



**California Fish and Game Commission  
California Department of Fish and Wildlife**

# **Wild Pigs in California: An Overview**

**Presented at the Wild Pig Forum**

**September 22, 2022**

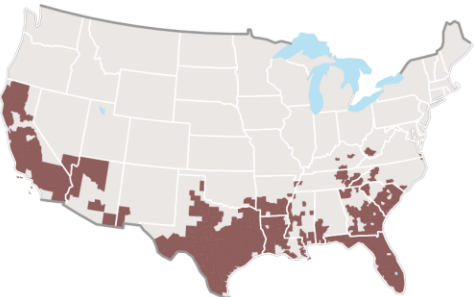
# Wild Pig Range Expanding



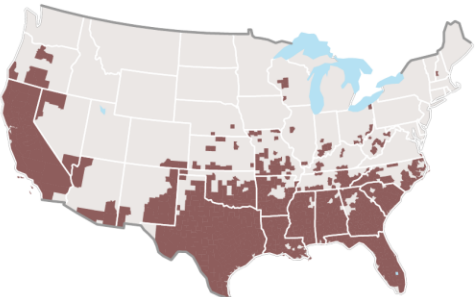
1982  
Present in 544 counties



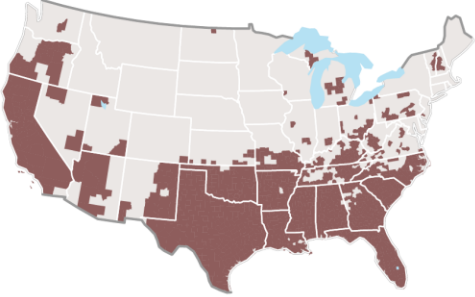
1988  
564 counties



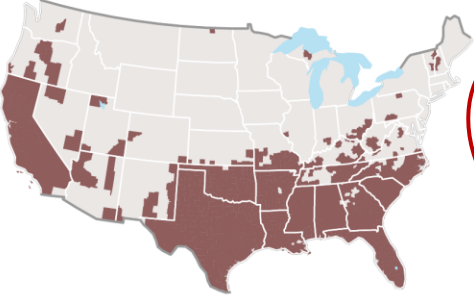
2004  
1,081 counties



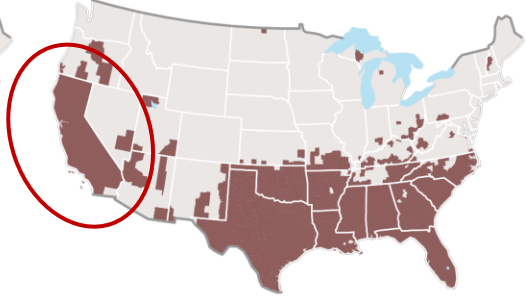
2016  
1,319 counties



2018  
1,860 counties

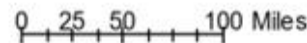


2020  
1,915 counties



Data shown is for the contiguous United States. Feral pigs are also present in Hawaii and Puerto Rico. Alaska has no established population.

KATIE ARMSTRONG, NG STAFF. SOURCE: USDA



# Wild Pig Quick Facts

- Estimates range: 200,000 to 400,000 in California
- Female estrus every 21 days (5-6 piglets per litter)
- Mostly nocturnal
- Omnivores - Eat almost anything
- Habitat generalists
- Non-native in California
- Phenotypic variation



# Wild Pig Phenotypes



In California, "wild pig" includes feral pig and European wild boar.



# Forum Discussion

- Wild Pig "Issues"
  - Domestic Animal Health
  - Wildlife Health
  - Ecosystem Health
  - Economic Impacts
- Wild Pig "Solutions"
  - Wild Pig Damage Management
  - Consumptive / Non-consumptive Activities
  - Requires Comprehensive Approach



# California Department of Food and Agriculture

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- Animal Health and Food Safety
- Animal Health Programs
- Domestic Livestock Disease Programs (Status)
- Education
- Questions



# Protecting Animal Health

## California Department of Food & Agriculture

**Animal Health & Food Safety Services Division**  
Director & State Veterinarian:

### **Branches of the Division**

- 1. Animal Health Branch**
2. Bureau of Livestock Identification
3. Meat, Poultry and Egg Safety Branch
4. Milk & Dairy Food Safety Branch
5. Antimicrobial Use and Stewardship
6. Animal Care

\*California Animal Health and Food Safety  
Services Laboratories

# Animal Health



- **Programs focus on livestock and poultry health:**
  - Animal disease surveillance programs
  - Animal disease traceability program
  - Animal disease emergency response planning
  - Equine medication monitoring program
  - Domestic-wildlife interface program
- **Laboratories providing diagnostic testing support for programs include:**
  - California Animal Health and Food Safety Laboratories (CAHFS) – in Davis, Turlock, Tulare, San Bernardino
  - Private diagnostic laboratories
  - Private practitioner testing services





