



JC Griffin
Feral Swine Coordinator
USDA/APHIS/Wildlife Services
30 May 2019

***Human Dimensions,
National Feral Swine
Initiative, and
Approaches to Feral
Swine Management***

**WS Wildlife
Services**

Protecting People
Protecting Agriculture
Protecting Wildlife

Wildlife Services Mission

**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.**



Feral Swine

- Same species, *Sus scrofa*, as domestic pigs
- Descendants of escaped or released pigs
- Other names:
 - Wild boar, wild hog, razorback, piney woods rooter, Russian boar, or Eurasian boar



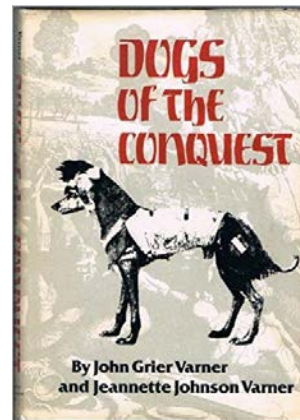
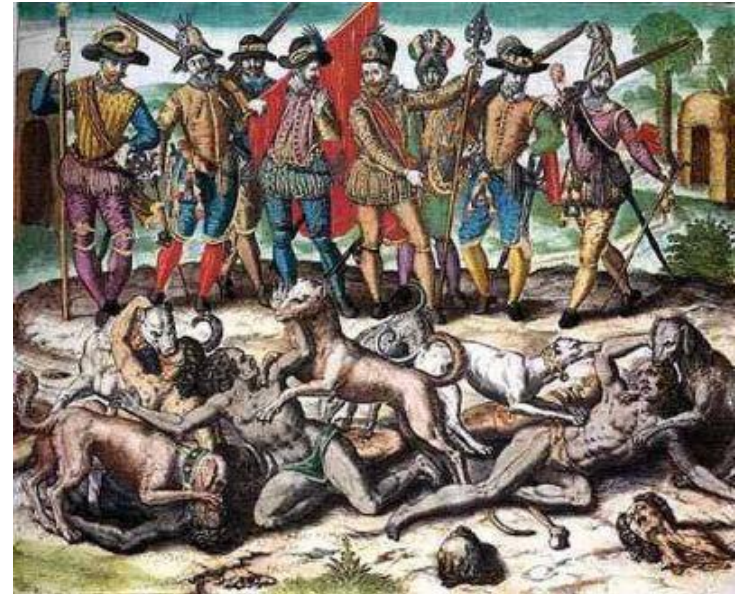
History

- Brought to the U.S. from Spain by early explorers and settlers as a food source
- Christopher Columbus (1493)
 - 8 hogs introduced in West Indies
- Ponce de Leon (1521)
- Hernando DeSoto
 - 1520s he controlled the Nicaraguan Indian slave trade
 - 1532 he was the cavalry captain who conquered the Inca Empire
 - Returned to Spain in 1536
 - 1537 commissioned to conquer Florida and made governor of Cuba



History

- May 1539 came ashore with 620 men, women, and Children, 220 horses, Spanish Mastiff “War Dogs” and 13 pigs.
- Objectives
 - Establish a Spanish colony.
 - Spread the Catholic faith on the North American continent.
 - Given permission to conquer and enslave the natives.
- After wintering near Tallahassee, went on a 3 year, 3000 mile journey
 - Fate of pigs
- Terrifying invisible legacy
 - Swine borne diseases
- Nearly 500 years later



