Responding to African Swine Fever: Research to Develop New Methods to Manage ASF Infected Animal Carcasses

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African Swine Fever (ASF)

African Swine Fever has wiped out nearly a quarter of the world's pigs.

Where will it strike next?

Impact of ASF

November 13, 2019

Korean river runs red from blood of pigs culled amid African swine fever outbreak

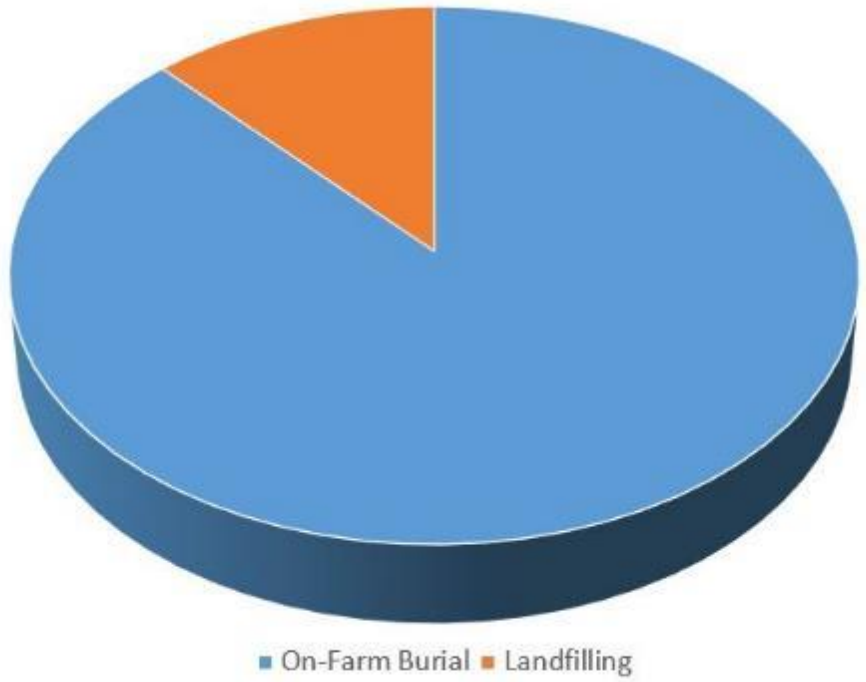
As South Korea battles an outbreak of African swine fever (ASF), the destruction of some 47,000 pigs has led to the Imjin River, which runs through the demilitarised zone, turning blood red.

The strange colour is the result of the river being polluted with the blood of many of the slaughtered pigs. Heavy rains caused their blood to flow from a border burial site into a tributary of the Imjin.

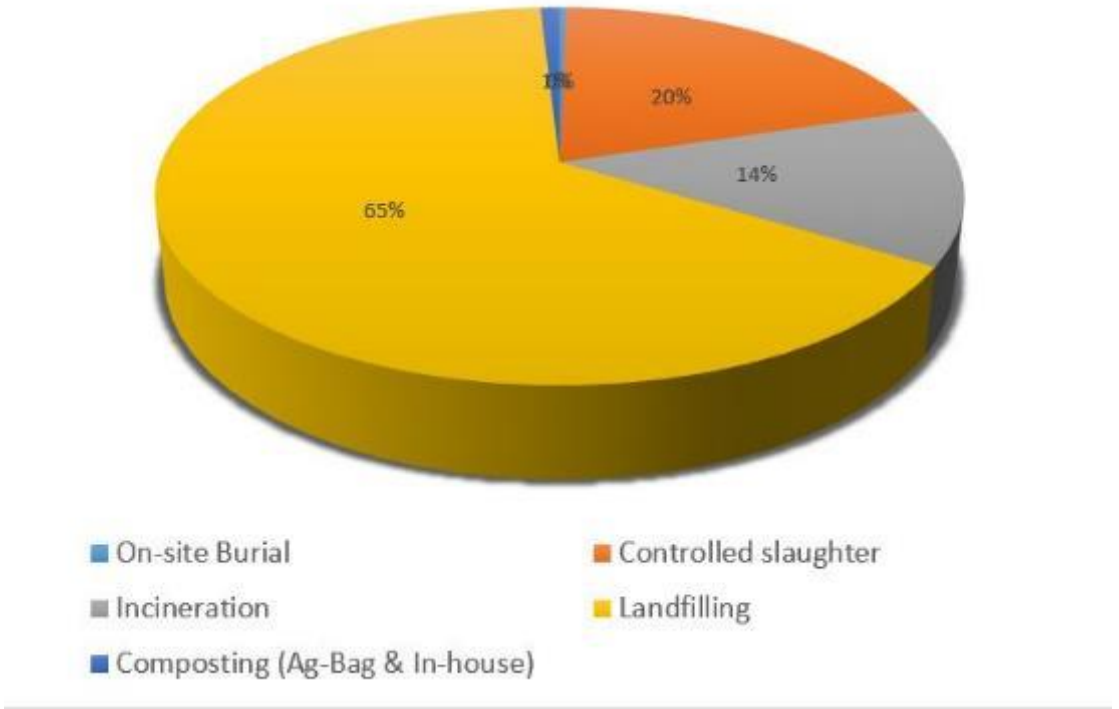
South Korean authorities culled the pigs in an attempt to halt the spread of the disease, which is highly contagious and incurable, with a near zero survival rate for infected pigs.

