAGE AREA: 453 square miles.

RECORDS AVAILABLE: Discontinued station. April 16, 1912 to November 23, 1917.

EXTREMES: *Maximum* 12,700 second-feet (daily), March 4, 1917;
Minimum 212 second-feet (daily), September 16 and 17, 1914.

REMARKS: Staff gage. No regulation.

LITTLE TENNESSEE RIVER AT ALMOND

Drainage Area 453 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1912	2,122	392	1,771	420	1,311	489	877	8½ mon	ths only
1913	9,170	333	4,807	347	2,876	404	964	2.13	28.87
1914	5,671	212	3,136	245	2,162	272	770	1.70	23.02
1915	9,621	368	3,472	399	2,123	483	1,161	2.56	34.66
1916	10,100	448	5,843	470	3,252	566	1,267	2.79	38.08
1917	12,700	408	4,032	491	3,468	519	1,251	11 mont	hs only

CHEOAH RIVER AT JOHNSON

No. 1211

LOCATION: Graham County, Cheoah River, 11 miles above mouth, 1 mile above Johnson, 2 miles below mouth of Santeetlah Creek and 4 miles above mouth of Yellow Creek.

DRAINAGE AREA: 175 square miles.

RECORDS AVAILABLE: Discontinued station. November 1, 1912 to December 31, 1918; and December 29, 1920 to September 30, 1927.

EXTREMES: *Maximum* 11,400 second-feet (daily), March 4, 1917;
Minimum 37 second-feet, September 11 and 12, 1925.

REMARKS: Staff gage.

CHEOAH RIVER AT JOHNSON

Drainage Area 175 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1912	1,132	143	501	169	377	191	286	2 months only	
1913	4,817	130	1,946	138	1,377	167	496	2.83	38.31
1914	6,902	110	1,782	123	877	133	370	2.11	28.57
1915	6,322	152	1,622	186	946	212	491	2.80	37.87
1916	3,352	164	1,393	175	953	225	505	2.88	39.22
1917	11,400	136	3,368	169	2,387	191	662	3.77	51.03
1918	5,234	171	1,663	188	1,053	258	547	11 months only	
Station discontinued December 31, 1918; re-established December 29, 1920.									
1921	4,170	108	1,644	120	1,050	171	517	2.95	39.79
1922	8,470	123	2,405	134	1,620	148	718	4.10	55.78
1923	3,480	95	1,592	103	1,290	113	617	3.54	47.53
1924	5,670	68	1,504	105	908	125	510	2.91	39.68
1925	2,000	38	1,204	47	957	54.2	354	2.03	27.50
1926	6,030	130	2,930	143	1,320	168	480	2.74	37.25
1927	3,120	140	2,180	144	1,400	194	664	9 months only	

NANTAHALA RIVER AT WESSER

No. 1212

LOCATION: Swain County, Nantahala River at Wesser R. R. station, 500 feet below upper railroad bridge, one-fourth mile below mouth of Silvermine Creek, one-fourth mile above mouth of Wesser Creek and 4 miles upstream from Almond.

DRAINAGE AREA: 160 square miles.

RECORDS AVAILABLE: Discontinued station. April 15, 1920 to April 30, 1921.

EXTREMES: *Maximum* 9,800 second-feet, December 14, 1920;
Minimum 195 second-feet, November 14, 1920.

REMARKS: Staff gage. No regulation.

NANTAHALA RIVER AT WESSER

Drainage Area 160 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1920	6,400	205	1,564	221	895	271	566	7 months only	
1921	4,100	355	1,474	375	1,000	494	499	4 months only	

CHEOAH RIVER AT TOPOCO

No. 1214

LOCATION: Graham County, Cheoah River at Topoco, one-fourth mile above confluence with Little Tennessee River.

DRAINAGE AREA: 213 square miles.

RECORDS AVAILABLE: Discontinued station. October 1, 1924 to September 30, 1927.

EXTREMES: *Maximum* 6,130 second-feet, December 8, 1924;
Minimum 33 second-feet, September 9 and 10, 1925.

REMARKS: Staff gage.

CHEOAH RIVER AT TOPOCO

Drainage Area 213 Square Mile

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1924	5,170	110	1,420	145	722	165	363	3 months only	
1925	2,350	36	1,441	46	1,110	58	405	1.90	25.71
1926	4,770	137	2,969	146	1,420	180	559	2.62	35.62
1927	4,280	184	2,187	184	1,300	240	731	9 months only	

LITTLE TENNESSEE RIVER AT ETNA

No. 1215

LOCATION: Macon County, Little Tennessee River at foot bridge at Etna, just below mouth of Lakey Creek, 3¾ miles below mouth of Cowee Creek and 7½ miles northwest of Franklin.

DRAINAGE AREA: 378 square miles.