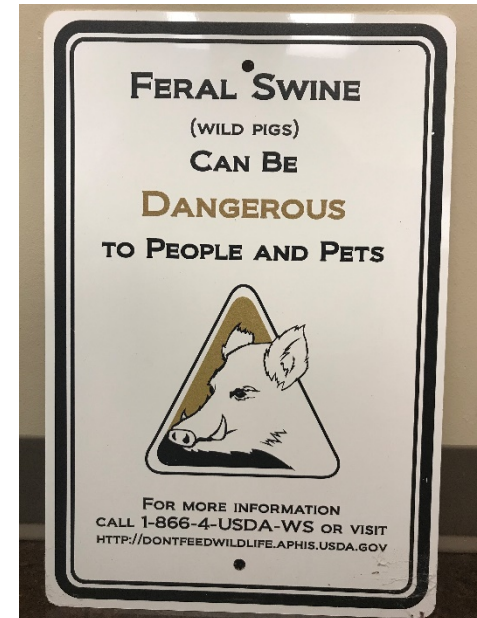
Impacts

- **Estimated \$1.5 Billion each year**
- **Everyone is affected in some way**
 - **Agriculture**
 - **Natural Resources**
 - **Property**
 - **Pets & People**
 - **Cultural and Historic Sites**



Human Dimensions

- **The Enemy**
- **How society views pigs (4 Categories)**
 - **Nuisance**
 - **Resource**
 - **Victim**
 - **Invasive exotic species**



Human Dimensions

■ Nuisance

Frustrated residents seek alternative to shooting 'destructive' hogs



By: Aaron Mesmer, FOX 13 News

POSTED: JUL 09 2018 05:42PM EDT
VIDEO POSTED: JUL 09 2018 06:08PM EDT
UPDATED: JUL 09 2018 06:15PM EDT



Wild pigs plow up yards, plague Flagler neighborhoods

MOST POPULAR

- 1 Authorities investigate Osteen farm with ill people, dead animals
Oct 7 at 9:56 PM
- 2 Daytona Bandshell concert crowd of 5,000 miffs merchants
Oct 8 at 3:24 PM
- 3 I-95 reopens after multiple wrecks kill 1 in Palm Coast



BUY PHOTO

HIDE CAPTION

Alberto Jones looks at damages to his backyard on Blackfoot Court on Nov. 30 after wild hogs tore through several areas of Palm Coast's Woodlands neighborhood. [News-Journal/Matt Bruce]

Human Dimensions

- **Resource**
 - **Hunters**
 - **Rancher & Farmers**



Human Dimensions

■ Victim

“It was like Vietnam outside my house.”



The screenshot shows a news article from WINK 11. The header includes navigation links for Sports, Lifestyle, WINK, Weather, Election, and Investigations, along with a search bar. The main headline reads "USDA Residents nervous after helicopters used to shoot wild hogs in Charlotte County". The article is by Kristi Gross, dated 10/14/2018, and is categorized under "Environment". The text describes how the USDA is using helicopters to hunt wild hogs in the Rotonda West neighborhood of SWFL. A resident, Carol Abarbanell, shares her experience, stating that the noise and gunshots made her feel like she was in Vietnam. The article includes a small photo of a person looking out a window and a "grille now" logo at the bottom left.

Sports Lifestyle **WINK** Weather Election Investigations

USDA

Kristi Gross

10/14/2018 6:04 PM EDT
5:07 PM EDT

Environment -

Residents nervous after helicopters used to shoot wild hogs in Charlotte County

The USDA is using helicopters to search for wild hogs and shoot them down.

Hogs can be a big issue if their population is not controlled. And it's happening around one community in SWFL.

A normally quiet Sunday morning in a Rotonda West neighborhood was suddenly interrupted by the sounds of a low-flying helicopter and gun shots.

"It was like Vietnam outside of my house," said Rotonda West resident Carol Abarbanell.

Abarbanell says she ran outside to see what was going on.

