



Agroterrorism & Bioterrorism

The Threat of Agroterrorism and Bioterrorism in Florida
Prevention and A Coordinated Response



Agroterrorism & Bioterrorism Prevention & Response

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Funded by Cooperative State Research, Extension and Education
Service (CSREES), USDA

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Acknowledgements

- US Dept. of Health & Human Services, Centers for Disease Control and Prevention
- American Veterinary Medical Association
- US Dept. of Interior, US Geological Survey
- University of Florida, Institute of Food & Agricultural Sciences
- University of California, Agriculture & Natural Resources; Mississippi State University Extension Service; University of Texas, Dr. Philip Varghese, Fluid Mechanics
- Florida Fish & Wildlife Conservation Commission
- Susan Halbert, PhD; Gail Wisler, PhD; Gerald Holmes, PhD, North Carolina State University; Jim Stack, PhD, Kansas State University; R. Winstead, Adolph Northern, Lee Island Coast CVB, University of North Dakota, Long Lake Fishing Club; Theodore Wells, Stanton, Texas



Learning Objectives

1. Explain agroterrorism and bioterrorism
2. Identify examples of agroterrorism and bioterrorism from history
3. Explain how Florida may be vulnerable agriculturally, geographically and climatologically
4. Identify likely agricultural threats should Florida specifically become a terror target
5. Discuss the NPDN, National Plant Diagnostic Network
6. Explain how Florida citizens and government can mobilize to prevent a terrorist act and how they may mount a coordinated response



Florida SART

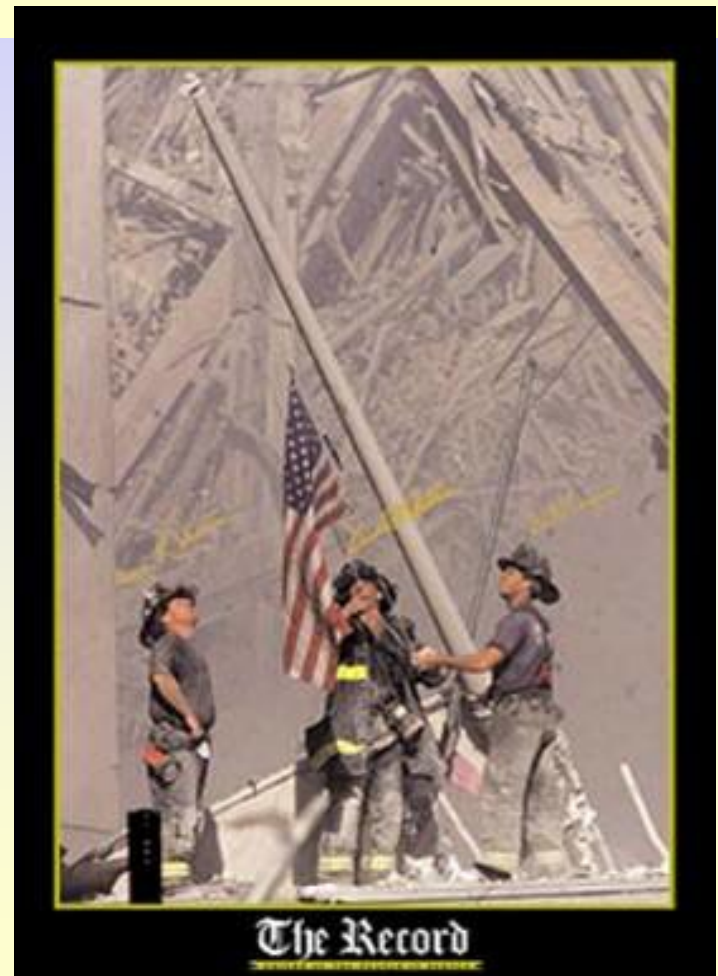
- Multi-agency coordination
 - Governmental and private
 - All-hazard preparation, response and recovery
 - Animal and agricultural



What's the rush?

The aftermath of 9/11

- Department of Homeland Security (DHS) was officially formed in November 2002
- Americans realize that oceans and distance are no longer our protection from the wider world as terrorist cells are discovered in the US, Canada and around the world
- Begin to evaluate possibilities of attack, develop a “threat matrix” which includes bioterrorism and agroterrorism



Wake-Up Calls



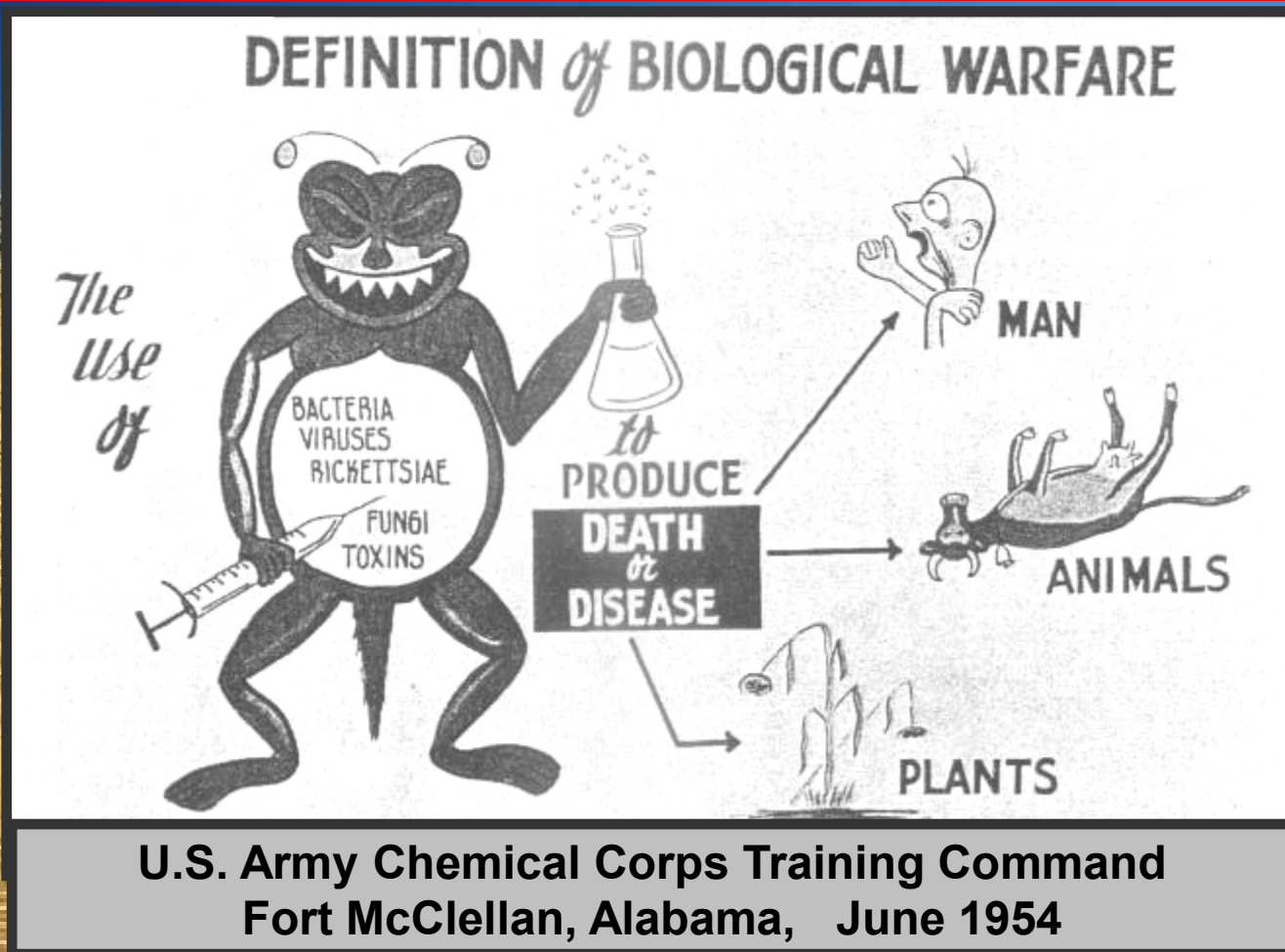
9/11 – Foreign: 19 foreign nationals associated with al-Qaeda hijack and crash four airliners in the U.S. Almost 3,000 people die in the attacks and the effects appear to be permanent.



