# NORTH CAROLINA DISASTER SYMPOSIUM MARCH 4, 2020 AFRICAN SWINE FEVER (ASF)

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# AFRICAN SWINE FEVER
## KEY FACTS

- A severe viral disease affecting domestic and feral pigs
- Is responsible for serious production and economic losses
- Has a high mortality rate (between 40 – 90%); death could result in ~ 2 days
- No vaccine
- Not a human health concern
- Can be spread by:
  - Live or dead pigs (domestic and wild)
  - Pork products
  - Contaminated feed and fomites such as shoes, clothing, vehicles, and equipment
  - Ticks that feed on infected animals

# AFRICAN SWINE FEVER
## KEY FACTS

- ASF Virus is a very hardy and survives well in the environment
  - Can survive in fresh and cured pork products
  - Survives well in garbage
  - Survives in blood, feces, oral fluids and tissues for weeks to months
  - However, the virus ***is*** sensitive to heat

**Saturated Blood**
The virus, though, doesn't need traveling swine to spread. A single drop of blood of an infected pig can contain 50 million virus particles, and just one of those particles ingested in contaminated drinking water may be enough to transfer the disease to another pig.

**The Virus is hard to track**
Pigs may incubate it for five to 15 days and can shed infectious particles for one to two days before falling ill. That means the virus can be silently spread in the waste, meat and blood of infected pigs that don't appear to be sick, especially when they are illegally transported or slaughtered before diagnosis.

# AFRICAN SWINE FEVER & BIOSECURITY

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS

- ASF first discovered in Kenya in 1921 and remains endemic in Africa
- In the late 50's early 60's – the virus moved into Spain and Portugal; was contained and remained an isolated event (disease was eradicated in these countries)
- 2007 ASF was found in the Republic of Georgia and spread throughout Eastern Europe and Russia
- In August of 2018, the virus was identified in China **(First known occurrence of ASF in China)**
- Officials in China report 150 outbreaks across all 32 provinces since August 2018 and many more in nearby countries including Cambodia, Indonesia, Laos, the Philippines, South Korea, and Vietnam. The largest number of outbreaks have been reported in Vietnam, with more than 4,600 across all provinces and municipalities, and more than 5.9 million pigs culled. (National Biosurveillance Integration Center (NBIC) Monitoring List 28 February 2020)
- More reliable reports (USDA and industry) suggest that by year end, losses will total 350+ million pigs, half of China's pig population, a 50% loss of production in China and 20% or more of world pork production

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS


Click to play

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS ~CHINA~

### CHINESE SWINE INDUSTRY

- Estimated 700+ million pigs
  - Nearly half of the global swine population!
- Many ‘small-time’ farmers; results in poor biosecurity
  - 40% of farms have less than 500 head
- World’s highest per capita pork consumption
- The disease may have spread via swill feeding

# AFRICAN SWINE FEVER

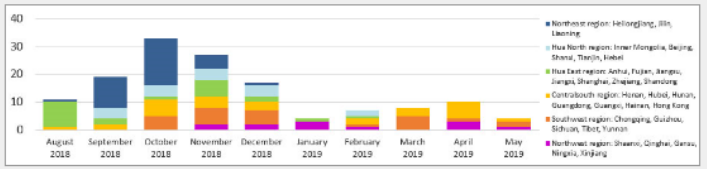
## HISTORICAL OVERVIEW AND RECENT EVENTS ~CHINA~

As reported by the FAO

**Actions taken by China**

Epidemiological studies of 68 outbreaks revealed 3 major causes spread ASF virus: 46% by vehicles and workers without disinfection, 34% by swill feeding, and 19% by transport of live pigs and their products across regions [reference]. MARA released the 2019 edition of the 'ASF Epidemic Emergency Implementation Plan' [reference]. MARA updated regulations on pig slaughterhouses: It task pig slaughter enterprises to conduct self-inspection by using PCR. If ASF is detected, the slaughtering enterprise should stop production for 48 hours, then apply for evaluation to resume production [reference]. A dead pig found on Dadan Island beach, Lieyu Township (Lesser Kinmen), Kinmen County, Taiwan Province on 14 May tested positive for ASF by PCR. The gene sequence was 100% matching with the ASF virus in other parts of China [reference]. Following assessment, Epidemic Zone was lifted on 17 May in Lichuan City, Enshi Prefecture, Hubei Province [reference] as there were no new cases reported in the affected areas for 6 weeks.

