

RIVERS AND FLOODS

[River and Flood Division, MONTROSE W. HAYES, in Charge]

By RICHMOND T. ZOCH

There were numerous floods in April, but fewer than in March. Most of them were of minor consequence; but one in Kentucky, which began in March and ended in April, was of more than ordinary importance, and the following is a report on it, made by the official in charge of the Weather Bureau office in Evansville, Ind.:

From a monetary standpoint the most disastrous flood of record in the lower Green River prevailed from March 11 to April 24, 1935. The crest at Rumsey, Ky., was 43.7 feet on April 13. In the flood of 1913 the crest at Rumsey was 47.5 feet, but due to the development of property interests in the lower Green Valley in the intervening years both the flood losses and the savings effected through heeding flood warnings were much greater in the recent flood than in the greater inundation in 1913.

At Rumsey the river is about 500 feet wide at an ordinary stage, but on April 13, the day of the flood crest, it was 14 miles wide.

McLean County was most seriously affected; about 40 percent of the county was inundated. The following towns were under water to a greater or less degree: Ashbyburg, Beech Grove, Burk City, Calhoun, Comer, Curdsville, Delaware, Eastwood, Hamilton's Ferry, Island, Jewel City, Kirtly, Lemon, Livermore, Rumsey, Sacramento, Wrightsburg. One hundred and fifteen thousand acres were inundated, of which 90,000 acres usually are cultivated, approximately as follows: 9,000 acres wheat, 18,000 acres tobacco, 31,500 acres clover, and 31,500 acres barley, lespedeza, alfalfa, corn, potatoes, tomatoes.

The first flood warnings were issued well in advance and were widely disseminated. Final crest warnings were issued 5 days in advance and in all instances were within a few tenths of the actual crests recorded. Immediately upon receipt of the warnings, action to move or protect property was taken, and there was no loss of life as a direct result of the flood. Total savings reported were \$521,400.

The most outstanding case was in Livermore, Ky., where equipment in two chair factories valued at \$250,000 was raised above the predicted crest, and was not harmed, although the factory buildings were flooded to a depth of 4 feet.

From conservative estimates the total loss of nonmovable property amounted to \$458,150.

A report on the flood in the Sacramento River in California appears as a separate article in this REVIEW (pp. 135).

Any important features of the floods now prevailing in the lower Mississippi Basin will be mentioned in a later issue of the MONTHLY WEATHER REVIEW.

Table of flood stages in April 1935

[All dates in April unless otherwise specified]

River and station	Flood stage	Above flood stages— dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE					
James:	Feet			Feet	
Columbia, Va.....	10	1	16	22.3	2
				21.4	9
Richmond, Va.....	8	2	4	12.1	3
		8	10	11.7	9
Roanoke:					
Randolph, Va.....	18	2	3	23.5	3
		9	10	22.5	9
Weldon, N. C.....	31	2	5	36.6	4
Williamston, N. C.....	10	Mar. 19	29	36.2	10
				11.9	8-15
Tar:					
Rocky Mount, N. C.....	8	3	5	8.4	4
		24	25	8.3	25
Tarboro, N. C.....	18	6	6	18.2	6
Greenville, N. C.....	12	Mar. 29	16	14.3	8
		27	28	12.4	27, 28
Neuse:					
Neuse, N. C.....	13	2	5	16.0	4
		9	11	15.3	11
		23	25	15.3	24
		2	6	15.0	5, 6
Smithfield, N. C.....	12	9	13	14.5	11, 12
		24	26	14.0	25, 26