4/95 – Domestic: Security Camera shows Timothy McVeigh's rented Ryder truck arriving at the Alfred Murrah Federal Building in Oklahoma City. 168 confirmed deaths in the explosion of agricultural fertilizer and motor oil. McVeigh calls it "retaliation" not terror.



The Threat is Real



Intentional ... or not

Does it matter whether or not it is intentional?



An Aggroterrorism Event

Estimated Costs (Intentional or not)

- \$1.8 billion for slaughter of animals
- \$1.0 billion to disinfect farms
- \$658 million for livestock disposal
- \$78 million for business recovery
- \$21 million for marketing support
- \$4 billion loss for agriculture industry
- A 20% loss to the state's \$107 billion tourism industry



What is “agroterrorism?”

When any person knowingly or maliciously uses biological or chemical agents as weapons against the agriculture industry and food supply or the malicious use of plant or animal pathogens to cause disease in the agricultural sector – plants or animals.



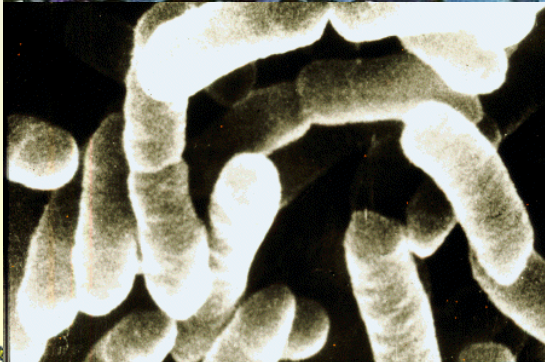
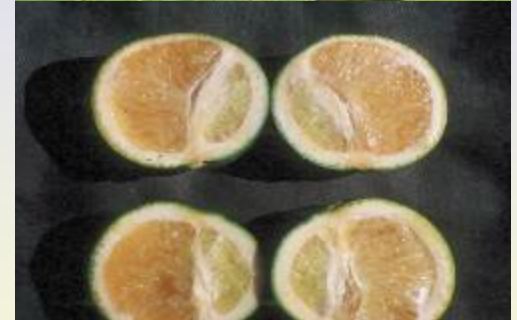
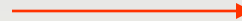
Little Things ... Big Problems



A fungus causes
soybean rust.



A bacteria causes
citrus greening.



A virus causes
tomato spotted wilt.



Possible Delivery Source

- **Point Source Delivery**
 - Letter or Package
 - Sprayer
- **Vectors**
 - United States experiments with Yellow Fever spread by infected mosquitoes
 - Japanese use plague infected fleas in China
- **Upwind Line Delivery**
 - Highly modified crop duster or rooftop dispersion
 - Issues of inversion and dilution
- **Human Carrier**
 - “Person-to-person” – Suicidal Delivery
 - Only certain agents are transmissible (Pneumonic Plague, Smallpox)



The Agroterrorist's Objective

- Attack our food supply and create shortages
- Cause us to fear, to lose faith and confidence
- An indirect form of attack and aggression



The Agroterrorist's Objective



An agroterrorist's objective may be something very symbolic of Florida



Agroterrorism

(In reverse and with unintended consequences)



1812: French Emperor Napoleon Bonaparte invades Russia with 610,000 troops. They are defeated by weather and Russians “scorched earth” policy: 600,000 die. (Painting by Adolph Northern, 19th century.)

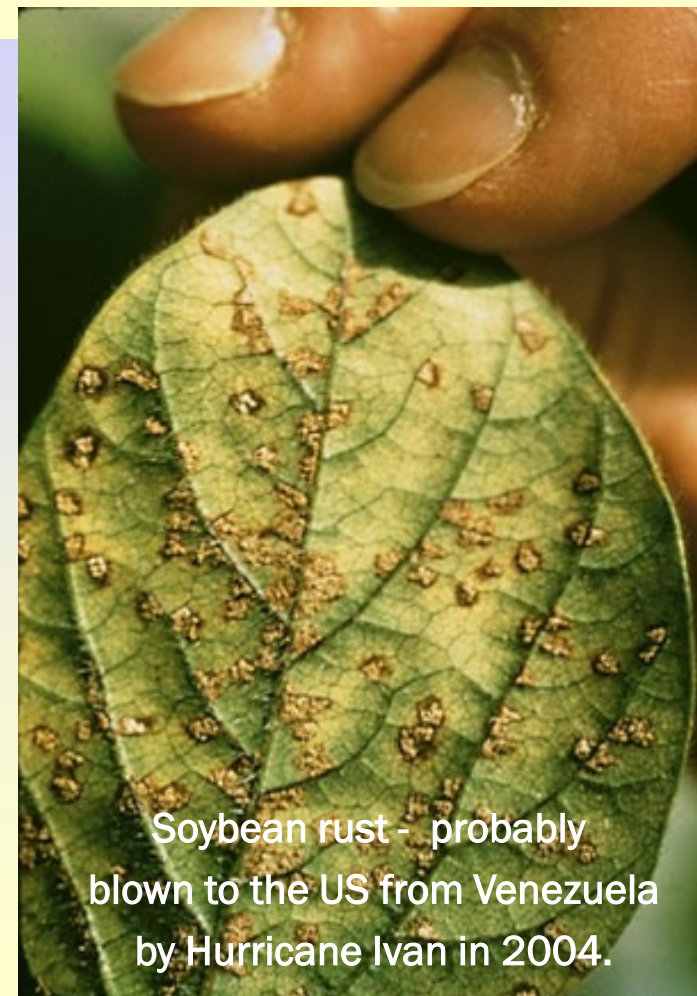


1961-71: The United States uses herbicides such as “agent orange” in Viet Nam. The purpose is to serve as a defoliant and destroy enemy crops. Unfortunately, side effects are a dramatic increase in soft-tissue cancers.

