Animal Carcass Disposal

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Difficult Subject

• No easy solutions
• Limited options
• Involves multiple agencies
• Falls in the gaps
Disposal Options in Florida

- On-Site Burial
- Composting
- Cremation/Incineration
- Rendering
- Transport to a Class I Landfill
On-Site Burial
On-site Burial

- Cheap
- *Site suitability issues - need soil data/site assessment*
- *Unlined burial has leachate issues*
- *Possible health and liability issues from contamination*
We Have a Problem in Florida

• We have a lot of water and it’s all connected
Florida Aquifer Vulnerability Assessment (FAVA)

A model used to predict the vulnerability of Florida’s aquifer to contamination from land surface
FAVA Uses Well Data

FDEP Water Quality Background well
- Surficial Aquifer System
- Intermediate Aquifer System
- Floridan Aquifer System

Florida Department of Agriculture and Consumer Services
FAVA Uses Proximity to Karst Features
FAVA Uses Altitude of Water Table
Conceptual Model
FAVA output for relative vulnerability to contamination from land surface

Red is bad!
Bottom Line

• We have sandy soils overlying porous limestone
• We have a shallow water table
• We have large rainfall totals
• We have a lot of water and it’s all connected
• You just can’t bury large numbers of animal carcasses in Florida
Composting
Composting

- Space and carbon source needs can be extensive
- Carbon source required - 3 pounds of carbon required per pound of carcass
- Carbon sources are sawdust, wood chips or shavings, shredded paper
- Average Holstein cow weighs 1500 pounds - needs 4500 pounds of carbon
- Ecologically sound
Incineration

- Slow
- Expensive
- Transportation required
- Open air burning prohibited in Florida
- Municipal incinerators will not usually accept carcasses
- Limited number of commercial incinerators
Air Curtain Incinerators
Commercial Incinerators
Rendering
Rendering

- Expensive
- Plant refusal is common
- Will not take cattle carcasses because of BSE, or rotten carcasses
- Transportation required
- Limited number of commercial renderers
Rendering

- Florida capacity - 120,000 lbs./hour or 2,880,000 lbs./day
Transport to a Class I Landfill
Transport to a Commercial (Class I) Landfill

• Tipping fees can be expensive
• Transportation required
• Landfill prior permission typically required
• Probably the best option in Florida
Commercial Landfill

An engineering marvel!

Is lined

Has groundwater monitoring wells

Leachate is collected

Gas is collected
~ 60 Class 1 Landfills

65 Class 1 Landfills
## Holistic Weighting of Disposal Options

<table>
<thead>
<tr>
<th>Weighting</th>
<th>Criteria</th>
<th>Off-Site Landfill</th>
<th>Rendering</th>
<th>Off-Site Incineration</th>
<th>Composting</th>
<th>Open Air Burning</th>
<th>On-Site Burial</th>
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Payment
Payment

• Under a Presidential Declaration, FEMA will reimburse for carcass disposal with restrictions

• Under an foreign animal disease emergency, USDA will pay for carcass disposal with restrictions
Generally, FEMA will provide assistance for the removal and disposal, which may include open burning, incineration, or rendering, of animal carcasses resulting from a Presidentially declared major disaster . . .

. . . .when animal carcass removal and disposal is necessary to reduce or eliminate an immediate threat to life, protect public health and safety
FEMA Public Assistance


- This assistance is authorized under Sections 403, 407, and 502 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act

- Public Assistance Category A (debris removal) and/or Category B (emergency protective measures)
Direct Federal Assistance

- FEMA may also provide direct federal assistance (DFA) through a mission assignment to another federal agency to perform carcass removal and disposal work.
Carcasses on Private Property
Carcasses on Private Property

- Removal and disposal of carcasses on private property is generally not eligible work.
- If the carcasses are determined to present an immediate threat to life, public health and safety, then removal and disposal may be eligible as an emergency protective measure.
- FEMA may require certification from the state or local health department, or the USDA, that a health threat exists.
OTHER FEDERAL AGENCY ASSISTANCE
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• The USDA Natural Resources Conservation Service (NRCS) may be able to provide assistance to private landowners for the removal and disposal of animal carcasses

• Private landowners should contact the NRCS State Office to receive assistance that may be available
OTHER FEDERAL AGENCY ASSISTANCE

• U.S. Environmental Protection Agency (EPA) and U.S. Coast Guard (USCG) have the authority to respond to animal carcasses that are contaminated with oil, hazardous substances, pollutants, or contaminants
Information
SART Website

www.flsart.org
Carcass Disposal Resources on SART Website

Animal Carcass Disposal Resources

The Animal Carcass Management Working Group was formed in 2006 to address large scale animal carcass disposal needs. The group is composed of representatives from the Florida Department of Agriculture and Consumer Services, Florida Department of Environmental Protection, Florida Department of Health, Florida Geological Survey, University of Florida, Animal Plant Health Inspection Service, Veterinary Services, and the Natural Resource Conservation Service. Private industry partners also assist the working group in their role.

Questions regarding this working group should be addressed to Greg Ormsby D.V.M., Florida Department of Agriculture and Consumer Services, Division of Animal Industry. Phone: (850) 415-6991, Email: gormsby@fdacs.com.

Please click here to visit the Animal Carcass Management Working Group webpage that includes similar reports, current working group meetings and additional resources.
Important links


• EPA's debris disposal decision support tool suite: http://www2.ergweb.com/bdrtool/login.asp

• Farm disaster assistance: http://www.fsa.usda.gov/
Contact Us

• Web EOC Mission request
• Contact a SART Partner
• Contact me

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Questions?
Foot and Mouth Disease (FMD) – U.S.

• The most devastating FMD outbreak in the U.S. happened in 1914
• It originated from Michigan, but entered the stockyards in Chicago
• About 3,500 livestock herds with 170,000 cattle, sheep, and swine
• The eradication cost was $4.5 million, a huge sum of money in 1914
Carcass Disposal in 1914

- Burial by steam shovels (only available in some areas)
- Dumping down mine shafts
- Blasting canyon walls to cover
- Slaughter and consumption of exposed, but not diseased/ill animals
Recent Disease Outbreaks

• 1971 U.S. - 8 million birds killed (END)
• 1983 U.S. - 17 million birds killed (HPAI)
Recent Disease Outbreaks

• 1997 Taiwan - 4 million hogs killed (FMD)
• 1998 Netherlands - 11 million hogs killed (CSF)
Recent Disease Outbreaks

• 1999 Malaysia—1 million hogs killed (Nipah)
• 2001 UK – 10 million animals killed (FMD)
Recent Disease Outbreaks

• 2015 U.S.- Highly Pathogenic Avian Influenza (HPAI) - 50 million birds died or killed
Recent Disease Outbreaks

• 2019  East Asia - African Swine Fever (ASF) - 1.7 million swine died and euthanized