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House Committee on Transportation and Infrastructure
Subcommittee on Economic Development, Public Buildings, and
Emergency Management
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**North Carolina's Preparedness, Response, and Recovery Activities in
the Management of Animals in Disasters**

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Chairman DeFazio, Ranking Member Graves, and members of the Subcommittee on Economic Development, Public Buildings, and Emergency Management, I am Dr. Doug Meckes, and I serve as the State Veterinarian and the Director of the Veterinary Division at the North Carolina Department of Agriculture and Consumer Services (NCDA&CS). The division includes 150 employees that serve North Carolina's poultry and livestock industry, manage and operate the state's four veterinary diagnostic laboratories, and are charged with implementation of the Animal Welfare Act in kennels, shelters, and other animal facilities caring for and housing companion animals in North Carolina.

North Carolina's robust agriculture and agribusiness industry is the number 1 industry in the state, contributes nearly \$91.8 billion on an annual basis to North Carolina's economy, more than 17% of the state's gross domestic product, and employs 17% of the state's employees.

Within agriculture and agribusiness in North Carolina, the animal agriculture industry - comprised of livestock, dairy, and poultry - accounted for 68.5% of \$11.13 billion of farm cash receipts in the state in 2018. Additionally, North Carolina ranks second in hog production, second in turkey production and, as one of the most diverse poultry producing states in the U.S., second or third annually in overall poultry cash receipts.

The Veterinary Division and the NCDA&CS's Emergency Programs Division (EP Division), established in the early 2000's, lead the Department's agricultural preparedness, response, and recovery activities. The EP Division partners with the Veterinary Division to protect North Carolina's animal agriculture industry and to formulate plans to meet the challenges facing agriculture and food in the 21st century. The mission of the EP Division is to "support the agriculture community and protect consumers by coordinating the Department's efforts to plan for, respond to and recover from emergency events and public health concerns that may impact agriculture in North Carolina." The EP Division is a unique operating entity as few other states in the nation have used this model. It is fully integrated into the State Emergency Management Division's operational structure as the lead agency for Emergency Support Function #11 (ESF#11) and engages on a day-to-day basis with internal and external stakeholders from the local, regional, state, and national level. Since its inception, the EP Division has had an all hazards approach and participated in response to animal disease, food illness outbreaks, wildfires, and, of course, hurricanes. Additionally, members of the EP and Veterinary Divisions have deployed in a variety of other incidents around the country to assist our counterparts in other states. Particularly impactful has been the Veterinary and EP Divisions' engagement with the animal agriculture industry at all levels regarding potential threats from catastrophic disease outbreaks to natural disasters.

In the past 3 years, North Carolina has been significantly impacted by, and stood up a robust response to, 3 major hurricanes – Hurricane

Matthew (2016), Hurricane Florence (2018), and Hurricane Dorian (2019).

Hurricane Matthew made landfall on the coast of South Carolina on October 8, 2016 but caused historic flooding across central and eastern North Carolina – greater than that of Hurricane Floyd in 1999. Almost half of the state received a major disaster declaration. Though there were far greater numbers of poultry and livestock on the ground in 2016, there was less mortality: 2,800 swine (of 9 million on the ground in North Carolina every day), 1.9 million poultry (of the 190 million birds on the ground in North Carolina every day), and only a few cattle. All carcasses were properly managed, the swine predominately by their respective integrators and growers, and the poultry by integrators, growers and the significant efforts of state response teams which composted the birds. As a result, environmental consequences and public health concerns associated with mortality management were minimal. \$1.5 million from a FEMA Public Assistance Grant was used for the purchase of carbon source to facilitate the composting of poultry mortality. This was the first time that FEMA supported such an effort in a mass animal mortality incident.

Hurricane Florence made landfall near Wrightsville Beach in North Carolina as a Category 1 hurricane on September 14, 2018, again causing historic flooding across Eastern North Carolina and resulting in a major disaster declaration for more than half the state. The storm dropped as much as 35 inches of rain in the densest animal agriculture production areas of Eastern North Carolina. Approximately 4.2 million poultry and 5,500 swine were lost in 14 counties due to the storm.