RECORDS AVAILABLE: Discontinued station. January 7, 1926 to December 31, 1928.

EXTREMES: *Maximum* 10,600 second-feet, August 16, 1928;
Minimum 191 second-feet, October 2, 1927.

REMARKS: Staff gage. Marked diurnal fluctuation caused by operation of Franklin municipal power plant above. No diversions.

LITTLE TENNESSEE RIVER AT ETNA

Drainage Area 378 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1926	5,400	215	3,461	253	1,400	270	683	1.81	24.49
1927	4,080	191	1,870	235	1,460	324	716	1.89	25.75
1928	4,080	455	3,126	475	1,510	526	1,020	2.70	36.81

HIWASSEE RIVER AT MURPHY

No. 1301

LOCATION: Cherokee County, Hiwassee River, 500 feet below bridge on U. S. Highways 19 and 64 at Murphy, one-half mile above mouth of Valley River and 4 miles above mouth of Nottely River.

DRAINAGE AREA: 410 square miles. Revised to 419 square miles

RECORDS AVAILABLE: Active station. June 23, 1896 to date.

EXTREMES: *Maximum* 23,100 second-feet, March 19, 1899;
Minimum (estimated) 10 second-feet, December 3, 1924 (caused by filling of Andrews Reservoir).

REMARKS: Automatic recorder installed November 9, 1926; wire and chain gage prior to this date. Considerable diurnal fluctuation at low water due to operation of Andrews hydro plant ten miles above. No diversions. Zero of gage is 1,510.62 feet above mean sea level.

HIWASSEE RIVER AT MURPHY

Drainage Area 410 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1897	3,270	305	1,338	254	753	339	503	2½ months only	
1898	15,900	305	5,901	336	2,480	380	1,221	2.97	40.57
1899	23,100	268	6,400	291	3,430	334	1,042	2.54	33.59
1900	13,100	215	3,857	277	2,070	503	1,099	2.68	36.19
1901	14,300	408	5,417	431	3,110	478	1,588	3.88	52.70
1902	15,900	198	4,820	203	2,590	237	959	2.34	31.47
1903	12,000	205	4,483	209	3,720	247	1,123	2.74	36.85
1904	3,990	140	1,720	160	1,260	166	519	1.27	17.26
1905	8,490	258	2,629	258	1,520	315	823	2.02	27.37
1906	18,400	340	4,824	567	1,830	729	1,345	3.28	44.65
1907	10,200	425	2,147	460	1,410	531	1,032	2.52	34.07
1908	8,730	260	3,319	290	1,950	398	1,056	2.57	35.00
1909	8,690	350	4,374	375	2,690	393	1,353	3.30	44.74
1910	4,550	295	2,761	300	1,600	326	823	2.01	27.25
1911	5,450	205	2,938	265	2,100	340	804	1.96	26.49
1912	10,500	320	4,337	348	2,410	424	1,036	2.53	34.39
1913	12,600	205	4,863	233	2,720	293	817	1.99	27.02
1914	5,450	140	2,509	201	1,650	208	596	1.45	19.74
1915	12,300	230	3,248	248	1,770	327	834	2.02	27.78
1916	9,950	375	4,540	399	2,540	495	1,078	2.63	35.82
1917	15,400	360	4,823	404	3,780	437	1,152	2.80	38.08
1918	13,100	270	3,523	306	1,730	407	903	2.20	29.83
1919	6,280	225	2,500	237	1,620	301	898	2.19	29.71
1920	13,100	360	5,554	390	2,640	456	1,217	2.97	40.38
1921	7,560	240	3,348	249	2,080	318	884	2.16	29.01
1922	13,800	250	4,986	272	2,490	299	1,239	3.02	41.03
1923	5,080	225	2,830	254	1,920	311	1,103	2.69	36.36
1924	4,540	10	2,337	162	1,590	210	795	1.94	26.38
1925	4,360	49	2,336	110	1,550	137	499	1.22	16.56
1926	6,560	120	4,029	130	1,790	221	641	1.56	21.21
1927	5,870	216	2,651	246	1,570	320	861	2.10	28.49
1928	9,940	385	3,159	453	1,580	519	1,100	2.69	36.57
1929	12,300	289	4,130	407	2,950	633	1,530	3.73	50.75
1930	3,570	152	1,730	179	1,270	223	640	1.56	21.18
1931	4,970	103	2,310	133	1,550	156	604	1.47	19.98
1932	16,500	162	6,434	212	3,350	340	1,183	2.89	39.59
1933	3,760	84	2,420	181	1,830	207	816	2.01	27.03
1934	9,020	162	3,513	281	1,740	363	701	1.71	23.24
1935	4,580	166	2,460	169	1,459	202	684	1.67	22.68
1936	14,700	157	3,837	214	3,007	279	1,054	2.52	34.30