**Figure 1.** Number of ASF reported village by region by onset month* in **China**




**Click to enlarge** - For cases with unknown onset date, detection date, confirmation date or reporting date was used. *Source:* Veterinary Bureau, MARA, China.

"Epidemiological studies of 68 outbreaks revealed 3 major causes spread ASF virus: **46%** by vehicles and workers without disinfection, **34%** by swill feeding, and **19%** by transport of live pigs and their products across regions."

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS ~CHINA~

Video of ASF affecting small-time and rural farmers

Click on video to play

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS ~BELGIUM~

Officials confirm ASF in Wild Boar - September 2018

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS ~CZECH REPUBLIC~

ASF in Wild Boar – June 2017 through August 2018

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS ~RUSSIA~

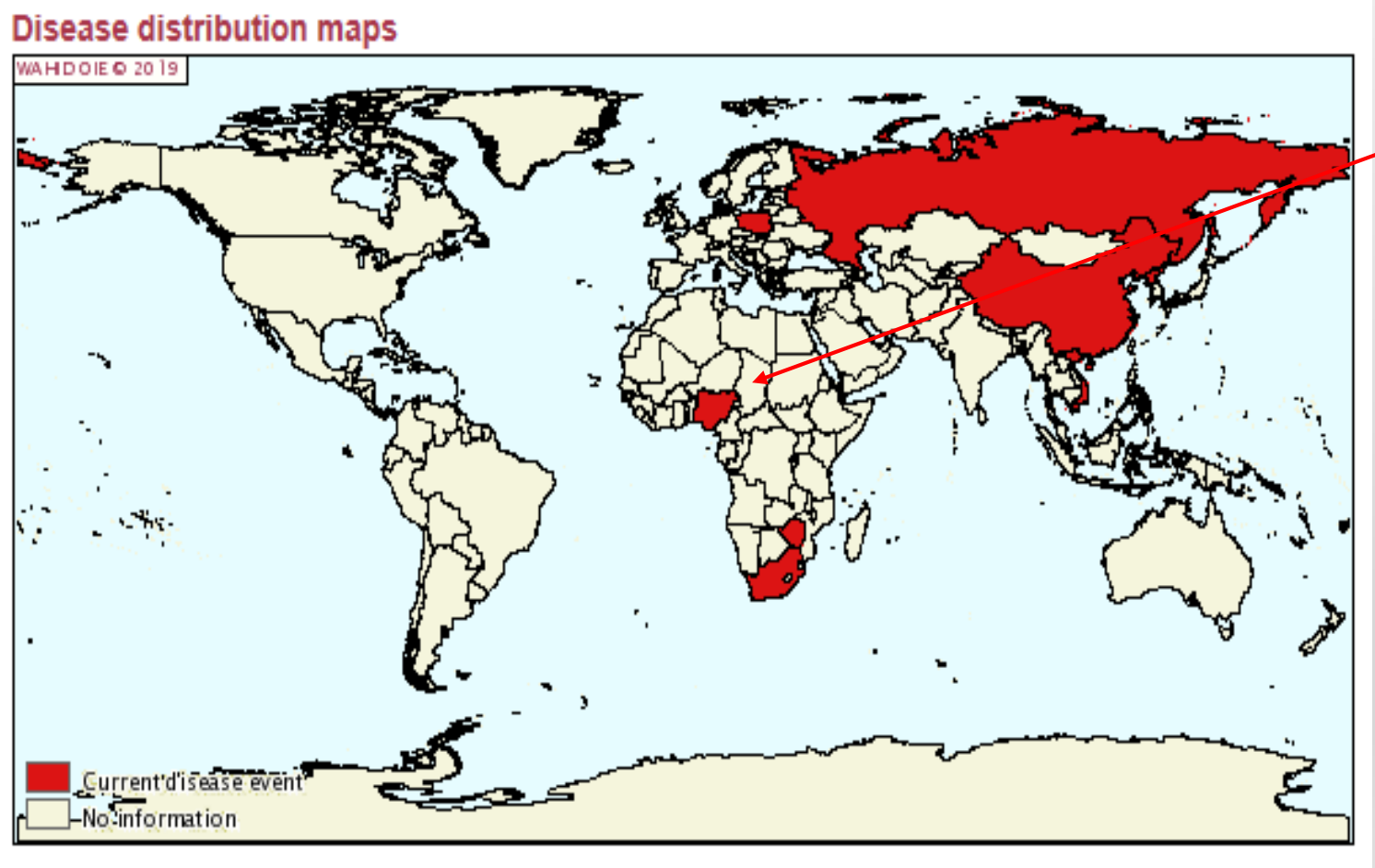
Entire herds culled in an attempt to stop the spread of ASF
(Feb. 2019)

