N.C. Department of Agriculture Coordinated Response To Hurricanes and Animal Agriculture Emergencies

2020 National CAFO Roundtable

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All U.S. States face hazards.

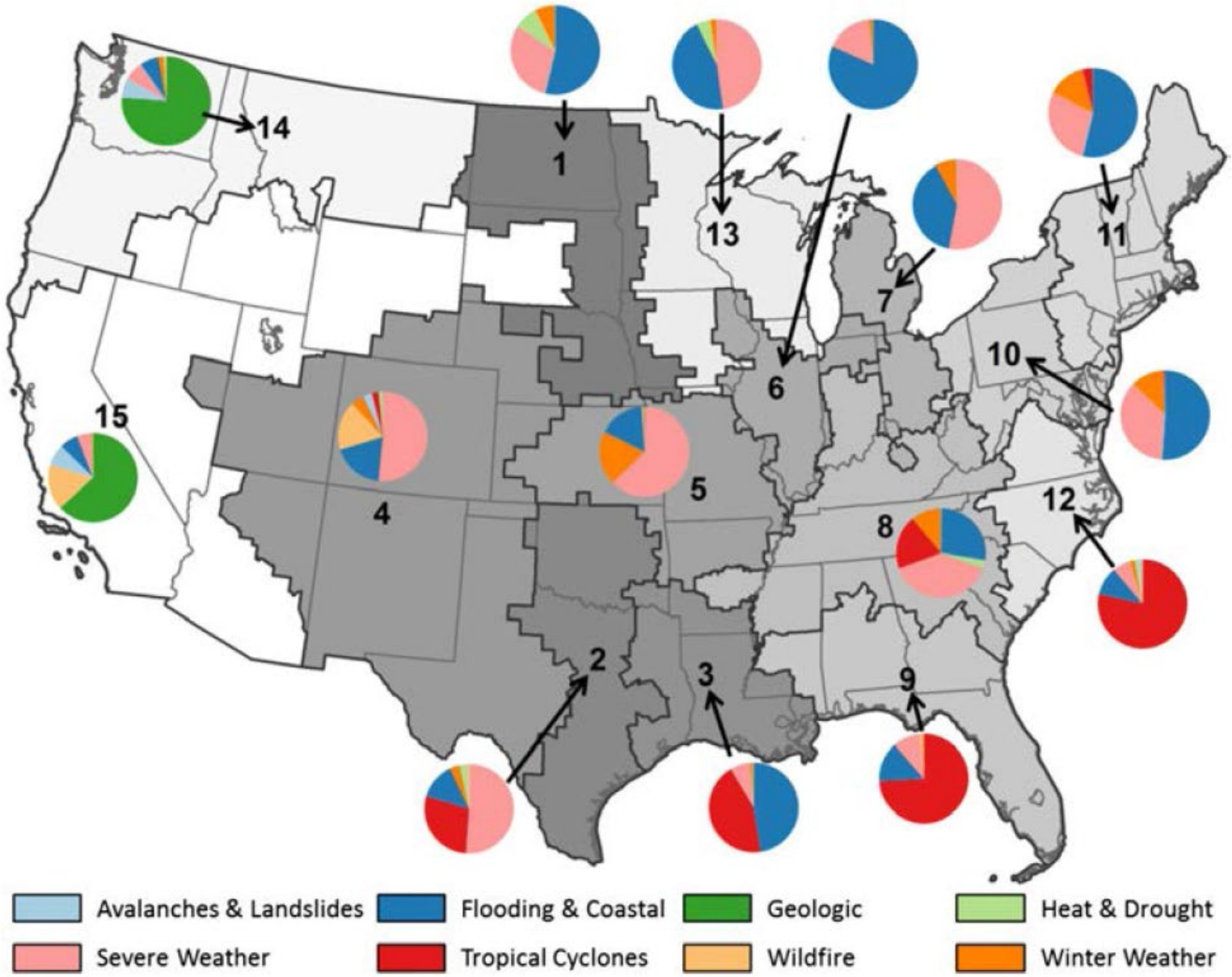


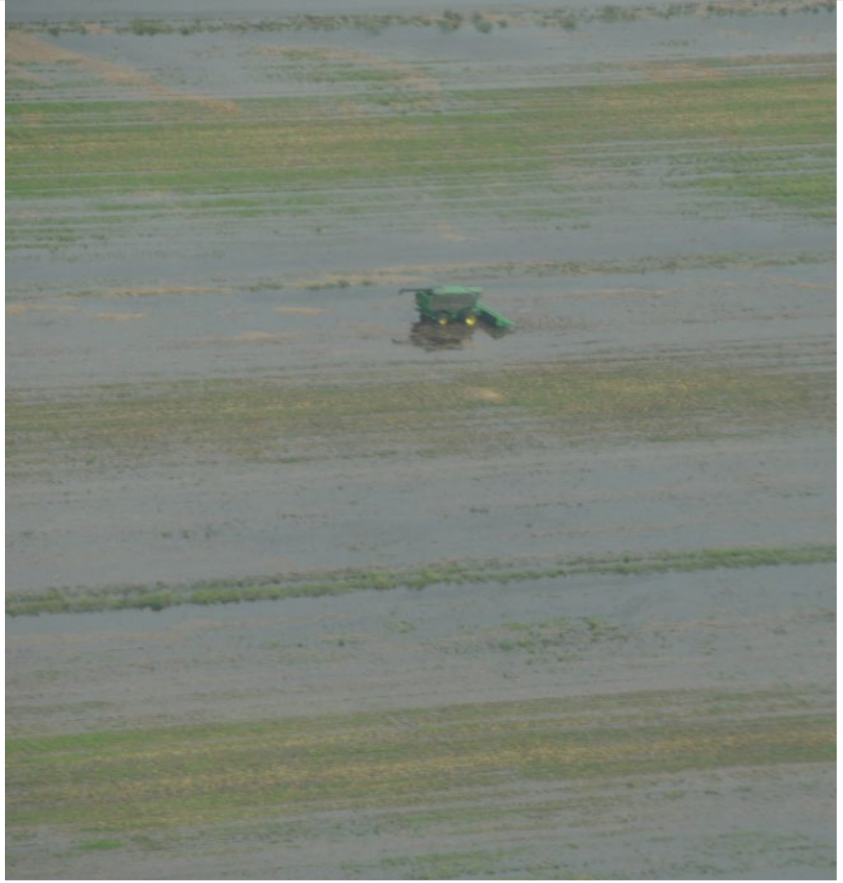
Figure 3–8. Distribution of losses by hazard types for U.S. regions using hazard data from 1980–2009. (Source: Ash et al., 2013.)

State Animal Response Team (SART)

- Founded in NC after Hurricane Floyd, where >3 million domestic and farm animals were lost.
- A multi-agency approach to taking care of animals in emergencies.
