The Sentinel

Newsletter of the Florida State Agricultural Response Team

FDACS staff at the State Emergency Operations Center

Special Features of this Issue:

- *Avian Influenza Update*
- *Florida's ESF 17 Presents at FEPA*
- *Human Service Branch Summit at the State EOC*
- *African Swine Fever Update*

Last month, FDACS' LeiAnna Tucker and Ben Motes presented '*Opening the Doors to Pet-Friendly Sheltering*,' a presentation that highlights the new Pet-Friendly Sheltering Online Training by Florida SART.

Read the full story on page 8.

Statewide Emergency Operations Exercise – Under Siege 3

The Florida Department of Agriculture and Consumer Services (FDACS) attended a 4-day Statewide Emergency Operations Center (SEOC) exercise. The exercise was designed to test the state's capabilities to respond to natural and man-made disasters around the state.

The SEOC simulated many disaster events related to cyber events and events unrelated to cyber. FDACS activated Emergency Support Function (ESF) 17 and the State Agricultural Response Team (SART), simulating response to cyber-attacks on natural gas pipelines, train derailments, hazardous material spills, catastrophic flooding, and wildfires.

ESF 17 and SART activated to assist the state as a multi-agency coordination group to provide resources and subject matter expertise to incidents that affect animals and agriculture. The exercise tested the state's consequence management capabilities in response to cyber-attacks and flooding.

The Florida SART was activated and made available to help with critical and unmet needs along with ESF 17 to help counties with animal and agricultural issues. ESF-17 and SART held a conference call each day of the exercise to provide a situation report, assess unmet needs, and coordinate response actions.

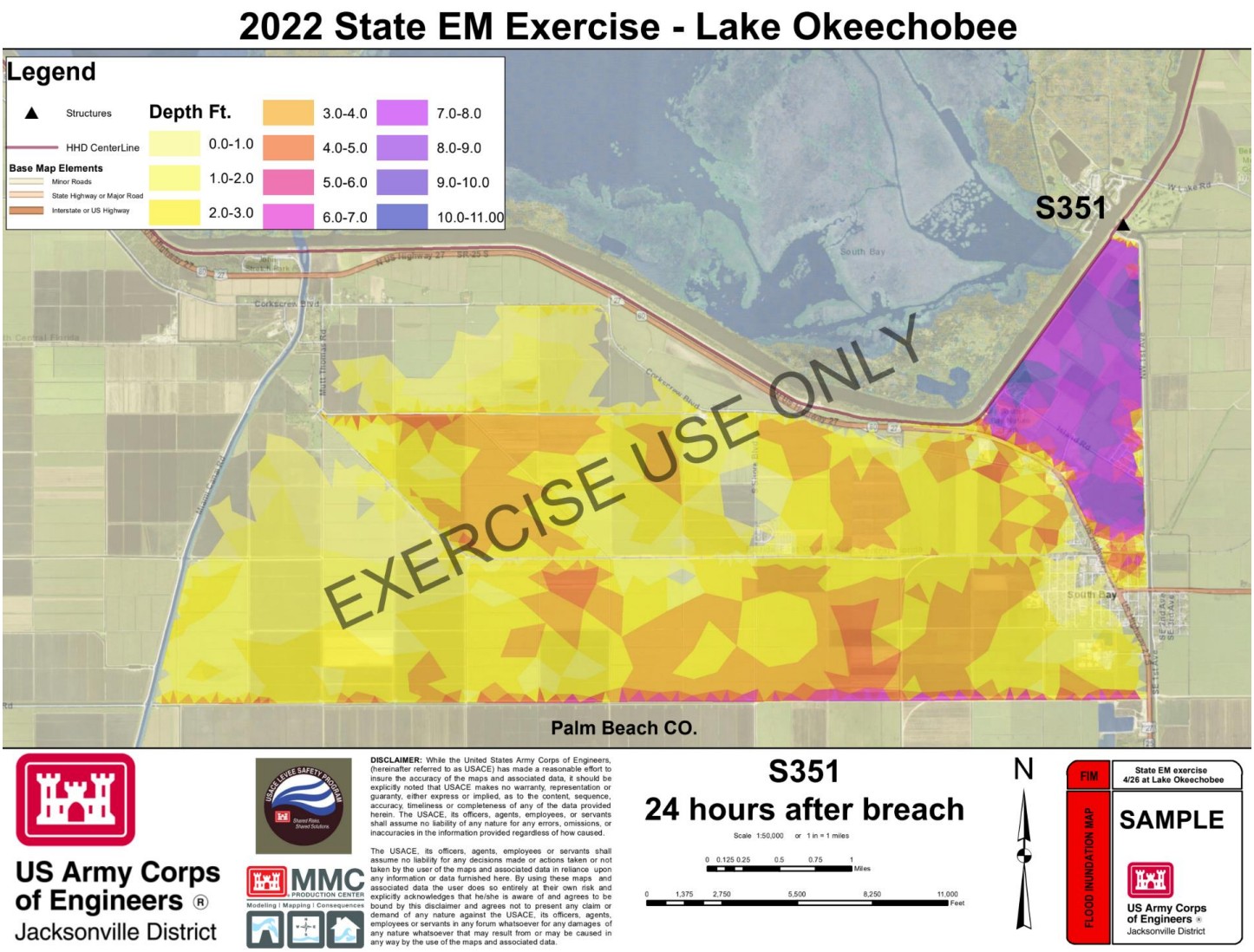
See Emergency Operations Exercise, page 2.