Florida's Agroterrorism Experience

Florida has had no known intentional case of agroterrorism to date. The potential is huge, however. Most cases of invasive, destructive plants, animals and insects have either been accidental or “acts of God.”

Water hyacinth: introduced in 1800s.



Soybean rust - probably blown to the US from Venezuela by Hurricane Ivan in 2004.

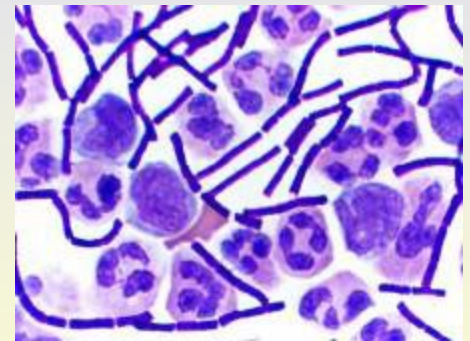
What is “bioterrorism?”

The deliberate release of viruses, bacteria, other germs or chemicals to cause illness or death in people, animals, or plants.



Bioterrorism

- More than 1,000 microbiological libraries worldwide, naturally occurring disease and national bio-weapons programs, there are ample sources from which agents can be obtained
- Two weapons categories
 - Disease-causing organisms such as bacteria, viruses and prions
 - Toxic substances produced by or from living organisms such as bacterial toxins, fungi and molds, plant extracts and animal toxins



What's the difference?

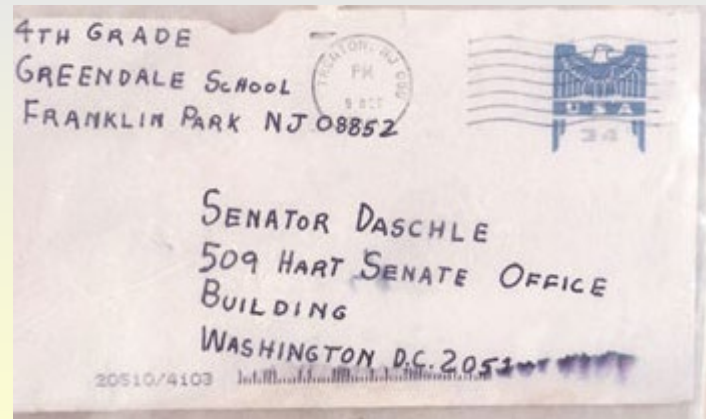
Although there is some overlap, the intent of agroterrorism is to attack and destroy the plant and animal infrastructure while the intent of bioterrorism is to threaten people directly with biological organisms.

Agroterrorism



Few known significant, successful historical examples, but plenty of opportunity.

Bioterrorism - September 2001



Letter to Senator Tom Daschle contained anthrax powder. It killed two postal workers.



Where Florida is Vulnerable

17 million residents are crowded into the Florida peninsula
and more than 75 million visit each year!



Florida “Climate-Receptive”



- Nickname is the *Sunshine State* for its average of 300 days of full sunshine per year
- One of every climate zone
 - Tropical in Florida Keys
 - Sub-tropical South Florida
 - Temperate North Florida
- Thus receptive to almost any plant, animal, insect or disease from any location in the world



Florida and The World



Florida – A “Sentinel State”

- Florida is a “Sentinel State”
 - A constant invasion of exotic species
 - Not native to the Florida or North American eco-system
 - Causes harm to or has potential to cause harm to the environment
 - Can be a native American species that has invaded a new area or crop or from Africa or Asia or even from another world!



Love bugs



Armadillo



Melaleuca



Florida's Exotic Plants



Melaleuca quinquenervia: rapidly destroying Florida's Everglades.



The air potato (*Dioscorea bulbifera*) quickly engulfs native forests.



Florida's Exotic Animals



From South America, the giant toad is a voracious feeder, highly toxic and well-established.

The Rhesus monkey is considered established in Florida.



The Florida Fish and Wildlife Conservation Commission now considers the Burmese Python to be established and its range is expanding in the state.



Florida's Exotic Arthropods

Established



One of Florida's newest residents is the Africanized honeybee or "killer bee."

The Mexican Red-Rump Tarantula is now established near Fort Pierce.

Not
Established



Photo by Jack Clark,
University of California Agriculture and Natural Resources

The Mediterranean fruit fly is potentially devastating to the Florida citrus industry.



Established



How Florida is Vulnerable - Plants

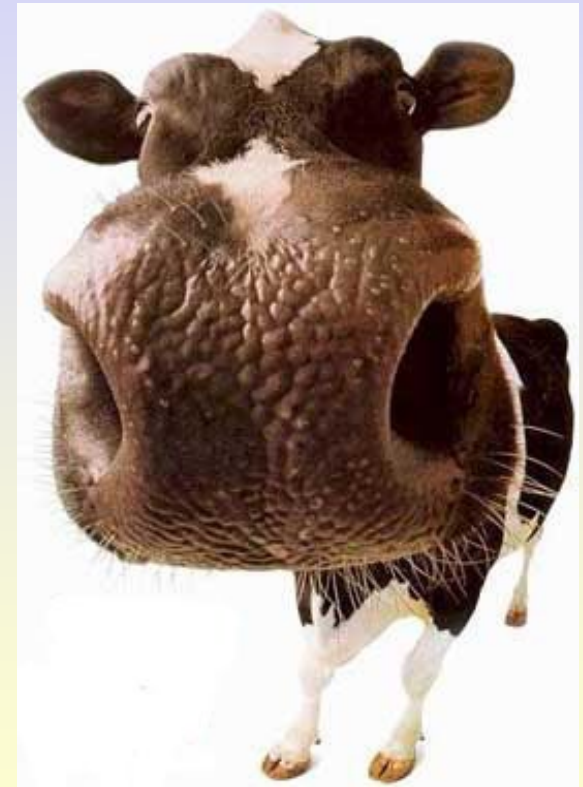
- 1.25 million residents earn livings in agriculture producing billions in market value crops
- A \$6.2 billion industry (direct and indirect impact: Second only to tourism: provides 75% of United States winter produce)
- Florida's top agricultural sectors:
 - Cane for sugar
 - Citrus
 - Dairy
 - Forest products
 - Greenhouse/nursery products
 - Tomatoes



