

# Hurricane Florence: Flood waters recede but hazards to Carolinians persist

Beginning on September 14, 2018, low-moving Hurricane Florence dumped nearly 40 inches of rain on portions of North Carolina with lesser amounts spread over an area from Washington, DC to Georgia. Because of the physical size of the hurricane and its slow movement, governors of South Carolina, North Carolina, and Virginia issued mandatory evacuations for some coastal areas days in advance of the storm's expected landfall.

Because Florence had been downgraded to a category 1 hurricane before it hit the coast and its slow movement, a large portion of its damage was caused by flooding. With much of the rain falling inland, many area rivers crested above previous flood-stage highs, spreading out over rural landscapes and urban areas alike. The death toll from Florence is currently 45 with North Carolina accounting for 32.

For farmers, Florence could not have come at a worse time; crops were maturing, and harvest had only begun. Depending on their production patterns, many farmers have seen several years of financial losses due to low crop prices. This leaves farmers, many of whom have not fully recovered from Hurricane Matthew two years ago, in a weakened financial condition before the hurricane hit.

As we write this column, estimates of preliminary losses to agriculture in the affected states range from hundreds of million to billions of dollars. Storm water will need to recede and even then, it will take weeks or more to assess the extent of the damage. What is clear at this point is the nature of the damage.

The rain and inundation from nearby streams have combined to cause significant crop losses across the Carolinas. Cotton fields with bolls that were open when the rain started have been rendered valueless while many other fields that were nearing maturity have been damaged by rushing floodwaters.

North Carolina, responsible for 50 percent of the national production of tobacco, stands to incur significant losses as the rain and floodwater came during the middle of harvest for many farmers.

Peanuts and sweet potatoes, where the harvest product grows beneath the soil, will see significant damage from rot in areas where the waters do not recede quickly. North Carolina is the largest producer of sweet potatoes in the US. This will have an impact on grocery store prices during the prime Thanksgiving and Christmas seasons, depending on the extent of the damage.

Corn and soybeans have also shown damage from the rains and flooding, though the price impact at the national level will be minimal.

In North Carolina it is estimated that, according to industry sources, at least 3.4 million chickens died as the result of flooding. The North Carolina Department of Agriculture and Consumer Services estimates that 5,500 hogs perished in the floodwaters. North Carolina is second in the nation in pork production. As the floodwaters recede farmers will be left with the cost of the disposal of these animals.

The loss of electricity has negatively affected farm operations well beyond the flooded areas. In addition, there has been damage to farm homes and buildings and it will take some time to repair the damaged roads that farmers depend upon.

The combination of rain and flood levels has resulted in raising the liquid level in the lagoons that are an essential part of contemporary hog production practices. In some instances,

the lagoons have overflowed or been breached, resulting in the spilling of hog manure into the surrounding environment.

In addition to farm lagoons, containment systems at coal-fired power plants have been penetrated, resulting in the release of wet fly ash into the surrounding water. The fly ash contains heavy metals that should not be released into the environment.

Whether it is hog manure or fly ash, the release of material from these containment systems can have a negative impact on members of the general population.

If the recent past is any indication, we are likely to see more of these weather events. With that in mind, we need to revisit containment regulations for hog and electrical production that were designed taking a 50- or 100-year weather event into consideration. We know many farmers react negatively to the idea of increased regulation, but the kinds of regulations that protect them from heavy metal deposits on their land are similar to the ones that are needed to protect the general public from the impact of the release of animal waste.

Our second policy point concerns compensating farmers for crop losses. Most farmers take out crop insurance that will pay in events like the one caused by Hurricane Florence. The problem is the reimbursement that farmers receive is based on crop prices and when prices are low, and farmers need the protection the most, they receive the lowest insurance payments. If Congress were to adopt a supply management program with loan rates near the full cost of production, and if the price component of crop insurance were based on the loan rate, farmers would be better protected than they are under current policies.

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