Emergency Operations Exercise (continued)

SART partners from around the state participated on the daily coordination calls and provided expert knowledge of their respective fields to assist ESF-17 in responding effectively to this exercise. ESF-17 conducted a preliminary assessment of the Lake Talquin Dam located in north Florida and Lake Okeechobee inundation zones located in south Florida to assess which animal and agricultural facilities were impacted. The Division of Food Safety also completed impact assessments of retail food establishments and dairy farms and dairy processing plants impacted by the incidents. In response to resource requests from county emergency management, ESF-17 simulated sending two SART Mobile Animal Response Equipment Units with animal sheltering supplies to Hendry County and Lee County to assist with pet-friendly sheltering.

For the Statewide exercise, ESF-17 released an animal movement waiver to assist with the evacuation of animals from the impacted areas. The waiver was issued by FDACS, suspending the intrastate movement requirements for the transportation of animals within Florida. The stated animals are fleeing from flooding areas designated within an evacuation zone or local state of emergency in response to the Lake Okeechobee flooding incident. The University of Florida Veterinary Emergency Treatment Services Team simulated assisting SART in the rescue of two horses stuck in the mud requiring the deployment of SART Animal Technical Rescue (ATR) equipment in counties. FDACS Division of Agricultural Environmental Services saw their share of vector control issues throughout the exercise. Vector Control took an active role during this exercise in assist counties with vector control questions and ready deployment of the the FDACS Mosquito Control Incident Response Team.

For a list of Florida SART partners, visit the SART website.



Avian Influenza Update

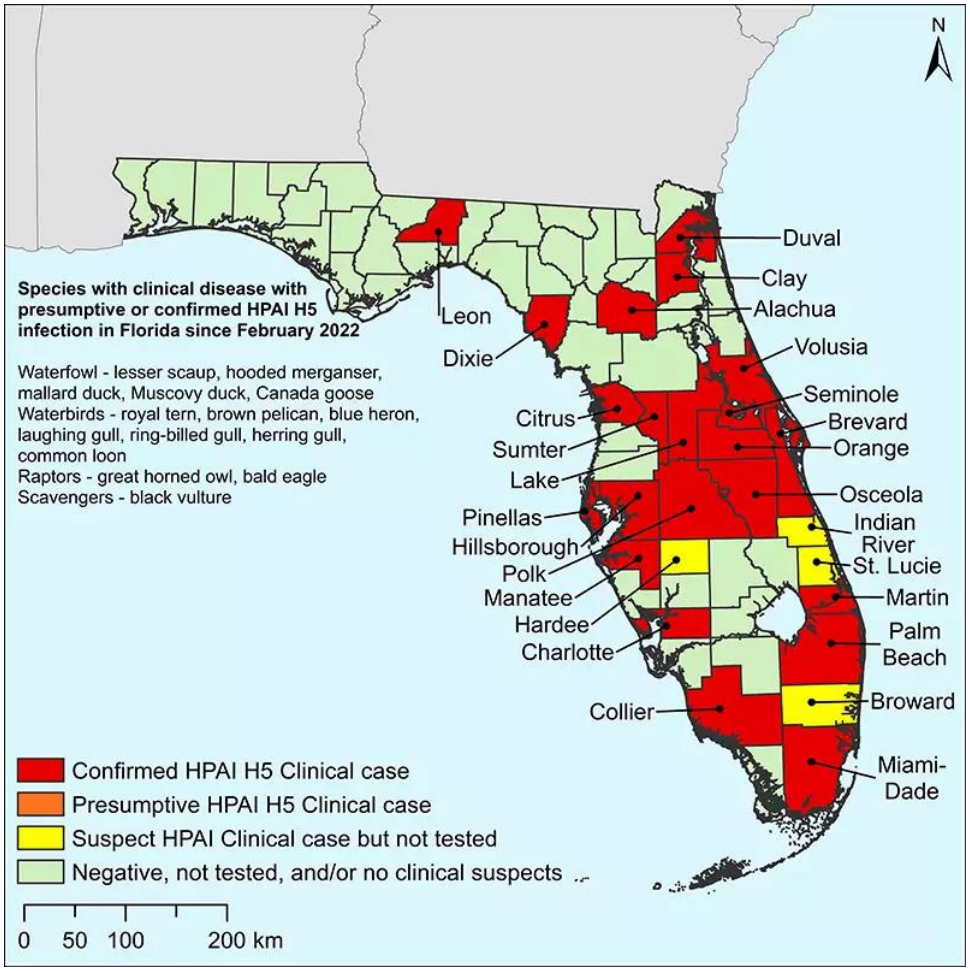
Avian Influenza (AI) has NOT been detected in Florida domestic poultry. Currently, Highly Pathogenic Avian Influenza (HPAI) has been detected in Alaska, Colorado, Connecticut, Delaware, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Dakota, Texas, Utah, Virginia, Vermont, Wisconsin, and Wyoming.

In addition, HPAI has been detected in wild birds in multiple states along the eastern seaboard, including Florida.

For more information on avian influenza and the current situation, visit the USDA avian influenza website.

Due to the recent AI findings, Florida poultry producers and enthusiasts (commercial and backyard) should take the following precautions to minimize the risk of introduction of influenza into our Florida poultry flocks.

1. Implement strict biosecurity measures on all poultry premises:
    - Alert all company personnel, growers, farmworkers and service personnel of the increased risk of HPAI.
    - Focus biosecurity methods on preventing any exposure to wild waterfowl or their droppings.
    - Keep current biosecurity at all times, especially relating to essential visitors and entry biosecurity.
2. Avoid any contact with wild birds of any kind, especially waterfowl, their habitat, or their droppings.
3. Take necessary precautions around any congregation points for growers or backyard owners – do not bring disease back to your poultry flock.