How Florida is Vulnerable - Animals



- 26 million poultry
- 1.5 million beef cattle
- 350,000 horses
- 140,000 dairy cattle
- 100,000 swine
- 30,000 goats
- 10,000 sheep
- Millions and millions of pets



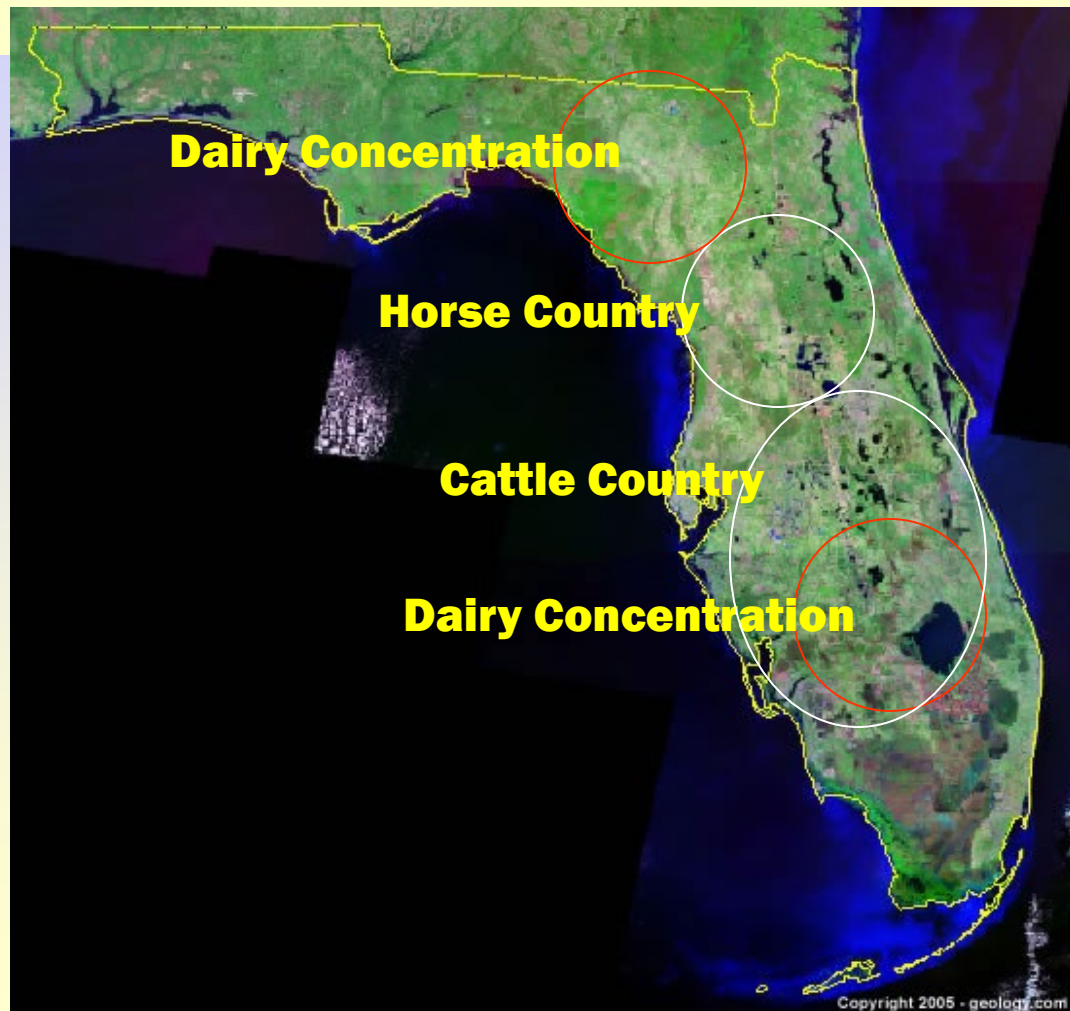
Farm and Ranch Concentrations

Throughout the state,
but concentrated in

Horses: Marion
County

Dairy: Suwannee
River Valley and
Okeechobee
Area

Cattle: South
Central Area



Be Prepared!

Who is ultimately responsible for protecting you, your family, your community and your way of life?



Prevention and Response

Office of Bio and Food Security Preparedness

- Mission: to ensure the safety and wholesomeness of food and other consumer products through inspection and testing programs
- Created in 2002, is responsible for protection of Florida citizens
- Coordinates response of Florida Department of Agriculture & Consumer Services (FDACS)
- Coordinates with local, state and federal agencies; private and government laboratories; agriculture/food industries
 - Federal: USDA, FDA, CDC, FBI
 - State: FDOH, FDLE, FDEP, IFAS



Prevention and Response

Office of Bio and Food Security Preparedness

- Since 9/11 has spent more than \$17 million to prepare for and prevent agroterrorism events
 - Laboratory construction, renovation and upgrades
 - Additional border protection for agricultural interdiction
 - More than 15 major training and coordination events
 - Development of SART, State Agricultural Response Team



State Agricultural Response Team

Prevention and Response



Office of Agricultural Law Enforcement

- Within Florida Department of Agriculture & Consumer Services (FDACS)
- Dedicated to protecting Florida's agriculture and its consumers through professional law enforcement



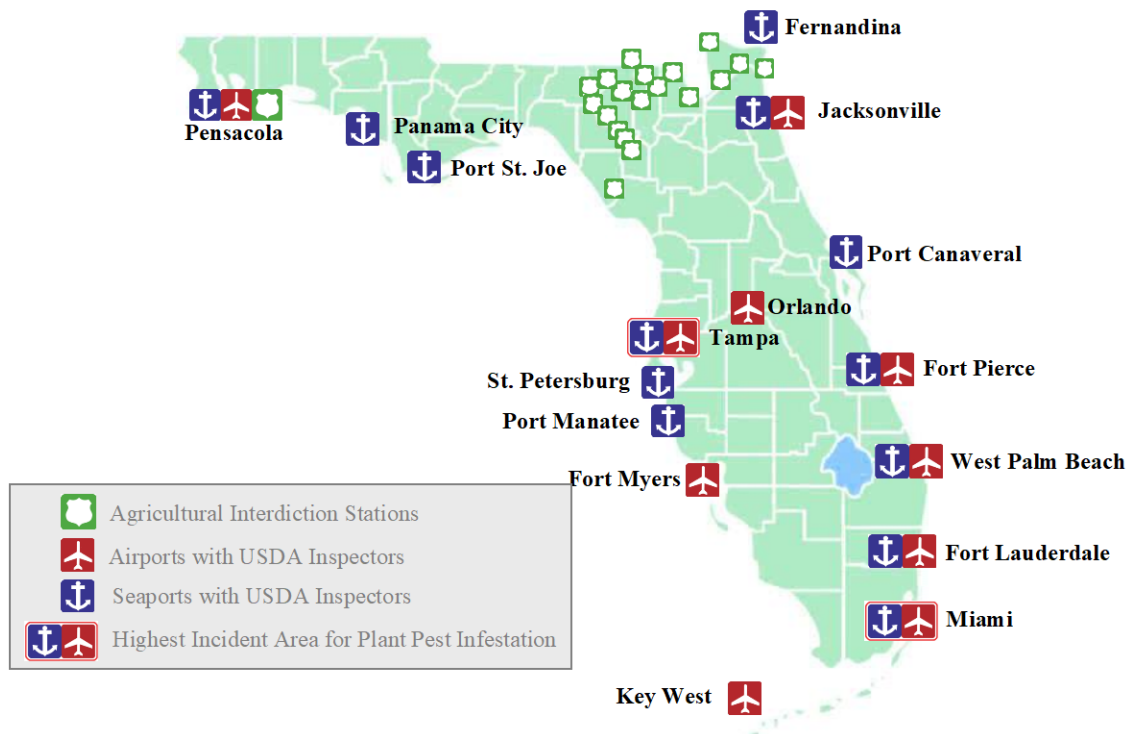
Helping protect
against the spread
of “citrus greening”