# AFRICAN SWINE FEVER

## HISTORICAL OVERVIEW AND RECENT EVENTS ~VIETNAM~

Local farm pig confirmed with ASF; 59 localities in Vietnam as of June 2019

# CURRENT DISTRIBUTION PER OIE




Cameroon

Zimbabwe

South Africa

Poland

Russia

Vietnam

China

# POTENTIAL IMPACTS TO THE US

- Soybean meal demand is declining
- Pork exports expected to increase
- Beef and Poultry exports expected to increase
- Prices of other protein sources expected to rise
- Dairy industry expected to lose some market share

# POTENTIAL IMPACTS TO THE US

**African swine fever fallout could hit dairy**
**Story Date: 5/13/2019**

Source: POLITICO'S MORNING AGRICULTURE, 5/10/19

The African swine fever outbreak in China that has killed millions of pigs may have another victim: the U.S. dairy industry. Fewer hogs means less demand for ingredients used in feed, many of which are derived from cow's milk, such as milk and whey permeate, whey powder and lactose.

As many as 200 million pigs are expected to be infected or slaughtered due to ASF, which translates to a decline in demand of lactose in piglet feed of between 54,500 metric tons and 72,500 metric tons, according to a report from Rabobank, a Dutch financial services firm.

Early signs of declining demand appeared in November. Global trade data showed that demand sank 30 percent in March compared with the same period the year prior. U.S. exports of whey and permeate to China saw a 60 percent decline in demand, attributed to ASF and Chinese tariffs on dairy exports, which the firm called a "double whammy" on the dairy industry.

No end in sight: The firm said it believes that "the impacts of ASF are not short-lived and that it may take years to replenish the hog numbers that have been lost. Thus the demand for dry whey, permeate, and lactose will be negatively impacted, lowering the potential returns to cheese and whey manufacturers through this period."

Impact on the Dairy Industry

- 60% reduction of U.S. exports of whey and permeate to China

# POTENTIAL IMPACTS TO NORTH CAROLINA

- Example:

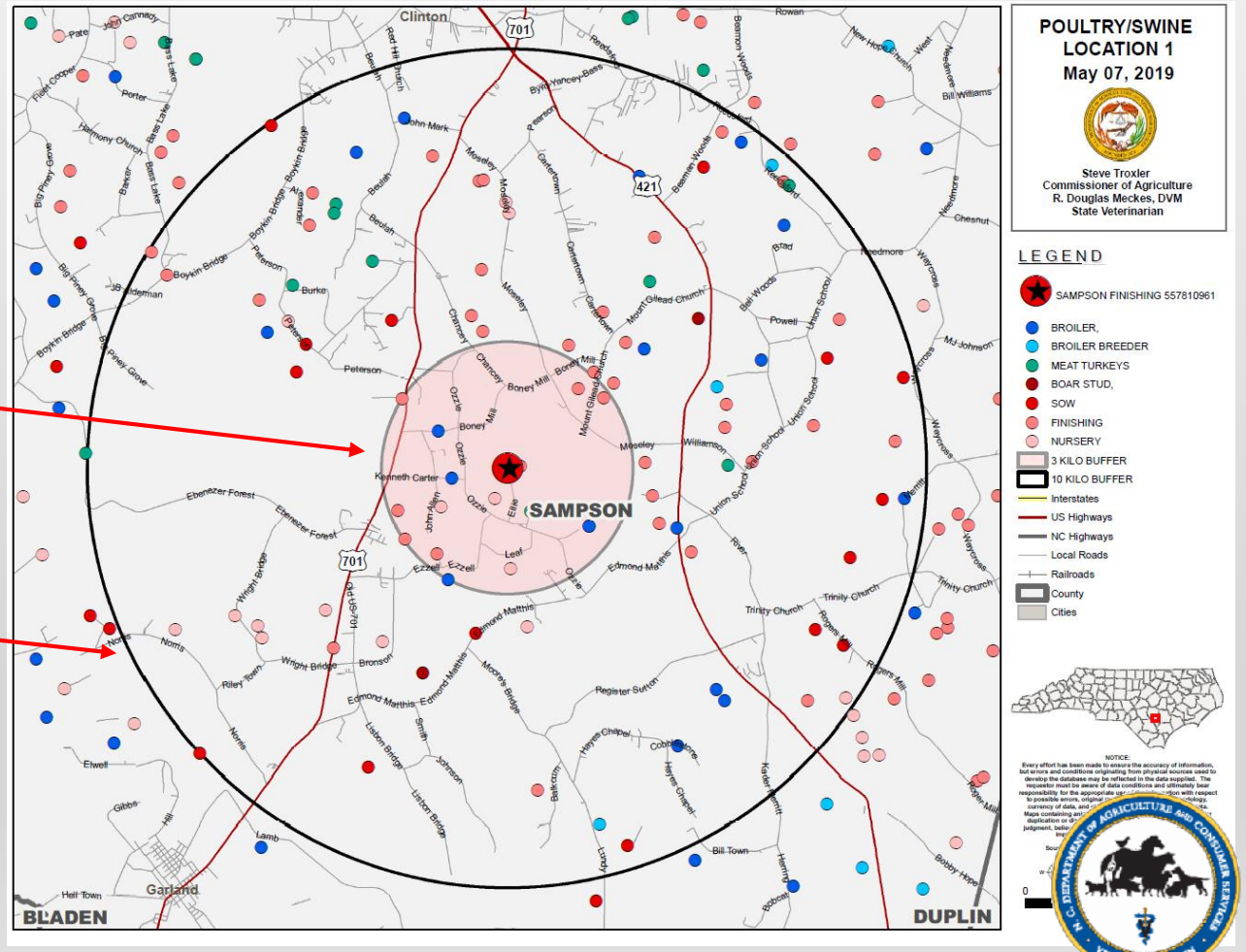
Swine Farm in **Sampson** County

- In 3 kilometer Infected Zone:

Approx. 44,000 swine & 400,000 poultry

- In 10 kilometer Control Area:

Approx. 253,000 swine & 2.1 million poultry



# POTENTIAL IMPACTS TO NORTH CAROLINA

- Example:

