

Aphis National Feral Swine Damage Management Program



Feral Swine Disease & Risk Management
November 18, 2014

Feral Swine - Background

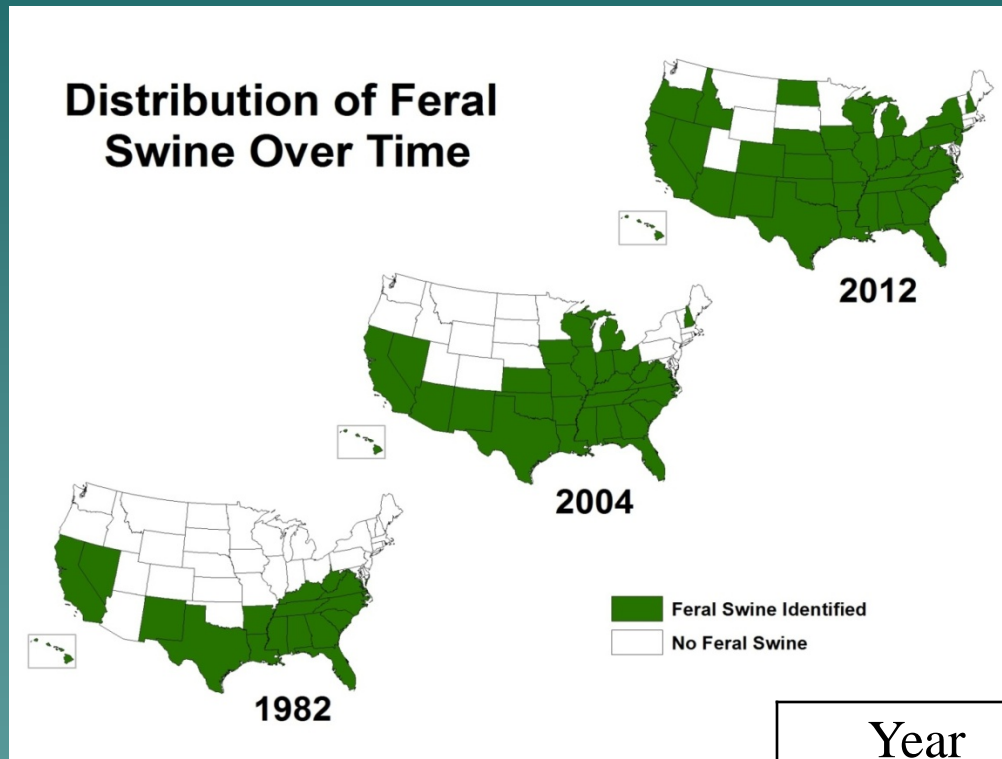
Swine first brought to the United States over from Spain in the 1500's and further introductions have occurred since.



- Habitat Generalists
- Omnivores
- Opportunists
- Range expansion is exacerbated by intentional translocations



Feral Swine - Background



Year	Number of States
1982	17
2004	28
2012	36

Feral Swine – Why Do We Care?

“World’s Worst Invasive Alien Species.”



Photo sanglier porc domestique. Mas images

Feral Swine – Damage/Threats

Damage to Natural Resources



The World Conservation Union, Invasive Species Specialist Group has labeled feral swine as one of the “World’s Worst Invasive Alien Species.”



Feral swine consume large quantities of herbaceous vegetation (3-5% of their body weight daily) and have been linked to 95% declines of understory vegetation in some ecosystems.

Understory species (from arthropods to mammals) decline with the absence of the vegetation.

Feral Swine - Damage/Threats

Damage to Native Plants/Wildlife



In Florida, feral swine have contributed to the decline of at least 22 plant species and 4 species of amphibians listed as rare, threatened, endangered, or of special concern.



Feral swine predation may negatively affect bobwhite quail and wild turkey nest success.

Feral swine are significant predators of threatened and endangered marine turtles (loggerhead, green, leatherback, hawksbill, and Kemp's ridley) feeding on the eggs.

Feral Swine - Damage/Threats

Damage to Crops



Currently, the total aggregate cost of damage caused by feral swine is estimated to be \$1.5 billion annually, with at least \$800 million of this estimate related to direct costs to agriculture.

Field crops commonly reported as damaged by feral swine include corn, grain sorghum, wheat, oats, peanuts, and rice, among others. High value vegetable crops, such as lettuce, spinach, melons, and pumpkins are favorite foods.