Avian Influenza Update (continued)

4. Monitor all flocks for increased mortality or clinical signs consistent with HPAI and report any concerns immediately to your veterinarian. To date, the consistent clinical sign in all the current reported cases has been a marked, rapid increase in mortality over several days.
5. Consider making a contingency plan for moving outdoor poultry into bio-secure housing.
6. For more information regarding reporting sick birds, please visit: https://www.fdacs.gov/content/download/23969/file/Bird-Influenza-Card-English.pdf

If you have any questions, please contact the Florida Department of Agriculture and Consumer Services (FDACS), Division of Animal Industry, at (850) 410-0900. Please visit our website for additional information regarding Avian Influenza and the requirements for moving poultry into the state at www.FDACS.gov/AvianInfluenza.

Additional Avian Influenza information
Center for Disease Control and Prevention: Recent Bird Flu Infections in U.S. Wild Birds and Poultry Pose a Low Risk to the Public | Avian Influenza (Flu) (cdc.gov)
USDA: USDA APHIS | Help and Site Map
United States Geological Survey, National Wildlife Health Center: Avian Influenza | U.S. Geological Survey (usgs.gov)

Defend the Flock - Biosecurity 101

Keep visitors to a minimum. Only allow those people who take care of your poultry to come in contact with your birds, this includes family and friends. Keep track of everyone who is on your property at all times. Make sure everyone follows biosecurity principles.

Wash your hands before and after coming in contact with live poultry. In addition to potentially spreading disease from farm to farm or bird to bird, you can also spread germs such as *Salmonella* that can impact human health. Wash with soap and water (always your first choice). If using a hand sanitizer, first remove manure, feathers, and other materials from your hands because disinfectants will not penetrate organic matter or caked-on dirt.

Provide disposable boot covers (preferred) and/or disinfectant footbaths for anyone having contact with your flock. If using a footbath, be sure to remove all droppings, mud or debris from boots and shoes using a long-handled scrub brush BEFORE stepping into the disinfectant footbath, and always keep it clean.

Change clothes before entering poultry areas and before exiting the property. Visitors should wear protective outer garments or disposable coveralls, boots, and headgear when handling birds, and shower and/or change clothes when leaving the facility.

Clean and disinfect tools or equipment before moving them to a new poultry facility. Before allowing service vehicles, trucks, tractors, or tools and equipment—including egg flats and cases that have come in contact with birds or their droppings—to exit the property, make sure they are cleaned and disinfected to prevent contaminated equipment from transporting disease. Do not move or reuse items that cannot be cleaned and disinfected—such as cardboard egg flats.

Look for signs of illness. Know the warning signs of infectious bird diseases.

Report sick birds. Don't wait. If your birds are sick or dying, call a local veterinarian, cooperative extensive service, or state veterinarian. Call USDA toll-free at **1-866-536-7593.**

For more information about biosecurity practices, including checklists you can follow, visit the Defend the Flock Resource Center.

Background Information on Avian Influenza

Avian Influenza viruses are classified by proteins of the virus: "H" proteins, of which there are 16 (H1–H16), and "N" proteins, of which there are nine (N1–N9). Many different combinations of "H" and "N" proteins are possible. Like all influenza viruses, Avian Influenza viruses are known to easily re-assort and mutate (to change) into new Avian Influenza subtypes. They can even change in their ability to infect within a subtype. Only H7 and H5 subtypes have been found to change from Low Pathogenic Avian Influenza (LPAI) to HPAI.

Avian Influenza (LPAI) normally resides in the North American wild bird population. Wild waterfowl (ducks, geese, and shorebirds) are known to be carriers of the virus. They do not get sick but spread the virus wherever they go. Any contact with wild birds of any kind, especially waterfowl, their habitat or their droppings, should be avoided. The virus is shed in the droppings and by direct contact. Florida is associated with both the Mississippi and Atlantic migratory flyways.

In 2014 and 2015, Highly Pathogenic (H5N8 and H5N2) caused the largest animal disease outbreak in United States history. This outbreak affected both commercial and backyard poultry. The outbreak affected 21 states, caused over 50 million bird deaths, and cost an estimated $3 billion economic impact. This outbreak was caused by an Asian lineage avian HPAI virus brought by wild waterfowl from Asia. The virus re-assorted with a North American subtype to produce HPAI in the USA. Factors involved with the spread of the virus included wild waterfowl migration and breakdowns in biosecurity.

In 2016, HPAI (H7N8) and LPAI (H7N8) infected several premises in Indiana and caused the loss of 43,000 commercial poultry. The viruses were identified as North American origin. It is thought that the LPAI (H7N8) mutated into HPAI (H7N8). In 2017, HPAI (H7N9) and LPAI (H7N9) infected several premises in North and South Carolina. The viruses were identified as North American origin. It is thought that the LPAI (H7N8) mutated into HPAI (H7N8). In 2020, LPAI (H7N3) was detected on several premises in North and South Carolina, causing the loss of 337,000 commercial turkeys. The virus was identified as North American wild bird lineage from the Mississippi flyway.