Well ahead of landfall, on September 7, 2018, NC Governor Roy Cooper issued two storm-related Executive Orders. Executive Order 51 was the Declaration of a State of Emergency. Executive Order 52 was a Temporary Suspension of Motor Vehicle Regulations to ensure restoration of utility services and transporting essentials. It suspended, temporarily, weighing vehicles, including those used to transport animal

feed, livestock, poultry, and crops, and waived the maximum number of hours of service for drivers of these vehicles. The agriculture industry of North Carolina relies on this waiver to move animals and harvested crops out of harm's way to reduce the impact to the agricultural industry as well as pre-position feed, fuel, and other supplies to ride out the storm. It is estimated that this waiver allowed the industry to move approximately 1.5 million poultry and thousands of swine prior to the storm, preventing further catastrophic losses.

NCDA&CS organized conference calls and meetings with industry partners (poultry, livestock, dairies, food firms) many days prior to the storm and continued those calls on a regular basis through landfall and response. The Veterinary Division also sent out maps created by Emergency Programs staff to industry partners that overlay National Weather Service data, including wind and rain forecasts, with farm location data (which the industry provides voluntarily to NCDA&CS) so the industry knows which farms may be impacted.

NCDA&CS fully activated its Agriculture Incident Management Team for coordination of all response and recovery operations for the Department on September 16, 2018. NCDA&CS also provided an ESF#11 Liaison to the State Emergency Operations Center. A typical Incident Command System (ICS) structure was used for response activities and included the following Operations Groups – Poultry, Livestock, Mortality Management, Companion Animal, Food and Drug, and Agronomic Services. A 24-hour public hotline was opened and staffed for the duration of the response.

The Poultry Group received reports from poultry companies and producers of damage and mortality and requests for assistance with depopulation and disposal. They deployed teams and equipment to assess and depopulate poultry due to animal welfare concerns in houses impacted by power loss, partial flooding, or building collapse.

The Livestock Group received reports of impacts to both commercial livestock facilities and small farms which included livestock running at

large or stranded with farmers unable to deliver feed and fresh water or operate and refuel generators to run critical electrical functions of the animal housing. NCDA&CS response included the use of boats, high-clearance vehicles, and helicopters to address impacts to livestock.

The Mortality Management Group provided technical expertise specific to mortality issues on each impacted farm. The group also prioritized, planned, and monitored response operations on farms, verifying that prescribed activities were conducted and completed properly. Of 75 total poultry farms impacted, 58 farms entered the state's Mortality Management Program.

Based upon lessons learned from Hurricane Matthew in 2016, NCDA&CS and FEMA worked together to develop a \$12.6 million grant through FEMA's Public Assistance (PA) Program to support the Department's Mortality Management Program. The grant outlined three contracted service components for management of animal mortality by composting: Composting Subject Matter Experts, Carbon Acquisition and Delivery, and Removal and Hauling. Using this approach, which will become the model for all such future responses, the entire project was completed in only 35 days. The efficiency of this process protected the environment and public health and allowed for a timely return to production for affected integrators and growers.

NCDA&CS Veterinary and EP Divisions' experiences with animal mortality composting began in a meaningful way during the 2015 HPAI outbreaks in the Midwest. During the disease outbreak, composting as a means of mortality management became the method of choice.

NCDA&CS staff adapted lessons learned about composting from that response to managing mortality due to flooding. Burial of animal carcasses in Eastern North Carolina, especially after a flood event such as Hurricanes Matthew and Florence, is not a solution to mass animal mortality due to the high seasonal water table.

NCDA&CS staff have continued to expand and perfect capability. In collaboration with Maine Cooperative Extension and USDA,

NCDA&CS obtained grant funding to research effective techniques to improve animal mortality composting. In 2019, two demonstration projects and a composting school were conducted in North Carolina. Today, in the face of the threat of African Swine Fever to our swine industry, and with the knowledge of the catastrophic losses of swine in China and the far East with perhaps as many as 350 million swine dead, the necessity for a solution to mass animal mortality takes on even greater urgency.

Going forward, State agriculture agencies need more financial support to prepare and develop robust response programs. In addition, livestock response activities should be eligible for FEMA PA funding. Although response activities related to keeping livestock animals alive align with the FEMA Public Assistance eligibility requirements, such activities are often deemed ineligible for this funding. Providing relatively simple emergency response actions to save livestock animals potentially reduces mass mortality – a cascading event. Moving livestock to safer locations, feeding them, repairing fences and other containment structures, and other means of securing livestock are critical from a public health and safety standpoint. If livestock are outside of their containment areas (fenced pastures, barns, etc.), injury or death of nearby citizens, including responders, is an immediate concern, especially if the animals are in roadways.