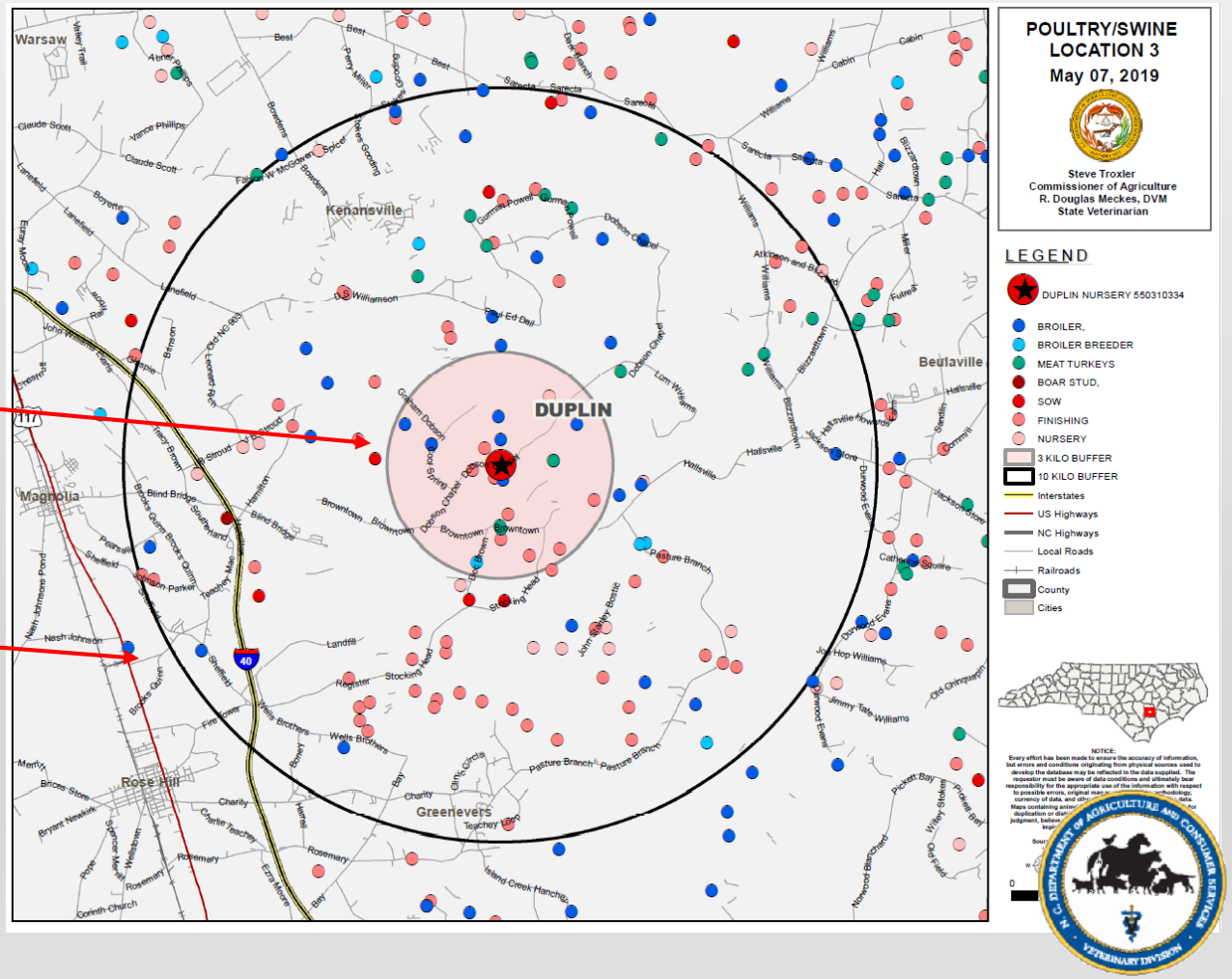
Swine Farm in **Duplin** County

- In 3 kilometer area:

Approx. 63,000 swine & 1.2 million poultry

- In 10 kilometer area:

Approx. >300,000 swine & 4.8 million poultry



# PREPAREDNESS AND RESPONSE IN NORTH CAROLINA

## USDA Sponsored Exercises

- ASF Policy Exercise – November 2018
- ASF Planning Exercise – February 2019
- ASF Tabletop Exercise – April 2019
- ASF Functional Drills – September 2019

