

**NC STATE**

Veterinary Medicine

**Population Health  
and Pathobiology**

# Foreign animal Diseases

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# Learning outcomes

- Broad definition of FAD and importance
- Identify the main differences between TAD and FAD
- Outline FAD investigation steps

# What are Foreign Animal Diseases?

- Disease **that is not currently** present in the US
- TADs
  - Significant economic, trade and/or food security importance for countries
  - Easily spread, epidemic proportions
  - Control/management requires countries cooperation

# Consequences of FAD for the US and classification

- Highly fatal
  - African Horse sickness, peste des petits ruminants, Nairobi sheep disease
- Low mortality; high morbidity FADs
  - Epizootic lymphangitis, foot-and-mouth disease (FMD)
- Human health
  - Monkeypox virus- spread from dog ->> human (2003)
  - Bucelosis in 1947 4.4. cases per 100k people
    - Now <0.5 per 100k

# Economic consequences

- Loss of markets, animals
- Processors, haulers, tourism, sporting events
- Domestic, int'l markets--Change buying patterns
  - Before pseudorabies- Aujeszky's disease
    - Cost \$21M per year in the US

# International Trade

- 2003: BSE detected in 1 imported cow in Washington state
  - Many U.S. trading partners suspended U.S. beef, beef products

# Effective surveillance and reporting

- Rapid detection
  - –Minimizes depopulation, eradication, trade loss costs
  - –Prevents disease forming in animal reservoirs or arthropod vectors
- 1998: WNV exotic to Americas
- 1999: WNV cases recognized in NY
- Now: WNV endemic to North and parts of South America

# FAD in the US history

- Previously endemic to US
  - FMD, CSF, bovine babesiosis, screwworms
- Eradicated due to prompt reporting, surveillance, control efforts
- FAD need to be familiar– prompt recognition and reporting



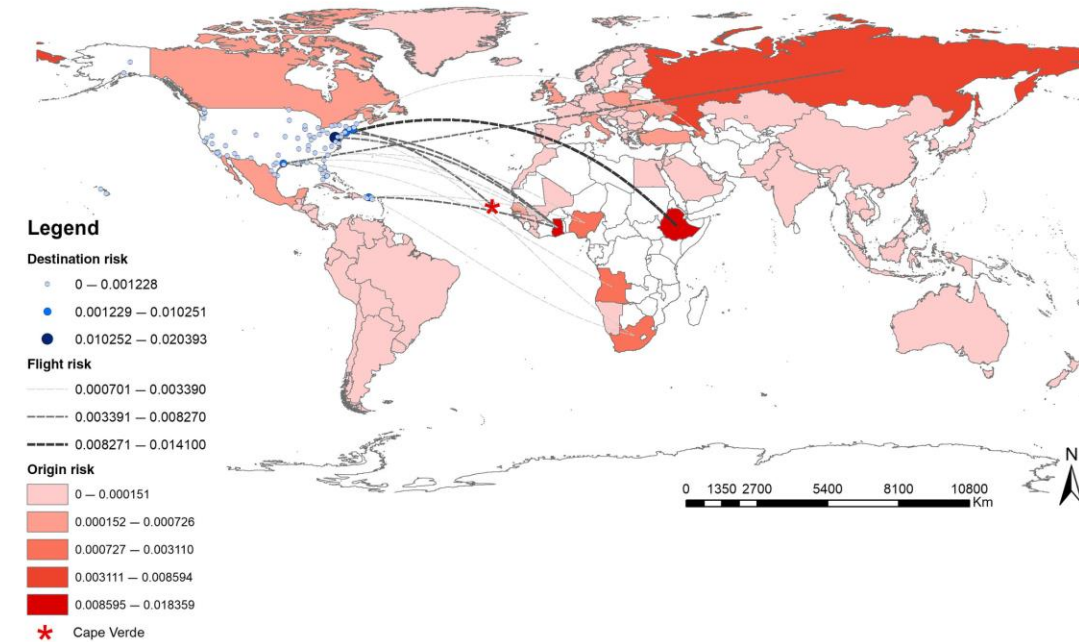


# Routes for FADs enter or re-enter the county

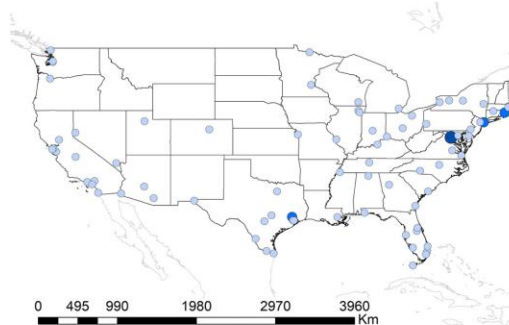
- Imported animals or animal products
- Carried by unsuspected travelers
- International waste handling