We know that owners of companion animals are less likely to evacuate during a disaster unless they can bring their animals with them – this is, of course, the basis for the PETS Act. Livestock owners and their employees may likewise risk their lives to take care of these animals without proper equipment or supplies. Human lives can be saved by providing PA funding to those agencies or groups that have the authority to assist these owners in saving their animals. FEMA has previously determined that the expenses for providing shelter, bedding, feed, and supplies to horses and livestock incurred during wildfires in California in October 2007 were eligible for reimbursement as emergency protective measures (<https://www.fema.gov/appeal/219472>).

Uniquely associated with the management of animals in disasters in North Carolina is waste management. Within the state there are approximately 3,300 waste treatment lagoons associated with swine production operations. Proper management of these lagoons is recognized as essential to protection of the environment in anticipation of significant storm and rainfall events. The Veterinary, EP and Soil and Water Conservation Divisions cooperate with the Department of Environmental Quality of North Carolina which is charged with oversight of animal feeding operations and their waste management plans, in their efforts in anticipation of such storms to properly manage these lagoons.

Those pro-active efforts were successful during Hurricane Florence. Lagoons on just 6 farms suffered structural damage, 8 farms experienced inundation of lagoons with flood waters, and 28 farms experienced overflows of rainwater during the storm – 98% of North Carolina’s active swine lagoons did not experience **any** of these issues. An inconvenient truth that received scant mention in media coverage is more than 121 million gallons of untreated and partially treated human sewage that discharged directly to surface waters at more than 200 municipal wastewater treatment systems across the state.

Finally, the rescue, care, and housing of companion animals must also be addressed during disaster. The Veterinary Division’s Animal Welfare Program, established by the North Carolina General Assembly to create a uniform system for the regulation of private and public animal shelters, oversees 930 such shelters and other companion animal facilities throughout the state. This Program is managed by the Animal Welfare Section (AWS) of the Veterinary Division. Many of these shelters and facilities stand in harm’s way of the hurricanes that frequently impact North Carolina. To appropriately prepare for these events, the AWS requests that every licensed/registered shelter or facility have a natural disaster response plan that has been approved by the local emergency management agency. The AWS and the EP Division work with local government, emergency management, and animal shelters/facilities to

identify how these facilities will manage the animals long before a storm or disaster hits the community. The AWS also coordinates with these agencies and facilities ahead of time to develop protocols for set-up, registration, intake, animal care, sanitation, and demobilization of temporary animal sheltering areas co-located with human shelters. Temporary animal sheltering resources are prepositioned near the expected landfall area in the event of a forecasted disaster; these resources are then readily available, after the event, to care for displaced animals. Subsequent to the passing of the storm or when conditions permit access to shelters/facilities in the affected area, the AWS and the EP Division coordinate with national and local resources to support the hardest hit areas with personnel and resources. In the immediate aftermath of the event, AWS and EP act as a clearinghouse for donations of both monetary and material resources. Assistance is also provided to direct teams of volunteers to the shelters and counties that have the greatest needs.

During recovery from a disaster the AWS and EP Division continue to offer support and coordinate relief efforts for the animal shelters/facilities and affected communities. Inspections of temporary shelters continue until they have been demobilized and citizens are assisted with complaints concerning events that occurred during the disaster and its aftermath when under the jurisdiction of the AWS. The rescue, care, and sheltering of companion animals during disasters has been recognized as essential to a successful response. The Department's Animal Welfare Section leads the way in this important endeavor in North Carolina.

Thank you for the opportunity to provide insight into North Carolina's programs and efforts to address natural disasters and/or animal disease emergencies. Given the state's location on the eastern coastline of our Nation, there will, no doubt, be continuing needs to deploy our State's response teams. In such events, we look forward to expanding our partnership with FEMA, moving toward a better understanding of

livestock response activities eligible for reimbursement, enabling our teams to readily manage storm impacts and, going forward, building upon current capabilities to improve outcomes. Additionally, our Veterinary and EP Divisions believe there currently exists a gap in capability at the state and Federal level for a catastrophic animal disease outbreak. Such an incident, usually considered the sole responsibility of USDA, could be of such consequence that all response resources available would need to be brought to bear. Given the global character of trade, travel, and illegal movement of agricultural products, perhaps it's time to consider a fully integrated approach to such an event.