Feral Swine - Damage/Threats

Damage to Pastures/Rangelands



In Texas, 72% of county extension agents report damage to ranch facilities, such as fences, water supply, irrigation ditches and guzzlers.

They consume, contaminate, and destroy supplemental feed and mineral sources targeted for livestock.

Wallowing and rooting leads to soil erosion, weakens levees and earthen dams, and increases siltation of ponds and other water sources.

Feral Swine - Damage/Threats

Predation on livestock



Feral swine are documented predators of livestock, primarily calves and lambs, but they occasionally kill adult animals that are vulnerable while giving birth.

In Texas, 33% of county extension agents report livestock predation by feral swine as a significant problem.

Feral Swine - Damage/Threats

Damage to Urban Property



Feral swine in cities, towns, and suburbs often tear up lawns and destroy gardens.

Urban parks and golf courses often receive the brunt of feral swine damage.



Destroyed vegetation and wallows reduces aesthetic value of recreational areas.

Feral Swine - Damage/Threats

Damage to Vehicles

The annual cost of property damage and personal injury associated with feral hog-vehicle collisions in the United States is estimated to be \$36 million

A number of human fatalities from collisions with feral hogs have been reported in the United States during the past few years.



Feral Swine - Damage/Threats

Disease Transmission to Livestock



Diseases of concern include but are not limited to:

Classical swine fever

Pseudorabies virus

Swine brucellosis

Porcine reproductive and respiratory syndrome

Influenza virus

Toxoplasmosis

Trichinellosis

along with many others...



Feral Swine - Damage/Threats

Disease Transmission to Humans



E. coli outbreaks have been linked to feral swine environmental contamination.

A recent study suggests that the prevalence of leptospira species in feral swine may be as high as 30%.



Wildlife Services - Background

The mission of USDA APHIS Wildlife Services (WS) is to provide Federal leadership and expertise to resolve wildlife conflicts to allow people and wildlife to coexist. WS conducts program delivery, research, and other activities through its Regional and State Offices, the National Wildlife Research Center and its Field Stations, as well as through its National Programs.

Wildlife Services has addressed feral swine issues for the past several years

- Operational
- Research
- Disease Monitoring

Wildlife Services: Operational

- WS State Programs generally coordinate their activities with state and local agencies, and private organizations.
- Wildlife Services operational activities vary among states, a few examples include:

Develop BMP

Conduct Disease Surveillance

Consult with government agencies,
companies, & private

Estimate Population Size

Improve tools

Investigate Complaints

Investigate Presence

Outreach and Education

Protect:

Biological Sensitive Areas

Crops

Endangered Species

Protect continued:

Golf courses

Landscapes

Levees

Natural Resources

Native Fauna

Parks

Rangelands

Rural/Urban Interface

School Yards

Timber

Water resources

Wildlife habitat



Wildlife Services: Research

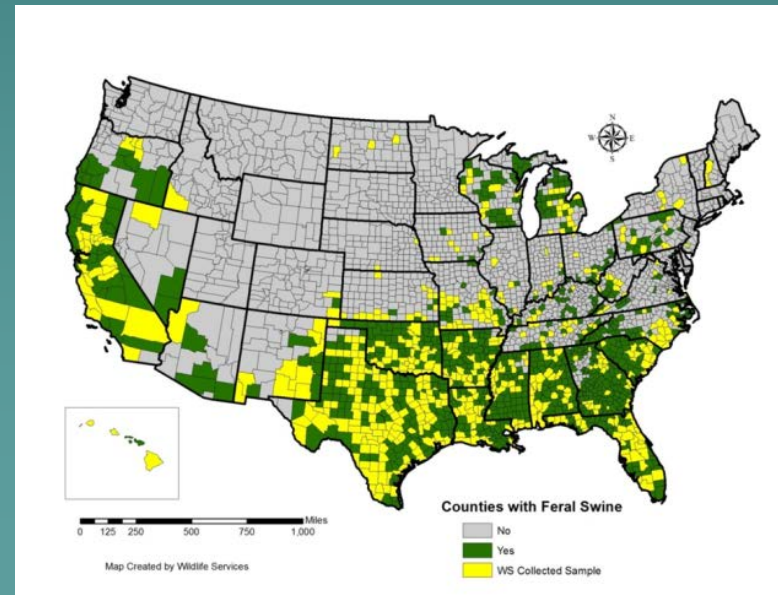
➤ Prior research activities addressing feral swine issues include:

- Activity Patterns
- Economic Impacts
- Environmental Impacts
- Efficacy/Efficiency of Tools & Methodologies
- Fertility Control
- Oral Delivery Systems
- Population Ecology
- Response to Control Activities
- Toxicants



Wildlife Services: Disease Monitoring

WS National Wildlife Disease Program develops procedures and protocols for conducting disease monitoring in feral swine.