Guarding against
“mad cow” disease
(*bovine spongiform
encephalitis*)



Prevention and Response

Statewide Ag Inspection



Prevention and Response



Where Florida is Vulnerable

Points of Entry



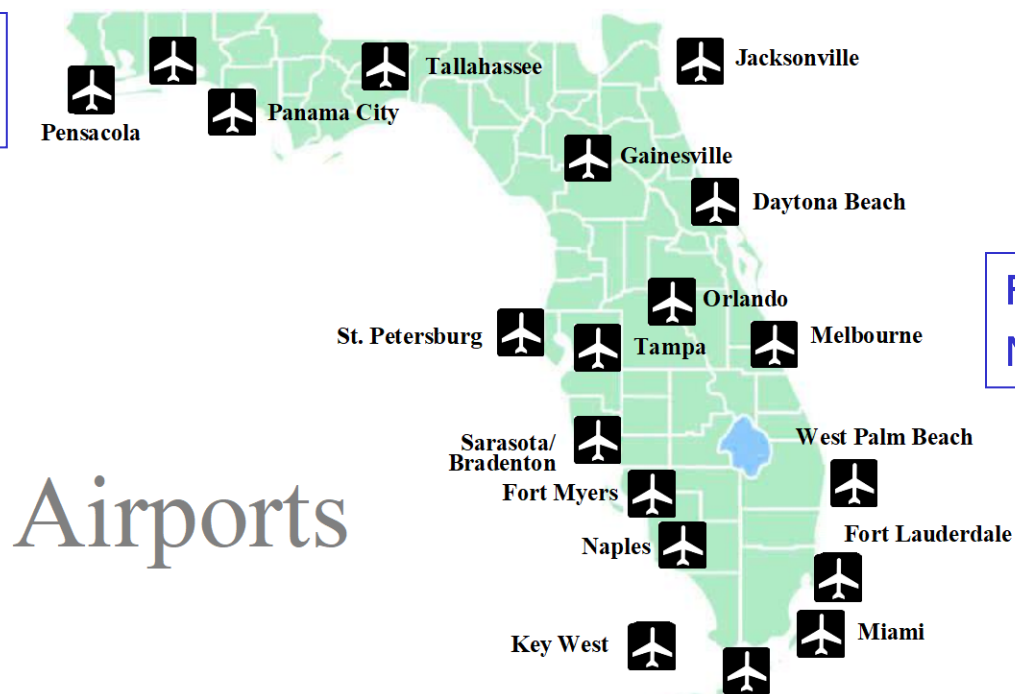
Ports



Where Florida is Vulnerable

Points of Entry

Florida is 361 miles
East to West



Florida is 447 miles
North to South

Airports





Domestic Security

Cornerstones of National and State Effort

- Prepare first responders
- Improve information, intelligence and technology capability
- Enhance public health capacity and bio-terrorism defenses
- Protect Florida's borders

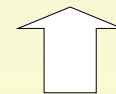
PREVENTION



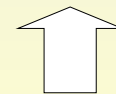
MITIGATION



RESPONSE



RECOVERY



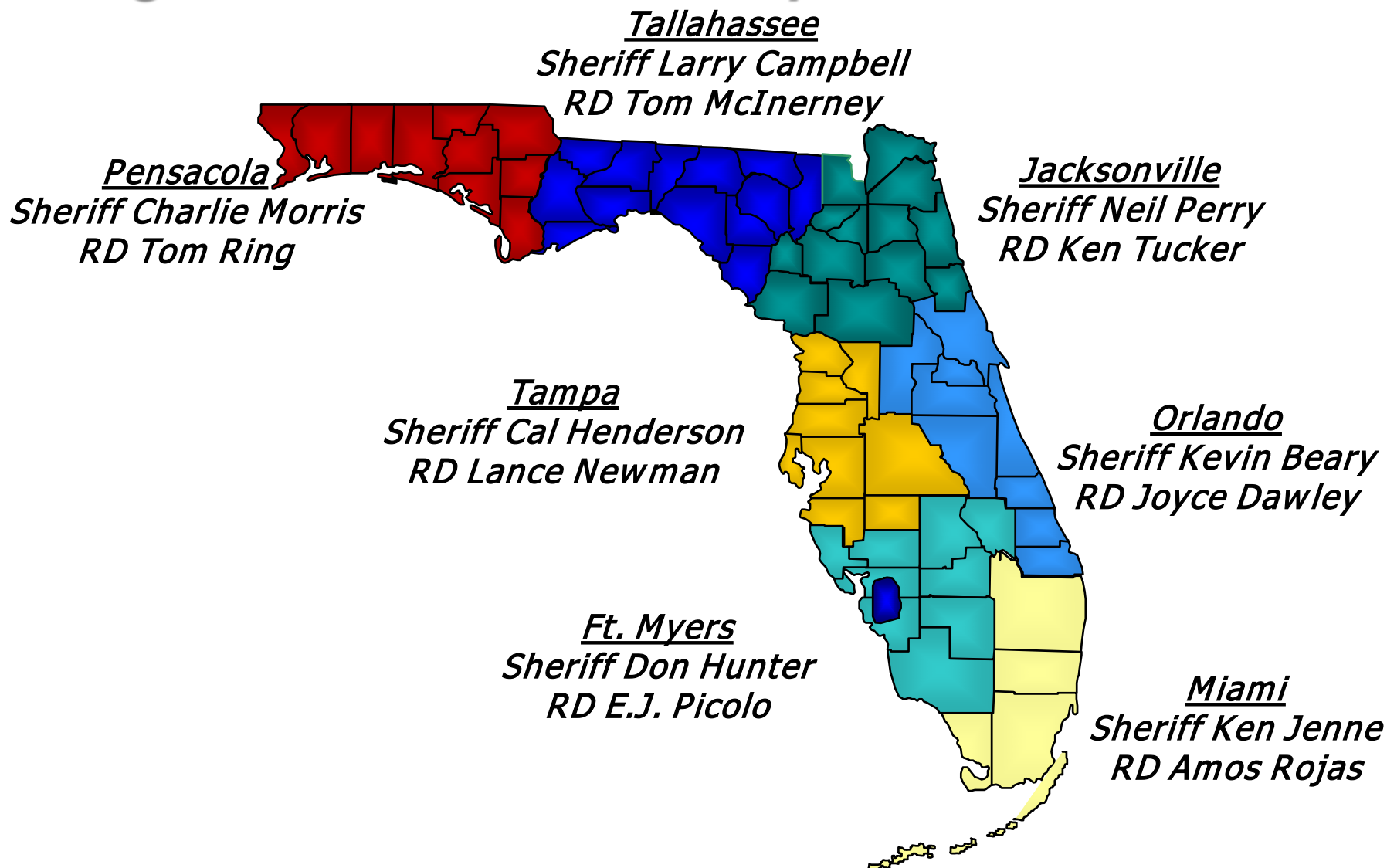
7 REGIONAL DOMESTIC SECURITY TASK FORCES