Carcass Disposal Methods

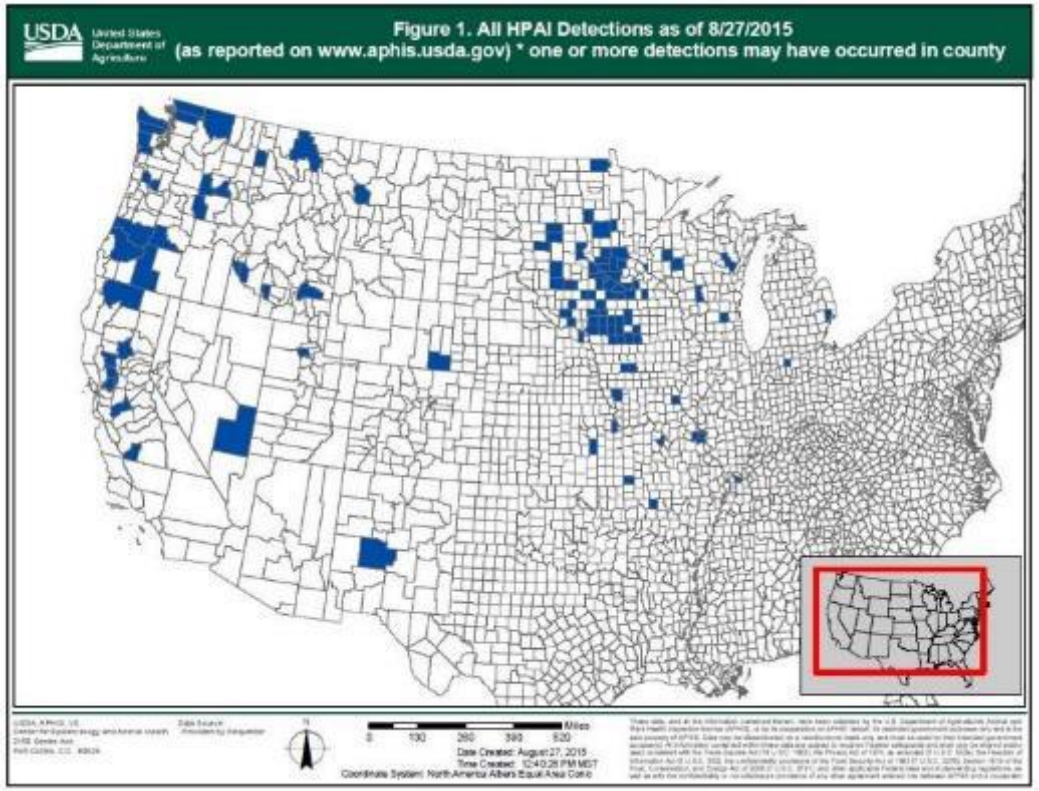
1983

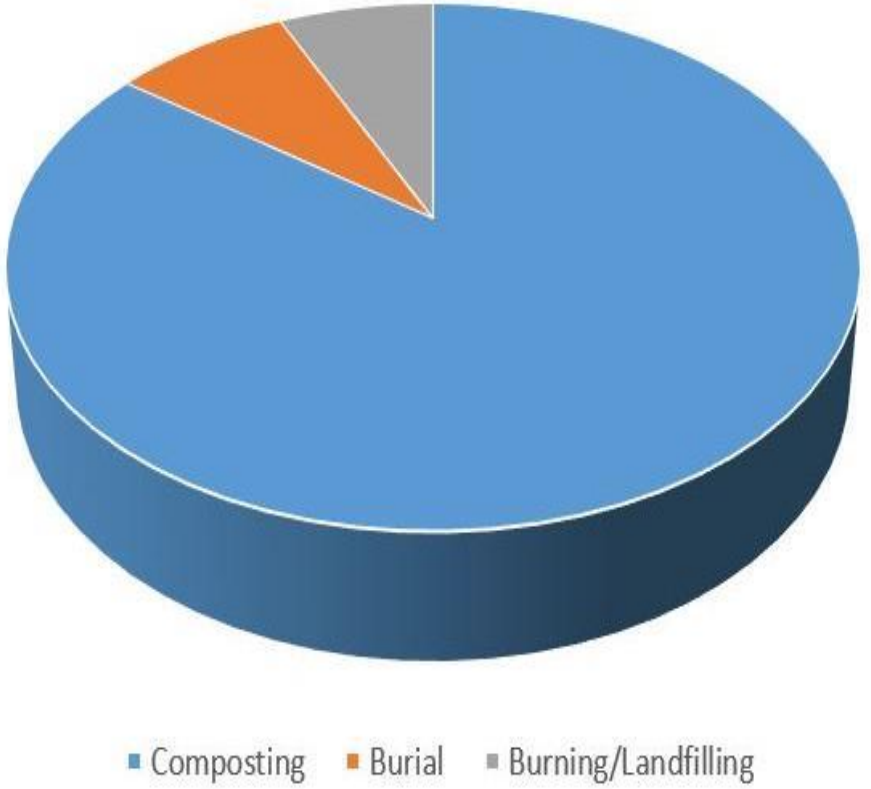


2002



Highly Pathogenic Avian Influenza Outbreak 2015



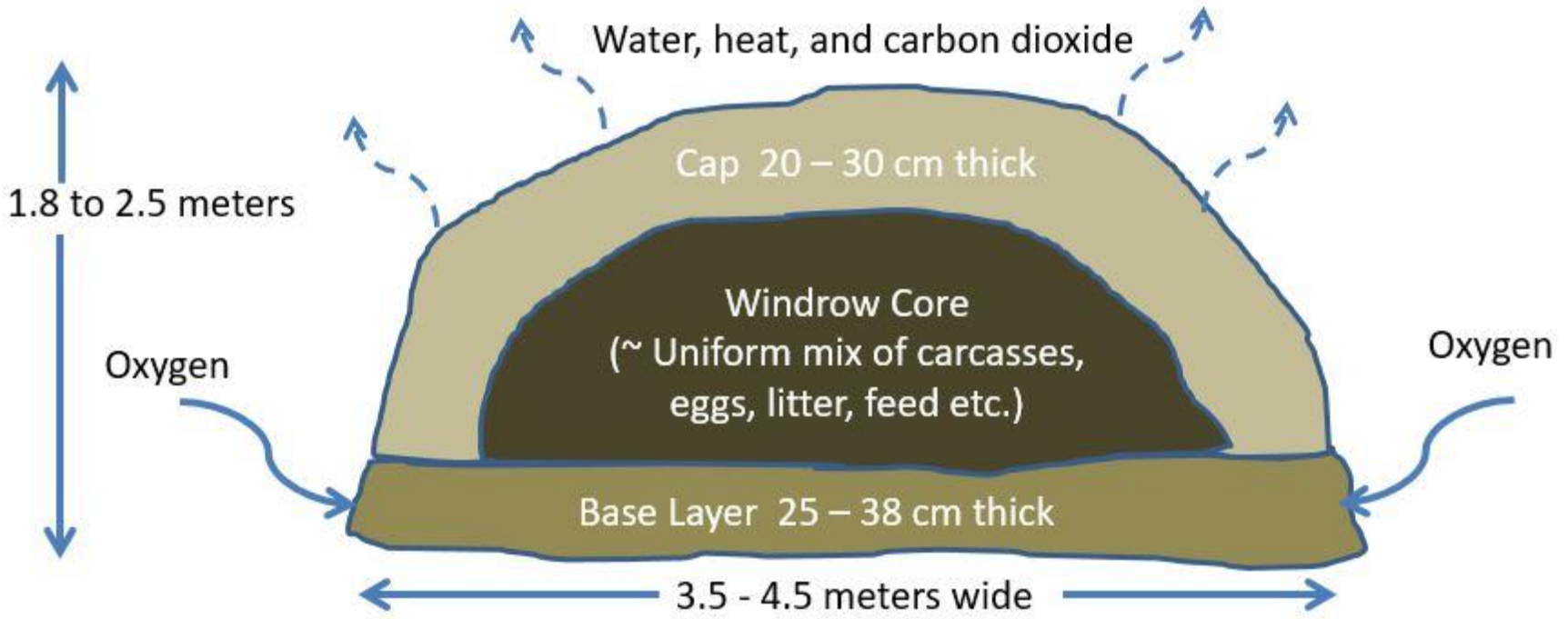


New Methods

Grinding/Composting

Above Ground Burial

Composting



Cross Section of Compost Windrow

Carcass Grinding/Composting

- December 2018 – Proof of Concept Demonstration – Virginia
- February 2019 – Operational Scale Project – North Carolina
- July 2019 – Operational scale project – North Carolina
- August 2019 – Operational scale project – North Carolina

Proof of Concept Demo - Virginia

Operational Scale Demonstrations – North Carolina

Potential Benefits

- Significantly reduces composting time
  - From 6 to 9 months to 30 days
- May reduce the amount of carbon needed
- Increased temperatures
- Decreases long-term management

Above Ground Burial

Biological Process

- Hybrid of composting and burial
- Carcasses in biologically active soil zone
- Deep burial – very little biological activity

Potential Benefits

- Low cost
- Simple
- Rapid execution
- Keeps infected material on the farm
- Minimize the need for off-site resources
- Greater separation from groundwater table
- Carbon absorbs the leachate and promote biological activity
- Vegetated layer
  - Stabilizing cap

