USDA United States Department of Agriculture

African Swine Fever Response

Outbreak in Feral Swine: Incident Playbook

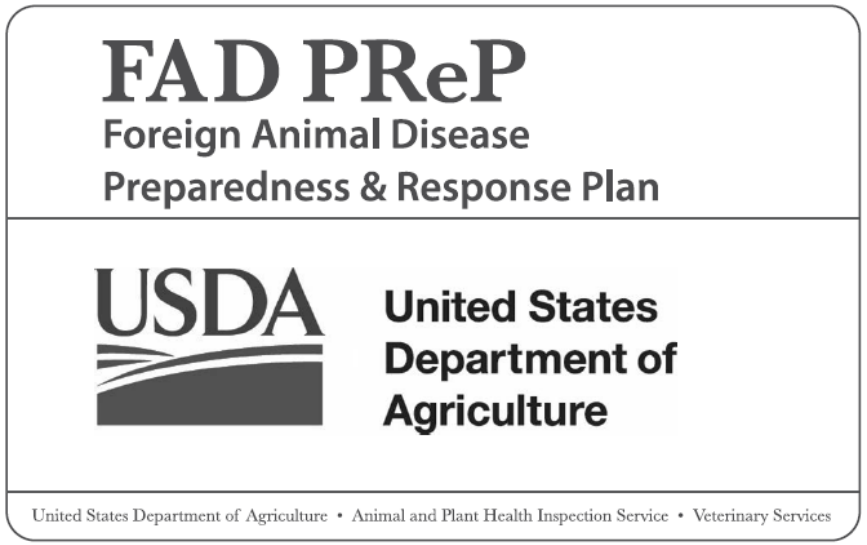
July 2023

Target Audiences

- Federal, State, Territory, and Tribal Animal Health Officials
- ASF outbreak responders

Purpose

- Provide quick, practical access to key approaches, resources, and tools to implement ASF response activities in feral swine.
- Describe the adaptive response approach, which is the practice of dynamically adapting outbreak response activities from confirmation, containment, control, and eradication.



User Guide

OVERVIEW OF ASF RESPONSE

An African swine fever (ASF) outbreak in domestic pigs or feral swine will have immediate and serious negative interstate commerce and international trade impacts. If ASF is found in the United States, the response goals will be to 1) detect, control, and contain ASF in swine as quickly as possible; 2) eradicate ASF using strategies that seek to stabilize animal agriculture, the food supply, and the economy, protect public health and the environment; and 3) provide science-and risk-based approaches and systems to facilitate continuity of business for non-infected animals and noncontaminated animal products.

There is currently no approved vaccine available in the United States for ASF virus in domestic or feral swine. As such, the primary response strategy for ASF in infected domestic pigs is depopulation of clinically affected and, as appropriate, swine that are directly exposed to the virus. The primary response strategy in infected feral swine is population reduction/eradication in affected areas. Control Areas will be established around Infected Premises and/or the location of infected feral swine, supported by quarantines and movement restrictions of domestic pigs to reduce the risk of susceptible swine from coming into contact with ASFV. Response strategies will be adjusted to best fit the outbreak situation.

INTRODUCTION TO THE PLAYBOOK

The playbook is meant to be a useful resource to help animal health officials and responders manage and adapt their response to ASF when the virus is detected in feral swine populations. The playbook is meant to be an easily referenced companion, not a replacement, to the policies, guidelines, and strategies in the USDA APHIS ASF Response Plan (The Red Book).

The phases of the response include:

- **Preparedness,** or the continuous cycle of planning, organizing, training, equipping, exercising, evaluating, and taking corrective action to ensure effective coordination during an outbreak response.
- **Confirmation**, or first detection of ASF in a feral swine population; this could be the first detection of ASF in the United States, or first detection of ASF in feral swine in a new area with/without detection in domestic pigs in the same area.
- **Containment**, or preventing the spread of disease in early stages of transmission through measures such as early detection, removal of feral swine and carcasses from the landscape, surveillance, preventing disease spread to domestic pigs, and preventing continued spread across the landscape.
- **Mitigation**, or minimizing the outbreak impact, by reducing the geographic extent of the affected area to reduce strain on resources. Achieved largely through feral swine population reduction, constant evaluation of impacted areas, and specific measures to prevent unintended feral swine movements from their natural home range.
- **Control,** or demonstrating disease transmission is under control based on epidemiology and surveillance.
- **Eradication**, or demonstrating freedom of disease in previously affected areas.