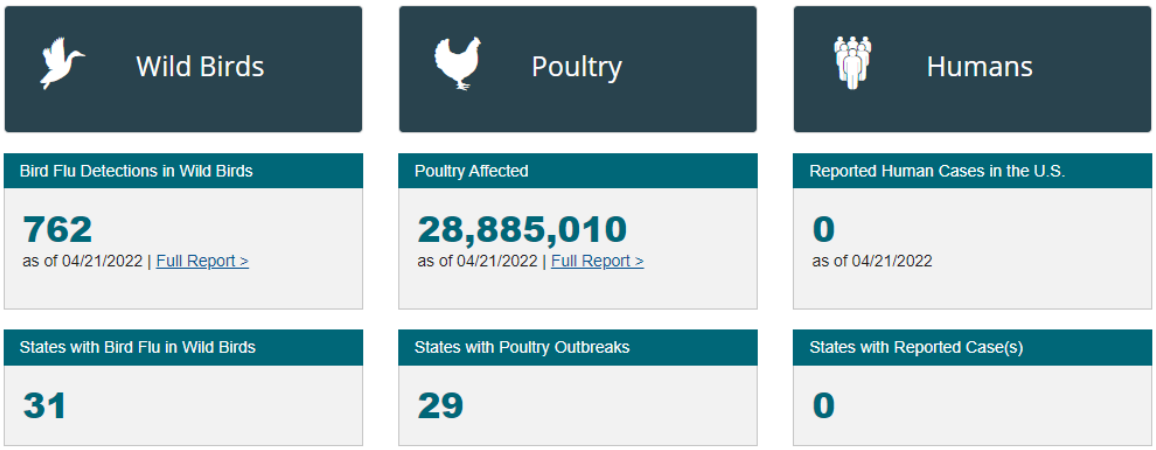
Additional Avian Influenza information

- Center for Disease Control and Prevention: Recent Bird Flu Infections in U.S. Wild Birds and Poultry Pose a Low Risk to the Public
- United States Department of Agriculture: https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animaldisease-information/avian/avian-influenza/2022-hpai
- United States Geological Survey, National Wildlife Health Center: https://www.usgs.gov/centers/nwhc/science/avian-influenza

Avian Influenza Confirmed in Wild Birds in Florida

The Florida Fish and Wildlife Conservation Commission (FWC) has been notified by the National Veterinary Services Laboratory of confirmed cases of Highly Pathogenic Avian Influenza (HPAI) strain: H5 2.3.4.4 in a lesser scaup, black vultures and other avian species. There is a low risk of HPAI transmission to humans and, to date, there have been no known human infections in North America.

The FWC is currently investigating bird mortalities in Brevard, Indian River and Volusia counties believed to be caused by HPAI. This strain has been documented in the United States since 2021 and was detected in hunter-harvested blue-winged teal in Palm Beach County in January 2022.



To prevent the spread of HPAI, the public should avoid handling sick or dead wildlife, prohibit the contact of domestic birds with wild birds, and report wild bird mortalities to FWC so deaths can be investigated. Please be advised that because HPAI is not treatable and is easily transmitted in wild birds, some wildlife rehabbers may not be accepting these animals at this time.

The FWC is working closely with the United States Department of Agriculture-Wildlife Services, Florida Department of Agriculture and Consumer Services, University of Florida, National Wildlife Health Center, Southeastern Cooperative Wildlife Disease Study, Florida Department of Health, and wildlife rehabilitators to investigate mortality events involving wild birds.

Additional Resources

- Florida Fish and Wildlife Conservation Commission: MyFWC.com/AvianInfluenza
- Florida Department of Health: floridahealth.gov/diseases-and-conditions/influenza/index.html
- Florida Department of Agriculture and Consumer Services: fdacs.gov/Consumer-Resources/Animals/Animal-Diseases/Avian-Influenza
- U.S. Department of Agriculture Animal and Plant Health Inspection Service: aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/avian-influenza/defend-the-flock-hpai

USDA

United States Department of Agriculture

Checklist: Tips To Help Keep Your Flocks Healthy

This checklist is a general guide to practicing good biosecurity, but if you have a site-specific biosecurity plan, please follow it. Commercial growers should be sure their site-specific plans follow the National Poultry Improvement Plan biosecurity principles.

- ☐ **Wear personal protective equipment** or clothing and shoes that you only use when caring for your poultry. This includes boot covers or boots that can be disinfected. Change into fresh protective gear between poultry houses or coops.
- ☐ **Enclosures must be empty for a thorough cleaning.** If you have a poultry house, wait until the house is empty to start the cleaning process. If you have a coop or other type of enclosure, move the birds to a separate area before cleaning.
- ☐ **Remove all litter, manure, and other debris.**
- ☐ **"Dry" clean all areas**—brush, scrape, and shovel off manure, feathers, and other materials. Disinfectant will not penetrate organic matter or caked-on dirt.
- ☐ **"Wet" clean all surfaces**—scrub with water and detergent. Work from top to bottom and back to front.
- ☐ **Rinse all surfaces carefully with water.**
- ☐ **Apply disinfectant** according to the directions on the label. Be sure to use a disinfectant that is registered by the U.S. Environmental Protection Agency (EPA) and indicates that it is effective against avian influenza and other poultry diseases.
- ☐ **Leave the enclosure empty** until it is completely dry. Use fans and/or open doors and windows to help speed the drying process. Wet surfaces can be harmful to poultry.
- ☐ **When you're done, remove and discard** your protective gear. If using dedicated clothing and boots, change clothing and clean and disinfect your boots.
- ☐ **Wash your hands thoroughly** with soap and water. Wash and dry your dedicated clothing.