Excavate the Trench

Add Carbon Material

Place Carcasses

Cap with Excavated Soil

Establish Vegetative Cover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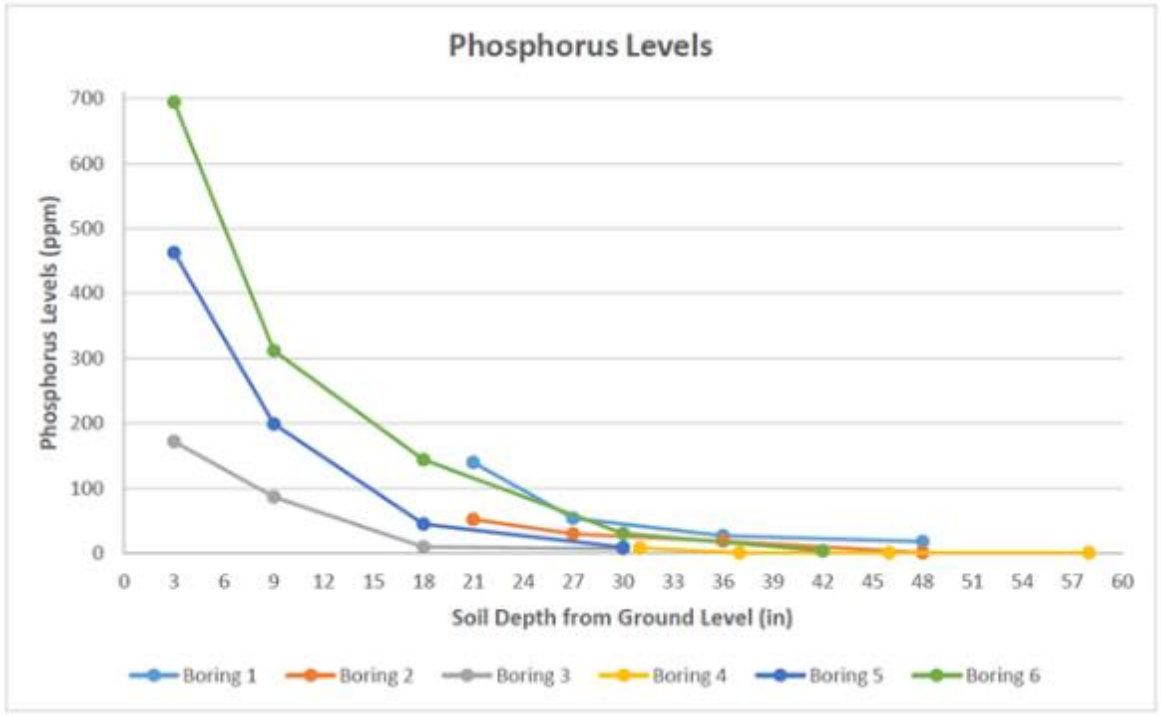