"I grab my binoculars and look up and there's a long gun that a man is holding, shooting. Pop, pop, pop for about a minute and a half just shooting bullets into the ground," she said.

grille now

Human Dimensions

- **Invasive Exotic Species**



Human Dimensions

- **Challenges we face**
 - **Diversity of opinion/cultural importance**
 - **Private property (70%)**
 - **Lack of funding**
 - **Identify ways to work together**



Our Roles

- To combat these threats
 - What are we currently doing, and how can we work together?
- The Players
 - FLDEP – Tip of the Spear
 - DOD
 - FWC
 - History
 - Increased hunting opportunities
- U.S. Forest Service
- USFWS
- Universities
- Water Management Districts, National Parks & Seashores, etc.
- USDA



National Feral Swine Initiative

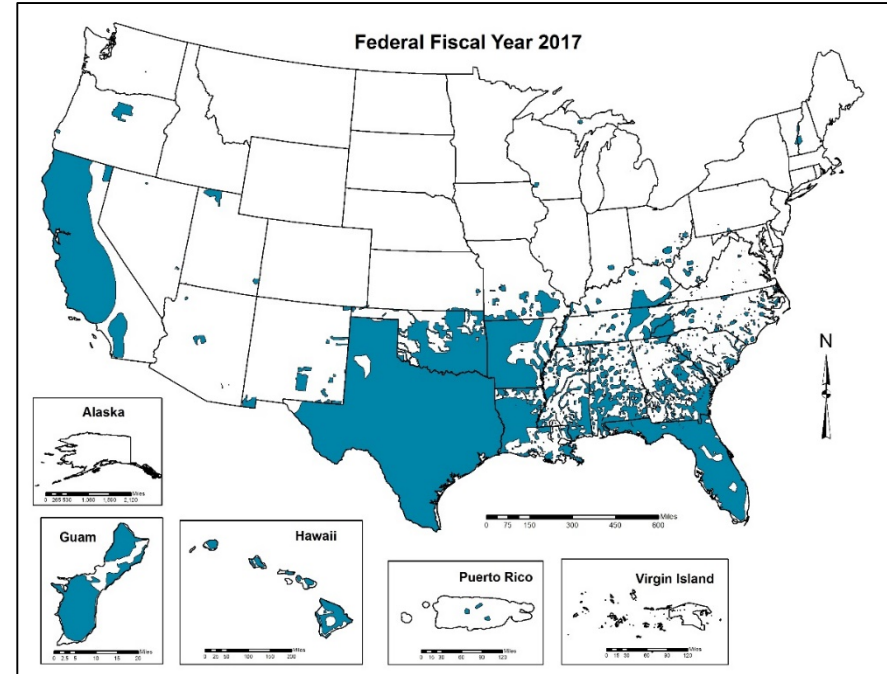
This is an APHIS program - led by Wildlife Services

In March, 2014 APHIS began receiving \$20 million annually to implement a collaborative, national feral swine management program in states where there was a recognized feral swine population.

Primary Goal: Minimize damage caused by feral swine to protect agriculture and livestock, natural resources, property, and human health and safety.

Accomplished by:

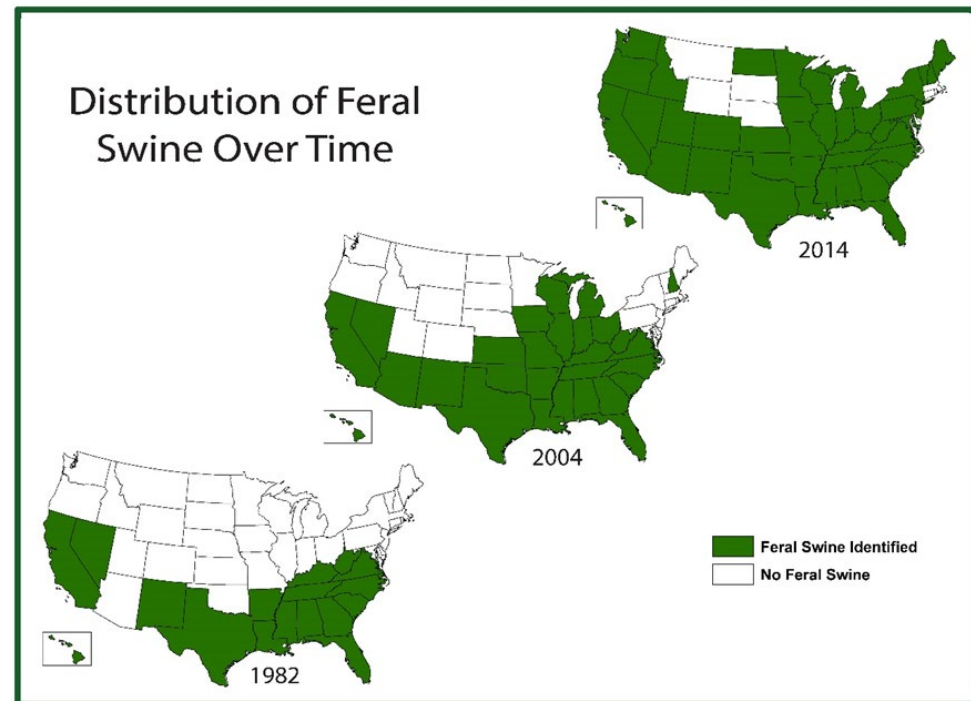
1. Suppressing populations in states where feral swine populations are large and widely distributed
2. Eliminating feral swine in states where populations are low or newly emerging