- Public/private partnership to prepare, plan, respond and recover any animals in an emergency.
- Communicated disposal guidance to producers (SART Memo).

NCDA&CS Emergency Programs Division established in 2001.
…the driving force for State Agriculture emergency preparedness and response

The NCDA&CS Emergency Programs Division's mission 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 NC.


Florence Agriculture Impacts

http://linapps.s3.amazonaws.com/linapps/photomontage.com/photos/2016/10/g42638-damage-from-hurricane-matthew/719221-north-carolina-rescue-4f173.png

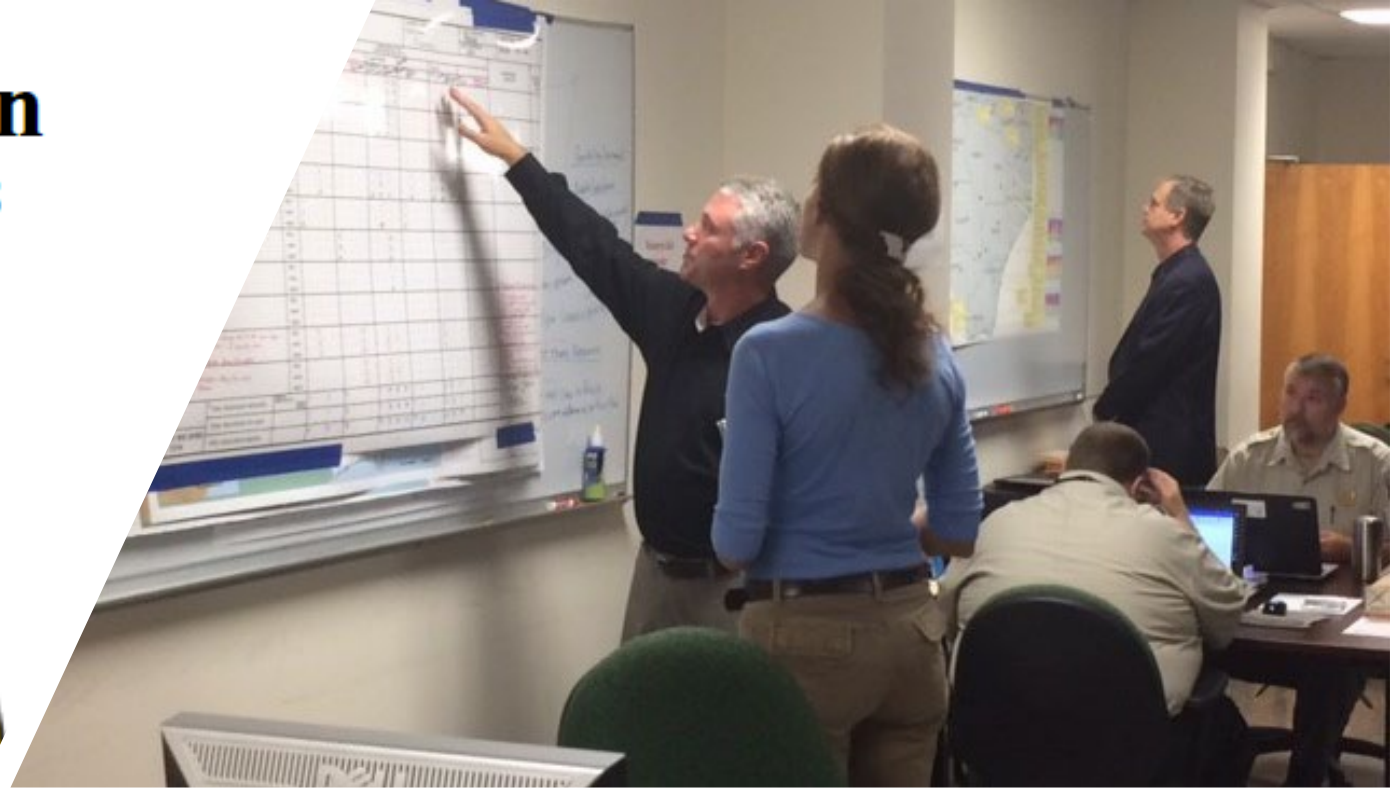
http://a.abcnews.com/images/US/RT_Hurricane_Matthew_North_Carolina7_MEM_161011_4x3_992.jpg