HIWASSEE RIVER AT MURPHY

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50	2										
100	12								3		
150	83	13					30	1	10		
200	109	34				25	62	4	38	4	35
250	136	86	7			77	84	16	78	9	60
300	151	128	39		2	109	111	23	102	30	103
350	164	144	55		3	136	135	40	134	61	130
400	181	155	70	1	6	162	169	51	151	95	147
500	226	184	98	24	23	182	209	68	179	153	175
600	263	223	142	69	49	198	248	87	201	207	198
700	309	265	181	106	67	221	273	130	212	258	217
800	318	291	203	143	89	241	287	167	215	296	243
900	326	309	238	166	108	271	303	198	219	311	272
1,000	333	325	269	202	142	296	316	230	231	320	291
1,200	341	336	308	259	188	334	336	269	276	336	319
1,400	347	342	324	289	218	348	344	297	305	343	336
1,600	351	347	334	321	246	353	352	311	321	347	344
2,000	356	350	352	345	292	359	356	330	341	356	357
2,500	359	356	356	354	317	362	357	339	351	359	362
3,000	362	358	358	358	332	364	360	344	359	359	362
5,000	365	361	364	365	358	365	364	357	365	363	365
10,000		365	365	366	364		365	365		365	
17,000					365			366			

NOTTELY RIVER NEAR RANGER

No. 1302

LOCATION: Cherokee County, Nottely River 200 feet above highway bridge, one-half mile below Ranger and 7½ miles southwest of Murphy.

DRAINAGE AREA: 272 square miles.

RECORDS AVAILABLE: Active station. February 17, 1901 to December 31, 1905; January 22, 1914 to April 30, 1917; October 20, 1918 to date.

EXTREMES: *Maximum* 14,100 second-feet, February 28, 1902;
Minimum 41 second-feet, September 6, 7, 23, 24, 1925.

REMARKS: Automatic recorder installed May 16, 1934; staff and chain gage prior to this date. Slight regulation at low stages due to operation of grist mills above. No diversions. Zero of gage is 1,544.56 feet above mean sea level.

NOTTELY RIVER NEAR RANGER

Drainage Area 272 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1901	9,100	301	2,936	367	1,860	386	869	10½ months only	
1902	9,800	121	2,609	154	1,220	216	537	1.98	26.62
1903	7,350	163	2,113	163	1,490	208	636	2.34	31.47
1904	2,250	103	872	103	675	105	315	1.16	15.75
1905	4,000	121	1,484	130	840	166	453	1.67	22.62
Station discontinued December 31, 1905; re-established January 22, 1914.									
1914	4,180	89	1,592	94	884	118	319	11 months only	
1915	4,580	162	1,528	178	845	186	462	1.70	27.98
1916	6,580	244	3,471	265	1,420	315	595	2.19	30.18
1917	5,780	465	2,546	647	2,010	802	125	4 months only	
Station discontinued April 30, 1917; re-established October 20, 1918.									
1918	6,300	184	2,117	357	1,280	529	870	2½ months only	
1919	3,900	164	1,686	181	1,060	226	604	2.22	34.14
1920	6,110	256	2,941	295	1,540	357	782	2.88	39.06
1921	5,500	181	2,534	205	1,400	239	564	2.07	27.66
1922	5,450	207	2,042	215	1,280	229	721	2.63	35.69
1923	2,480	245	1,520	251	984	267	628	2.29	31.08
1924	2,940	181	1,470	194	912	208	512	1.88	25.59
1925	2,580	41	1,260	45	787	73.9	286	1.05	14.30
1926	2,950	101	1,700	137	773	150	343	1.26	17.10
1927	1,630	147	993	157	688	200	419	1.54	20.92
1928	3,890	280	1,600	316	835	335	609	2.24	30.47
1929	5,150	153	1,990	266	1,580	360	831	3.06	41.41
1930	2,010	101	1,280	130	937	210	454	1.67	22.67
1931	4,050	80	1,930	111	1,220	142	514	1.89	25.66
1932	7,120	134	2,934	159	1,650	236	711	2.61	35.58
1933	2,390	123	1,215	136	886	146	477	1.76	23.83
1934	4,300	152	1,801	181	912	207	399	1.47	19.88
1935	2,190	101	1,161	102	795	122	374	1.38	18.64
1936	8,890	140	3,801	153	1,655	211	588	2.16	29.43