Table of flood stages in April 1935—Continued

River and station	Flood stage	Above flood stages— dates		Crest	
		From—	To—	Stage	Date
ATLANTIC SLOPE DRAINAGE—Contd.					
Cape Fear: Lock No. 2, Elizabeth- town, N. C.....	20	2	5	24.2	3
		9	12	24.3	10
		23	25	23.5	24
Peedee:					
Mars Bluff Bridge, S. C.....	17	Mar. 29	14	19.9	1
		3	10	19.6	5
Poston, S. C.....	18	13	15	18.9	14
Saluda: Chappells, S. C.....	13	7	7	14.9	7
Catawba: Catawba, S. C.....	11	1	1	11.0	1
Santee:					
Rimini, S. C.....	12	4	13	13.7	10
Ferguson, S. C.....	12	4	18	13.3	11-13
Savannah: Ellenton, S. C.....	14	6	15	18.0	10
EAST GULF OF MEXICO DRAINAGE					
Black Warrior: Lock No. 10, Tusca- loosa, Ala.....	46	1	1	47.1	1
Tombigbee:					
Lock No. 4, Demopolis, Ala.....	39	3	17	46.4	13
Lock No. 3, Ala.....	33	Mar. 6	19	49.0	13
Lock No. 2, Ala.....	46	5	7	46.3	6
		12	18	50.5	13
Lock No. 1, Ala.....	31	Mar. 6	21	35.7	16
Pearl:					
Edinburg, Miss.....	20	11	16	22.0	14
Jackson, Miss.....	18	2	26	27.8	18, 19
				16.2	Mar. 22
Pearl River, La.....	12	Mar. 9	(¹)	14.7	23
MISSISSIPPI SYSTEM					
<i>Upper Mississippi Basin</i>					
Illinois:					
Havana, Ill.....	14	Feb. 26	26	16.1	Mar. 28-31
Beardstown, Ill.....	14	Feb. 27	27	16.6	Mar. 17-20
Mississippi:					
Keokuk, Iowa.....	12	11	12	12.3	11
Quincy, Ill.....	14	12	12	14.1	12
Hannibal, Mo.....	13	10	14	13.9	12
<i>Ohio Basin</i>					
Gauley: Summersville, W. Va.....	10	2	2	10.4	2
Barren: Bowling Green, Ky.....	20	1	3	22.4	2
		7	10	23.6	9
Green:					
Lock No. 6, Brownsville, Ky.....	28	1	12	36.5	9
Lock No. 4, Woodbury, Ky.....	33	Mar. 27	14	44.2	10
Lock No. 2, Rumsey, Ky.....	34	Mar. 12	23	43.7	13
Cumberland:					
Celina, Tenn.....	28	Mar. 26	4	40.4	Mar. 20
			12	40.5	18
Carthage, Tenn.....	40	7	9	40.8	0
Nashville, Tenn.....	40	7	13	42.3	18
Clarksville, Tenn.....	46	6	14	50.5	1
Lock F, Eddyville, Ky.....	50	Mar. 31	18	59.7	12
North Fork: Mendota, Va.....	8	1	2	9.2	7
Elk: Fayetteville, Tenn.....	14	6	8	15.5	7
Duck: Columbia, Tenn.....	30	7	7	30.8	8
Tennessee:					
Bridgeport, Ala.....	18	7	9	19.7	
Widow's Bar Dam, Ala.....	26	7	10	28.2	8
Guntersville, Ala.....	25	8	11	27.3	9, 10
		2	2	33.0	2
Riverton Lock, Ala.....	33	8	12	34.0	10
Ohio:					
Dam No. 47, Newburgh, Ind.....	38	Mar. 29	17	41.4	2-14
Evansville, Ind.....	35	Mar. 28	18	39.3	2
				39.6	14
Dam No. 48, near Henderson, Ky.....	38	Mar. 31	17	40.7	2, 3, 14, 15
Dam No. 49, near Uniontown, Ky.....	37	Mar. 30	18	39.7	3
				39.1	15
Dam No. 50, Fords Ferry, Ky.....	34	Mar. 13	22	42.4	4
				41.9	15, 16
				41.2	7
Dam No. 51, Golconda, Ill.....	40	2	18	40.9	16
Dam No. 52, Brookport, Ill.....	37	Mar. 13	21	44.8	8
Dam No. 53, near Mound City, Ill.....	42	Mar. 12	22	50.0	14, 15
Cairo, Ill.....	40	Mar. 12	23	48.2	14, 15
<i>White Basin</i>					
Black: Black Rock, Ark.....	14	Mar. 11	16	26.7	Mar. 12
White:					
Georgetown, Ark.....	21	Mar. 13	20	31.3	Mar. 18
Clarendon, Ark.....	26	Mar. 16	29	33.7	Mar. 26
<i>Arkansas Basin</i>					
Petit Jean: Danville, Ark.....	20	20	24	22.15	21
<i>Red Basin</i>					
Ouachita: Camden, Ark.....	26	8	11	28.11	9
Sulphur:					
Ringo Crossing, Tex.....	20	6	6	20.5	6
		21	(¹)	24.4	22
Naples, Tex.....	22	25	(¹)	(¹)	(¹)