http://a.abcnews.com/images/US/RT_Hurricane_Matthew_NC3_MEM_161011_4x3_992.jpg

Incident Action Plan

Thursday, September 20, 2018

Operations Period 0700 - 1900



NCDA&CS E

Cost Center/Charging C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N421NC


40


PET TAXI

NORTH CAROLINA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES
VETERINARY DIVISION

Mass Animal Mortality Management Plan for Catastrophic Natural Disasters

Natural Disaster

Catastrophic Mortality

Off-site Options

Rendering ***

Description

Rendering is a preferred off-site option with some limitations due to timing challenges and access to carcasses during flooding events. It is low cost and results in a product of value from rendered carcasses.

Resources Needed

1) Rendering facilities that are fully operational;

2) Transportation (typically available through the renderer); and

3) Timely access to carcasses (flooding conditions can often prevent timely access to animal carcasses, causing the carcasses to be unusable for rendering).

Landfills***

Description

Landfills have been successfully used in past events as an off-site option. Limiting factors in using landfills include: acceptance of carcasses by the landfill, amount of landfill material available after an event to use to cover the carcasses, and the number of carcasses to be landfilled. Landfills willing to accept carcasses should be identified prior to an event.

Resources Needed

1) Leak-proof transport for carcasses (liners or retrofitted dump trucks can be used if vehicle is not leak-proof);

2) Access to animals (time is not a factor as with rendering);

3) Equipment to load carcasses into transport vehicles; and

4) Tipping fees at landfill.

Incineration

Description

Incineration has many disadvantages that makes this option a very low priority for use in North Carolina. Under the right conditions, this option might be used.

Resources Needed

1) Incinerators rented from contractors and large amounts of fuel;

2) Environmental permits to incinerate;

3) Transportation to incineration sites;

4) Heavy equipment to load fuel and carcasses; and

5) Requires 24-hour staffing.

On-Site Options

Composting***

Description

Composting is the best on-site carcass disposal option. There is a possibility that composting, under the right conditions, could be used off-site to meet the needs created by a multiple county event. Composting of poultry can be accomplished in 28 days or less. Composting of larger animals takes longer (up to six (6) months). Compost piles may be turned periodically to facilitate the process. Dry carbon materials are mixed to create the proper ratio based on moisture content of the carcasses and litter. Land application of compost material will be at recommended agronomic rates.

Resources Needed

1) Site allowing access for heavy equipment to form the compost pile and move carcasses;

2) Dry carbon source- dried sawdust or shavings are preferred material for compensating for wet litter and carcasses;

3) Other coarse and/or fine carbon materials are needed for proper windrow construction;

4) Composting Subject Matter Expert to oversee compost windrow construction. NCDA & CS has a list of qualified personnel; and

5) If a community composting off-site option is used, suitable land for composting operations would need to be identified.

Alkaline Hydrolysis**

Description

This option is noteworthy and will be considered as a support option. This option is limited by the throughput capacity and the number of available hydrolysis units.

Resources Needed

1) Fee for service with contractors;

2) Site must allow for heavy-equipment use; and

3) Resulting effluent must be disposed of properly or land applied.

Burial* (Above/Below)

Description

Burial is a limited on site disposal option due to flooded conditions and often minimal depth to seasonal high water table. Farmers are encouraged to obtain pre-approval for mass burial sites. Above ground burial (partial burial with mounding of the cover soil) has a number of challenges that must be addressed on a case-by case basis.

Resources Needed

1) Burial sites for catastrophic mortality are evaluated on a site to site basis;

2) Heavy-equipment for carcass movement and burial;

3) Personnel and small-equipment to prepare carcasses for burial; and

4) Above ground burial may require additional soil, carbon materials and other equipment.

5) Burial sites may require additional environmental monitoring.

Composting Mass Animal Mortality is new!