For more information about how to keep your flocks healthy, follow **Defend the Flock** on **Facebook** and **Twitter** and visit **www.aphis.usda.gov/animalhealth/defendtheflock.**

DEFEND THE FLOCK
BIOSECURITY
Let's keep our poultry healthy together

Animal and Plant Health Inspection Service
Program Aid No. 2235-1 • Issued November 2018

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Florida's ESF 17 Presents at FEPA

On April 22nd, the Division of Animal Industry's Emergency Programs Section were invited to present to the Florida Emergency Preparedness Association (FEPA). LeiAnna Tucker and Ben Motes presented ***Opening the Doors to Pet-Friendly Sheltering,*** a presentation that highlights the new Pet-Friendly Sheltering Online Training by Florida SART. The presentation provided emergency management professionals with the resources that would help them develop the skills and knowledge necessary to develop a pet-friendly shelter plan as required by Florida law. Further, LeiAnna and Ben discussed SART-funded training such as the in-person Small Animal Emergency Sheltering Training provided by the Florida State Animal Response Coalition (SARC). The presentation allowed LeiAnna and Ben to share SART resources with the emergency management community and share information on the training opportunities available throughout the State.

Human Services Branch Summit at the State EOC

On April 18-20, FDACS ESF 17 Coordinators LeiAnna Tucker, Ben Motes, Nick Morrow, Hyatt Sudano, and Jeremy Dunkley presented at the 2022 Human Services (HS) Branch Summit at the State Emergency Operations Center in Tallahassee. The HS Branch Summit provides an opportunity for the ESFs under the HS Branch's organizational structure during a response to discuss resources and trainings available in relation to their mission area as well as discuss gaps, best practices and lessons learned from previous events.

This year at the summit, Division of Animal Industry ESF 17 staff, Ben Motes and Nick Morrow, provided an overview of Florida SART's role in ESF 17, and discussed SART trainings and resources such as the Online Pet-Friendly Sheltering Training, the State Animal Response Coalition's Small Animal Emergency Sheltering Trainings, and UF VETs Animal Technical Rescue trainings. Nick and Ben also gave an update on the Highly Pathogenic Avian Influenza outbreaks across the United States. Hyatt Sudano, the ESF 17 Vector Control Coordinator, presented on how ESF 17 responds to vector control issues following a natural disaster. Jeremy Dunkley, the ESF 17 Food Safety Coordinator, presented on how ESF 17 responds to food safety issues during a disaster. The HS Summit was well-attended in-person by many State Emergency Response Team partners and virtually by over 40 county emergency management offices across the state. ESF 17 cannot wait to present again at next year's summit!

African Swine Fever Update

African Swine Fever (ASF) is a highly contagious and deadly viral disease affecting both domestic and feral swine of all ages. ASF is not a threat to human health and cannot be transmitted from pigs to humans. It is not a food safety issue.

ASF is found in countries around the world, particularly in sub-Saharan Africa. More recently, it has spread through the Dominican Republic, China, Mongolia and Vietnam, as well as within parts of the European Union. It has never been found in the United States – and we want to keep it that way.

Why is African Swine Fever a Concern?
ASF is a devastating, deadly disease that would have a significant impact on U.S. livestock producers, their communities and the economy if it were found here. There is no treatment or vaccine available for this disease. The only way to stop this disease is to depopulate all affected or exposed swine herds. USDA is working closely with other federal and state agencies, the swine industry, and producers to take the necessary actions to protect our nation's pigs and keep this disease out. This group is also actively preparing to respond if ASF were ever detected in the U.S.

What Producers and Veterinarians Need to Know
Anyone who works with pigs should be familiar with the signs of ASF:

- High fever
- Decreased appetite and weakness
- Red, blotchy skin or skin lesions
- Diarrhea and vomiting
- Coughing and difficulty breathing

Immediately report animals with any of these signs to state or federal animal health officials or call USDA's toll-free number at **1-866-536-7593** for appropriate testing and investigation. Timeliness is essential to preventing the spread of ASF.

On-farm biosecurity is crucial to preventing any animal disease from developing and spreading. All pig owners and anyone involved with pig operations should know and follow strict biosecurity practices to help protect U.S. pigs from ASF. Work with your veterinarian to assess your biosecurity plans and make improvements as needed.

What Travelers Need to Know
International travelers could unknowingly bring back this disease from an ASF-affected country, especially if they visit farms. Visit the APHIS traveler page to know which items you can bring back into the United States. Some food items may carry disease and threaten domestic agriculture and livestock. If you go to an ASF-affected country, do not bring back pork or pork products.

See *African Swine Fever Update,* next page.

African Swine Fever Update (continued)

Declare any international farm visits to U.S. Customs and Border Protection when you return. Make sure you thoroughly clean and disinfect, or dispose of, any clothing or shoes that you wore around pigs, before returning to the U.S. Do not visit a farm, premises with pigs, livestock market, sale barn, zoo, circus, pet store with pot-bellied pigs, or any other animal facility with pigs for at least 5 days after you return.

