

Information Brief: Evaluation of the Swine Hemorrhagic Fevers Surveillance Plan in the U.S. Protection Zone

Introduction

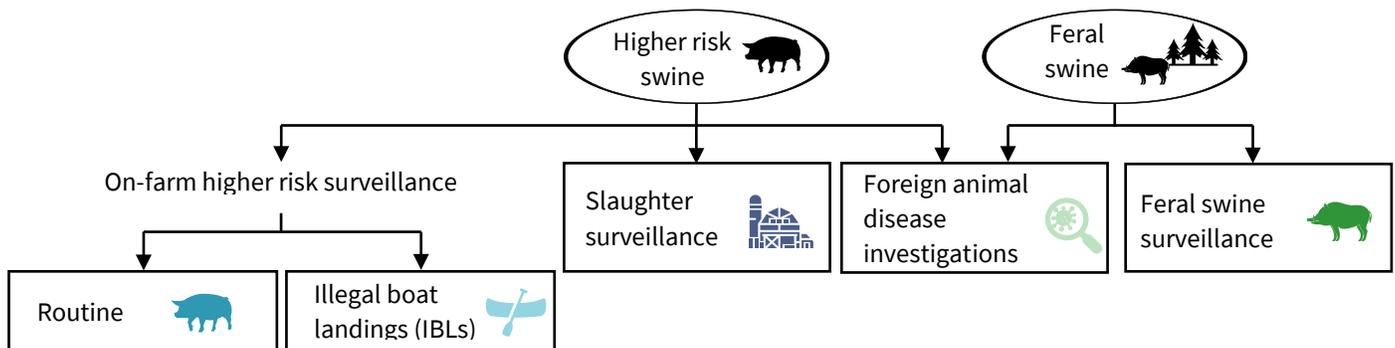
The U.S. Department of Agriculture’s (USDA) Animal and Plant Health Inspection Service (APHIS) maintains the [Swine Hemorrhagic Fevers Integrated Surveillance Plan](#) for African and classical swine fevers (ASF and CSF). Following the detection of ASF in Hispaniola in July 2021, USDA established a Protection Zone (PZ) in Puerto Rico and the U.S. Virgin Islands (USVI) due to the proximity of the Caribbean territories and increased risk for virus introduction. The [declaration of the PZ to the World Organisation for Animal Health \(WOAH\)](#) outlines several elements of enhanced surveillance including increased sampling of higher risk domestic swine, sampling of premises near illegal boat landings (IBLs), and testing of feral swine. Additionally, the USDA established a Federal Order suspending the interstate movement of swine and swine products from Puerto Rico and USVI. The United States, including Puerto Rico and USVI, is currently recognized as free from ASF and CSF.

The surveillance plan has two objectives:

- To strengthen detection capabilities and enhance outbreak preparedness for ASF and CSF
- To support claims of disease freedom from ASF and CSF

Surveillance System Components

PZ surveillance system components capture data from higher risk domestic swine and feral swine:



- **Foreign Animal Disease (FAD) Investigations:** Any sick or dead feral or domestic swine, with clinical signs consistent with ASF or CSF, initiates a FAD investigation.
- **On-farm Higher Risk:** All domestic swine farms in the PZ are considered higher risk. Most farms are small (less than 50 pigs), and many are garbage feeders or raise swine outdoors with risk of feral swine exposure.
 - o **Routine:** Domestic swine are sampled on-farm at all PZ premises every 4–6 months.
 - o **Illegal boat landings (IBL):** Boats often originate from Hispaniola and frequently carry pork products. Surveillance is initiated at all domestic swine premises within 3 km of an IBL.
- **Slaughter:** Domestic swine slaughtered at abattoirs are sampled during weekly visits.
- **Feral:** Feral swine are removed to reduce populations, and adults and sub-adults are sampled.

Evaluation Strategy

APHIS used the [RISKSUR evaluation tool](#) to evaluate data from August 1, 2021, to July 31, 2024. Surveillance components were analyzed for organizational, functional, effectiveness and value attributes. A separate [evaluation for the rest of the United States](#) was completed in September 2023.