*“However, the estimated detection rate of these products is relatively low, ranging from **10% to 50%** depending on the source of information”*

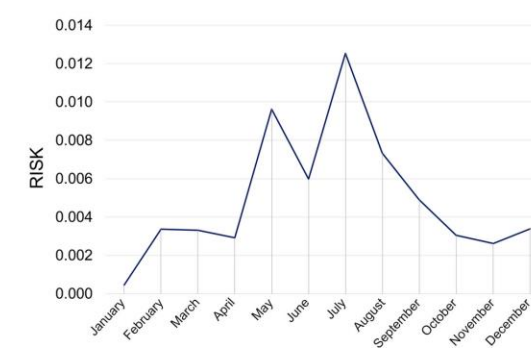
(a) ASFV risk at destination airport, flight and country level



(b) ASFV risk at US destination airport



(c) ASFV risk per month



# Routes for FADs enter or re-enter the county

- Insect vectors or wild animals
  - Carry infectious agents across national borders
  - Wild animals may carry arthropod vectors infected with FAD agents
- Intentional introduction
  - Zoonotic FADs
  - Agroterrorists
    - Animal health, not human health
    - *Induce economic and trade disruption*

# Import products and animals

- Pre-export, import, and/or post entry quarantines
- Some pathogenic organisms viable in animal products
  - FMD, CSF, SVD, ASF
- Swine Health Protection Act regulates feeding meat containing waste to swine

# Travelers

- Travelers required to declare
  - Time on a farm/ranch/pasture or touched/handled livestock
  - Meats, animals, animal products they intend to bring into the U.S.
- U.S. Department of Homeland Security (DHS), Customs and Border Protection (CBP) examines items

# Your role!!!- all veterinarians

- Essential to prompt recognition and reporting
  - Many FADs look like endemic disease
- Reasons to suspect FAD
  - Possible contact with people/livestock from abroad
  - Does not follow typical clinical pattern, respond to treatment as expected
- Suspicious Symptoms: Immediately contact
  - Daytime: 866-536-7593
  - After hours: 800-940-6524

# FAD Investigation Steps

- **Step 1:** Suspicious signs identified and reported to AD and SAHO
  - Initiate investigation

## Step 2:

- Visit premises, examine affected animals
  - Conduct epidemiological investigations
- Communicate with NVSL-VDL to discuss
  - Sample collection, preparation, handling, destination lab
- Collect diagnostic samples, conduct necropsies
- Help producer establish biosecurity measures

# FAD Investigation Steps

- **Step 3:** Implement control measures
  - Premises quarantines and/or restricted movement controls
  - Response planning
- **Step 4:** Confirm/rule out
- Confirmed
  - Full-scale response plan
- Ruled out
  - Quarantines, movement orders lifted
  - Further diagnostics: animal owner



# FAD Investigation Steps

- **Step 5:** FAD confirmed, Federal and State officials respond
  - USDA-APHIS-VS works with SAHO to coordinate response
- **Step 6:** U.S. notifies OIE within 24 hours of diagnosis
  - OIE disseminates information to member nations
  - Possible trade restrictions



# OIE Early warning system

- Allows member countries to take action
- First 24 hours
  - Infected country required to inform OIE Central Bureau in France
  - OIE warns countries considered at risk
- Countries at risk
  - Take preventative actions
- OIE disseminates info to all members
- Infected country reports weekly updates

Usually used mainly for earthquakes, Taiwan just sent out an message over its national emergency alert system warning of **African swine fever**. If you buy pork online from overseas you could get 7 years in **jail** or a NT\$1m fine for trying to bring pork in from abroad.