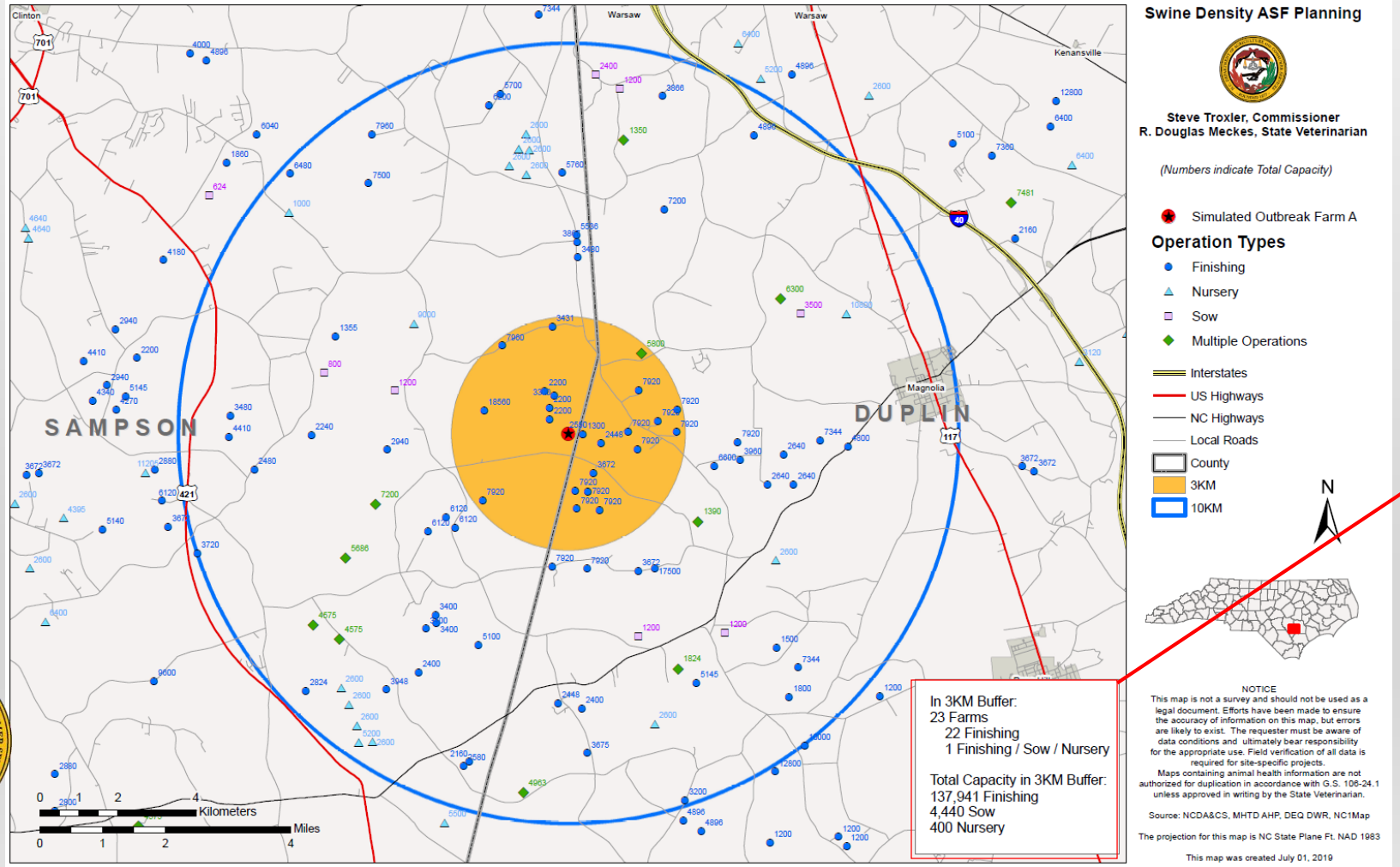
# PREPAREDNESS AND RESPONSE IN NORTH CAROLINA

## NCDA&CS working closely with NC swine industry

- Conference Calls / Meetings / Exercises - worked to identify
  - Sampling needs of farms / companies
  - Depopulation methods of infected farms
  - Disposal methods of dead or depopulated animals
  - Cleaning & Disinfection methods and locations
  - The means to ensure Business continuity for other agricultural operations within the Control Areas