Table of flood stages in April 1935—Continued

River and station	Flood stage	Above flood stages— dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI—continued					
Lower Mississippi Basin					
Big Lake Outlet: Manila, Ark.....	Fect 10	Mar. 10	May 1	Fect 17.6	6, 7
St. Francis:					
Fisk, Mo.....	20	1	4	22.3	3
St. Francis, Ark.....	18	Mar. 11	16	20.4	5
St. Francis Lake Lock, Ark.....	27	Mar. 21	9	29.2	Mar. 25-27
Parkin, Ark.....	28	Mar. 30	13	29.1	7, 8
Madison, Ark.....	32	Mar. 29	16	33.4	2-4
Tallahatchie: Swan Lake, Miss.....	26	Jan. 10	(1)	29.6	17
Yazoo: Yazoo City, Miss.....	29	Mar. 5	(1)	36.3	11
Mississippi:					
New Madrid, Mo.....	34	Mar. 13	23	38.4	15-17
Memphis, Tenn.....	34	Mar. 21	25	36.1	15-20
Helena, Ark.....	39	Mar. 18	(1)	49.2	2
Arkansas City, Ark.....	42	Mar. 22	(1)	51.8	6
Greenville, Miss.....	36	Mar. 23	(1)	45.5	6, 7
Vicksburg, Miss.....	43	1	(1)	46.7	15
Natchez, Miss.....	46	2	(1)	50.3	17-24
Angola, La.....	45	5	(1)	48.0	20-27
Baton Rouge, La.....	35	6	(1)	38.3	21, 22
Plaquemine, La.....	31	6	(1)	34.2	23, 24

1 Continued into May.

Table of flood stages in April 1935—Continued

River and station	Flood stage	Above flood stages— dates		Crest	
		From—	To—	Stage	Date
MISSISSIPPI—continued					
Lower Mississippi Basin—Continued					
Mississippi—Continued:	Fect			Fect	
Donaldsonville, La.....	28	7	(1)	30.0	25-27
Reserve, La.....	22	9	(1)	23.0	27-29
New Orleans, La.....	21	20	20	17.0	20
Atchafalaya Basin		22	22	17.0	22
Atchafalaya Basin		27	30	17.0	27-30
Atchafalaya:					
Melville, La.....	37	6	(1)	(1)	(1)
Atchafalaya, La.....	22	Mar. 15	(1)	24.3	(1) 20-30
PACIFIC SLOPE DRAINAGE					
Kings: Piedra, Calif.....	10	8	8	10.1	8
Sacramento:					
Red Bluff, Calif.....	23	8	8	23.65	8
Colusa, Calif.....	25	10	10	25.55	10
Knights Landing, Calif.....	30	9	11	30.2	10
Sacramento, Calif.....	27	8	9	28.6	8

WEATHER OF THE ATLANTIC AND PACIFIC OCEANS

[The Marine Division, W. F. McDONALD, in Charge]

NORTH ATLANTIC OCEAN, APRIL 1935

By H. C. HUNTER

Atmospheric pressure.—April pressure averaged below normal over most of the North Atlantic Ocean. In parts of the southeastern and northeastern areas, however, the pressure was above normal, particularly near Iceland, where Reykjavik showed a mean excess of 0.19 inch.

