

## 2019 Backwater Flood Data

The following report summarizes the negative impacts the 2019 Backwater Flood had on the Mississippi Delta. This report does not capture all losses, as many have not yet been or cannot be calculated. It will take several years to fully realize the effects the flooding had on this region, as losses and negative consequences are still being reported.

Additionally, this report contains data and language from a study done by Mississippi State University. That study can be found [here](#).

## Demographic Information of Impacted Region

With a cumulative population of 88,366 the five counties affected by the backwater flood (Humphreys, Issaquena, Sharkey, Warren, and Yazoo) account for only 3.5% of the entire state of Mississippi's population. The National Census Data for the State of Mississippi clearly shows the impacted counties within the backwater to be among the most economically underdeveloped and demographically challenged in both the State and country. While the Census Data numbers are informing, specific demographic information collected by the Mississippi Emergency Management Agency for the affected population paints a more defining level of the impact on these families. The State average for those persons with disabilities is 16.3%, while the percentage of those with a disability among the impacted population is 37%. The State average for those living below the poverty level is 21.5%, while the impacted population is nearly 47%. The percentage of elderly, retired, or living on a single income State average is 15.5%, with the corresponding backwater population at 45%. These numbers, and others, clearly show a disproportionate and devastating impact to these residents of the State (See Attachment 1 - Table 1).

## Damage to Homes

Within the backwater flood region, 687 homes were affected by the standing floodwaters. County and State preliminary damage assessments categorize 252 as major damage or destroyed, with 210 homes being uninsured.

While these numbers are tragic, they do not paint the entire picture, as the dollar figure of damages done by the flooding to homes has not yet been fully calculated. Additionally, the costs incurred by providing temporary or alternative permanent housing to those whose homes were affected have also not yet been reported.

## Agricultural Economic Impact

Economic damage and localized per capita impacts continue to be extremely high. Agriculture is a primary source of employment for the lower Mississippi Delta that encompasses Humphreys, Issaquena, Sharkey, Warren, and Yazoo counties. Within the backwater counties alone, the

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aggregate total for crop damages collected by the USDA are expected to exceed \$800 million with the completion of loss reporting efforts. In 2019, the flood destroyed 50% of the corn yield, 40% of cotton, 30% of soybean, and 120,000 acres of farmland were damaged to a degree where no crops could be grown for the remainder of the year. Another 231,000 acres of farmland were flooded for a duration that no crops could be planted at all for the remainder of the year. The county of Yazoo alone suffered \$195 million in crop destruction, while Issaquena followed closely with \$157.1 million in losses (See Attachment 1 - Table 2). The flooding has imposed a targeted hardship on 170 farming businesses with their associated 680 employees. Unemployment rates rose 2.9% as a result of the backwater flood disaster impacts on these communities (See county specific rates in Attachment 1 – Table 1).

The damages collected and reported by USDA do not necessarily capture the full extent of damages to the agriculture sector. When combined with the losses from farmers being unable to plant crops on flooded land, the actual economic impact was far higher than the estimated \$800 million.

### **County Specific Agricultural Impact**

The following was gathered by Mr. Tom Ball with the Center for Government and Community Development at Mississippi State University:

In Humphreys County, there are 152,000 acres of cropland that have been impacted by the weather events. Using 2019 estimated crop values for production per acre, as aggregated based on 2018 production levels (\$573.84/acre) and number of acres found on an inundation map as compared with county ad valorem tax rolls for Humphreys County, the economic impact on Humphreys County would be \$87.22 million. That is an estimated production loss and does not include the economic impact on farm equipment, storage facilities, and equipment sheds or repair shops/out-buildings. Nor does it include the cost of preparing the soil for planting in coming seasons; replacement of geospatial markers and land levelling equipment nor planting or picking equipment/implements lost to the rapidly rising and long-lasting flooding.

In Issaquena County, there are 162,686 acres of cropland that have been impacted by the weather events. Using 2019 estimated crop values for production per acre, as aggregated based on 2018 production levels (\$573.84/acre) and number of acres found on an inundation map as compared with county ad valorem tax rolls for Issaquena County, the economic impact on Issaquena County would be \$93.36 million. That is an estimated production loss and does not include the economic impact on farm equipment, storage facilities, and equipment sheds or repair shops/out-buildings. Nor does it include the cost of preparing the soil for planting in coming seasons; replacement of geospatial markers and land levelling equipment nor planting or picking equipment/implements lost to the rapidly rising and long-lasting flooding.

