

UNITED STATES  
DEPARTMENT  
OF AGRICULTURE

# Radio Service

OFFICE OF  
INFORMATION

CHAT WITH THE WEATHER MAN

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ANNOUNCEMENT: Now for another chat with the weather man. Our old friend, Ob. Server, has been talking with the chief of the river and flood division of the United States Weather Bureau about the waters now flooding certain sections of the South ---- What about those floods anyway, Mr. Observer?

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Rains come before floods, of course.

So before we get to talking about those floods which have been going on down in Mississippi and Louisiana for some weeks now, let's refresh our memories with a little recent rain history.

You recall about the middle of December, we had some unusually heavy rains in the south central part of this country of ours. Those rains were not widespread enough to cause a flood in the Mississippi River. There were no floods in the Arkansas River, or the White River, or the Ohio, or the Missouri, and consequently no floods in the Mississippi River proper.

The floods have been in the interior rivers chiefly, the Tallahatchie and Yazoo rivers of Mississippi, the Red River, and the Ouchita River in Louisiana.

I wish you could see a map of that country. Mr. M. W. Hayes, chief of the river and flood division of the United States Weather Bureau, who told me about the forecasts of those floods, showed me what it is like. I had trouble even keeping track of some of those rivers on the map. Take the Tallahatchie or the Yazoo for example. They turn, and twist, and divide and wind around worse than one of those labyrinth puzzles you've seen in the papers. In fact, I venture to say if a stranger started down stream in a boat on one of those rivers he would lose himself a dozen times before he would ever reach the mouth of the river. The country is rather level, as you may have noticed from the pictures, and those streams are old streams which have changed their beds often.

Some of you who may have lived on the upper reaches of rivers and mountain streams may think of a flood as something sudden, but in that low level country where those rivers are now out of their banks a flood is a much more leisurely proposition.

On December 19, the Weather Bureau forecast the flood in the Tallahatchie and Yazoo Rivers of Mississippi and Ouchita in Louisiana. Here is what the forecaster said about that rise. "It will continue about two weeks probably reaching flood stage of forty feet late in December."

That message went out by wire and radio and mail. Everybody in the area expected to be flooded had ample warning, and time to take all possible precautions toward saving livestock and other property.

At the time that ten days advance notice was given, Mr. Hayes says, it looked as if the trouble would be over by the last of December. But more rain fell. And it fell fast.

You understand, in this flood business, it is not only the amount of rain which falls, but how fast it comes.

On January 8th the Weather Bureau also issued flood warnings for all the interior rivers of Louisiana, with the prediction that the crest of the flood would be reached the latter part of this month. That's nearly three weeks between the day of warning and the date of the highest water.

In fact, Mr. Hayes tells me that in case of floods on the lower Mississippi itself, the Weather Bureau often forecasts the stages of the flood a full month in advance. Yes, sir, and very accurately too.

To anyone who doesn't know how it is done it must seem almost like magic that the weather forecaster can tell a month ahead within an inch or two of just how high a great river will rise. But there is no hokus-pokus about it. Of course, there are years of experience and a lot of good sound judgment that must be used, but the general principle is simple. When water runs down hill, it takes some time to reach the bottom. Accurate measurement of the rain which falls in gauges located throughout the watershed, and reports of gauge readings showing the height of the water in the river at various points along its course furnish the forecaster with the chief data he uses in forecasting floods.

In the upper reaches of our rivers, and in the smaller, swifter streams, he has to rely on the rainfall reports, and he can only forecast a short time ahead. But as the river reaches lower, more level ground the water moves more slowly, and reports of the height of the water at up-river points and in tributary streams wired into the forecast office give notice of how much water may be expected at points down stream. Those reports together with the records of the past performances of the river at those points, enable the forecaster to estimate how much the stream will rise at different places along the lower reaches of its course. So, you understand, flood forecasts are largely a matter of accurate measurements and communication. And our communication is much faster than the movement of water down stream. Especially, is that true of rivers in low country such as those now in flood in the South.

Of course, if the forecaster predicts the crest of a flood within two weeks, and more rain comes, the river may go higher and the highest water come later than was first forecast. Then another thing which throws off a flood forecast, is the breaking of a levee, as has happened in these floods now going on. When one of those banks, built to hold the water back, breaks, wide sweeps of country may be submerged. The water that spreads out over the land may take off enough water to reduce the expected height of the river further down stream.

True, the water which breaks through eventually finds its way back to the river, but it takes its own good time about doing it.

When such a break occurs, maps and knowledge of the lay of the land may enable the forecaster to make a rough estimate of the effect of the break and make allowance for it in his later forecasts. However, nobody knows exactly where the break will come. It may be one place one year and another the next. The flood forecaster certainly has worries, and a lot of things can happen to change the rate of movement of the water.

But even without any breaks in the levees or any unexpected rains, the movement of water down stream is not always the same. A lot depends on the height of the water and other conditions at the mouth of the stream. The water may come down faster than it can empty out. That means that the water coming down stream piles up and rises higher than it would otherwise. In fact, there is one river in Louisiana which runs North sometimes and South at others, largely depending on the height of the water in the river to which it is tributary, or more properly an outlet. In making his forecast, the weather man must take all such conditions into consideration.

In spite of the obstacles to precise prediction, however, our forecasters manage to get out flood warnings well ahead of danger, and far enough in advance for all precautions possible to be taken.

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ANNOUNCEMENT: You have just heard another of our Chats with the Weather Man, which Station ----- presents each week in cooperation with the United States Department of Agriculture.

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# **National Oceanic and Atmospheric Administration**

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