# PREPAREDNESS AND RESPONSE IN NORTH CAROLINA

## In the event of identification of ASF at a single site in NC:



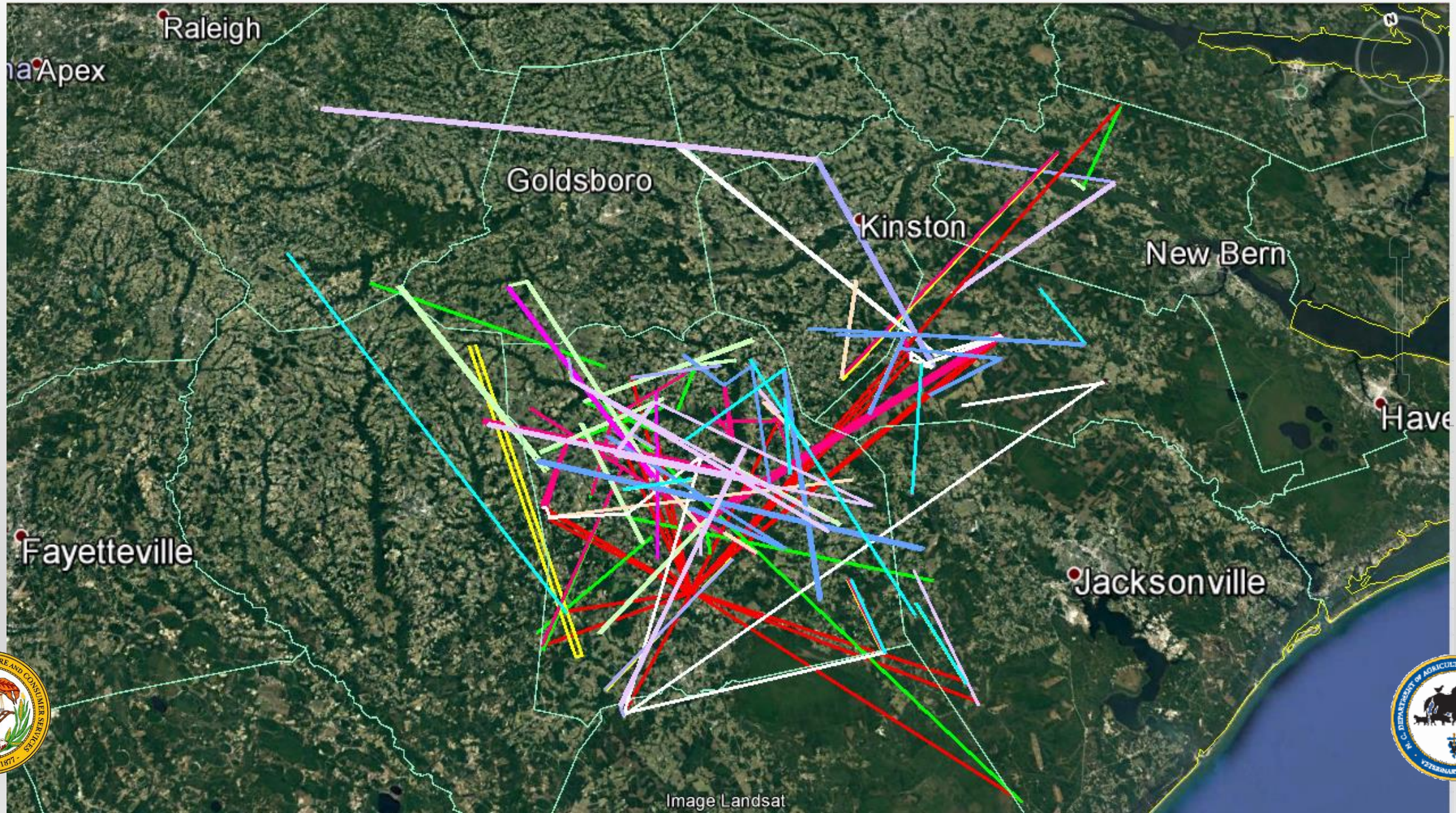




**In 3 km Buffer:**
**23 Farms**
- **22 Finishing**
- **1 Finishing / Sow / Nursery**

**Total Capacity in 3 km Buffer:**
- **137,941 Finishing**
- **4,440 Sow**
- **400 Nursery**

# ONE WEEK = 110,311 ANIMALS MOVED



# PREPAREDNESS AND RESPONSE IN NORTH CAROLINA

## In the event of identification of ASF at multiple sites in NC:

- National stop movement required for 72 hours
- Immediate quarantine of all livestock and poultry in the 10 kilometer control areas
- Immediate depopulation of all pigs in the infected zones
- Disposal of depopulated pigs at previously identified centralized location
- Initiate testing of all pigs in the buffer zones to determine disease status
- Indemnification at 100% of market value for all depopulated pigs

# PREPAREDNESS AND RESPONSE IN NORTH CAROLINA

## In the event of identification of ASF at single or multiple sites in NC:

- National stop movement required for 72 hours
- NCDA&CS will require immediate access to state funds for response activities (depopulation, carbon source material, equipment necessary for management of carcasses) decontamination and disinfection of supplies and equipment; indemnity for affected swine producers; and NC Veterinary Diagnostic Laboratory requirements for disease testing increased.
- $100 million

# SUMMARY

- African Swine Fever in the United States will cost NC swine producers millions in economic losses
- Additionally, small businesses, feed sales, equipment sales, banking, and transportation will all be negatively impacted and will profoundly affect much of Eastern NC
- Lost export markets (currently 25% of all pork products are exported) will require years for recovery
- US consumers initially will be reluctant to consume pork products, but market will return as diseased is controlled