Initial successes:

- In-house composting of broilers w/LPAI on Delmarva (**2004**)
- In-house & outdoor composting of 40 lb. turkeys w/LPAI in VA and W. VA (**2007**)

The largest animal health incident in U.S. history:

- HPAI (**2015**) in Minnesota
- 9,024,632 birds
- 107 of 108 farms composted

- HPAI (**2015**) in Iowa
- 30,323,900 million chickens/ 1,100,000 million turkeys
- all turkeys composted
- >50% of chickens composted

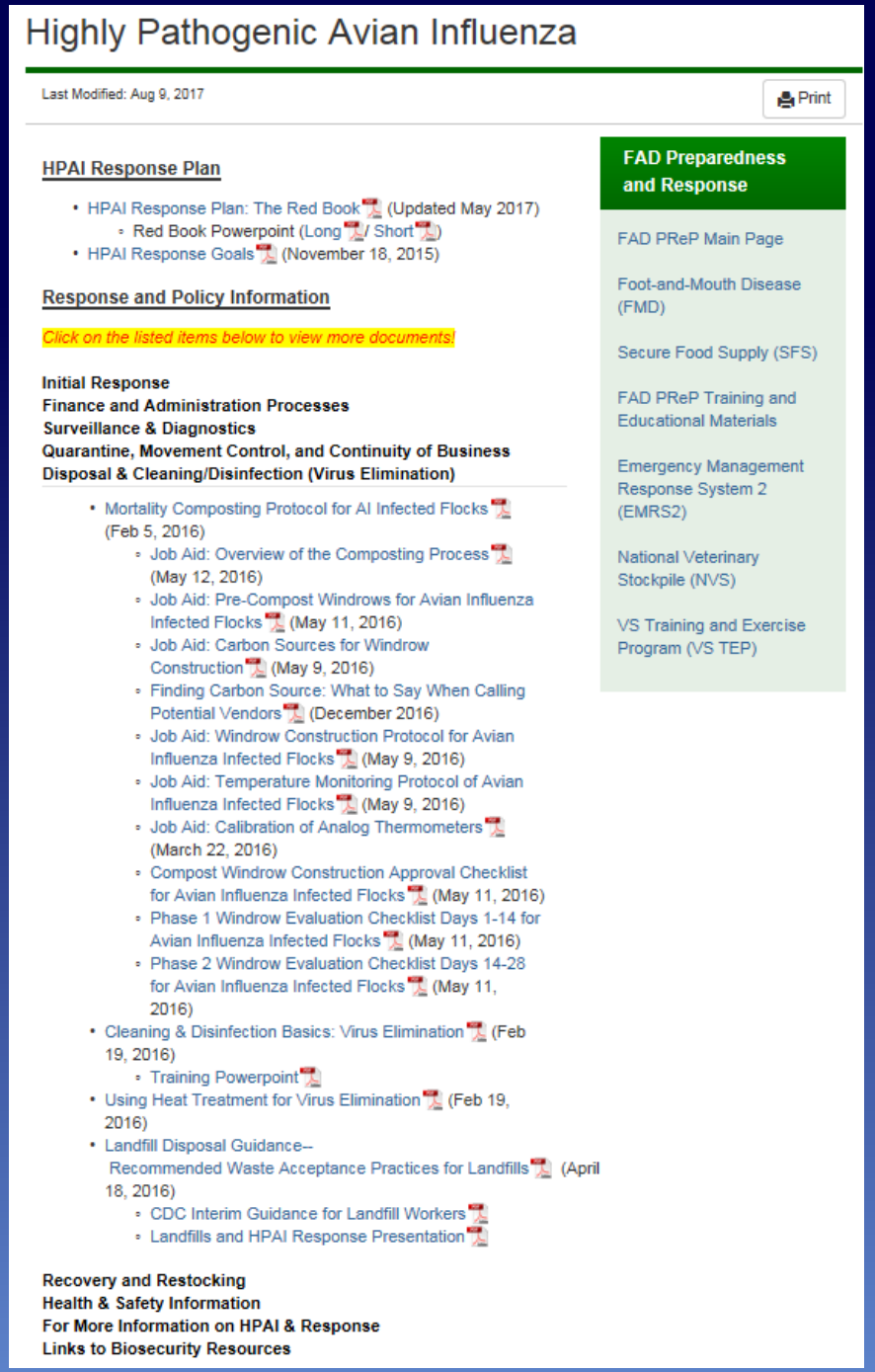
More recently:

- LPAI/HPAI (**2016**) in Indiana
- 414,503 birds (mostly turkeys)
- 10 of 11 farms compost (258,325 turkeys)

USDA-APHIS

HPAI preparedness and response

- state and federal representatives
- development of tools & expertise
- collaborative; ongoing



Highly Pathogenic Avian Influenza

Last Modified: Aug 9, 2017

Print

HPAI Response Plan

- HPAI Response Plan: The Red Book (Updated May 2017)
  - Red Book Powerpoint (Long / Short)
- HPAI Response Goals (November 18, 2015)

Response and Policy Information

Click on the listed items below to view more documents!