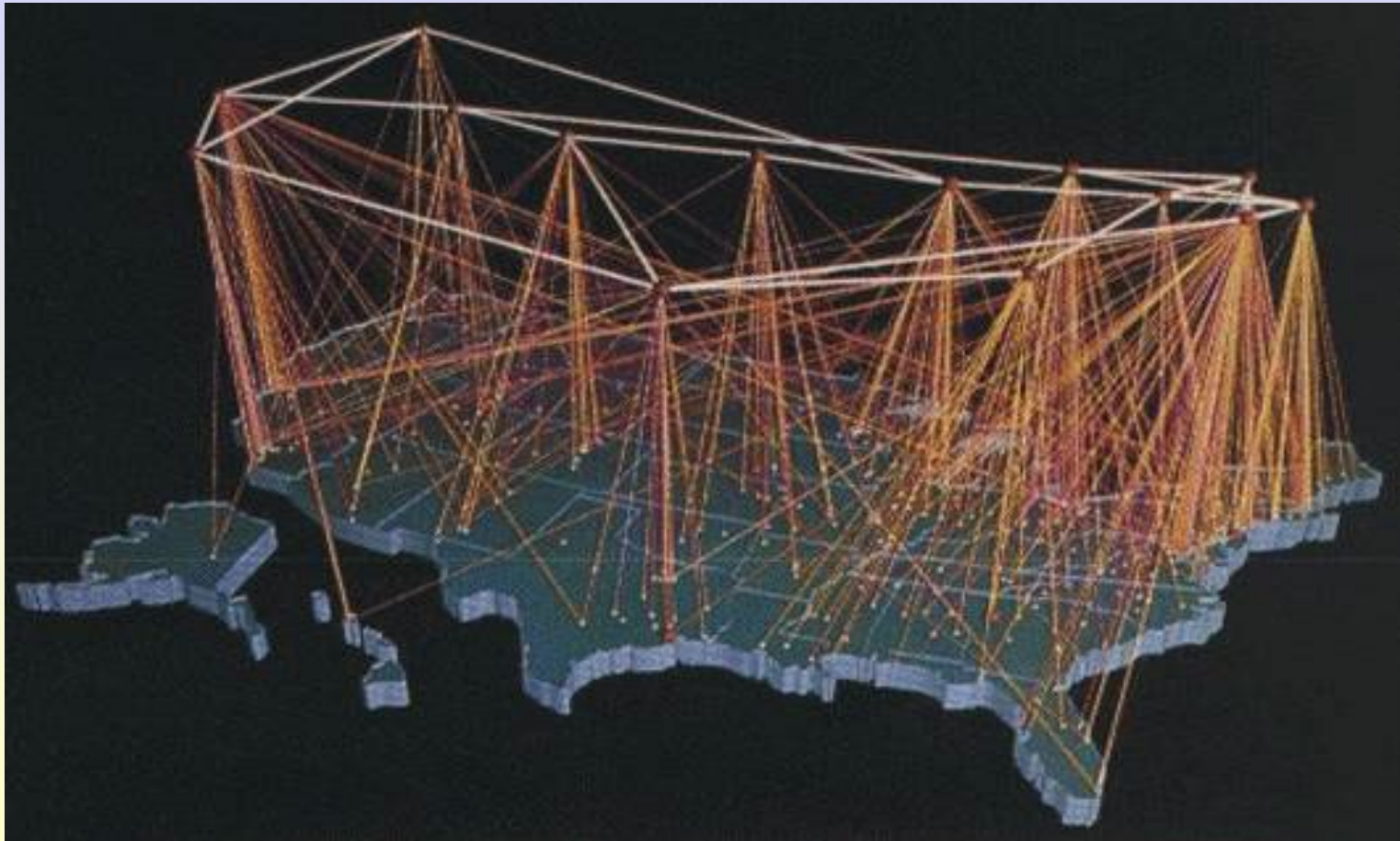
Florida's Domestic Security Structure



Regional Domestic Security Task Forces



NPDN: National Plant Diagnostic Network

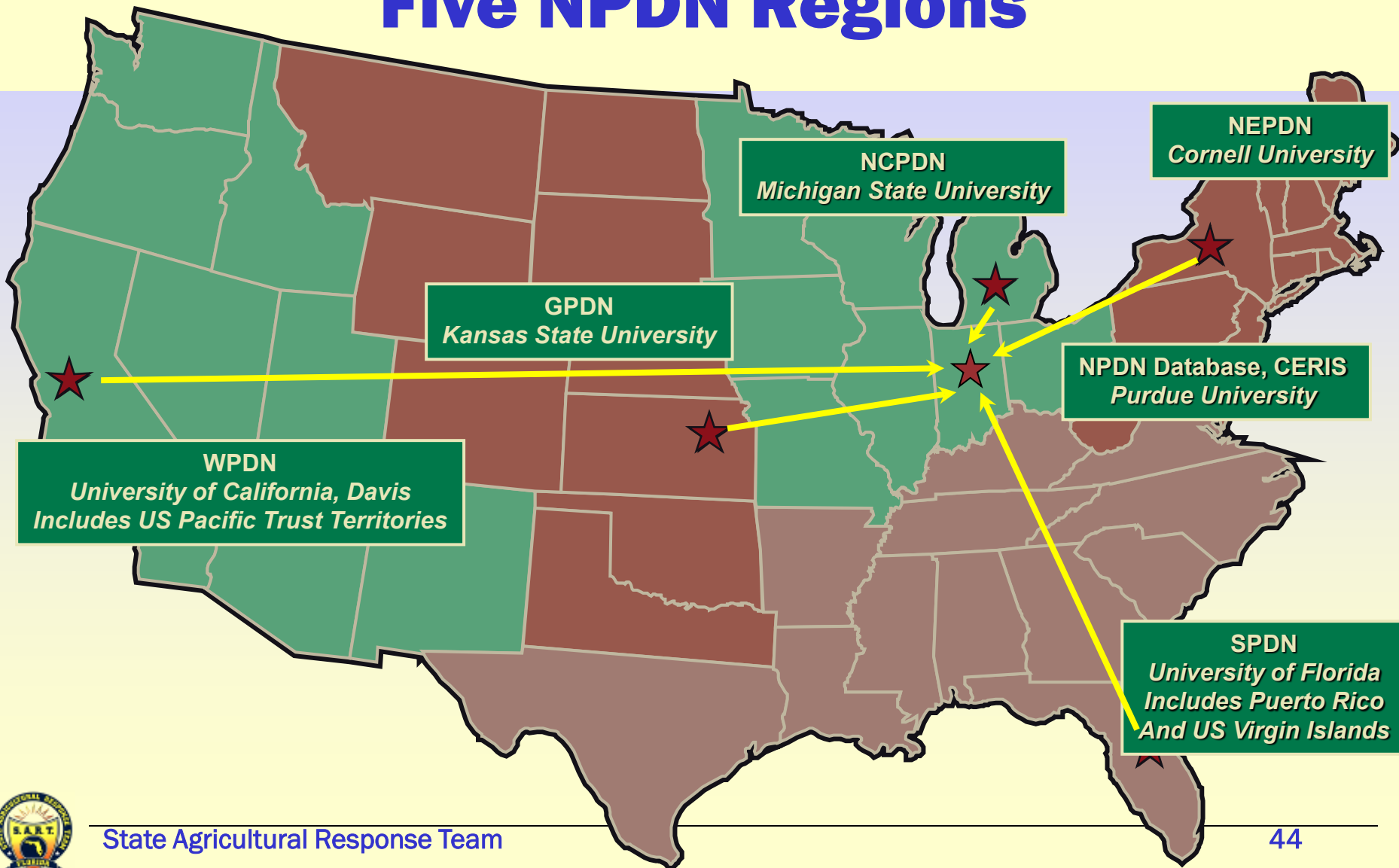


The NPDN Role

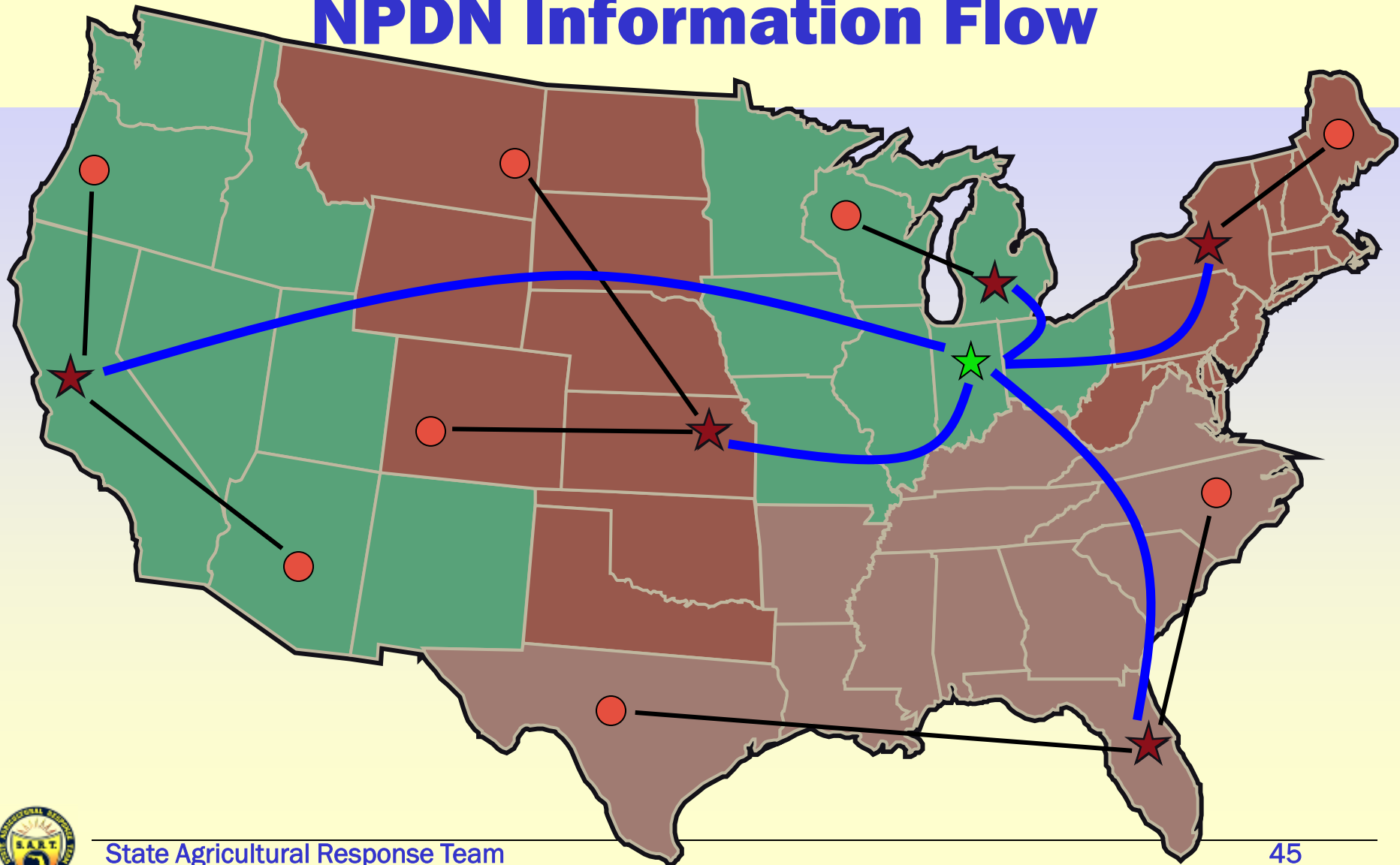
- Enhanced security of America's agricultural sector from a biosecurity event or unintentional introduction.
- How is this accomplished?
 - Coordinated national diagnostic laboratories
 - Rapid communication and response system
 - Database analysis for event detection
 - Education and training of “first detectors”



Five NPDN Regions



NPDN Information Flow



What is a “First Detector?”