# NORTH CAROLINA
# FERAL SWINE TASK FORCE
## (NCDA&CS, NCWRC, NCDPH, USDA-VS, USDA-WS, N.C. COOPERATIVE EXTENSION)

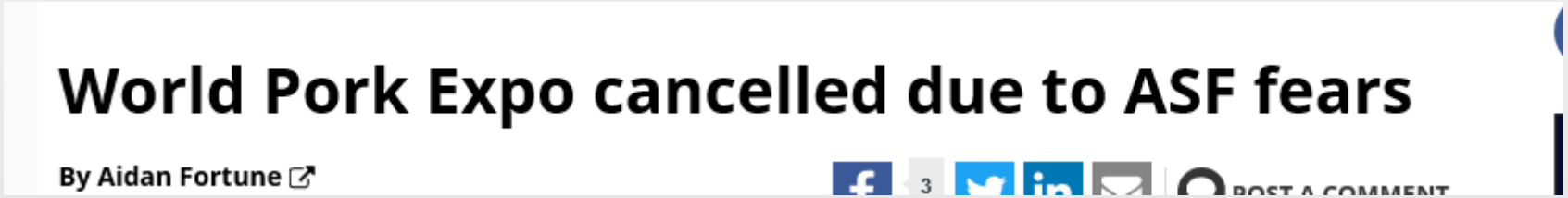
- NC Feral Swine Sampson County Eradication and Control Project
  - This project will accumulate measurable data to develop an area specific plan to eradicate (to the greatest extent possible) feral swine within the identified southern portions of Sampson County.
  - $562,500 awarded by NRCS, $187,500 state agency cost-share/match funding
  - 3-year project length
- NC Feral Swine Task Force
  - Conducted 4 listening sessions across the state since November 2018
  - Participated in 5 outreach events since October 2018

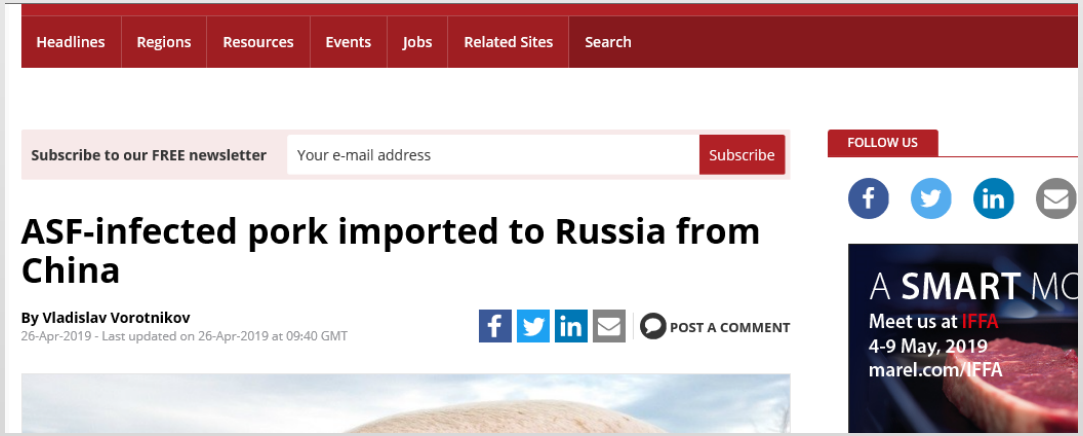
# Questions??

# THE GLOBAL THREAT

- March 2019 – Federal agents seized 1 million pounds of product smuggled from China to NJ some of which contained pork (incinerated as a precaution)
- Officials have bought on an additional 60 working dogs and added 600 inspectors to monitor US ports and borders to prevent ASF introduction
- Canada has also added additional dogs and inspectors
- Australia: ASF was detected in 46 pork products seized by Australian officials

# POTENTIAL IMPACTS TO THE US




# POTENTIAL IMPACTS TO THE US

- Could be economically devastating!
- 1 infected farm could lead to hundreds of infected farms & millions of swine
- Could literally put thousands in the pork industry out of work or out of business
- Will affect other industries