NOTTELY RIVER NEAR RANGER

DEFICIENCY TABLE

Discharge in Second-feet	Years										
	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935
	Number of days when discharge was equal to or less than that shown in first column										
50	17										
100	63						7				
125	81	20				8	31		1		48
150	103	68	5			12	53	3	43		83
175	122	107	22		1	24	59	13	77	20	108
200	142	133	52		3	45	67	17	93	62	134
225	161	149	66		10	78	80	36	106	89	147
250	186	166	95		12	92	94	45	134	111	159
300	238	200	116	5	39	134	139	58	160	171	181
350	277	252	177	64	56	156	168	82	176	215	208
400	310	281	225	110	72	179	194	112	195	249	238
500	335	314	277	178	101	216	222	168	210	304	281
600	345	334	309	248	149	277	263	201	245	326	308
700	352	341	331	289	191	317	291	233	293	335	331
800	354	350	345	307	233	339	313	266	313	341	338
900	355	351	349	324	259	348	334	305	331	351	347
1,000	355	352	353	335	277	352	339	313	340	354	353
1,500	362	360	362	356	331	362	349	342	361	360	360
2,000	364	360	365	360	347	364	356	352	363	361	363
3,000	365	365		365	359	365	362	358	365	363	365
5,000				366	364		365	365		365	
8,000					365			366			

VALLEY RIVER AT TOMOTLA

No. 1303

LOCATION: Cherokee County, Valley River at highway bridge at Tomotla, one-half mile above Rodgers Creek, 1 mile below Colvards Creek and 6 miles above junction with Hiwassee River at Murphy.

DRAINAGE AREA: 106 square miles. Revised to 104 square miles.

RECORDS AVAILABLE: Active station. June 29, 1904 to December 31, 1909; January 21, 1914 to April 30, 1917; October 29, 1918 to date.

EXTREMES: *Maximum* 9,030 second-feet, November 19, 1906;
Minimum 12 second-feet, several times in August and September, 1925.

REMARKS: Automatic recorder installed May 11, 1934; staff, slope, and chain gage prior to this date. May be slight regulation at extreme low water due to operation of small grist mills above. No diversions.

Zero of gage is 1,555.64 feet above mean sea level.

VALLEY RIVER AT TOMOTLA

Drainage Area 106 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1904	1,000	22	248	26	181	32.9	88.1	6 months only	
1905	3,430	50	1,011	62	642	85.2	272.8	2.57	34.73
1906	7,780	102	1,878	125	663	204	402	3.79	51.56
1907	1,500	86	704	101	483	123	298	2.81	38.05
1908	1,890	58	848	58	495	73.9	244	2.30	31.29
1909	2,520	72	1,103	86	697	87.4	335	3.16	42.57
Station discontinued December 31, 1909; re-established January 21, 1914.									
1914	3,200	45	989	50	492	55.7	183	11 months only	
1915	3,200	46	792	61	422	73.7	206	1.94	26.38
1916	2,130	60	736	72	458	81.4	244	2.30	31.35
1917	2,490	225	2,226	275	740	448	570	4 months only	
Station discontinued April 30, 1917; re-established October 29, 1918.									
1918	3,250	106	826	139	964	178	319	2 months only	
1919	1,640	34	758	43	441	57.3	224	2.12	28.67
1920	4,910	94	1,885	103	832	119	377	3.55	48.19
1921	3,050	67	1,079	70	635	94.1	284	2.68	36.03
1922	4,550	56	1,470	59	806	67.3	359	3.38	41.41
1923	2,620	48	997	52	688	56.2	297	2.80	37.76
1924	1,450	41	754	46	451	51.6	220	2.07	28.25
1925	1,210	12	670	16	497	21.3	153	1.44	19.55
1926	2,560	42	1,429	47	655	67.8	228	2.15	29.23
1927	2,390	56	1,006	65	543	82.1	272	2.57	34.79
1928	4,300	111	1,125	113	512	156	328	3.09	42.14
1929	2,170	66	1,480	72	755	105	402	3.78	51.37
1930	1,400	28	648	31	462	37.5	178	1.68	22.85
1931	2,120	18	700	21	439	33.3	159	1.50	20.39
1932	5,220	36	1,729	38	1,050	64.9	345	3.25	44.35
1933	2,740	24	1,076	31	716	38.6	223	2.13	28.52
1934	2,960	62	1,069	72	554	96.8	186	1.75	23.78
1935	1,860	27	880	28	494	37.5	187	1.76	23.98
1936	5,050	28	1,943	32	835	48.0	294	2.83	38.52

HIWASSEE RIVER BELOW HAYESVILLE

No. 1307

LOCATION: Clay County, Hiwassee River 2 miles below Hayesville, three-fourths mile below mouth of Tusquitee Creek and 3½ miles above mouth of Fires Creek.

DRAINAGE AREA: 256 square miles. Revised to 251 square miles.

RECORDS AVAILABLE: Active station. June 13, 1934 to date.

EXTREMES: *Maximum* 10,600 second-feet, April 2, 1936;
Minimum 103 second-feet, December 21, 1905.

REMARKS: Automatic recorder entire record. May be slight regulation at extreme low water due to operation of small grist mills above. No diversions. Zero of gage is 1,760.69 feet above mean sea level.