- What is a First Detector?
 - Anyone likely to encounter an act or suspected act of bio- or agroterrorism
 - Producer: farmer or rancher
 - Agricultural consultant
 - County Extension Agent or Forester
 - Agents of the State Department of Agriculture & Consumer Services
 - Florida Master Gardeners



What does a “First Detector” do?

- Training, certificate of completion and national registry
- Surveillance
 - Be alert to the odd or different
 - Change in attitude from business as usual to potentially important
 - May be contacted if an incident in their area



“First Detectors” – Natural Multi-Taskers



Key Resources

- United States Department of Agriculture (USDA) www.usda.gov
- Florida Department of Agriculture and Consumer Services (FDACS) www.doacs.state.fl.us
- FDACS-Division of Plant Industry www.doacs.state.fl.us/pi/
- FDACS Division of Animal Industry www.doacs.state.fl.us/ai/
- USDA, Animal and Plant Health Inspection Service, National Center for Import and Export www.aphis.usda.gov/vs/ncie/
- Florida State Agricultural Response Team www.flsart.com
- Integrated Pest Management, IFAS Extension, University of Florida <http://ipm.ufl.edu/>
- Southern Region Center for Integrated Pest Management www.sripmc.org
- University of Florida, IFAS Extension Service <http://solutionsforyourlife.ufl.edu/>



Key Resources

- National Plant Diagnostic Network www.npdn.org
- Southern Plant Diagnostic Network <http://spdn.ifas.ufl.edu/>
- Florida Plant Diagnostic Network <http://fpdn.ifas.ufl.edu/>
- Extension Disaster Education Network
 - www.eden.lsu.edu
- Congressional Research Service, The Library of Congress
“Agroterrorism: Threats and Preparedness” by Jim Monke, Analyst
in Agricultural Policy, August, 13, 2004
 - www.fas.org/irp/crs/RS32521.pdf
- Centers for Disease Control and Prevention www.cdc.gov



Working Together To Protect Florida's Agriculture & Way of Life



Thank You!



Now, Test Your Knowledge and Awareness (1 of 3)

1. (True or False) The United States has never participated in planning, developing or carrying out acts of agroterrorism or bioterrorism.
2. The essential difference between agroterrorism and bioterrorism is _____ .
3. (Yes or No) The accidental release into the fragile Florida ecosystem of a pet snake that one can no longer care for should be prosecuted as an act of bioterrorism.
4. Florida is called a “sentinel state” because _____ .
5. Which of the following Florida industries is considered *immune* to an attack by an agro-terrorist?
 1. Citrus industry (too wide-spread)
 2. Cattle and horse industries (animals are just impossibly difficult)
 3. Nursery industry (nope – species confusion)
 4. Vegetables (would take an airplane and no one would do that ...)
 5. All are possible targets as well as timber and even pets!



Pre/Post Test (2 of 3)

6. Ensuring the safety and wholesomeness of food and other consumer products through inspection and testing programs is the mission of which of the following Florida offices?
 1. Office of Safety and Wholesomeness of Food
 2. Office of Bio and Food Security Preparedness
 3. Office of Other Consumer Nuisance Regulations
7. (Yes or No) The 24/7 toll free telephone number of Florida's Agriculture Law Enforcement office is **1-800-342-5869** and you should call it right away if you suspect any case of or issue with agro- or bio- terrorism. (Hint. The correct answer is "Yes." Please remember this number!)
8. (Circle the correct answer) The National Plant Diagnostic Network is responsible for training which of the following volunteer guardians of America's agriculture industry.
 1. First Responders
 2. First Detectors
 3. First Decorators



Pre/Post Test (3 of 3)

9. Which of the following may not an objective of a trained terrorist?
 1. To cause fear and insecurity
 2. To make a “political or economic statement”
 3. To cause harm to the enemy’s infrastructure
 4. All of the above may be terrorist objectives
10. On a scale of 1 to 10, one being very uneasy and apprehensive, and ten being rock-solid safe and secure, I feel that Florida is well-prepared for a possible bioterror or agroterror event. _____



Test Answer Key (1 of 2)

1. False
2. It is instructive to think of bioterror as specific acts directed at individuals, crowds or populations, such as sending anthrax spores through the mail. Agroterror is a general act, intending to sow death, destruction and dismay by indirect means, such as introducing a plant virus that may take years to become destructive to a host industry.
3. This is an opinion question and one could argue all sides of the issue.
4. Florida is a “sentinel state” because it is uniquely situated by climate and geographic position to host exotic and harmful immigrants.
5. #5. All are possible targets as well as timber and even pets!
6. #2. Office of Bio and Food Security Preparedness
7. The 24/7 toll free telephone number of Florida’s Agriculture Law Enforcement office is **1-800-342-5869** and you should call it right away if you suspect any case of or issue with agro- or bio- terrorism.



Test Answer Key (2 of 2)

- 8. #2. First Detectors
- 9. #4. All of the above may be terrorist objectives
- 10. This too is an opinion question and there is no right or wrong answer. It is entirely personal. However, if you have an idea that you believe will make America stronger or more vigilant without sacrificing our free and democratic way of life, please write that idea on the answer sheet!





Glossary

- Agroterrorism: when any person knowingly or maliciously uses biological or chemical agents as weapons against the agriculture industry and food supply. It may also be thought of as the malicious use of plant or animal pathogens to cause disease in the agricultural sector – plants or animals.
- Bioterrorism: The deliberate release of viruses, bacteria, other germs or chemicals to cause illness or death in people, animals, or plants.
- SART: The Florida State Agricultural Response Team. A multi-agency coordinating group consisting of governmental and private entities dedicated to all-hazard disaster preparedness, planning, response and recovery for the animal and agriculture sectors in Florida.
- Terrorist: One who utilizes violence and intimidation systematically to achieve political objectives, while disguised as a civilian non-combatant. The use of a civilian disguise exempts the perpetrator from protection under the Geneva Conventions, and consequently if captured they are liable for prosecution as common criminals.



Reporting Suspicious Plant and Animal Diseases Cases

Meanwhile... Batman falls for yet another of the Joker's fiendish phone pranks.

What?! You won't insure the Batmobile?



Protect Florida agriculture.

Report suspicious animal disease cases to the
Office of the State Veterinarian.

All calls are confidential and toll free.

Daytime (8 am - 5 pm) 1-877-815-0034
(1-850-410-0900)

Or to Office of Bio & Food Security Preparedness
1-850-410-6757

Or 24/7 to Agriculture Law Enforcement
1-800-342-5869

Or SPDN Hub Laboratory (Gainesville)
1-352-392-1795



Agroterrorism and Bioterrorism Prevention and Response

This concludes our presentation on “The threat of Agroterrorism and Bioterrorism in Florida: Prevention and a Coordinated Response.” Thank you for attending and participating.