Proposed National Plan to Address Feral Swine

- No national strategy currently exists
- Wildlife Services has proposed ideas for a national strategy, but is waiting for additional public comment through the NEPA process before finalizing plans
- Cooperative program

Proposed National Plan to Address Feral Swine

- APHIS serves as a lead federal agency in a cooperative effort with other federal, state, tribal, and local entities that share a common interest in reducing or eliminating problems caused by feral swine
- APHIS will work cooperatively with bordering countries, Canada and Mexico, to support border activities

Proposed National Plan to Address Feral Swine

- The overall objective of the program is to minimize damage inflicted by feral swine
- Specific Objectives
 - Further develop cooperative partnerships with other pertinent federal, state, tribal, and local agencies, and private organizations working to reduce impacts of feral swine to agriculture, natural resources, property, animal health, and human health
 - Expand feral swine management programs nationwide to protect agriculture, natural resources, property, animal health, and human health
 - Expand disease monitoring in feral swine to improve understanding of disease ecology, particularly at the feral swine, agriculture, and human interface

Proposed National Plan to Address Feral Swine

➤ Specific Objectives (continued)

- Develop and improve tools and methods to manage feral swine populations, including field tests to assess efficacy for reducing risks to agriculture, natural resources, property, animal health, and human health
- Develop predictive models for population expansion and economic impacts of feral swine, along with risk analysis to agriculture, animal health, and human health
- Develop outreach materials and activities to educate the public about feral swine damage and related activities to prevent or reduce damage
- Coordinate with Canada and Mexico to ensure awareness of feral swine initiatives and mitigation techniques as appropriate

Proposed National Plan to Address Feral Swine

- APHIS will implement activities to reduce problems associated with feral swine in most states where they are present
- In states where feral swine are emerging or populations are low, APHIS will cooperate with local and state agencies to implement strategies to eliminate them

Proposed National Plan to Address Feral Swine

- Since environmental conditions and laws governing feral swine vary considerably among states, APHIS' strategy is to provide resources and expertise at a national level, while allowing flexibility to manage operational activities from a local or state perspective

Proposed National Plan to Address Feral Swine

- Guidance/oversight
- Activities to focus efforts
 - Control
 - Research
 - Disease Monitoring
- Disperse resources
 - Collaborative Opportunities
 - Build capacity
 - Projects
 - Special Requests



Proposed National Plan to Address Feral Swine

Guidance/oversight

- Program oversight provided by the Wildlife Services Deputy Administrator's Office
- A WS Feral Swine Program Manager serves as the dedicated point of contact for all aspects and serves as lead for three committees:
 - National Multi-Agency Feral Swine Committee
 - APHIS Feral Swine Coordinating Committee
 - WS Feral Swine Steering Committee

Proposed National Plan to Address Feral Swine

Guidance/oversight

National Multi-Agency Feral Swine Committee

- Purpose: Informational Exchange & Agency Coordination
- Status: Collaborating with USDA Invasive Species Council to form the committee
- Discussed committee concept with:
 - U.S. Fish & Wildlife Service
 - National Park Service
 - Association of Fish & Wildlife Agencies
 - Armed Forces Pest Management Board
 - National Resource Conservation Service
 - Forest Service
- Auburn University is taking a lead to develop a National Task Force

Proposed National Plan to Address Feral Swine

Guidance/oversight

APHIS Feral Swine Coordinating Committee

- Purpose: Coordinate among APHIS units; Identify national goals and objectives
- Primary Participation
 - Wildlife Services
 - Veterinary Services
 - International Services
 - Legislative and Public Affairs
 - Policy and Program Development
 - Animal Care?