HIWASSEE RIVER BELOW HAYESVILLE

Drainage Area 256 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	2,380	186	816	202	555	246	413	6½ mon	ths only
1935	2,510	112	1,413	115	902	136	452	1.77	23.95
1936	7,480	120	3,951	156	1,847	188	679	2.71	36.89

HIWASSEE RIVER NEAR VESTS

No. 1308

LOCATION: Cherokee County, Hiwassee River, one-half mile below Hiwassee Dam, 2½ miles below mouth of Beaverdam Creek, 2 miles above mouth of Shoal Creek and about 3 miles northeast of Vests.

DRAINAGE AREA: 979 square miles. Revised to 967 square miles.

RECORDS AVAILABLE: Active station. September 1, 1934 to date.

EXTREMES: *Maximum* 42,800 second-feet, February 4, 1936;
Minimum 235 second-feet, October 7, 1935.

REMARKS: Automatic recorder entire record. Considerable diurnal fluctuation caused by operation of Andrews and Nottely hydro plants above. No diversions.

Zero of gage is 1,264.00 feet above mean sea level.

HIWASSEE RIVER NEAR VESTS

Drainage Area 979 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1934	5,610	709	1,825	776	1,484	905	913	4 months only	
1935	9,660	316	5,304	333	3,378	416	1,498	1.53	20.78
1936	29,600	450	15,410	523	6,747	698	2,334	2.41	32.80

NOTTELY RIVER NEAR MURPHY

No. 1309

LOCATION: Cherokee County, Nottely River, 400 feet below the Nottely Dam of the Southern States Power Company, one-half mile above confluence with the Hiwassee River and 2½ miles west of Murphy.

DRAINAGE AREA: 228 square miles. Revised to 287 square miles.

RECORDS AVAILABLE: Active station. February 17, 1936 to date.

EXTREMES: Discharge not computed, see remarks.

REMARKS: Automatic recorder entire record. Probably some regulation at low stages due to operation of power plant above. No diversions. Zero of gage is 1,461.89 feet above mean sea level. This station maintained for gage height record only. No discharge record has been computed and the gage height records are not published.

HIWASSEE RIVER NEAR HAYESVILLE

No. 1304

LOCATION: Clay County, Hiwassee River at steel highway bridge on road from Hayesville to Hiwassee, Ga., 1 mile below mouth of Shooting Creek and 2½ miles east of Hayesville.

DRAINAGE AREA: 190 square miles.

RECORDS AVAILABLE: Discontinued station. May 20, 1907 to December 31, 1909; and August 16, 1922 to September 30, 1923.

EXTREMES: *Maximum* stage 11.0 feet, December 17, 1922 (discharge not determined);
Minimum 157 second-feet, October 8, 1908.

REMARKS: Chain gage. No regulation.

HIWASSEE RIVER NEAR HAYESVILLE

Drainage Area 190 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	500	204	474	214	381	263	331	6 months only	
1908	500	157	472	166	367	208	285	7 months only	
1909	500	190	479	204	344	219	305	6 months only	
1922	Records for 1922-1923 are unreliable.								
1923									

TUSQUITEE CREEK NEAR HAYESVILLE

No. 1305

LOCATION: Clay County, Tusquitee Creek at bridge 2½ miles above mouth of Creek, 3 miles northeast of Hayesville.

DRAINAGE AREA: 40 square miles.

RECORDS AVAILABLE: Discontinued station. June 1, 1907 to December 31, 1909.

EXTREMES: *Maximum* 938 second-feet, March 13, 1909;
Minimum 30 second-feet, October and November, 1908.

REMARKS: Staff gage. No regulation.

TUSQUITEE CREEK NEAR HAYESVILLE

Drainage Area 40 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1907	590	46	239	51	139	69	112	7 months only	
1908	775	30	380	31	215	42.3	119	2.98	40.63
1909	938	36	460	37	274	42.5	141	3.52	47.62

SHOOTING CREEK NEAR HAYESVILLE

No. 1306

LOCATION: Clay County, Shooting Creek at highway bridge on road from Hayesville to Franklin, 5 miles from Hiwassee River and 7½ miles southeast of Hayesville.

DRAINAGE AREA: 37.9 square miles.

RECORDS AVAILABLE: Discontinued station. August 15, 1922 to March 13, 1924.

EXTREMES: *Maximum* 2,380 second-feet, December 17, 1922;
Minimum 20 second-feet, October 5, 1922.

REMARKS: Chain gage. No regulation.