The highest pressure thus far reported is 30.48 inches by the Swedish steamship *Braheholm*, when near latitude 57° N., longitude 20° W., shortly before noon on the 2d. The lowest reading, 28.37 inches, was noted on the American steamship *Steelmaker*, near 49° N., 32° W., during the forenoon of the 8th.

TABLE 1.—Averages, departures, and extremes of atmospheric pressure (sea level) at selected stations for the North Atlantic Ocean and its shores, April 1935

Station	Average pressure	Departure	Highest	Date	Lowest	Date
Julianehaab, Greenland.....	29.89	---	30.32	18	29.46	30
Reykjavik, Iceland.....	29.99	+0.19	30.44	2	29.61	15
Lerwick, Shetland Islands.....	29.75	-0.05	30.34	26	28.84	11
Valencia, Ireland.....	29.52	-0.07	30.35	28, 29	29.01	10
Lisbon, Portugal.....	30.11	+0.12	30.34	13	29.88	27
Madeira.....	30.08	+0.07	30.28	12	29.74	4
Horta, Azores.....	30.01	-0.14	30.26	17	29.74	9
Belle Isle, Newfoundland.....	29.71	-0.08	30.42	10	28.90	4
Halifax, Nova Scotia.....	29.90	-0.03	30.36	9, 11, 12	29.54	17, 28
Nantucket.....	29.84	-0.13	30.26	4	29.36	16
Hatteras.....	29.88	-0.13	30.18	26	29.48	21
Bermuda.....	29.94	-0.15	30.16	28	29.70	11
Turks Island.....	29.99	-0.03	30.07	1, 2	29.91	22
Key West.....	29.96	-0.06	30.18	14	29.81	7
New Orleans.....	29.94	-0.06	30.24	14	29.68	7

NOTE.—All data based on a. m. observations only, with departures compiled from best available normals related to time of observations, except Hatteras, Key West, Nantucket, and New Orleans, which are 24-hour corrected means.

Cyclones and gales.—During the period from the 7th to 16th, there was considerable storminess; otherwise there were few gales worth noting.

On the 3d the Dutch motorship *Manoeran* met two vigorous squalls, not quite an hour apart, in the north-central Gulf of Mexico.

Near the Strait of Belle Isle, on the 6th, a well-developed Low had begun to cause gales, and this center continued rather intense as it crossed the ocean to the vicinity of Ireland, by the 10th. The sole instance of hurricane force (12) was recorded during the night of the 7th-8th, by the British steamer *Lustrous* near 45° N., 34° W. A few hours later the lowest pressure of the month was noted by the *Steelmaker* in this vicinity as mentioned above.

Another Low, less intense, was northeast of Bermuda on the 11th and 12th, when fresh to whole gales were reported over a considerable area, mainly in latitudes lower than those where the strength of the earlier storm had been felt.

Still another Low caused gales near the middle coast of the United States on the 15th and 16th. The fortnight of April subsequent to this was mainly without strong gales, particularly the final week.

Fog.—Fog increased somewhat from the previous month over much of the North Atlantic, particularly in the vicinity of the Grand Banks and thence eastward along the chief lanes toward northern Europe to about the 20th meridian. On the other hand fog was less frequently met in the waters just southeastward of Nova Scotia and Maine.

The square from 40° to 45° N., 45° to 50° W., with fog on 13 days, leads all other squares in fog frequency. This is somewhat more than even the Grand Banks area shows in April, on the average. The period from the 15th to the 22d was especially marked in this area for prevalence of fog.

Near the east coast of the United States the square from 35° to 40° N., 70° to 75° W., reported a notably large amount of fog, 10 days in all, or almost twice as much as normal.

Dust.—Over much of the Gulf of Mexico and off the southeast coast of the United States dust was encountered during part of the second week of April in sufficient amount greatly to reduce visibility, in a few instances to about a mile. The wind at the time was usually blowing from points between northwest and north, but in one instance from the southwest. This report was from the