Proposed National Plan to Address Feral Swine

Guidance/oversight

WS Feral Swine Steering Committee

- Purpose: Coordination among WS units; develop and implement plans to achieve national goals and objectives
- Primary Participation
 - WS Feral Swine Program Office
 - WS Western Region
 - WS Eastern Region
 - WS National Wildlife Research Center
 - AFWA Representatives
- Accomplishments
 - Program approach to meet control and research needs, elimination criteria, aerial support, and special projects
 - Rank WS State Program submitted projects

Proposed National Plan to Address Feral Swine

Activities to focus efforts?

➤ Program components

- Field operations (WS)
- Disease and Population Monitoring (VS, WS, IS)
- Research (WS, VS)
- Planning, Evaluation, and Monitoring (WS, PPD)
- Communication and Outreach (LPA, WS)
- Regulatory Actions (VS, WS)

Proposed National Plan to Address Feral Swine

Activities to focus efforts?

Field operations (WS)

- Select Expected Accomplishments:
 - Baseline capacity to address feral swine in 41 states
 - Eliminate feral from targeted states
 - Stabilize the increase in feral swine damage within 10 years of program initiation (2024)



Proposed National Plan to Address Feral Swine



Activities to focus efforts?

Disease and Population Monitoring (VS, WS, IS)

➤ Select Expected Accomplishments:

- Targeted disease monitoring
- Annually collect biological samples from 2,800 feral swine
- Confirm feral swine populations at county level within 2 years
- Five swine diseases identified by VS: classical swine fever, swine brucellosis, porcine reproductive and respiratory syndrome, swine influenza, and pseudorabies
- WS/NWDP monitoring/investigation of additional diseases
- Work with neighboring countries

Proposed National Plan to Address Feral Swine

Activities to focus efforts

Research (WS, VS)

- Select Expected Accomplishments:
 - Feral swine toxicants and safe delivery systems
 - Economic analysis
 - Genetic markers
 - Risk analysis
 - Reproductive inhibitor



Proposed National Plan to Address Feral Swine

Activities to focus efforts?

Planning, Evaluation, and Monitoring (WS, PPD)

- Select Expected Accomplishments:
 - Complete EIS and State EAs
 - Establishment of strategic monitoring framework or measurement system



Proposed National Plan to Address Feral Swine

Activities to focus efforts

Communication and Outreach (LPA. WS)

- Select Expected Accomplishments:
 - APHIS communication plan
 - Stakeholder Engagement
 - Enhance APHIS' web site for feral swine



Proposed National Plan to Address Feral Swine

Activities to focus efforts

Regulatory Actions (VS, WS)

- Select Expected Accomplishments:
 - Evaluate existing regulations to determine if they are effective in restricting the movement of feral swine (9 CFR 78.30(c))
 - Generate outreach materials on risk associated with feral swine and regulations restricting feral swine movements
 - State agencies must determine what regulations are appropriate for their respective states



Proposed National Plan to Address Feral Swine

Disperse resources

- Collaborative Opportunities
 - Build Capacity
 - Projects (National/State or Local)
 - Special Requests
-
- Each approach has merit
 - Decision was to incorporate aspects of each
 - Funds directed towards meeting national goals
 - Funding distribution is not permanent - annual evaluations with allocations adjusted as success in some areas enable focusing on additional issues