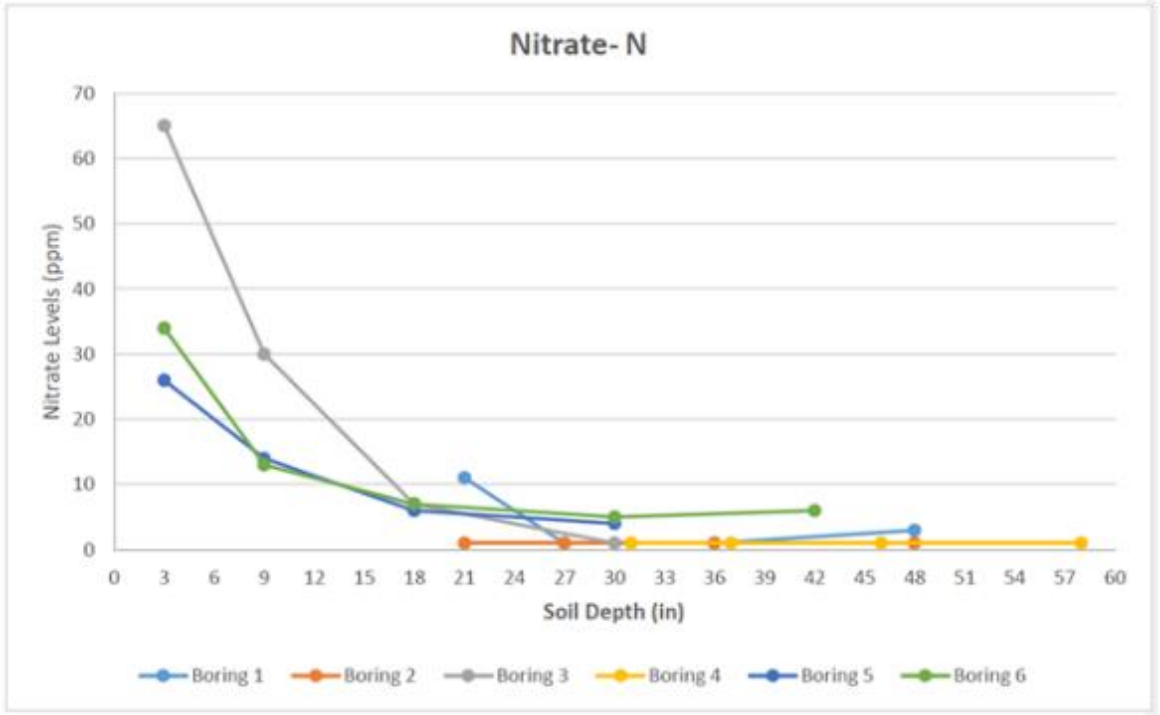
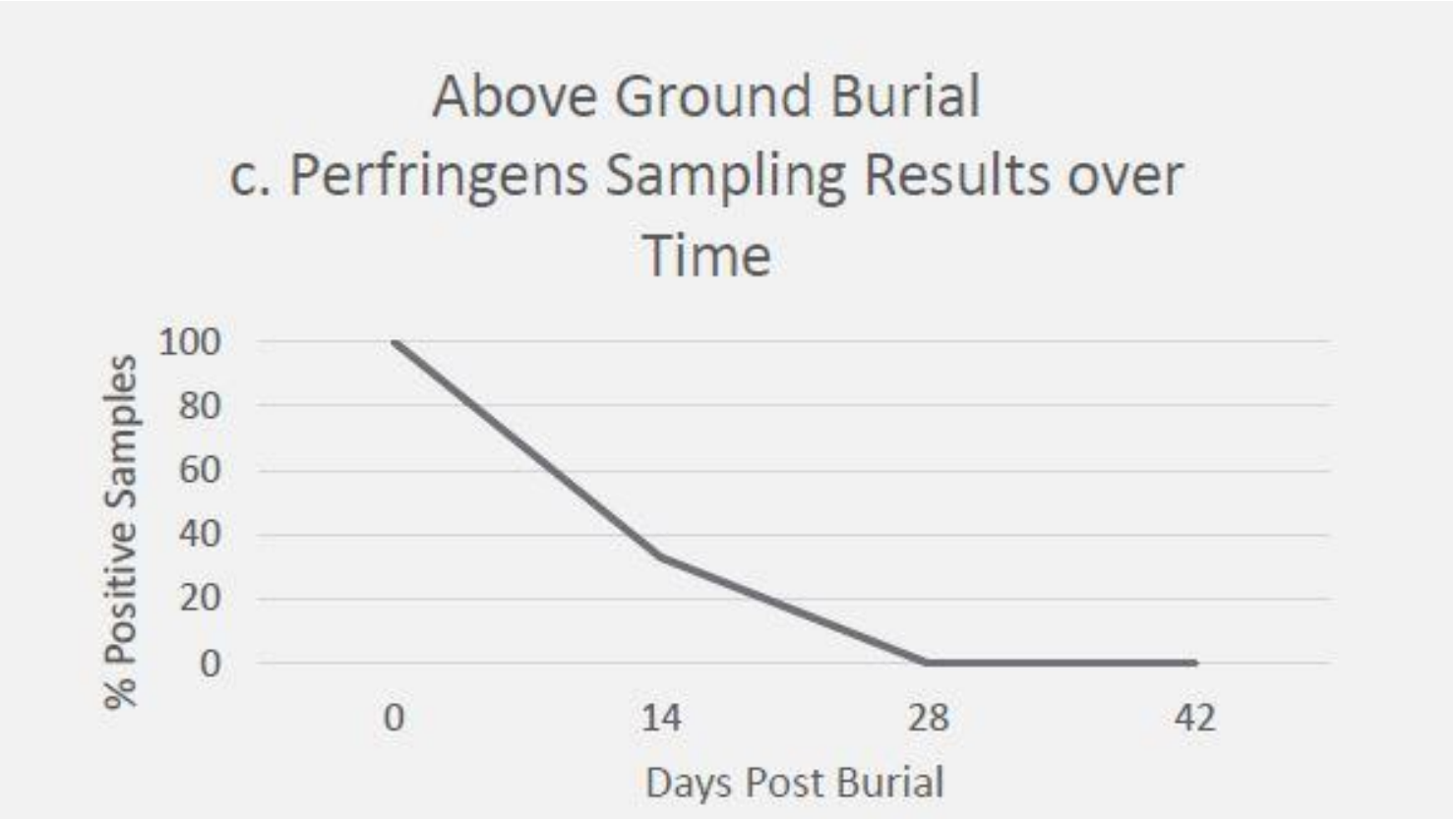
12-Month Assessment