By the Numbers

During the evaluation period, USDA tested approximately **14,465** animals in Puerto Rico and **901** animals in USVI for ASF and CSF.



Foreign animal disease (FAD) investigations: **126** animals tested during **26** investigations



Slaughter: **3,689** animals tested



Higher risk – routine: **7,397** animals tested



Higher risk – IBL: **712** animals tested during **394** IBL responses



Feral swine: **3,442** animals tested; **5,631** animals removed

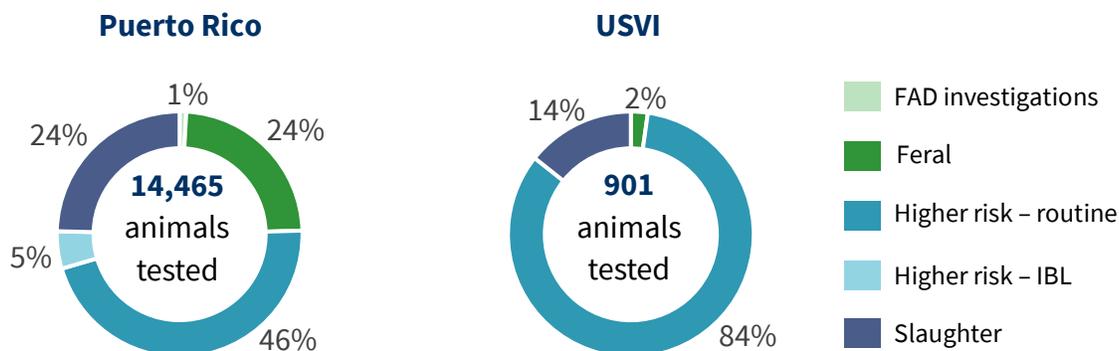


Figure 1. Animals sampled by surveillance component. The number of animals tested for ASF and CSF varied by surveillance system component.

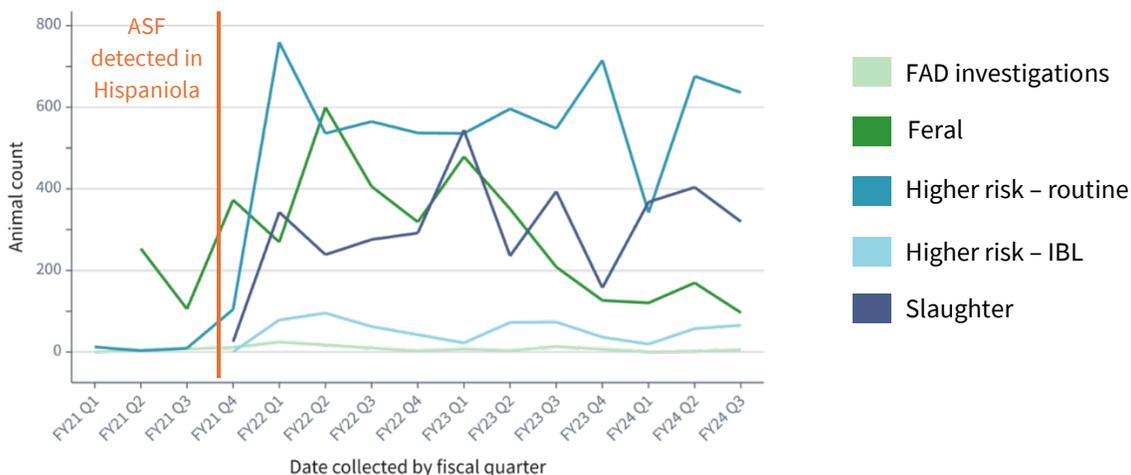


Figure 2. Animals tested per quarter by surveillance component. The number of animals tested for ASF and CSF increased 900% after the establishment of the PZ.

Organizational Metrics

The surveillance evaluation confirmed that effective organization and management practices provided resources necessary for effective surveillance including workforce, equipment, and data management systems. All data from animals tested for ASF and CSF in the PZ are contained in the [Emergency Management Response System \(EMRS\)](#). The use of this singular system enables streamlined data flow into applications for monitoring and epidemiological analyses.