In Sharkey County, there are 170,801 acres of cropland that have been impacted by the weather events. Using 2019 estimated crop values for production per acre, as aggregated based on 2018

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production levels (\$573.84/acre) and number of acres found on an inundation map as compared with county ad valorem tax rolls for Sharkey County, the economic impact on Sharkey County would be \$98.01 million. That is an estimated production loss and does not include the economic impact on farm equipment, storage facilities, and equipment sheds or repair shops/out-buildings. Nor does it include the cost of preparing the soil for planting in coming seasons; replacement of geospatial markers and land levelling equipment nor planting or picking equipment/implements lost to the rapidly rising and long-lasting flooding.

In Warren County, there are 29,629 acres of cropland that have been impacted by the weather events. Using 2019 estimated crop values for production per acre, as aggregated based on 2018 production levels (\$573.84/acre) and number of acres found on an inundation map as compared with county ad valorem tax rolls for Warren County, the economic impact on Warren County would be \$17.0 million. That is an estimated production loss and does not include the economic impact on farm equipment, storage facilities, and equipment sheds or repair shops/out-buildings. Nor does it include the cost of preparing the soil for planting in coming seasons; replacement of geospatial markers and land levelling equipment nor planting or picking equipment/implements lost to the rapidly rising and long-lasting flooding.

In Yazoo County, there are 35,673 acres of cropland that have been impacted by the weather events. Using 2019 estimated crop values for production per acre, as aggregated based on 2018 production levels (\$573.84/acre) and number of acres found on an inundation map as compared with county ad valorem tax rolls for Yazoo County, the economic impact on Yazoo County would be \$20.47 million. That is an estimated production loss and does not include the economic impact on farm equipment, storage facilities, and equipment sheds or repair shops/out-buildings. Nor does it include the cost of preparing the soil for planting in coming seasons; replacement of geospatial markers and land levelling equipment nor planting or picking equipment/implements lost to the rapidly rising and long-lasting flooding.

**An economic study done by Mississippi State yielded the following information:**

- \$42,160 per affected household in self-assessed costs to deal with the flood that are not expected to be covered by insurance or assistance programs.
- \$3,217 per resident in average additional commuting distance and time.
- \$5,183 per worker on average missed days and hours of work.
- 69% of workers reported a reduction in work productivity as result of stress and fatigue associated with the flood.
- Only 39% of respondents carried flood insurance coverage. Flood insurance was not required or previously warranted for these homes.
- In terms of out-of-pocket expenses, the average cash outlay amount is \$42,160.
- Backwater inundated 548,000 acres, 231,000 acres of which were prime cropland.

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## **Public Utilities Economic Impact**

Damage to public utilities was also severe and estimated to be much greater than initial projections. For reference, Category B is emergency protective measures, such as barricades, sandbags, and safety personnel. Category C damage includes damage to non-federal roads, bridges, streets, culverts, and traffic control devices. Initial estimates are as following: Category C damage assessments in Issaquena county were estimated at \$20,000. Category C damage estimates in Sharkey county alone valued \$426,000. Warren county estimated Category B at \$165,000, initial Category C damages at \$60,000, and expenditures were estimated are \$225,000. Yazoo county Category B expenditures were estimated at \$200,000. Total public assistance damage estimates for Humphreys, Issaquena, Sharkey, Warren, and Yazoo counties were estimated to be nearly \$1 million.

The Mississippi Department of Transportation, while still calculating the damages to roads and bridges, spent \$1,070,413 on clean-up efforts and debris removal for roads and bridges as a direct result of the Backwater Flooding.

This data is from initial estimates, and final estimated numbers are still being calculated. Final numbers are expected to dramatically exceed initial estimates. The economic impacts to utilities such as water, gas, sewer, and electric have not yet been fully calculated and are expected to be significant. Additionally, the damages to roads and bridges are still being calculated, and the dollar figure associated with recovery efforts will likely continue to rise as the integrity of many roads and bridges were damaged due to these structures being underwater for a sustained period of time.

## **Wildlife Impact**

The Mississippi Department of Wildlife has spent extensive time studying the effects the Backwater Flood had on wildlife. The Department observed the mortality of over 500 white-tailed deer along the levee alone during the Backwater flood. The Department additionally accrued numerous expenses in cleanup costs. More than 1700 hours were spent on surveys and cleanup costing the Department more than \$30,000 in additional payroll. Actual costs for replacing damaged or lost equipment, as well as cleanup and recovery, was more than \$50,000 for the Department.