Initial Response
Finance and Administration Processes
Surveillance & Diagnostics
Quarantine, Movement Control, and Continuity of Business
Disposal & Cleaning/Disinfection (Virus Elimination)

- Mortality Composting Protocol for AI Infected Flocks (Feb 5, 2016)
  - Job Aid: Overview of the Composting Process (May 12, 2016)
  - Job Aid: Pre-Compost Windrows for Avian Influenza Infected Flocks (May 11, 2016)
  - Job Aid: Carbon Sources for Windrow Construction (May 9, 2016)
  - Finding Carbon Source: What to Say When Calling Potential Vendors (December 2016)
  - Job Aid: Windrow Construction Protocol for Avian Influenza Infected Flocks (May 9, 2016)
  - Job Aid: Temperature Monitoring Protocol of Avian Influenza Infected Flocks (May 9, 2016)
  - Job Aid: Calibration of Analog Thermometers (March 22, 2016)
  - Compost Windrow Construction Approval Checklist for Avian Influenza Infected Flocks (May 11, 2016)
  - Phase 1 Windrow Evaluation Checklist Days 1-14 for Avian Influenza Infected Flocks (May 11, 2016)
  - Phase 2 Windrow Evaluation Checklist Days 14-28 for Avian Influenza Infected Flocks (May 11, 2016)
- Cleaning & Disinfection Basics: Virus Elimination (Feb 19, 2016)
  - Training Powerpoint
- Using Heat Treatment for Virus Elimination (Feb 19, 2016)
- Landfill Disposal Guidance-- Recommended Waste Acceptance Practices for Landfills (April 18, 2016)
  - CDC Interim Guidance for Landfill Workers
  - Landfills and HPAI Response Presentation

Recovery and Restocking
Health & Safety Information
For More Information on HPAI & Response
Links to Biosecurity Resources

FAD Preparedness and Response

- FAD PReP Main Page
- Foot-and-Mouth Disease (FMD)
- Secure Food Supply (SFS)
- FAD PReP Training and Educational Materials
- Emergency Management Response System 2 (EMRS2)
- National Veterinary Stockpile (NVS)
- VS Training and Exercise Program (VS TEP)

NC DENR HIGHLY PATHOGENIC AVIAN INFLUENZA RECOMMENDATIONS

ABSTRACT

Many livestock and poultry diseases are highly contagious and can be spread by people through contact with contaminated clothing, vehicles, and equipment. The mass mortalities caused by disease outbreaks can negatively impact both surface and groundwater resources. This guidance is offered to help protect animal health, to prevent the spread of disease, and ultimately, to protect North Carolina's environment and natural resources.

August 11, 2015

North Carolina Guidance for Composting of Mass Animal Mortality (October 2016)

- Biosecurity
- Decontamination
- Burial
- Composting
- Incineration
- Transportation
- Rendering

ergency disposal solution when
ccessfully to manage mortality
sease events. The composting
and stabilizes organic material
s is a recycled, organic material
nd.

MPOSTING)
as to prevent contamination of
ved solids, nitrates or ammonia

consider the predominant soil

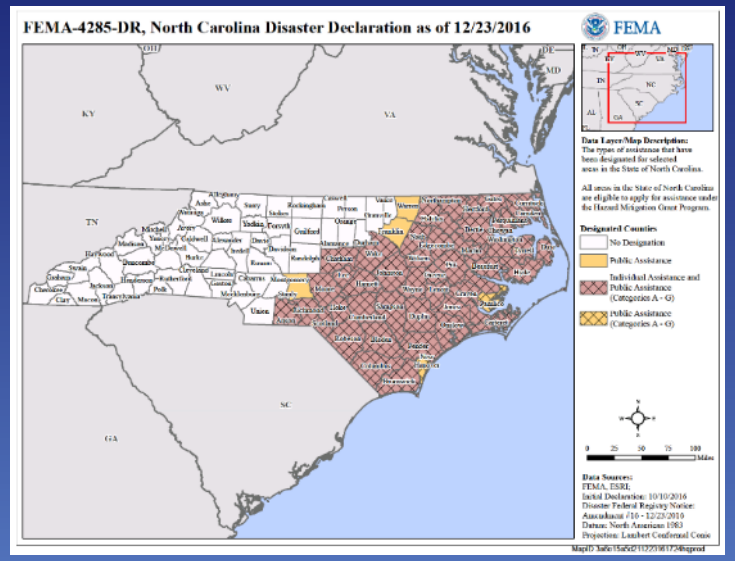
Hurricane Matthew (2016)

- 1,809,124 commercial poultry
- 49 farms, 180 poultry houses impacted
- 2,800 commercial nursery swine – landfill

Could composting on a large-scale work for hurricane response? …yes, if we had the resources…

Hurricane Matthew 2016

FEMA Ag Disaster Recovery Assistance



- Major disaster declaration

  Governor (State) → President (Federal)

- Need waiver from landowner: public funding to operate on private property

- Category B – Emergency Measures.