Results emphasized the need to retain trained, skilled, and competent employees. Maintaining consistent staff improves farmer relations, builds trust, and ensures efficient surveillance. Similarly, standardized training for sample collection and data entry is recommended to promote consistency and data accuracy. The evaluation also identified the need to maximize resource efficiency for each surveillance component to maintain disease detection capability. While communication channels exist for necessary information exchange, the lack of regular meetings with all PZ stakeholders limits the coordination of future surveillance updates.

Functional Metrics

The number of animals tested for each surveillance system component remained consistent throughout the evaluation period. An average of 5,120 animals were tested per year. The establishment of the Dorado Laboratory in Puerto Rico enabled rapid, effective surveillance. The addition of pooled blood swabs as an approved sample type demonstrated the system's flexibility. In general, farmers were amenable to APHIS Veterinary Services (VS) and Wildlife Services (WS) staff visits to conduct surveillance and provide recommendations to improve biosecurity. Maintaining farmer outreach and engagement is vital to foster strong relationships that facilitate passive surveillance through the reporting of sick or dead animals. Increased visibility and consideration of incentives may further strengthen these efforts.

Enhanced surveillance in the PZ during the evaluation period used a finite source of funding specifically designated for disease emergencies. Now that ASF is endemic in Hispaniola, the threat of incursion to the United States remains continuous. Sustainable financial and workforce resources are essential to maintain long-term surveillance in the PZ and mitigate the risks of disease incursion.

Effectiveness Metrics

The surveillance plan in the PZ demonstrated excellent domestic swine coverage with year-round, territory-wide coverage. Nearly all farms in the PZ were surveilled 2–3 times per year. Geographic coverage could be improved by expanding feral swine surveillance and IBL response, including detection and waste disposal, to Mona Island in Puerto Rico. This small, uninhabited island, adjacent to Hispaniola, lacks domestic swine but hosts an established feral swine population and IBLs. Expanding IBL coverage to USVI should also be considered. Timeliness from sample collection to testing in Puerto Rico was optimal, averaging 1 day for foreign animal disease investigations and less than 5 days for higher risk, slaughter, and feral components.

Value Metrics

The value of the PZ and its surveillance system is evident in the numerous benefits that it provides, including continuity of trade through supporting claims of disease freedom, improved capacity to respond to an outbreak, and maintenance of a critical level of field and laboratory infrastructure for disease response.

Accomplishments and Future Outlook

The evaluation identified program successes and recommendations to update the surveillance plan in the PZ as outlined below.

Accomplishments:

- Continuous surveillance at nearly all swine premises in the PZ.
- Consistent sample collection from all surveillance system components across time and geographic location.
- Comprehensive feral swine surveillance, feral swine elimination in USVI, and significant population reduction in high-risk areas of Puerto Rico.
- Addition of pooled blood swabs as an approved diagnostic sample type to improve sample collection efficiency in the field and testing efficiency in the laboratory.
- Use of EMRS database as a singular entity for robust data entry and messaging.
- Rapid diagnostic testing through the establishment of the Dorado Laboratory in Puerto Rico within months of ASF detection in Hispaniola.

Future goals:

The risk of disease incursion from Hispaniola remains a continuous threat. Surveillance in the PZ should be sustained through the following goals:

- Transition funding stream from emergency funds to permanent funds.
- Establish a sustainable workforce to maintain PZ surveillance.
- Enhance infrastructure and expand the capacity of the Dorado Laboratory.

Conclusion

This evaluation demonstrates that the Swine Hemorrhagic Fevers Integrated Surveillance Plan in the PZ successfully met the objectives to strengthen detection capabilities and enhance outbreak preparedness and support claims of disease freedom. Maintaining enhanced surveillance, in addition to other PZ activities, mitigates the risk of ASF and CSF introduction to the U.S. mainland and supports continued trade. The recommendations provided in this evaluation will be considered for future revisions of the surveillance plan.

For more information about ASF and CSF surveillance in the United States, please view the [Swine Hemorrhagic Fevers Integrated Surveillance Plan](#).

For information about the RISKSUR framework, please visit the [RISKSUR website](#).