The essential activities are organized into the following categories:

- Coordinated response
- Disease control
- Case management
- Preventing spillover to domestic pigs
- Information management
- Resource needs

In each category, response activities are mapped to the response phases. Some activities are maintained throughout all phases, while others are only relevant to specific phases of the outbreak.

The playbook must be adapted to the local context. All guidance should be developed in collaboration with Federal, State, and Territory wildlife officials. State, Territories, and Tribes will need to adapt their response to meet the needs of their jurisdiction.

The playbook is interactive. The adaptive response in each section of the playbook highlights key approaches and tools in the implementation of those activities.

USDA APHIS Wildlife Services provides leadership in feral swine management and disease response. The approaches and tools included in the playbook reflect USDA APHIS guidance and aim to provide a practical framework to rapidly focus on priority activities outlined by USDA APHIS. Tools and resources will be updated regularly as new guidance on ASF in feral swine is released by USDA APHIS. The playbook also includes tools from other international animal health organizations and other countries' experiences with ASF in feral swine/wild boar (e.g., World Organisation for Animal Health, Food and Agriculture Organization of the United Nations, Belgium, Czech Republic, Germany, Poland).

This playbook is a living, dynamic document. Global knowledge around ASF in feral swine continues to evolve. Feedback and suggestions can be sent to FAD.PReP.Comments@usda.gov.

KEY PRINCIPLES FOR THE PLAYBOOK

Driven by data, science, and risk

Use data to drive decisions.

Protection of United States agriculture and related sectors

Ensure response activities do not negatively impact the commerce of United States agriculture and ensure a secure and safe food supply.

Communication and engagement

Ensure effective and efficient whole community situation management and clear communication pathways are employed for a successful response effort.

Local adaptation

Adapt general response strategies to the regional and local context to maximize disease control efforts and minimize economic impacts.

Managing an ASF Response in Feral Swine: Essential Checklist

KEY APPROACHES

- Ensure safety of responders and the community when implementing activities in affected areas.
- Maintain coordination and communication among feral swine authorities at local, regional, and national levels.
- Use data and science to drive decision-making.

1. Effectively manage a coordinated response

☐ Establish USDA regulatory authorities to respond to an ASF outbreak in domestic pigs or feral swine.

☐ Use a unified approach to coordinate with Federal and State domestic and feral swine regulatory authorities and industry.

☐ Coordinate feral swine field operational response roles between USDA APHIS, State authorities, and response personnel.

2. Control the disease and reduce transmission across the landscape

☐ Quickly establish 5 km Control Areas and 5 km Surveillance Zones around infected feral swine and carcasses, expanding the size based on home range or when transmission is detected.

☐ Implement optimal response measures that best fit the location and outbreak situation.

- ☐ Assess the outbreak situation of the area before implementing response measures.
- ☐ Remove killed and found dead feral swine carcasses as a transmission source to susceptible domestic and feral swine, as is possible.
- ☐ Strategically implement feral swine population control and reduction activities in the Control Area/Surveillance Zone.
- ☐ Limit external disturbances to feral swine populations in the affected area that are not part of response activities.

3. Quickly identify and report new cases

☐ Take and submit diagnostic samples for killed and found dead feral swine located in Control Areas and Surveillance Zones.

☐ Implement additional outreach on domestic pigs and feral swine morbidity/mortality reporting in affected areas and nationally.

4. Prevent transmission between domestic pigs and feral swine

☐ Increase biosecurity on domestic pig premises to prevent contact between domestic pigs and feral swine in affected areas.

☐ Implement quarantines and movement restrictions for domestic pig premises located within Control Areas.

5. Ensure information flow and management

☐ Record and report all domestic and feral swine field data using USDA's Emergency Management Response System (EMRS).

☐ Utilize EMRS to manage the outbreak and meet national and international reporting requirements.

6. Identify and maintain resource requirements

☐ Continually assess equipment, supply, and personnel needs.