  Endorsement letter from NC Department of Public Health and NC Department of Environmental Quality

- Address potential threat to public health & environment

Matthew disposal response (2016)

- Carbon materials/Compost SME assistance to 49 poultry farms
- 999 loads, >86,897 yd^3 of carbon material delivered
- 14 Compost ‘SMEs’ deployed
- NCDA&CS fully managed all aspects of response and resources for >2 months

What we learned during Matthew response

- This was a bold and successful, first of its kind response in the US!
- Composting is effective for disposing of animal mortalities and wastes during hurricane response
- NCDA&CS complete management of all contractors, carbon orders and deliveries, SME schedules took key personnel away from their normal duties for months
- Need more equipment and crews to do work quickly – skills matter
- Contracting key response components would be better
- IMT should focus on coordinating overall response and speed
- Need Incident Command Post (ICP) near center of impact

Florence disposal response (2018)

- 4,171,710 commercial poultry
- 62 farms, 237 poultry houses impacted
- 5,500 commercial swine – rendering, landfill

Compost Subject Matter Experts

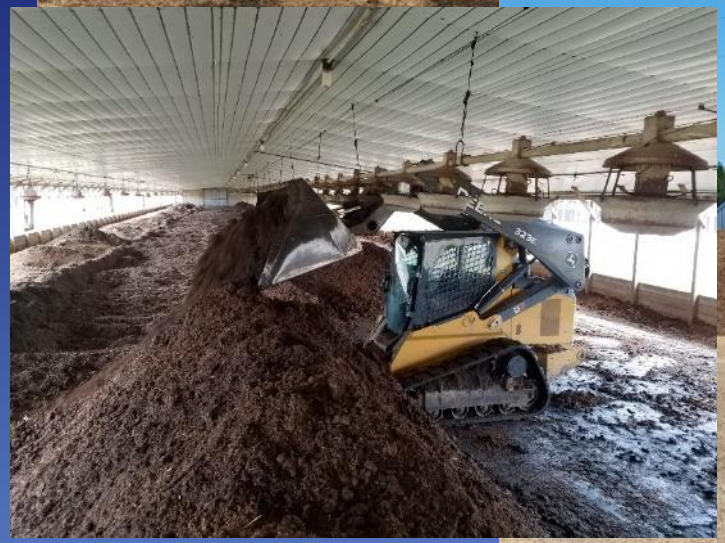
CARBON MATERIALS CONTRACTOR

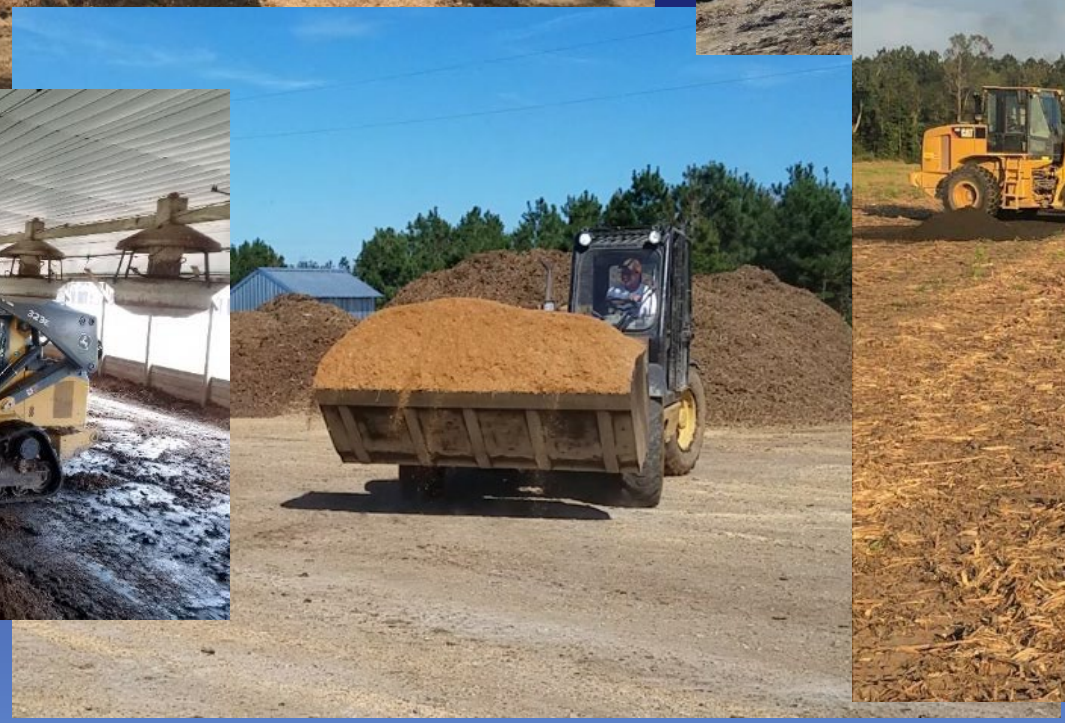
Source, schedule, deliver

TRACKING

carbon order
load ticket
date
load capacity
quantity delivered
material spec
driver
truck
loaded miles
vendor/subcontractor
payment documentation