Feral Swine Expansion

- By 2014, 6 million feral swine in 41 states

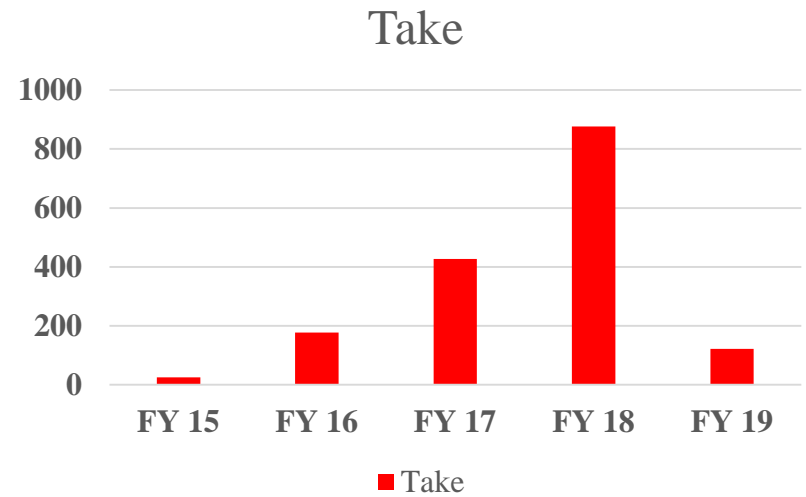
Year	# States
1982	17
2004	28
2014	41
2017	35
2018	34



National Feral Swine Initiative

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		Operations
	Special Projects		Operations/Outreach
	Elimination Projects		Operations
	Contingency		Operations
WS State Director Projects:	Total	\$ 1.3 million	Operations
	Grand Total	\$20 million	Feral Swine

Aerial Gunning



Aerial Gunning Operations

- **General Protocol is straight-forward**
 - **A pair, 1 certified pilot and 1 gunner**
 - **Conduct low-level (<500 ft AGL) search patterns**
 - **Able to look straight down to easily identify targets (no non-target species have been taken in the history of the program)**
 - **12 gauge shotguns**
 - **Only conduct ops where we have been given written permission**
 - **Work Initiation Document**
 - **Use GIS mapping and GPS flight tracking**



Disease Surveillance

- **Sampling for 3 national diseases of concern for Agricultural Industry**
- **Swine Brucellosis (SB) - bacteria that causes abortions, lameness, paralysis of hind limbs, abscesses**
- **Pseudorabies (PRV) – virus that causes paddling, respiratory distress, death**
- **Classical Swine Fever (CSF) – virus that causes fever, abortion, bleeding, skin discoloration, death**
 - **Foreign animal disease, eradicated in US in 1978**