Key approaches, resources, and tools

1. Effectively manage a coordinated response

Establish USDA regulatory authorities to respond to an ASF outbreak in domestic or feral swine	
Key Approaches	**Resources and Tools**
• A declaration of Extraordinary Emergency after first detection of ASF in the United States in domestic pigs (or possibly feral swine) will establish USDA as the leader of a coordinated response to control and eradicate the disease and ensure availability of resources. • USDA APHIS VS emergency response authorities will be used to support ASF response activities in both feral swine and domestic pigs. These authorities – in conjunction with State, Territory, and Tribal authorities – allow response activities to be conducted in affected areas. • USDA will not execute a 72-hour National Movement Standstill upon first confirmation of ASF in feral swine unless feral swine are located or associated with a domestic pig epidemiological risk situation.	• Declaration of Extraordinary Emergency & 72-Hour National Movement Standstill • USDA APHIS ASF Response Plan, Chapter 2: USDA Authorities, USDA APHIS VS Guidance • NAHEMS Guidelines: Wildlife Management and Vector Control for a Foreign Animal Disease Response in Domestic Livestock

Use a unified approach to coordinate with domestic pig and feral swine regulatory authorities at the national and State level.	
Key Approaches	**Resources and Tools**
• USDA APHIS will establish a unified Incident Command System organizational structure per the National Incident Management System to enable efficient and effective incident management. • A unified State-Federal Incident Command organizational structure and Incident Management Team(s) (IMT) will include personnel from USDA APHIS Veterinary Services and Wildlife Services at national and local levels and the State Animal Health Official of the affected State/Territory. ○ State-level feral swine authorities vary by State and will be coordinated accordingly.	• APHIS Foreign Animal Disease Framework: Roles and Coordination (FAD PReP Manual 1-0) • National Incident Management System • USDA APHIS ASF Response Plan, Chapter 3.4: Initial Response Actions

<table>
<tr><th colspan="4">Coordinate feral swine field operational response roles between USDA APHIS, State, and response personnel</th></tr>
<tr><th>Key Approaches</th><th colspan="3">Resources and Tools</th></tr>
<tr><td rowspan="2">• USDA APHIS Wildlife Services will lead field response activities and use its personnel for those activities requiring technical expertise.
• Coordination of field activities with the affected State/Territory will be critical for implementing response activities.</td><td>USDA APHIS WS Personnel Activities</td><td>Response Personnel Activities</td><td>Activities Requested of Affected State/Territory</td></tr>
<tr><td>• Determine Control Area and Surveillance Zone size, culling capacity
• Determine resource needs
• Sampling pigs
• Carcass aging
• Operating cameras
• Trapping/hunting
• Use of dogs for carcass or scat detection
• Use of helicopters or drones
• Use of GPS collaring
• Obtaining access to lands, approvals</td><td>• Carcass disposal</td><td rowspan="2">• Security, safety
• Law enforcement
• Obtaining access to lands, approvals
• Closing of areas and enforcement (e.g., State parks, Federal lands)
• Prohibiting interstate movement/ commerce of feral swine
• Prohibiting hunting/baiting and public access in Control Areas
• Notification to public of areas where hunting/baiting is prohibited or restricted
• Providing local intel of the area, feral swine density estimates, other area considerations
• Trapping equipment
• Feral swine population reduction activities (e.g., trapping, hunting, aerial removal)
• Use of EPA approved toxicants
• Coordination of testing of hunter-killed feral swine outside affected area</td></tr>
<tr><td></td><td>• Baiting and setting up traps
• Carcass canvassing and sampling</td><td>• Fencing</td></tr>
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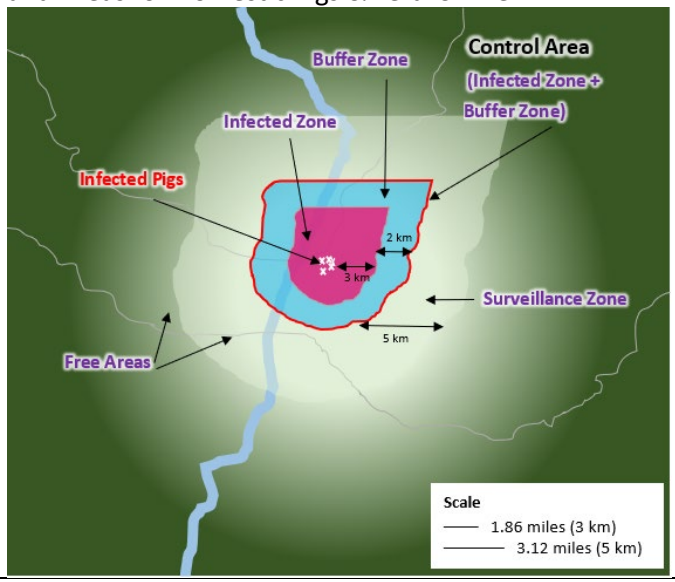
2. Control the disease and reduce transmission across the landscape