Revenue losses for wildlife management areas (WMA) exceeded \$310,000. Estimates are ongoing and will likely take years to fully calculate the damage done to the white-tailed deer population and surrounding wildlife.

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**Conclusion**

The 2019 Backwater flood was catastrophic to the Mississippi Delta’s economy, infrastructure, workforce, and quality of life. While the data reported above does show some of the impact the flood had on this region, it does not come close in describing the full picture and outlining just how destructive this flood was.

Many residents whose families have lived in this region forever were forced to move away and start over elsewhere. Businesses that had served the area faithfully for generations shut their doors permanently. Homes that stood for decades were washed away or made unsalvageable.

Much of the damage from the flood is still being counted. Roads and bridges are being assessed to calculate the full damage incurred by months of being underwater. Farmers are still seeing the negative economic impacts from the flood. It could take years to fully realize the impact the flood had on deer, trees, migratory birds, and other wildlife and it will take years for them to fully recover.

**Attachment 1 Mississippi Flooding 2019  
Statistical and Damage Information**

US Census Data – Compared to Mississippi Backwater Impacted Counties

<b>TABLE 1</b>	<b>Percent Disabled</b>	<b>Percent Pre &amp; Post Disaster Unemployment</b>	<b>Median Household Income</b>	<b>Average of Persons Below Poverty Level</b>	<b>Percent Elderly</b>
<b>National Average</b>	<b>12.60%</b>	<b>3.80%</b>	<b>\$57,652</b>	<b>14.60%</b>	<b>15.60%</b>
<b>Mississippi Average</b>	<b>16.30%</b>	<b>4.80%</b>	<b>\$42,009</b>	<b>21.50%</b>	<b>15.50%</b>
<b>Humphreys County</b>	<b>17.90%</b>	<b>7.8% - 8.1%</b>	<b>\$26,188</b>	<b>40.50%</b>	<b>15.00%</b>
<b>Issaquena County</b>	<b>25.00%</b>	<b>8.4% - 10.7%</b>	<b>\$25,609</b>	<b>40.30%</b>	<b>17.30%</b>
<b>Sharkey County</b>	<b>19.20%</b>	<b>6.6% - 6.8%</b>	<b>\$30,033</b>	<b>29.00%</b>	<b>16.20%</b>
<b>Warren County</b>	<b>14.80%</b>	<b>5.4% - 5.4%</b>	<b>\$41,635</b>	<b>23.70%</b>	<b>15.10%</b>
<b>Washington County</b>	<b>18.70%</b>	<b>6.6% - 6.7%</b>	<b>\$29,387</b>	<b>33.70%</b>	<b>14.10%</b>
<b>Yazoo County</b>	<b>18.00%</b>	<b>5.7% - 5.8%</b>	<b>\$28,330</b>	<b>36.50%</b>	<b>13.00%</b>
<b>Averages</b>	<b>18.93%</b>	<b>N/A</b>	<b>\$30,197</b>	<b>33.95%</b>	<b>15.12%</b>
<b>Backwater County Avg.</b>	<b>37%</b>	<b>3.0% NET Gain</b>	<b>\$24,780</b>	<b>47%</b>	<b>45%</b>

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*USDA Crop Loss Assessment Reports*

<b>TABLE 2</b>					
<b>Crop Damages by Type</b>					
<b>County</b>	<b>Rice</b>	<b>Corn</b>	<b>Cotton</b>	<b>Soybeans</b>	<b>County Totals</b>
Humphreys		\$17.5	\$5.2	\$8.7	\$31.4
Issaquena		\$150.0	\$4.3	\$2.8	\$157.1
Sharkey		\$23.0	\$6.5	\$49.0	\$78.5
Warren		\$6.5	\$4.3	\$3.1	\$13.9
Washington	\$122.5	\$12.4	\$1.0	\$4.9	\$140.8
Yazoo	\$155.0	\$29.1	\$8.7	\$2.5	\$195.3
<b>\$\$ Loss in Millions</b>					
<b>Crop Totals</b>	<b>\$277.5</b>	<b>\$238.5</b>	<b>\$30.0</b>	<b>\$71.0</b>	
<b>Backwater Totals All Crops</b>					<b>\$617,000,000.00</b>

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