

STORMS AND WARNINGS—WEATHER AND CROPS.

STORMS AND WEATHER WARNINGS.

WASHINGTON FORECAST DISTRICT.

No storm warnings were issued during August, except for the Atlantic coast from Cape Hatteras to Delaware Breakwater on the 26th in connection with falling barometer off the North Carolina coast and a strong area of high pressure to the northward. The highest wind velocity reported was 36 miles an hour from the northeast at Cape Henry.

Small-craft warnings were issued for Lake Huron on the 10th; for the Atlantic coast from Delaware Breakwater to Boston, Mass., on the 14th; and for Lakes Michigan and Huron and the Atlantic coast from Sandy Hook, N. J., to Portland, Me., on the 22d.

Frost warnings were issued for the cranberry bogs of New Jersey on the 22d.—*Charles L. Mitchell.*

CHICAGO FORECAST DISTRICT.

The only special warnings issued during the month of August in the Chicago Forecast District were those sent for light frost in the lowlands of North Dakota and northern Minnesota on August 13, and warnings for light frost to the Wisconsin cranberry marshes on the 13th, 14th, and 20th.

Most of the cranberry marshes were flooded on the dates in question as a result of these warnings, and no damage to the crop occurred.—*E. H. Haines.*

NEW ORLEANS FORECAST DISTRICT.

The month of August was exceptionally free from severe weather conditions. No storm warning was issued during the month, and no storm occurred without warning.—*I. M. Cline.*

DENVER FORECAST DISTRICT.

The usual summer conditions prevailed, with low, or relatively low, pressures in the southern Plateau sections, and frequent showers and thunderstorms and occasional heavy downpours in about all of this district. In western Arizona, however, there was little rain until the 20th, when showers were general in most of that State, with heavy rain in localities on both the 20th and 21st and in extreme southwestern Arizona on the 23d. An excessive rain in the vicinity of Canon City, Colo., on the evening of the 2d caused the Arkansas River to rise to a stage of 13.5 feet, the damage by the flood amounting to more than \$250,000. The heaviest August rainfall of record in 24 hours at Denver, 2.93 inches, occurred on the night of the 23d-24th. Farming operations on the western slope of Colorado were delayed by wet weather, and considerable quantities of hay and grain were damaged toward the close of the month.

Moderately strong HIGHS moved across the northern Rocky Mountain region, from the north Pacific coast, on the 5th, 10th, 12th, and 19th. The more pronounced Lows advanced from southwestern Canada eastward, or southeastward, to the Atlantic coast.

No special warnings were issued or required during the month.—*J. M. Sherier.*

SAN FRANCISCO FORECAST DISTRICT.

The weather in this district during August was marked by numerous depressions forming over the Plateau

region and then moving slowly northeastward over the Rockies. These caused an unusual number of thunderstorms in Nevada and Idaho, and rainy periods in the North Pacific States from the 13th to the 18th, and again on the 23d and 24th.

On the 10th a heavy rain near Caliente, Nevada, damaged the Salt Lake and Los Angeles Railroad tracks and greatly delaying train service. Heavy rains and thunderstorms occurred in the Colorado Desert and Imperial Valley, doing some damage to crops and roads.

On the 31st a storm from the north Pacific passed far enough south to give rain in the western portions of Washington and Oregon.

Fire-weather warnings were issued in northern California on the 4th, and for the whole State on the 15th; the warnings read: "Rising temperature with drying northeasterly winds favorable for forest fires for the next three or four days." The warnings were timely and valuable.

Southwest storm warnings were issued on the 31st at all Washington stations. These were not verified.—*G. H. Willson.*

RIVERS AND FLOODS, AUGUST, 1921.

By H. C. FRANKENFIELD, Meteorologist.

[Weather Bureau, Washington, Sept. 29, 1921.]

The floods of August were confined to the Arkansas River of Colorado and the Salt River of Arizona, other rivers throughout the country having been at about their average stage for this season of the year.

Excessive rains fell near Canon City, Colo., on Aug. 2, causing the highest stage of record, 13.5 feet, in the Arkansas River at that place, at 7.15 p. m. same day. The rains were very local, and it was impossible to issue adequate warnings. Warnings, however, were issued for Colorado points east of Pueblo. The damage as reported from Canon City is as follows: Loss to tangible property, etc., \$225,000; loss of prospective crops, \$17,500; loss of live stock or other movable property, \$4,250; loss due to suspension of business, \$10,000. Total loss, \$264,250. The flood stage was also exceeded in the Arkansas River at Pueblo and Fort Lyon, Colo., but with only slight damage.

On Aug. 21 unusually heavy rain fell near the headwaters of the Salt River, causing it to overflow considerably. At Phoenix, Ariz., the basement of the State capitol was flooded, damaging records to the extent of about \$150,000. Numerous individuals suffered losses in the way of ranches, crops, etc., making the combined losses for the flood about \$240,000.

Flood stages during August, 1921.

River.	Station.	Flood stage.	Above flood stages—dates.		Crest.	
			From—	To—	Stage.	Date.
Colorado drainage:		<i>Feet.</i>			<i>Feet.</i>	
Arkansas.....	Canon City, Colo.....	10	2	2	13.5	2
	Pueblo, Colo.....	10	2	3	11.7	2-3
	Fort Lyon, Colo.....	6	3	3	6.4	3