Disease Surveillance

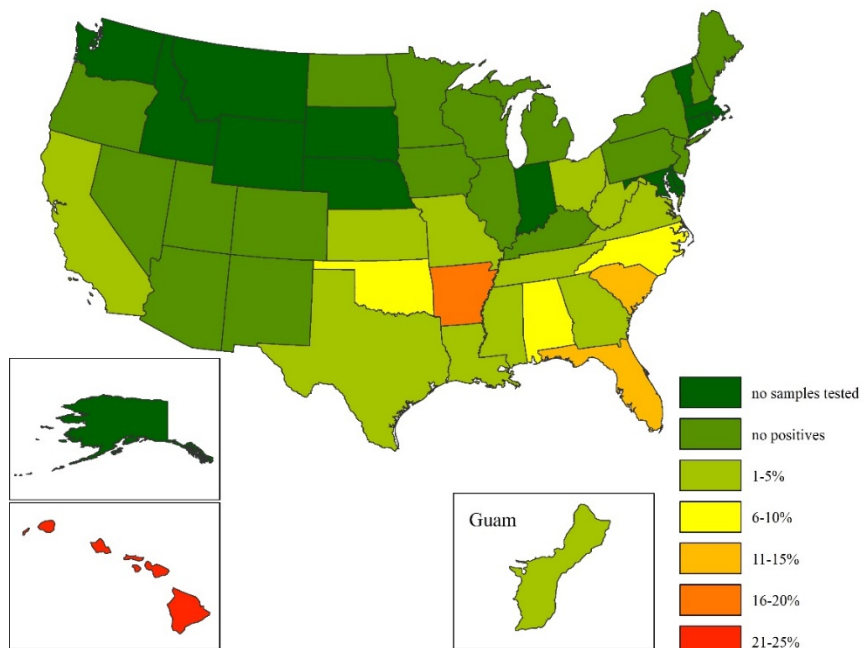
National level prevalence

CSF 0% (n=2937)

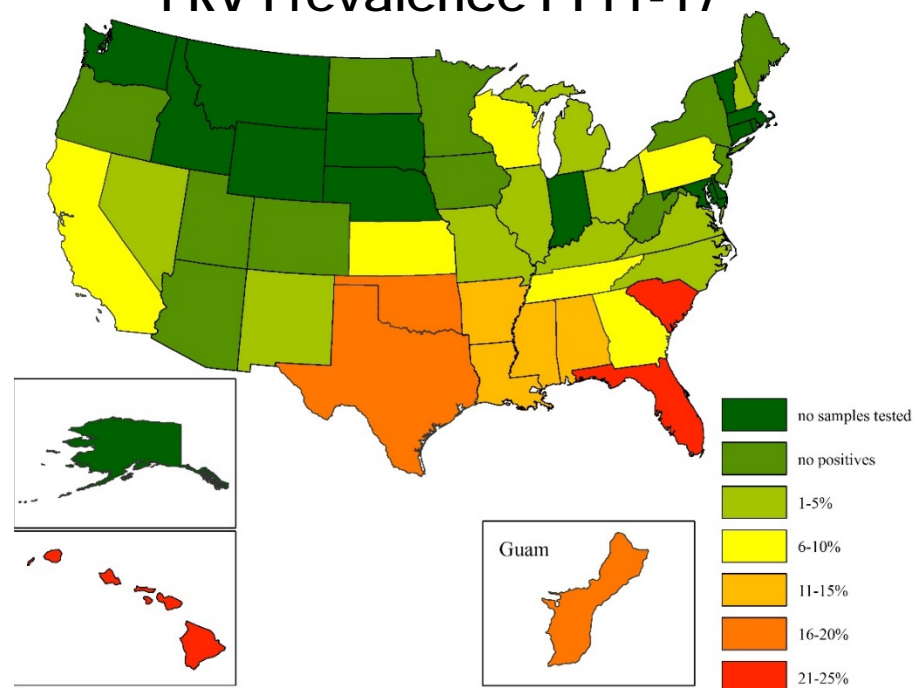
PRV 19.0% (n=2890)