Quickly establish minimum 5 km Control Areas and 5 km Surveillance Zones around infected feral swine and carcasses, expanding the size based on home range or when transmission is found	
Key Approaches	**Resources and Tools**
• Immediately establish a minimum 5 km Control Area (3 km Infected Zone + 2 km Buffer Zone) and 5 km Surveillance Zone around infected feral swine and carcasses; this allows response activities to begin and to be efficiently and effectively coordinated. • A 3 km Infected Zone within the Control Area encompasses the average home range for feral swine in the United States. The sizing of this zone, and therefore the total size of the Control Area, may be adjusted based on input and analysis from USDA APHIS Wildlife Services and local knowledge and assessment of the location, landscape, season, feral swine density, home range estimates, number and location of infected feral swine detected, and aging of infected carcasses in the area. • Feral swine population reduction activities will be prioritized in the Control Area. • Domestic pig premises located in Control Areas established due to the detection of infected feral swine will be placed under quarantine and subject to movement controls; as such, Control Areas should be sized to balance feral swine response goals and requirements to manage quarantined domestic pig premises and continuity of business of U.S. agriculture.	• USDA APHIS WS assessment of potential extent of ASF spread • USDA APHIS WS Optimal Culling Radius tool • USDA APHIS ASF Response Plan, Chapter 3.3.5: Control and Eradication of ASF in Feral Swine • USDA APHIS ASF Response Plan, Chapter 4.12: APHIS Wildlife Services • USDA APHIS ASF Response Plan, Chapter 4.5.2: Visualizing Zones and Areas for Domestic Pigs & Feral Swine 

Implement optimal feral swine response measures that best fit the location and outbreak situation	
Key Approaches	**Resources and Tools**
Assess the outbreak situation of the area before implementing response measures • Implementing response measures without first assessing the situation and coordinating with USDA APHIS Wildlife Services may further spread ASF into unaffected areas or reduce the effectiveness of response options. • USDA APHIS Wildlife Services will coordinate with local feral swine authorities and experts to obtain information of the area and determine what and how to implement response measures.	• USDA APHIS WS Optimal Culling Radius tool - estimate resource needs and requirements for the outbreak location • USDA APHIS ASF Response Plan, Chapter 3.3.5: Control and Eradication of ASF in Feral Swine

Remove killed and found dead feral swine carcasses as a transmission source to susceptible domestic and feral swine, as is possible
• Infected feral swine carcasses are a main source of continued ASF transmission during an outbreak; locations of infected carcasses also provide information on the geographic extent of the outbreak.
• Removal of carcasses in the Control Area will be prioritized through all outbreak phases.
• Use transects to systematically canvass the Control Area and Surveillance Zone and locate feral swine carcasses that minimizes population disturbance.
• Carcass disposal will depend on the location, environmental assessment, and resource availability; options include:
  ○ Removal from the affected area – carcasses are taken to a central area for disposal or performed onsite (e.g., mobile incineration).
  ▪ Use biosecurity measures when transporting carcasses to prevent environmental contamination (e.g., heavy duty bags, containers, tarps).
  ○ Above or below ground burial – requires environmental and logistical assessment.
  ○ Leave in place – may use if carcass(es) cannot be accessed due to terrain or if other options are not possible.
• Hydrated lime delays scavenging for up to a week and can be used on carcasses if there is a time lag before disposal.
	• USDA APHIS VS Office of Interagency Coordination: Depopulation and Disposal experts
	• USDA APHIS FAD PReP Standard Operating Procedures: 14. Disposal
	• African swine fever in wild boar: Ecology and biosecurity, 2019, FAO Animal Production and Health Manual
	• USDA APHIS ASF Response Plan, Chapter 3.3.5: Control and Eradication of ASF in Feral Swine
	• USDA APHIS ASF Response Plan, Chapter 4.12: APHIS Wildlife Services