Removal & Hauling Crews





Three-phase approach

1 – Cover it

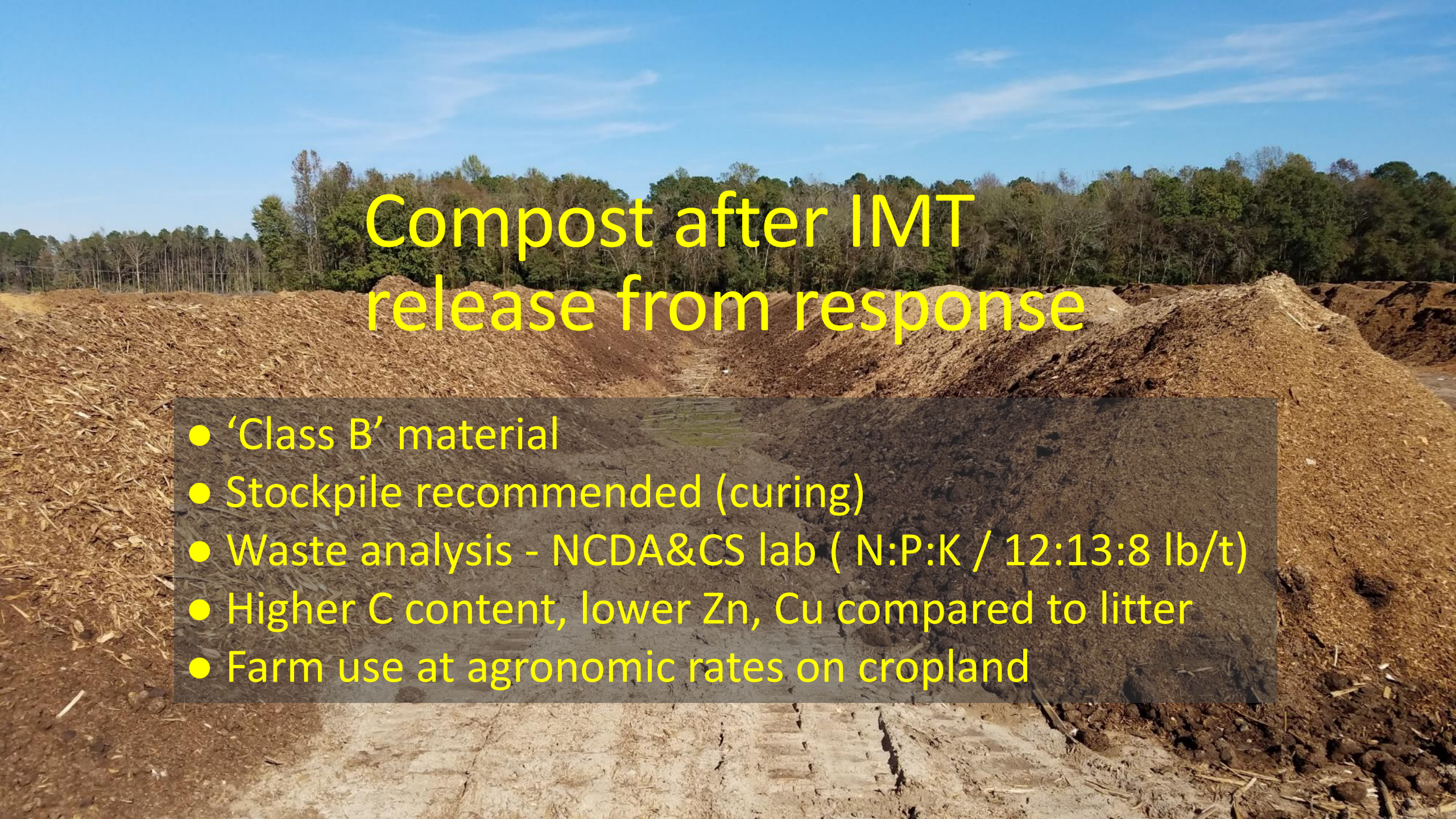
2 – Work it

3 – Compost it


REOTEMP
°F

Florence disposal response (2018)

- Assistance to 58 poultry farms
- 1,620 loads > 139,783 yd^3 of carbon material delivered
- 20 Compost ‘SMEs’ deployed
- NCDA&CS used 3 contractors (carbon, SME, removal/composting)
- Completed active response in ~35 days



Compost after IMT release from response

- ‘Class B’ material
- Stockpile recommended (curing)
- Waste analysis - NCDA&CS lab (N:P:K / 12:13:8 lb/t)
- Higher C content, lower Zn, Cu compared to litter
- Farm use at agronomic rates on cropland

Response successes

- Pre-storm Executive Orders for State of Emergency and Temporary Suspension of Motor Vehicle Regulations allowed industry to:
  - mitigate impacts to animals and commodities

- Develop contracts, hire expert contractors with NCDA&CS oversight to perform mortality management activities = Success

- Develop response plans and review w/ partners ahead of time

- FEMA – engagement, pre-approval of response plan

Response successes

- Response tools developed in advance
  - guidance documents, SOPs, Job Aides, forms
- Cross-agency collaboration (Ag industry, environmental, public health, EM)
- Coordinate/Communicate (before/during/after)
  - conference calls, Ag Emergency hotline, news releases, technical support
- Composting is a valuable waste management tool for response to natural disasters

What else?