SB 5.5% (n=2981)

SB Prevalance FY 11-17



PRV Prevalence FY11-17



Research Component

Toxicant Development

- **Sodium Nitrite** – active ingredient, food product/preservative for curing meat
- **Bait formulation** – black peanut paste with crushed grains
- **Safe delivery system** – bait boxes, 30 lbs. of resistance to open lids
- **A registration package was submitted to EPA for anticipated use of the product by 2020**

Methemoglobinemia – reduced ability of blood to transfer oxygen to tissues



New Approach to Feral Swine Management

- **Way of thinking constantly evolving**
- **Keys to success**
 - **Know your enemy**
 - **Wild pigs are highly intelligent and educate easily**
 - **Social bonds**
 - **Reproductive potential**
 - **Removal of entire sounders**
 - **Adult sows**
 - **No one left to educate**
- **You gotta get TACTICAL!!**



New Approach to Feral Swine Management

- **Patience, Pre-Baiting, Discipline!**
- **Every property is different and will present its own challenges but you have to understand how to select bait sites**
- **Establish at least 2-3 bait sites for every trap you have**
- **Be aggressive**
- **Gather intel**
 - **Cameras are critical to success**
 - **Key to making tactical decisions**



Tactical Decision Making



Tactical Decision Making



Tactical Decision Making



Traps



Traps



Traps



Remote Triggered Gates







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BUILDING A BETTER HOG TRAP



**WS Wildlife
Services**

Protecting People
Protecting Agriculture
Protecting Wildlife









BOCC BISS









Tactical Approach

- **Get Aggressive but find balance by making disciplined decisions**
 - **Bigger corrals**
 - **More gates**
 - **More bait**
 - **More bait sites**
 - **Establish sanctuary zones around your bait sites**
 - **Always be prepared to be opportunistic**
 - **Keep moving!**

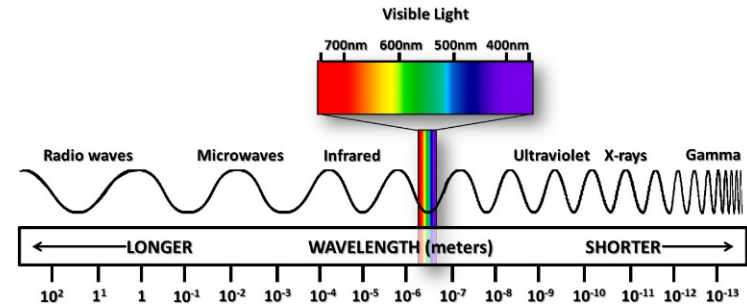


Snaring



Thermal

- **Electromagnetic spectrum**
 - **IR requires technology to see it (Germanium)**
 - **Infrared (near-IR, mid-IR, and thermal IR)**
 - **Emitted vs. Reflected**
 - **Captures light emitted by heat**
 - **Hot vs cooler objects**
 - **Transfers image to a monitor**



Thermal

- **Applications**

- **Stand alone weapon sight or clip-on**
- **Thermal imaging monocular**
- **Open habitat (Ex. Ag)**



- **First Rule of Firearm Safety**

- **Use a thermal monocular or night vision goggles**



Night Operations

- Night vision applications
 - IR laser
 - Walk and hunt
 - Use to drive blacked out
 - Best if someone else scans with thermal monocular
 - Holographic sights
 - Cellular cameras and bait sites



Conclusion

- **Integrated Wildlife Damage Management Approach (IWDM)**
- **Respect your opponent**
- **Patience, Pre-baiting, Discipline**



Contact Information

JC Griffin

Certified Wildlife Biologist®

Florida Feral Swine Coordinator

USDA/APHIS/Wildlife Services

John.C.Griffin@usda.gov

(352) 262-1360

Questions/Comments