Resources

- USDA | APHIS African Swine Fever Disease Information
- Swine Health Information Center
- USDA and CFIA Establish Protocol to Minimize Trade Disruptions in the Event of an ASF Detection in Feral Swine
- Joint Statement from the Chief Veterinary Officers of Canada and the United States
- Secure Pork Supply Plan

New Information Available for African Swine Fever

- USDA Submits Dossier to the World Organisation for Animal Health to Finalize African Swine Fever Protection Zone
- USDA Statement on Confirmation of African Swine Fever in Haiti
- USDA Continuing African Swine Fever Prevention Efforts – Preparing to Establish Foreign Animal Disease Protection Zone to Safeguard Puerto Rico, U.S. Virgin Islands, and the Entire U.S. Swine Industry
- USDA Announces Requirements for Importing Dogs from Countries Affected with African Swine Fever
- USDA Statement on Confirmation of African Swine Fever in the Dominican Republic

International Trade and Zoning

Joint Statement from the Chief Veterinary Officers of Canada and the United States

African Swine Fever Surveillance in the United States

USDA APHIS is furthering its overall ASF preparedness efforts with the implementation of a surveillance plan. To make this program as effective and efficient as possible, USDA will add ASF testing to their existing classical swine fever (CSF) surveillance. The plan, titled *Swine Hemorrhagic Fevers: African and Classical Swine Fever Integrated Surveillance Plan,* is available here.

International African Swine Fever Forum, April 30-May 1, 2019

Joint Statement on the International African Swine Fever Forum

African Swine Fever Assessments

APHIS has developed three new resources related to ASF:

- A qualitative assessment of the likelihood of African swine fever virus entry to the United States.
- A non-animal origin feed ingredient risk evaluation framework.
- A literature review of non-animal origin feed ingredients and the transmission of viral pathogens of swine.

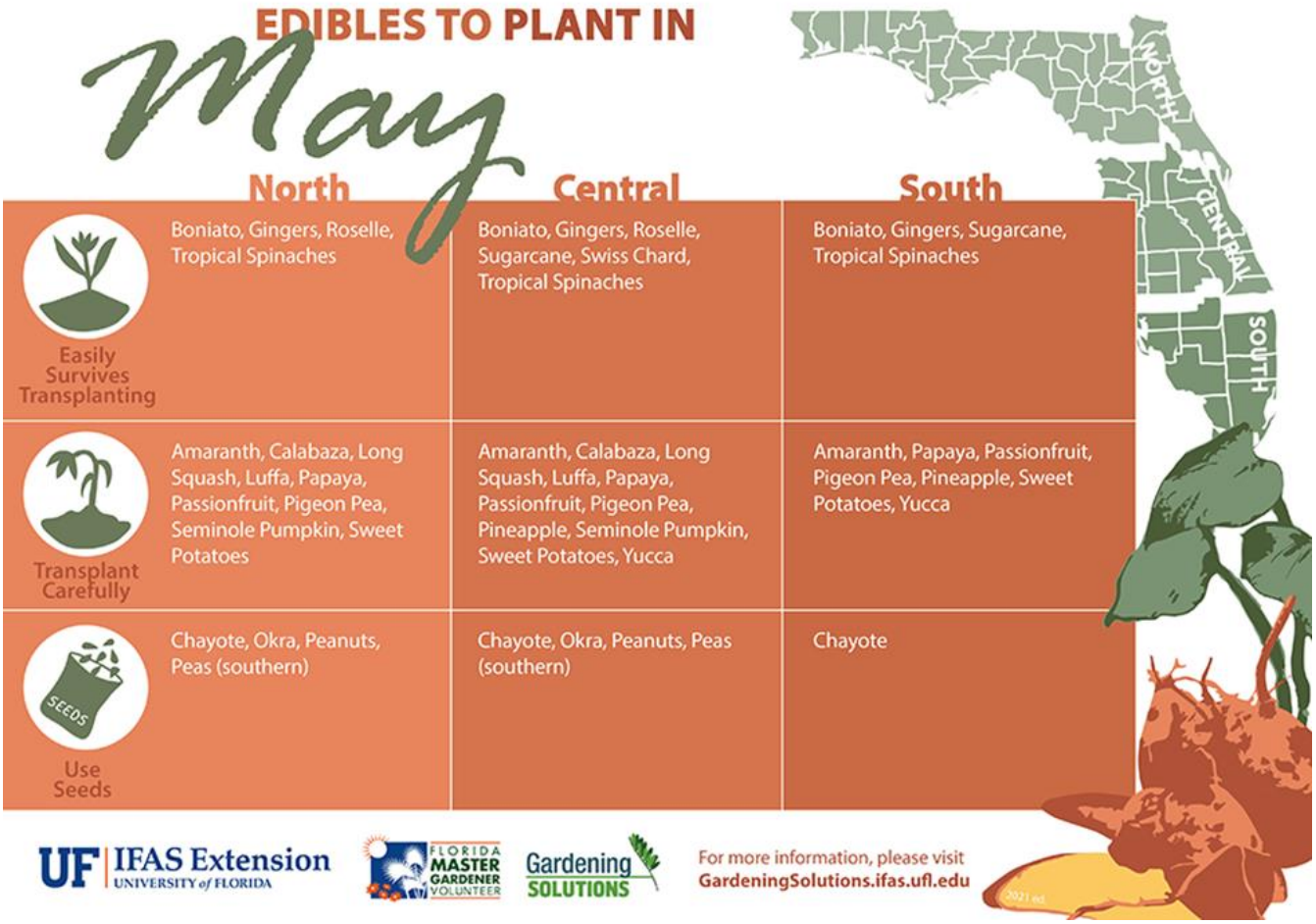
In the News…

- USA Today: Food prices expected to soar, USDA predicts
- AVMA Launches Veterinary First Responder Certificate Program

SART Website Resource

The Florida State Agricultural Response Team (SART) website has many resources available to help prepare our state's animal and agricultural sectors for disaster. One resource that we would like to highlight this month is the Animal Technical Rescue Training. SART has partnered with the University of Florida Veterinary Emergency Treatment Service (UF/VETS) team to develop the Animal Technical Rescue Training, which is hosted at the Florida Fire College. Animal Technical Rescue (ATR) occurs when an emergency involving an animal requires specialized skill sets and equipment beyond what is typically available in a typical emergency response. Two course options available are awareness and operations level. Incidents may include thick mud, septic tanks, swimming pools, haylofts, overturned trailers, sinkholes, or wells. A team of trained individuals can provide a safe, humane response for animals in these circumstances. UF VETS provides ATR training for fire/USAR, law enforcement, veterinarians, and animal welfare and livestock industry stakeholders. Each year, UF VETS offers courses through SART-sponsored trainings, open enrollment classes, and departmental trainings.