Strategically implement feral swine population control and reduction activities in the Control Area and Surveillance Zone
• During the **confirmation** phase:
  ○ When ASF is first detected in feral swine in a new area, population control and reduction activities will not be immediately implemented, or implemented for limited and specific purposes, in order to allow assessment of the outbreak situation and prevent this response activity from further spreading ASF to unaffected areas.
• During the **containment** phase:
  ○ Feral swine population control and reduction activities will be strategically implemented for surveillance and in high-risk areas (e.g., near domestic pig premises, in the immediate area of infected feral swine detections).
• During the **mitigation and control** phase:
  ○ Feral swine population reduction activities will be strategically implemented and at an intensity needed to support the goal of disease eradication and demonstration of disease freedom.
	• USDA APHIS Wildlife Services Optimal Culling Radius tool - estimate resource needs and requirements, including culling intensity for the affected area
	• USDA APHIS ASF Response Plan, Chapter 3.3.5: Control and Eradication of ASF in Feral Swine
	• USDA APHIS ASF Response Plan, Chapter 4.12: APHIS Wildlife Services

Limit external disturbances to feral swine populations in the affected area that are not part of response activities • External disturbances to feral swine populations in affected areas can further spread ASF into unaffected areas or reduce the effectiveness of response options. • Only response personnel will be used to conduct feral swine response measures in affected areas. • Coordinate with State and local officials to reduce or prohibit hunting, baiting, and access by the public in areas where response measures are being implemented.	• Evaluation of fences for containing feral swine under simulated depopulation conditions • USDA APHIS Wildlife Services: Wildlife Damage Management Technical Series – Feral Swine • Effects of simulated removal activities on movements and space use of feral swine

3. Quickly identify and report new cases

Take and submit diagnostic samples for killed and found dead feral swine located in Control Areas and Surveillance Zones	
Key Approaches	**Resources and Tools**

• Individual animal diagnostic samples for killed and found dead feral swine in a Control Area/Surveillance Zone will be taken, as is possible.
  ○ Do not pool samples from multiple animals, even if they are in the same trap.
  ○ Samples that are not able to be taken should be recorded (e.g., unable to access due to terrain).
• Diagnostic samples will be submitted to USDA APHIS' Foreign Animal Disease Diagnostic Laboratory (FADDL) or to a designated National Animal Health Laboratory Network (NAHLN) laboratory.
	• EMRS Feral Swine ASF Outbreak Datasheet
	• USDA APHIS ASF Response Plan, Chapter 4.3: Diagnostics
	• USDA APHIS NVSL Foreign Animal Disease Diagnostic Laboratory
	• National Animal Health Laboratory Network

Implement targeted feral swine passive surveillance in affected areas	
Key Approaches	**Resources and Tools**
• Implement mechanisms for public reporting of found dead feral swine carcasses (e.g., reporting hotline, webpage, etc.) in affected areas. • Incorporate processes within the IMT for assessing and responding to public reporting of found dead feral swine carcasses in affected areas.	• African Swine Fever: Report Feral Swine

4. Prevent transmission between domestic pigs and feral swine

Increase biosecurity on domestic pig premises to prevent contact between feral swine and domestic pigs in affected areas	
Key Approaches	**Resources and Tools**
• Domestic pig premises in affected areas should increase biosecurity measures on their premises. • Fencing may be used in certain circumstances.	• Secure Pork Supply Plan • Evaluation of fences for containing feral swine under simulated depopulation conditions

Implement quarantines and movement restrictions for domestic swine premises located within Control Areas	
Key Approaches	**Resources and Tools**
• Domestic pig premises located in Control Areas established due to the detection of infected domestic or feral swine will be placed under quarantine and subject to movement controls.	• USDA APHIS ASF Response Plan, Chapter 4.6: Domestic Response: Quarantine and Movement Control