SHOOTING CREEK NEAR HAYESVILLE

Drainage Area 37.9 Square Miles

DISCHARGE DATA IN CUBIC FEET PER SECOND

YEAR	Daily		Weekly		Monthly		Mean	Mean Per Sq. Mile	Runoff Inches
	Max.	Min.	Max.	Min.	Max.	Min.			
1922	1,470	21	368	24	195	27.8	55.1	4½ mon	ths only
1923	745	23	290	24	211	28.2	113.3	2.99	40.38
1924	522	69	216	84	157	97.5	133	2 month	s only

STREAM GAGING STATIONS
IN
NORTH CAROLINA
1937

ROANOKE RIVER BASIN

NO.	NAME	LENGTH RECORD	STATUS
101	Roanoke River at Neal	6	D
102	Dan River at Madison	5	D
103	Roanoke River at Old Gaston	21	D
104	Dan River at Pine Hall	2	D
105	Dan River near Francisco	11	A
106	Dan River at Asbury	2	D
107	Dan River at Leaksville	7	A
108	Mayo River near Price	7	A
109	Roanoke River at Roanoke Rapids	6	A

TAR RIVER BASIN

202	Fishing Creek near Enfield	18	A
203	Tar River near Nashville	8	A
204	Tar River at Tarboro	8	A
205	Tar River at Greenville	2	A

NEUSE RIVER BASIN

301	Neuse River at Selma	4	D
302	Mocassin Cr. near Middlesex	2	D
303	Little Cr. near Zebulon	1	D
304	Flat River near Bahama	11	A
305	Rocky Cr. near Bahama	6	D
306	Dry Cr. near Bahama	4	D
307	Dial Cr. near Bahama	11	A
308	Neuse River near Northside	9	A
309	Neuse River near Clayton	9	A
310	Flat River at Dam near Bahama	11	A
311	Eno River at Hillsboro	7	A
312	Contentnea Cr. at Hookerton	8	A
313	Neuse River at Goldsboro	6	A
314	Neuse River at Kinston	6	A
315	Contentnea Cr. near Wilson	6	A
316	Little River at Princeton	6	A

CAPE FEAR RIVER BASIN

401	Cape Fear River at Fayetteville	37	A
402	W.Fk.Deep River near High Point	11	A
403	Haw River at Moncure	1	D
404	Deep River at Cumnock	2	D
405	Deep River at Ramseur	14	A
406	Morgan Cr. near Chapel Hill	9	D
408	Cape Fear River at Lillington	13	A
409	Reedy Fork Cr. near Summerfield	2	D
410	Horsepen Cr. near Battleground	7	A
411	E.Fk.Deep River near High Point	8	A
412	N.Fk.Buffalo Cr. near Greensboro	8	A
413	S.Fk.Buffalo Cr. near Greensboro	8	A
414	Reedy Fork Cr. near Gibsonville	8	A
415	Deep River near Randleman	8	A
416	Haw River near Benaja	8	A
417	Haw River at Haw River	8	A
418	Rock Fish Cr. near Fayetteville	3	D
419	Lower Little River near Linden	8	A
420	Haw River near Pittsboro	8	A
421	Deep River at Moncure	7	A
422	Muddy Cr. near Archdale	2	A

NOTE:-
LENGTH OF RECORD IS GIVEN IN YEARS UP TO 1937
A INDICATES ACTIVE STATION
D INDICATES DISCONTINUED STATION
RECORDS OF FOLLOWING STATIONS SUPPLEMENT EACH OTHER:-
NOS. 103 & 109
303 & 313
309 & 316

YADKIN RIVER BASIN

NO.	NAME	LENGTH RECORD	STATUS
501	Yadkin River at Salisbury	32	D
502	Yadkin River at Norwood	1	D
503	Yadkin River at No.Wilkesboro	12	D
504	Yadkin River near Pee Dee	5	D
505	Third Creek at Statesville	10	D
506	Yadkin River at Donnaha	10	D
507	Yadkin River near High Rock	9	D
508	Ararat River near Pilot Mt.	2	D
509	Fisher River near Dobson	12	D
510	Pee Dee River near Rockingham	9	A
511	Yadkin River at Yadkin College	8	A
512	S.Yadkin River at Cooleemee	8	A
513	Yadkin River at Wilkesboro	7	A
514	Lumber River at Boardman	7	A
515	Rocky River near Norwood	7	A
516	Fisher River near Copeland	5	A
517	Uharie River near Trinity	2	A
518	Little Brown Cr. at Polkton	1	A
519	Brown Cr. near Polkton	1	A
520	N.Fk.Jones Cr. near Wadesboro	1	A

CATAWBA RIVER BASIN

601	Catawba River at Catawba	5	A
602	Johns River near Morganton	1	D
603	Linville River near Bridgewater	1	D
604	Catawba River near Morganton	3	D
605	Linville River near Fonta Flora	1	D
606	Catawba River at Old Fort	2	D
607	Mill Cr. near Old Fort	2	D
608	Johns River at Collettsville	1	D
609	Catawba River at Rhodhiss	3	D
610	Wilson Cr. near Adako	1	D
611	Linville River at Branch	14	A
612	Long Cr. near Gastonia	1	D
613	Little Sugar Cr. near Charlotte	12	A
614	Henry Fork River at Henry River	6	D
615	Catawba Cr. at Gastonia	1	D