Both courses are State-certified and approved by the Florida Division of Emergency Management and are eligible for Continuing Education through the Florida State Fire College. Courses are designed to meet National Fire Protection Association standards 1006 and 1670/2500.



UF/IFAS Florida Gardening Calendars

The Gardening Calendar publications on the UF/IFAS Solutions for Your Life website gives Florida gardeners a monthly guide for what to plant and do in their gardens and includes links to useful gardening websites, all based on University of Florida research and expertise. Three different editions of the calendar provide specific tips for each of Florida's climate zones—North, Central, and South.

Vegetables to Plant in May - Gardening Solutions - University of Florida, Institute of Food and Agricultural Sciences (ufl.edu)

Counties, Is Your Contact Information up to date on the SART Website?

Please review your county emergency contact information at https://flsart.org/resource/countyinformation.jsp.

If you need to make changes to your county contact information, please send a request to Benjamin Motes at Benjamin.Motes@FDACS.gov or LeiAnna Tucker at LeiAnna.Tucker@FDACS.gov.

CALENDAR OF EVENTS

Florida State Animal Response Coalition

Florida State Animal Response Coalition (FLSARC) provides **Small Animal Emergency Sheltering training** for Florida communities. These courses teach the unique procedures, skills, and knowledge necessary to build and operate a temporary emergency animal shelter in response to natural disasters and large cruelty cases. These courses were created and designed by experts from many organizations including Florida SART, University of Florida Veterinary Emergency Treatment Service (VETS) Team, and leadership of FLSARC.

Awareness Level	Operations Level
• May 7, 2022 • May 22, 2022 • June 4, 2022 • July 9, 2022	• May 14-15, 2022 • June 11-12, 2022 • June 25-26, 2022 • July 23-24, 2022

To register, visit: https://flsarc.org/training

Animal Technical Rescue Training

The University of Florida Veterinary Emergency Treatment Service has provided a flyer for the Animal Technical Rescue Training, which is funded by Florida SART. The training will be conducted at the Florida State Fire College in Ocala. The dates of trainings are as follows:

Awareness Level	Operations Level
	• June 6-8, 2022

Please visit http://bit.ly/2022ATRTraining for additional information and to register.

SART Monthly Webinar

Scheduled for May 26th, 2:00 - 3:00 PM EST. This meeting is for SART partner agencies only. Please contact Benjamin Motes at Benjamin.Motes@FDACS.gov for additional information.

Fertilizer Market Factors

A complex web of supply and demand factors directly impact the domestic fertilizer market.

Global Demand

A total of 90 percent of global fertilizer consumption occurs outside of the United States. US producers and farmers must continue to remain competitive globally to stay in business.

Anticipated Crop Prices

Fertilizer is closely linked to commodities. Corn for example, accounts for nearly 50 percent of U.S. nutrient use. The markets are linked because as farmers try to increase production to capture additional revenue from high or increasing crop prices, demand for fertilizer increases due to additional planted acreage. While highly correlated in the long run, there have been periods, such as 2011-2014, when the prices do not move together because there are factors that independently influence both crop and fertilizer prices.

2021/22 season average corn prices are currently forecast by USDA to be up significantly at $5.45/bu. compared to $3.61, $3.56, and $4.35 in the past three years. The price outlook for corn harvested in 2021 also dramatically increased since mid-2020, creating strong demand for fertilizers.

Cross-Border Vaccine Mandate

The Department of Homeland Security has imposed a vaccine mandate on U.S.-Mexican-Canadian cross-border commerce. Eighty-six percent (86 percent) of the potash fertilizer used by U.S. farmers comes from Canada, and the mandate may impact the ability to ship fertilizer across the border, raising costs and threatening supply in the northern states.

Global Supply

The primary fertilizer materials, like the major crops, are commodities and are widely traded globally. In 2020, nearly 44 percent of all fertilizer produced globally was exported. Supply chain challenges are present across all commodity markets today, and fertilizer is no exception.

Natural Disasters

The February 2020 winter ice storms and Hurricane Ida are the most recent examples of a natural disasters that interrupted production of fertilizers (and natural gas) in Louisiana, Oklahoma, and Texas, which account for 60 percent of total U.S. ammonia production.

COVID-19

To reduce potential exposure in 2020, some manufacturers postponed regularly scheduled maintenance turnarounds (2-6 week period) to avoid having additional contractors on site. This maintenance is necessary and cannot be delayed indefinitely, so a larger than normal number of turnarounds occurred in the summer of 2021, impacting some production schedules.

Transportation

Fertilizer moves by rail, truck, barge, pipeline, and ocean vessels. Over the past 20 years, rail rates to ship anhydrous ammonia have increased 206 percent, which is more than triple the average increase for all commodities combined. The just-in-time need for fertilizer application can exacerbate this challenge for fertilizer shippers as trucking capacity is a serious challenge, as are unexpected lock-and-dam failures. Further, a potential strike by Teamsters Canada workers against the Canadian Pacific Railroad is an immediate concern.

