

<b>NWS FORM E-5</b> <small>(11-88)</small> <small>(PRES. by NWS Instruction 10-924)</small>	<b>U.S. DEPARTMENT OF COMMERCE</b> <b>NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION</b> <b>NATIONAL WEATHER SERVICE</b>	HYDROLOGIC SERVICE AREA (HSA) <b>NEW ORLEANS/BATON ROUGE, LA</b>
	<b>MONTHLY REPORT OF HYDROLOGIC CONDITIONS</b>	REPORT FOR: MONTH <b>MAY</b> YEAR <b>2011</b>
TO: Hydrometeorological Information Center, W/OH2 NOAA / National Weather Service 1325 East West Highway, Room 7230 Silver Spring, MD 20910-3283	SIGNATURE KENNETH GRAHAM METEOROLOGIST-IN-CHARGE	DATE <b>JUNE 15, 2011</b>

When no flooding occurs, include miscellaneous river conditions, such as significant rises, record low stages, ice conditions, snow cover, droughts, and hydrologic products issued (NWS Instruction 10-924)

An X inside this box indicates that no flooding occurred within this hydrologic service area.

**...Major Flooding and Persistent Drought Occurred at the Same Time in May 2011...**

The phenomenon of flooding during a drought was prominent in May. Since most of the heavier rains during April missed this region, soil deficits were exacerbated across southeastern Louisiana, southwestern Mississippi, and coastal Mississippi. Soil conditions further deteriorated during May, after only a few periods of heavy rainfall developed across the area. At the same time, spring rainfall and snowmelt over the northern and central United States produced major flooding along the Mississippi River and eventually over much of the Atchafalaya River Basin. The Spring Flood of 2011 was among the most damaging flood events in the last century and comparable to the Mississippi River Floods of 1927, 1983, and 1993.

As snow and ice melted, flooding first developed in March and continued into May on the Atchafalaya River at Morgan City, LA. These circumstances also produced a second round of flooding on the Mississippi River at Red River Landing, LA late in April; that flooding continued into May. Flooding spread into Wilkinson County, MS in early May. By May 10<sup>th</sup>, Baton Rouge, Donaldsonville, Reserve, and New Orleans were all above their flood stages.

With the Mississippi River rising rapidly, the threat to Baton Rouge and New Orleans increased. The impending major flooding prompted the United States Army Corps of Engineers (USACE) to operate control structures to lessen the impacts on those two major metropolitan areas. Operation of the Bonne Carre' Spillway, a water control structure near Norco, LA, started May 9<sup>th</sup>. With 330 gates of the Bonnet Carre' Spillway eventually opened by May 15<sup>th</sup>, flood waters that would have produced a major flood at New Orleans were diverted into Lake Pontchartrain.

Continued high flows on the Mississippi River necessitated the operation of the Morganza Spillway at Morganza, LA, for the first time in 37 years. On May 14<sup>th</sup>, the USACE opened two gates to lessen the flood threat to Baton Rouge and New Orleans. By May 18<sup>th</sup>, seventeen gates of the Morganza Spillway were opened. During the height of the flood event, the Spillway was operating at one fourth of its capacity to divert 114,000 cubic feet of water per second from the swollen Mississippi River into the Atchafalaya River Basin.

Other mitigation efforts occurred over the parishes along the Mississippi River and Atchafalaya River. Barges were sunk in the Lower Atchafalaya River Basin to protect areas of Morgan City, Amelia, and the general vicinity. In addition, new levees were constructed and HESCO baskets were laid over parts of St. Mary Parish and other areas.

With the Bonnet Carre' and Morganza Spillways in operation, flooding at Baton Rouge persisted at major levels, while moderate flooding developed at Donaldsonville and Reserve. Only minor flooding occurred at New Orleans. Minor floods developed along the Atchafalaya River at Bayou Sorrel and at Myette Point, while moderate flooding continued at Morgan City. Flooding persisted into June on the Mississippi River except at New Orleans, where the river dropped below its flood stage on May 23<sup>rd</sup>. Flooding continued into June on the Atchafalaya River at Bayou Sorrel Lock, Myette Point, and Morgan City. Floods were prevented on the Atchafalaya River over the areas around Simmesport, Melville, Krotz Springs, and Butte La Rose, due to the operation of the Morganza Spillway.