BROAD RIVER BASIN

701	Second Broad River near Logans Store	1	D
702	Green River near Saluda	2	D
703	Broad River at Uree	2	D
704	N.Pacolet River near Tryon	1	D
705	Sandy Run River near Boiling Springs	3	D
706	Second Broad River at Cliffside	11	A
707	Broad River near Boiling Springs	11	A
708	Broad River near, Chimney Rock	11	A

NEW RIVER BASIN

901	S.Frk.New River near Crumpler	8	D
902	N.Frk.New River at Crumpler	16	A
903	N.Frk.New River near Warrenville	2	D
904	S.Frk.New River near Jefferson	10	A
905	S.Frk.New River at Bowie	1	D

WATAUGA RIVER BASIN

1001	Elk Cr. near Elk Park	2	A
1002	Elk Cr. near Banner Elk	2	A

FRENCH BROAD RIVER BASIN

NO.	NAME	LENGTH RECORD	STATUS
1101	French Broad River at Asheville	39	A
1102	N.Frk.Mills River near Pink Beds	5	D
1103	S.Frk.Mills River near Sitton	5	D
1104	Davidson River near Davidson	5	D
1105	French Broad River at Horseshoe	1	D
1106	Little River at Calhoun	4	D
1107	French Broad River at Rossman	2	A
1108	Mud Cr. at Naples	1	D
1109	Pigeon River at Canton	10	A
1110	Ivy River at Democrat	1	D
1111	Swannanoa River at Swannanoa	8	D
1112	No.Toe River at Spruce Pine	6	D
1113	Swannanoa River at Biltmore	7	A
1114	Davidson River near Brevard	18	A
1115	French Broad River at Blantyre	16	A
1116	Pigeon River near Crabtree	9	D
1117	Pigeon River near Mt.Sterling	5	D
1118	Mills River near Mills River	4	A
1119	French Broad River at Calvert	12	A
1120	Nolichucky River at Poplar	11	A
1121	N.Frk.Swannanoa R.near Black Mnt.	11	A
1122	Bee Tree Cr. near Swannanoa	10	A
1123	S.Frk.Mills River at The Pink Beds	10	A
1124	Pigeon River near Hepco	9	A
1126	Jonathan Cr. at Cove Creek	6	A
1127	French Broad River at Bent Cr.	2	A
1128	Ivy River near Marshall	2	A
1129	Big Laurel Cr. near Stackhouse	2	A
1130	French Broad River at Hot Springs	2	A
1131	N.Toe River near Spruce Pines	2	A
1132	S.Toe River at New Dale	2	A
1133	Cane River near Sioux	2	A
1134	Cataloochee Cr. near Cataloochee	2	A

LITTLE TENNESSEE RIVER BASIN

1201	Little Tenn. River at Judson	40	A
1202	Tuckasegee River at Bryson	39	A
1203	Nantahala River near Nantahala	2	D
1204	Tuckasegee River near E.LaPorte	2	D
1205	Little Tenn. River at Franklin	3	D
1206	Cullasaja Cr. at Cullasaja	17	A
1207	Cheoah River at Millsaps	1	D
1208	Scotts Cr. near Dillsboro	1	D
1209	Nantahala River at Almond	21	A
1210	Little Tenn. River at Almond	5	D
1211	Cheoah River at Johnson	6	D
1212	Nantahala River at Wesser	1	D
1213	Oconolufty River at Cherokee	16	A
1214	Cheoah River at Tapoca	3	D
1215	Little Tenn. River at Etna	4	D
1216	Cullasaja Cr. at Highlands	9	A
1217	Scotts Cr. at Sylva	8	A
1218	Tuckasegee River at Dillsboro	8	A
1219	Little Tenn. River at Iotla	7	A
1220	Tuckasegee River at Tuckasegee	2	A
1221	Nolan Cr. near Bryson	1	A

HIWASSEE RIVER BASIN

1301	Hiwassee River at Murphy	40	A
1302	Notley River near Ranger	26	A
1303	Valley River at Tomotla	26	A
1304	Hiwassee River near Hayesville	3	D
1305	Tusquitee Cr. near Hayesville	2	D
1306	Shooting Cr. near Hayesville	1	D
1307	Hiwassee River near Hayesville	2	A
1308	Hiwassee River near Vest	2	A
1309	Notley River near Murphy	1	A