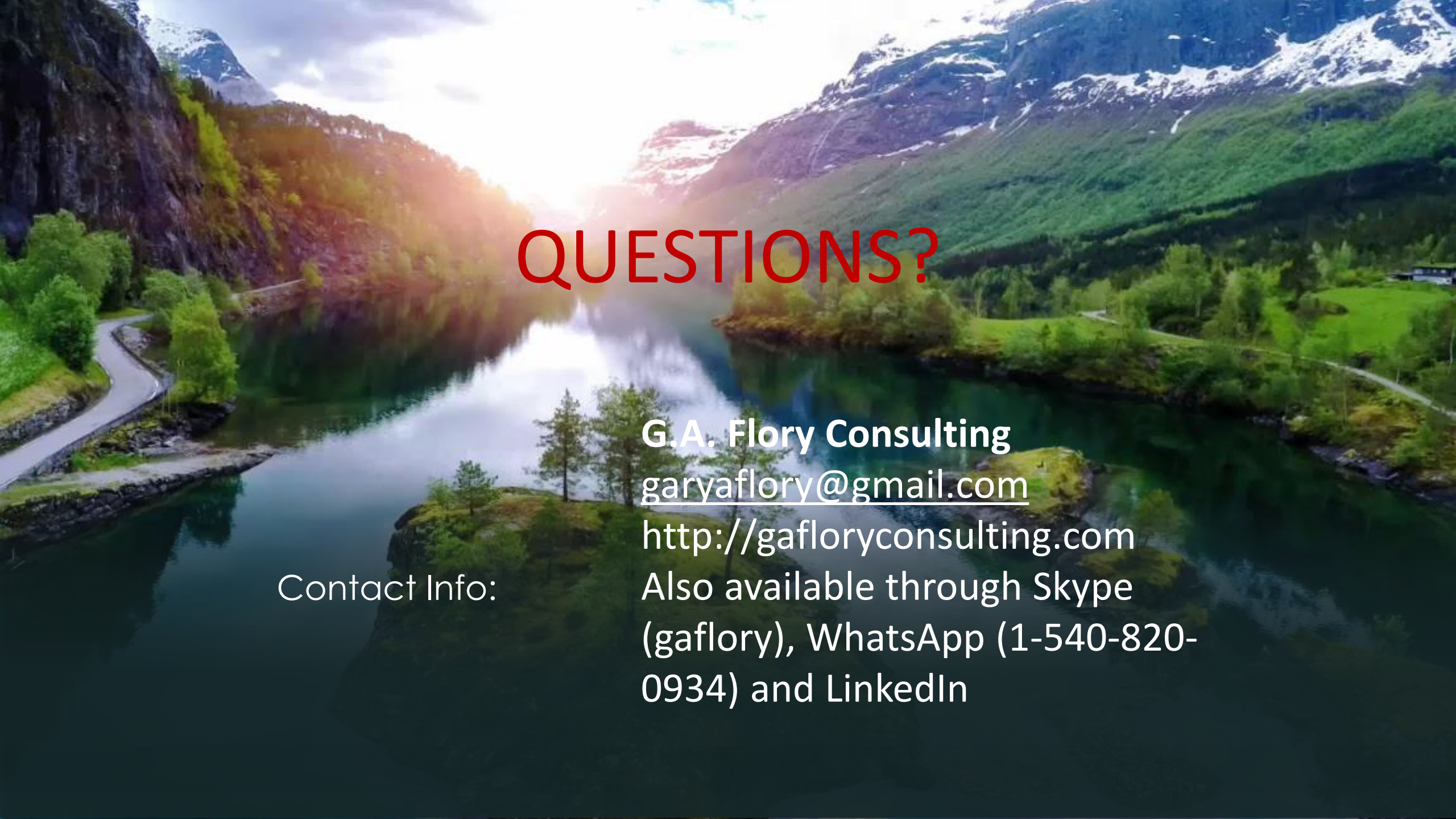


Pathogen Inactivation



Ongoing Above Ground Burial Projects

- Virginia
- North Carolina
- Oklahoma
- South Dakota



QUESTIONS?

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