**Impacts**

More than 24,500 residents were evacuated in Mississippi and Louisiana along the Mississippi River, the Atchafalaya

River, and its tributaries. Damages from the flooding in this region were most extensive on the Mississippi River over the western third of Wilkinson County. Extensive flooding also occurred in Louisiana over Avoyelles, Pointe Coupee, St. Martin, St. Mary, and West Feliciana Parishes.

According to a report by Dun and Bradstreet, **2011 Impact Report of Mississippi River Flooding - Preliminary Business Impact Analysis for States Affected by Floods**, of the 489,174 businesses potentially impacted in Louisiana, Mississippi, Missouri and Tennessee, about **45% are located in Louisiana**, with **219,749 businesses** potentially impacted by the flooding. This report examined construction, manufacturing, retail, business services, and other services.

Major flood impacts occurred for the petrochemical industries in Louisiana. Production was stymied by the inundation of 589 oil and gas wells in the Atchafalaya Basin, which usually produce 19,300 barrels of oil and 252.6 million cubic feet of natural gas per day. Shipping and barge operations were severely impacted along the Mississippi River, the Atchafalaya River, and the Intracoastal Waterway. Agriculture in the river basins suffered extensively, along with tourism and seafood production. According to the NOAA National Climatic Data Center, damages were estimated at \$800 million to agriculture in Mississippi statewide and costs were estimated at \$80 million for the first 30 days of flood fighting efforts in Louisiana statewide.

Damages in Mississippi from flooding of the Mississippi River and its tributaries reached **\$19,037,109**. Federal and state assistance was approved for people in fourteen (14) Mississippi counties that were declared a major disaster area by President Obama. Under the United States Small Business Administration (SBA), homeowners, renters, or small business owners were approved for a total of \$8,488,100 statewide. A total of \$10,549,009 was approved statewide for housing and personal needs by FEMA. The only county in this Hydrologic Service Area (HSA) is Wilkinson County, where residents received \$205,374.87 in disaster funds under FEMA's Individuals and Households Program.

The U.S. Department of Homeland Security's Federal Emergency Management Agency (FEMA) announced that federal disaster aid would be available to supplement state and local recovery efforts in areas struck by flooding. Federal funds were made available to Assumption, Avoyelles, Lafourche, Point Coupee, St. Charles, St. James, St. Landry, St. Martin, St. Mary, Terrebonne, and West Feliciana Parishes, along with other parts of Louisiana. In Louisiana, the total Public Assistance for infrastructure cost estimate was \$64,760,064 statewide. This flood event was not declared a major disaster for Louisiana.

### Flood Records

On the Mississippi River upstream of Wilkinson County, new flood records were set at Vicksburg, MS and Natchez, MS. Roughly one-third of Wilkinson County was flooded in May 2011. A new record stage was set at Knox Landing, LA, where the Mississippi River rose to 66.26 feet on May 18<sup>th</sup>. On that same date, the flood waters rose to a new record stage of 63.39 feet at Red River Landing. A recently-established gauge on the Mississippi River at St. Francisville, LA set a new flood record of 53.48 feet on May 18<sup>th</sup>, as well.

Monthly Reports by Agricultural Region	Areal Average	Departure from Normal
Southwest Mississippi (2 Sites)	1.11	> -4.00
South Central Mississippi (2 Sites)	1.09	> -4.00
Coastal Mississippi	N/A	> -4.00
Central Louisiana (2 Sites)	0.29	-4.88
East Central Louisiana	0.86	-4.76
South Central Louisiana (4 Sites)	0.38	-4.53
Southeast Louisiana	0.61	-4.52

### Extreme Rainfall for the Month (Inches and Departure from Normal)

Sun, LA	3.00	Bay Saint Louis, MS	0.16	-5.42
Norwood, LA	2.03	Galliano, LA	0.05	-5.70
Abita Springs, LA	1.81	Paradis, LA	0.12	-5.73

### Drought...

As May started, soil conditions eroded toward extreme drought (D3) levels over much of southeastern Louisiana and coastal Mississippi. Other areas generally suffered with severe (D2) to moderate (D1) conditions, aside from abnormally dry (D0) conditions over parts of southwestern Mississippi. Periods of heavy rainfall allowed soil conditions to improve by May 10<sup>th</sup> over much of the region. Although extreme drought conditions persisted over coastal Mississippi, soil conditions were normal over much of southeastern Louisiana. After May 17<sup>th</sup>, soil conditions deteriorated dramatically. By the end of the month, the entire region experienced severe to extreme drought.