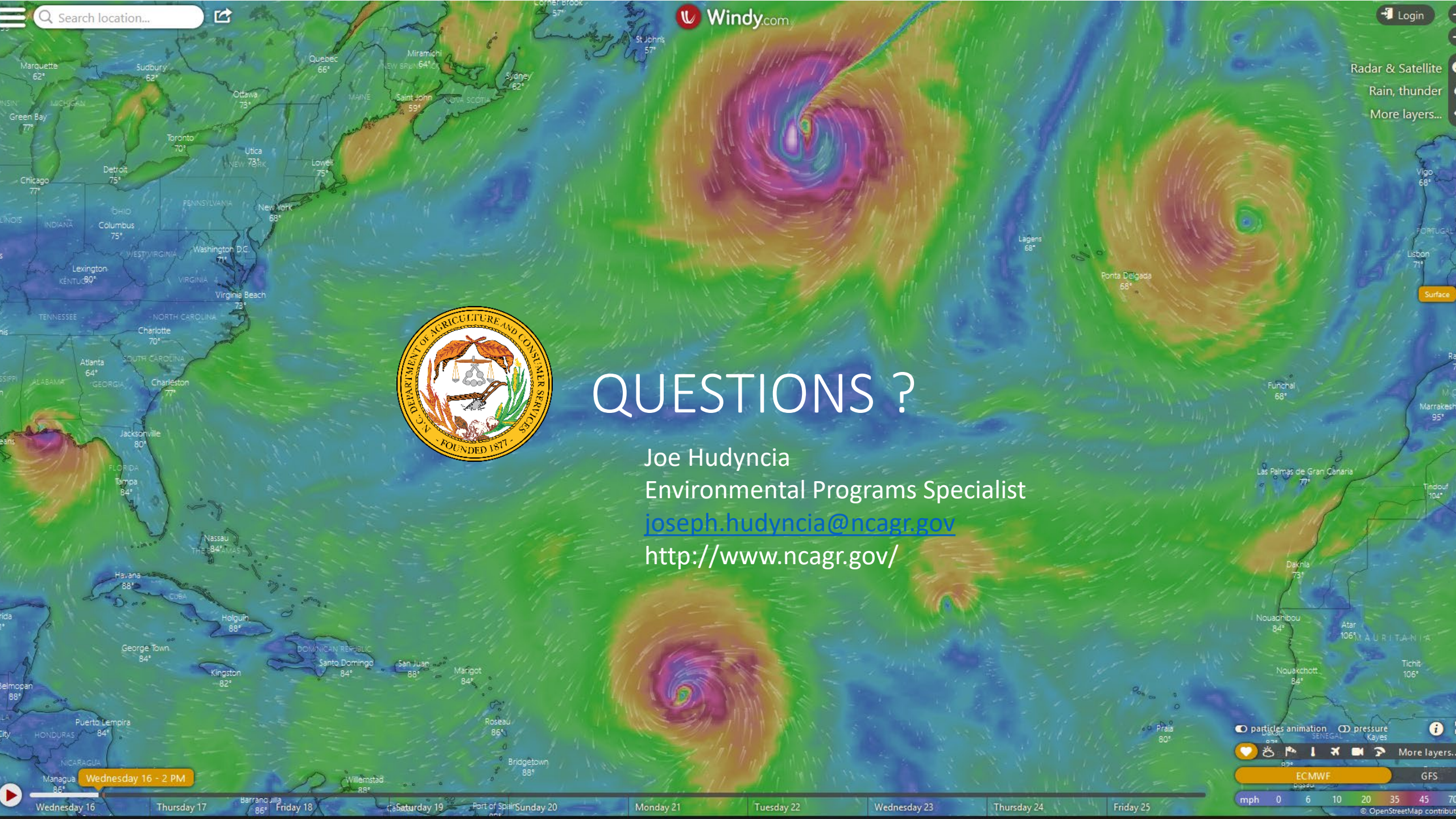
- Yes, this important component of our community and economy (agriculture) needs assistance during catastrophic emergencies.

- Thorough preparations for foreign animal disease (FAD) response have provided capabilities for hurricane animal ag response.

- NCDA&CS hurricane response for animal ag provides a model for NC and other states to use going forward

- Composting is being used more widely now for isolated Ag emergencies

- Capacity developed may help prepare you for other events – ASF, Covid-19



QUESTIONS ?

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