5. Ensure information flow and management

Record and report domestic pig and feral swine field data using USDA's Emergency Management Response System (EMRS)	
Key Approaches	**Resources and Tools**
• All domestic pig and feral swine data will be loaded into USDA's Emergency Management Response System (EMRS), the system of record for all FAD investigations and incidents. • Both domestic pig and feral swine data will be collected in EMRS to use for outbreak management and data visualization/analysis.	• EMRS Feral Swine ASF Outbreak Datasheet • USDA APHIS Emergency Management Response System • FAD PReP Manual 3-0 Incident Information Management and Reporting • ASF Epidemiological Questionnaire • USDA APHIS ASF Response Plan, Chapter 4.8: Information, Reporting, and Task Management

Utilize EMRS to manage the outbreak and meet national and international reporting requirements	
Key Approaches	**Resources and Tools**
• Internal and external situational reports will be developed using USDA APHIS and State/Territory templates and data within EMRS; public reporting of the outbreak situation will be coordinated between USDA APHIS and regulatory officials in the affected State/Territory. • Use of EMRS will be critical for negotiating and reestablishing trade. • Use of EMRS will be critical to meet international requirements for outbreak management and for the United States to self-declare the entire country, zone, or compartment free of ASF.	• World Organisation for Animal Health Terrestrial Animal Health Code: African Swine Fever • USDA APHIS ASF Response Plan, Chapter 3.4.2: Coordinated Public Awareness Campaign • USDA APHIS ASF Response Plan, Chapter 5: Recovery

6. Identify and maintain resource requirements

Continually assess equipment, supply, and personnel needs		
Key Approaches	**Primary Equipment/Supplies**	**Resources/Tools**

• All resource needs will be identified, evaluated, and monitored by the Incident Management Team(s) (IMT)/ Incident Coordination Group (ICG) and requested through the IMT via EMRS.	• Traps (box, corral, remote operated)
	• Bait
	• Cameras (real-time, remote operated)
	• GPS units/locators
	• Firearms/ammunition
	• Portable vaults for firearms
	• Dogs (scat/carcass detection)
	• Fencing
	• Helicopters, drones
	• Snares
	• GPS collars
	• Garbage/game bags, tarps
	• Carcass disposal equipment/supplies
	• Hydrated lime
	• Sampling supplies
		• USDA APHIS WS optimal culling radius model, evaluation of response measures and estimation of extent of disease spread
		• USDA APHIS WS and local feral swine density estimates
		• USDA APHIS WS evaluation of equipment/supplies to use based on landscape/location
		• USDA APHIS WS evaluation of resource needs
		  ○ Personnel
		  ○ Number of traps/mi^2
		• Carcass aging/decomposition rate
		• Firearm SOPs
		• Feral swine field biosecurity for responders

Additional Resources

USDA APHIS FAD PReP: African Swine Fever

USDA APHIS African Swine Fever Response Plan: The Red Book

USDA APHIS Wildlife Services Feral Swine Distribution Maps

USDA APHIS Wildlife Services: Feral Swine – Managing an Invasive Species

APHIS National Feral Swine Damage Management Program

NAHEMS: Wildlife Management & Vector Control for FAD Response in Domestic Livestock

APHIS Foreign Animal Disease Framework: Roles and Coordination (FAD PReP Manual 1-0)

APHIS Foreign Animal Disease Framework: Response Strategies (FAD PReP Manual 2-0)

APHIS Foreign Animal Disease Framework: Information Management and Reporting (FAD PReP Manual 3-0)

APHIS FAD Investigation Manual (FAD PReP Manual 4-0)

Permitted Movement (FAD PReP Manual 6-0)

Secure Pork Supply

NAHEMS: Continuity of Business

NAHEMS: Biosecurity

NAHEMS: Cleaning and Disinfection

NAHEMS: Disposal

NAHEMS: Health and Safety

NAHEMS: Personal Protective Equipment

NAHEMS: Mass Depopulation and Euthanasia

The FAD PReP mission is to raise awareness, define expectations, and improve capabilities for FAD preparedness and response.
For more information, please go to https://www.aphis.usda.gov/animal-emergencies/fadprep.