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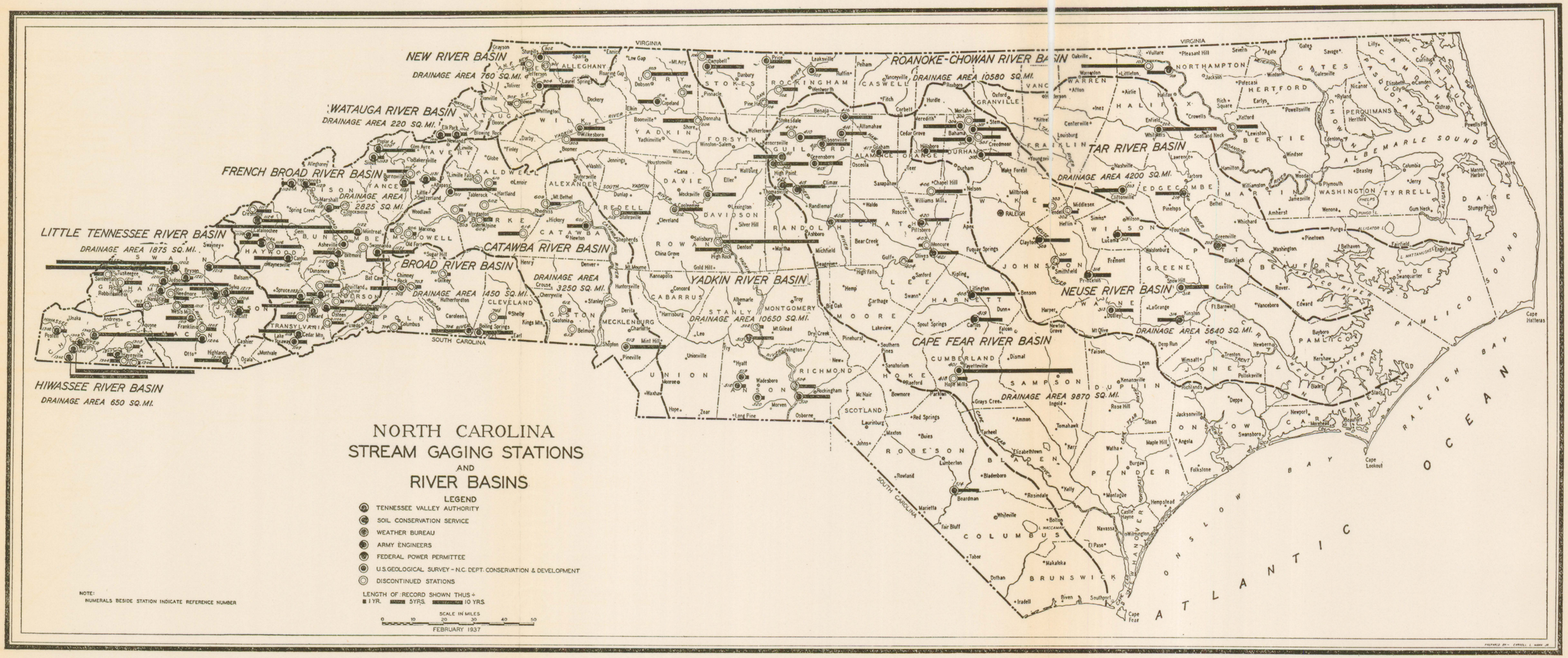
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TRANSYLVANIA
HENDERSON
BUNCOMBE
MCDOWELL
POLK
RUTHERFORD
CLEVELAND
GASTON
CATAWBA
LINCOLN
MECKLENBURG
CABARRUS
ROWAN
DAVIDSON
RANDOLPH
CHATHAM
WAKE
JOHNSTON
WILSON
EDGECOMBE
MARTIN
WASHINGTON
TYRRELL
DARE
GREENE
PITT
BEAUFORT
HYDE
LENOIR
WAYNE
JONES
CRAVEN
PAMLICO
MOORE
LEE
HARNETT
CUMBERLAND
SAMPSON
DUPLIN
ONSLOW
CARTERET
STANLY
MONTGOMERY
RICHMOND
ANSON
UNION
MOORE
HOKE
SCOTLAND
ROBESON
BLADEN
PENDER
NEW HANOVER
COLUMBUS
BRUNSWICK
RALEIGH
Cape Hatteras
Cape Lookout
Cape Fear
NOTE:
NUMERALS BESIDE STATION INDICATE REFERENCE NUMBER
NORTH CAROLINA
STREAM GAGING STATIONS
AND
RIVER BASINS
LEGEND
TENNESSEE VALLEY AUTHORITY
SOIL CONSERVATION SERVICE
WEATHER BUREAU
ARMY ENGINEERS
FEDERAL POWER PERMITTEE
U.S.GEOLOGICAL SURVEY - N.C. DEPT. CONSERVATION & DEVELOPMENT
DISCONTINUED STATIONS
LENGTH OF RECORD SHOWN THUS ÷
1 YR. 5 YRS. 10 YRS.
SCALE IN MILES
0 10 20 30 40 50
FEBRUARY 1937