Proposed National Plan to Address Feral Swine

Disperse resources

Collaborative Opportunities

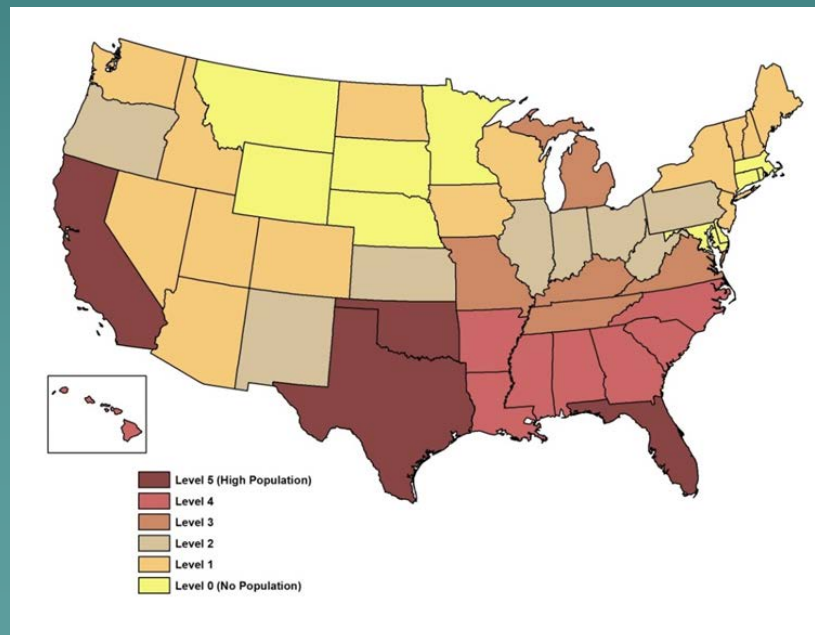
- Historically WS has addressed feral swine issues through cooperative agreements
- Build on existing and develop new collaborations
- Collaborate with other federal, state, tribal, and local entities that share a common interest in reducing or eliminating problems caused by feral swine
- Cost share work where possible

Proposed National Plan to Address Feral Swine

Disperse resources

Build capacity

➤ Baseline funding to WS State Programs



Proposed National Plan to Address Feral Swine

Disperse resources

Projects (National or Local/State)

- Baseline capacity will be supplemented with designated projects to achieve strategic accomplishments
- Projects to be implemented at both the national and state or local level



Proposed National Plan to Address Feral Swine

Disperse resources

- *National Projects*: National projects will be implemented to enable comprehensive coverage of
 - Research
 - Disease monitoring
 - Risk and economic analysis
 - State wide eliminations efforts
 - National outreach and education programs
 - Regional helicopter teams

Proposed National Plan to Address Feral Swine

Disperse resources

- *Local Projects:* Local or state will be generated by WS State Programs to address specific feral swine issues within their respective states
- Support national objectives, but generally on a smaller or more local scale. For example:
 - Eliminate feral swine populations in specified areas (e.g., county level, refuges) within a state
 - Enable collaborative opportunities to work with local stakeholders to address feral swine issues
 - Provide increased protection of local vulnerable resources (e.g., commercial swine facilities, protect endangered or threatened species)

Proposed National Plan to Address Feral Swine

Disperse resources

➤ Special Requests

- Limited Resource Farmers Outreach - 1890 Institutions
- NASS Survey
- Human Meat Consumption - Food Safety Inspection Service
- Disease Training/Brochure - SCWDS
- National Task Force - Auburn University
- K-12 curriculum - Mississippi State University
- Non-lead Ammunition
- National Feral Swine Genetic Archive

Proposed National Plan to Address Feral Swine

Funding FY14

Program Support	Total	\$ 4.1 million	Management
	APHIS		
	WS		
WS State Baseline Capacity:	Total	\$ 7.1 million	Operations
National Components:	Total	\$ 7.5 million	
	VS		Disease/Research
	LPA		Outreach
	IS		Disease
	NWRC		Research
	NFSP		Management
	ATOC		Operations
	Aerial		Operattions
	Special Projects		Operations/Outreach
	Elimination Projects		Operations
	Contingency		Operations
WS State Director Projects:	Total	\$ 1.3 million	Operations
	Grand Total	\$20 million	Feral Swine

Proposed National Plan to Address Feral Swine

Funding FY14

- Funds supporting operational control work

Cooperator Cost Share	\$8,500,000
Cooperator Funds	\$7,400,000
Cooperator In-Kind	\$1,100,000
APHIS Operational	\$11,500,000
Baseline	
Elimination Projects	
Local Projects	
Aerial Support	
Non lead Ammunition	

Summary

Feral swine are a rapidly growing problem in many parts of the United States.

Feral swine inflict damage to natural resources, agriculture, and pose threats to human health.

Issues with feral swine are expected to exacerbate if populations are left unmanaged.

A national plan is needed to effectively address feral swine issues and to halt the increasing problems inflicted by feral swine, but should be implemented at the local level based on local needs.

Summary

Thank you, for the opportunity to present the draft concept of the APHIS National Feral Swine Damage Management Program and to discuss possible opportunities for future collaboration.

Contact Information: Dale Nolte, Program Manager
APHIS National Feral Swine Damage
Management Program
Telephone: 970-266-6049
E-mail: Dale.L.Nolte@aphis.usda.gov

