NCDA & CS Mortality Management Plan for Catastrophic Natural Disasters

Hurricane Matthew Event

Introduction:

Owners of livestock and poultry are responsible for the proper disposal of mortality from natural disasters. It is understood that in times of disasters and disease events, catastrophic mortality may overwhelm the capabilities of owners/operators and outside assistance may be requested. Owners may choose to dispose of their mortality from storms and may do so, but catastrophic loss mortality must be reported to the State Veterinarian and the proposed method of disposal must be approved prior to disposal. Catastrophic mortality would be considered to be losses 20% of commercial farms (poultry and swine) and greater than 10 head in cattle operations.

Requests for Assistance

For owners that need assistance for disposal of catastrophic mortality, assistance as to how to request those resources will be provided when losses are reported to the State Veterinarian. The State Veterinarian will advise the Incident Management Team to work with owners to form requests for resources and which would be submitted to County Emergency Operations.

Prioritization of Mortality Disposal Operations: As previously agreed upon, by Division of Emergency Management and Department of Agriculture and Consumer Services, carcasses from animals that have perished due to natural disasters will be characterized as debris (i.e. not hazardous waste) and given a higher priority for disposal than other storm debris except for debris that hinders public safety and essential services.

Disposal Management Options **(all options are in consideration for large events but those with 3 stars are the primary options as a particular farm/site situation is considered when flooding is an issue. Thus rendering would be a first option if access to carcasses allows, but landfills and composting also considered. Burial would likely encounter additional challenges but could be an option as well but may be more likely to be ruled out depending on severity of flooding.) There will likely be use of all options to some degree in a large scale event.)**

Method	Description	Resources needed
Rendering* **	Rendering is a preferred **offsite** option the availability of which may well be comprised in the critical phases of Mort Management Ops. It is low cost and results in a product of value from rendered carcasses. Note this option has had little use due to timing challenges/access to carcasses in flooding events.	1) Rendering facility that are fully operable 2) Transport is typically available through renderer 3) Access to carcasses in a timely manner (flooding often precludes this as carcasses are too decomposed to be used for rendering)
Landfills* **	Landfills have been used in past events successfully as an **offsite** option. Availability/acceptance by the landfill of carcasses or of a	1) Leak-proof Transport for carcasses (liners or retrofitted dump trucks can be used if vehicle is not leak-proof)

	substantial amount of carcasses is primary limiting factor. Landfills have to be accessed at the time of event to determine their acceptance and how much.	2) Access to animals (time is not as important as for rendering) 3) Equipment to load carcasses into transport 4) Tipping fees at landfill
Composting* **	Best **on site** carcass disposal option if suitable site exists. There is also the potential to use a larger composting operation offsite to meet needs of a multiple county event. Composting of poultry can be accomplished in 28 days allowing removal. Composting of larger animals takes longer (up to 6 months verses poultry). Compost piles will need to be turned periodically to facilitate the process. Carbon material is mixed in a 2:1 ratio with carcasses. Soil Amendment application of compost material would be carried out as per usual rate application guidelines.	1) Site that allows heavy equipment to form the compost pile/transport to pile as well as a dry footing to form the pile 2) Carbon source- storm debris that has been chipped/mulched to ½ to 1 inch chips is ideal. 3) Potentially, equipment to move birds and form the pile. Industry uses composting as part of their routine mortality management activities but resources may be overwhelmed. 4) Composting Subject Matter Expert to oversight compost construction. NCDA & CS has a list of these personnel. 5) If a community composting offsite option is used, land suitable for such operations would need to be identified.
Burial*	Burial is a limited **on site** disposal option due to usual flooding and challenges associated with environmental concerns after natural disasters. Burial is used for routine mortality on some farms and so those farms are prepared on some level to perform but usually not on a catastrophic level. **Above ground burial (Partial burial with mounding of the cover soil)** has a number of additional challenges that must be further addressed on a case by case basis.	1) Burial sites for catastrophic mortality would need to be evaluated by NCDA&CS personnel on a site to site basis. 2) Equipment to construct pit and conduct burial. 3) Personnel and equipment to load/transport carcasses to pit and perform activities (including puncturing carcass as needed) 4) Above ground burial relates to the partial burial of carcasses with cover soil mounded over the carcasses and may need additional equipment for mound construction.
Alkaline Hydrolysis**	This portable option is noteworthy and will be considered as a support option. Its capacity is limited currently due to the number of hydrolysis units that exists. (roughly 4000 lbs 8-hour time frame)	1) Units are self-contained and contractor owned.
Incineration	Incineration has not proven to be as useful in catastrophic carcass disposal operations as hoped. It is a very low priority option for NC.	

Mortality Management Decision Matrix
(flow also indicates preference order)