Fertilizer Market Factors

Trade Disruptions

Fertilizer is sold in a global market, so disruptions in other geographies will also impact the U.S. market either through supply, price, or both.

Belarus has historically comprised approximately 21 percent of the global supply for potash. In August of 2021, the U.S. and EU governments enacted sanctions against Belarus for election fraud and other human rights violations. This created a global supply-shock in the potash market as some financial institutions are reluctant to provide financing for these transactions.

China's export ban on phosphate fertilizer as well as some nitrogen fertilizers through June 2022 puts additional pressure on the global market. China accounted for 25 percent of global processed phosphate exports and 10% percent of urea exports in 2020.

Russia set six-month quotas (not a full ban) on nitrogen and phosphate fertilizers in November 2021. Russia accounted for 10 percent of global processed phosphate exports and 23 percent and 14 percent of global exports for ammonia and urea respectively in 2020.

In response to the recent Russian invasion of Ukraine, the U.S. government enacted sanctions against Russia for its actions. Given Russia is a major global exporter of fertilizers, this will create a global supply-shock. Additionally, even for those countries who have not sanctioned Russia, financial institutions are reluctant to provide financing for transactions.

Additional Questions?

Contact Jason Troendle at jtroendle@tfi.org.

Production Costs

The price of natural gas has a direct impact on the cost of ammonia production as it accounts for 70 to 90 percent of total ammonia production costs. In 2021, natural gas prices doubled. Record prices in Europe near the end of 2021 caused an estimated 40 percent of ammonia production to be shuttered or idled. Prices have gone down, but recently increased due to the invasion of Ukraine.

Domestic Fertilizer Delivery

Timely fertilizer delivery is highly dependent upon global, national, and local logistics and supply chains. Historically, local and regional supply chains experience challenges due to unforeseen events and weather, this year being no different. The Fertilizer Institute strongly encourages growers to test their soils and work closely with their trusted retail providers to plan for the next crop year as early as possible.

Domestic Supply

The United States is the third largest manufacturer of nitrogen fertilizers, and the domestic market remains competitive. In 2008, there were 13 companies operating 22 nitrogen ammonia plants. Today, the industry has expanded to 16 companies operating 35 ammonia plants, producing 15.5 million nutrient short tons of nitrogen fertilizer.

The United States is the third largest producer of phosphate fertilizer; however, phosphate production is dependent on the location and availability of this natural resource.

Food Safety and Food Defense Report

A special section dedicated to feed and food emergency planning and response.

FDACS Division of Food Safety is responsible for assuring the public of a safe, wholesome, and properly represented food supply through permitting and inspection of food establishments, inspection of food products, and performance of specialized laboratory analysis on a variety of food products sold or produced in the state. The Division of Food Safety monitors food from the farm gate, through processing and distribution, to the retail point of purchase.

Spring Cleaning and Food Safety

It's that time of year again—time for spring cleaning! Get your spring season off to a fresh start with helpful refrigerator and freezer tips in our Division of Food Safety Spring Cleaning Video. For additional information about storing food safely, view our Division of Food Safety Food Storage Essentials Video.

Visit the Division of Food Safety's Consumer Resources and Outreach website for more food safety information from handwashing, to cooking, and serving your meal safely.

Food Storage Essentials

- Plan on enough storage space in the refrigerator and freezer. In the refrigerator, air needs to circulate to keep the temperature at 40°F or below. Keep your freezer at 0°F or below.

- Monitor your refrigerator and freezer temperatures with thermometers. Place one in your refrigerator and one in your freezer in easy-to-read locations and check the temperature regularly—at least once a week.

- Refrigerate meat, poultry, seafood, eggs and other perishables as soon as you get home from the store.

- Stick to the "two-hour rule." Remember to not allow foods needing refrigeration to sit out longer than two hours—one hour if the temperature is above 90°F. This includes leftovers, "doggie bags," and take out foods.

- Check food storage directions listed on food labels. If something hasn't been properly refrigerated, it is usually best to throw it out.

- After cooking, divide large amounts of leftovers into shallow containers for quicker cooling in the refrigerator.

SART Resources and Links

Large Animal Emergency Training from The University of Florida Emergency Treatment Services:
https://www.youtube.com/watch?v=PleLye_xBkA&t=4s

FEMA National Resources Hub:
National Resource Hub - Preparedness Toolkit
FEMA Resources on YouTube

Veterinary Services Training and Exercise Program (VSTEP):
USDA APHIS | Veterinary Services Training and Exercise Program

USDA APHIS Defend the Flock Program:
https://www.aphis.usda.gov/aphis/ourfocus/animalhealth/animal-disease-information/avian/defend-the-flock-program

Florida SART Pet-Friendly Sheltering Online Training
Pet-Friendly Sheltering Online Training (govtech.com)

Chronic Wasting Disease:
Chronic Wasting Disease (CWD) | FWC (myfwc.com)
Fight CWD | FWC (myfwc.com)

Please log in and update your membership information online at:

www.FLSART.org

About the *SART Sentinel*

The *SART Sentinel* is an email newsletter prepared monthly by the members of the **Florida State Agricultural Response Team** on the Florida SART website at www.FLSART.org.

If you have a story or photo that you would like to have considered for publication in the *SART Sentinel*, please contact the editors.

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