# Domestic-Wildlife Interface Program



- **Disease mitigation and other animal health threats impacting multiple species**
  - Partnership with other agencies, agricultural programs, institutes or schools UC or CSU
  - Collaborations/project development for detection, evaluation and disease control
  - Veterinary support to AHFSS wildlife disease management and relevant activities (EIR)
  - Planning, coordination and analysis of animal health surveillance and disease mitigation activities with a focus on domestic-wildlife interface
  - Training and Education



# California's Animal Agriculture Domestic Livestock Populations



~275 million chickens



~14 million turkeys



1.75 million dairy cattle



~655,000 beef cows



570,000 sheep



130,000 goats



~550,000 horses



95,000 swine



# Animal Health Status of Programs

Cattle Brucellosis	Swine Brucellosis*	Swine Pseudorabies*	Bovine TB	Cervid TB	Scrapie
Free	Free	Stage V	Free	MA	Consistent

\* Detections in wild pigs through serology surveillance in CA.

# Large Scale Disease Outbreaks

## Foreign Animal Disease Outbreaks

- Foot and Mouth Disease
- Swine Hemorrhagic  
Diseases African Swine Fever and  
Classical Swine Fever



*Protecting Animal Agriculture*

# PRV/SB Domestic and Feral Swine

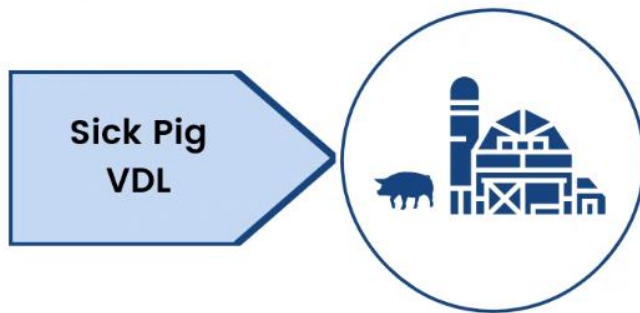
- **Free** Swine Pseudorabies and Brucellosis
- **Cooperative Surveillance Programs**
  - Swine Pseudorabies- 2001 (Free)
  - Swine Brucellosis -1980 (Free)
  - African Swine Fever (No occurrence)
  - Classical Swine Fever – 1970 (Free)
- **Targeted Domestic Swine Surveillance**
  - High Risk: FSIS Condemned at Slaughter
  - Culled Sows and Boars at Slaughter
  - On Farm Testing
  - Waste Feeders
- **Feral Swine Testing (USDA WS)**
  - Pseudorabies detected in 16 counties
  - Swine Brucellosis detected in 9 counties



# ASF-CSF Domestic and Feral Swine Swine Hemorrhagic Diseases

## Surveillance System Components

Large Commercial Swine



Feral Swine

Foreign Animal  
Disease  
Investigations



Higher Risk Swine

Slaughter/  
Aggregation  
point



APHIS

- CEAH, November 2021

# ASF-CSF Surveillance Report

## California Executive Summary FY2019-FY2022

### ASF & CSF Executive Summary

State  (All)

[View Dashboard Quick Guide](#)

Contact [CIS.Dashboard.Swine@usda.gov](mailto:CIS.Dashboard.Swine@usda.gov) with any dashboard questions

#### Objective 1: To strengthen detection capabilities and enhance outbreak preparedness for ASF and CSF

Test high-volume sample collection, laboratory capacity, and data management capabilities prior to an outbreak scenario.

Provide timely and consistent surveillance in order to establish a baseline of disease absence.

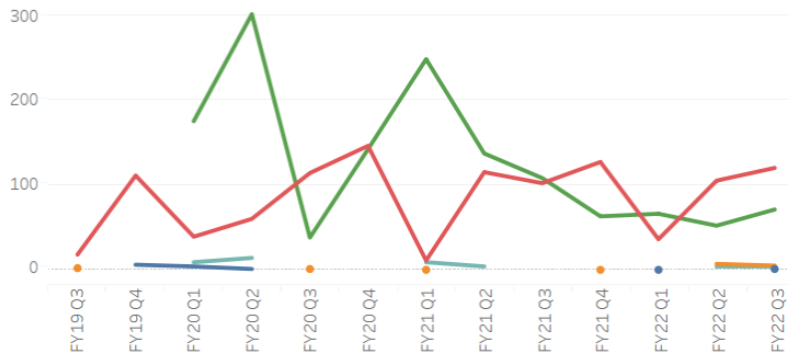
#### Objective 2: Support claims of disease freedom for ASF and CSF

Establishing historical data through diagnostic testing of targeted subpopulations of swine collected via five mechanisms:

- Sick Pig Veterinary Diagnostic Lab (VDL) Component
- Slaughter or Aggregation Point Component
- Higher Risk Component
- Feral Swine Component
- Foreign Animal Disease Investigations

#### Specimens Collected

*Hover over each line for specific information*



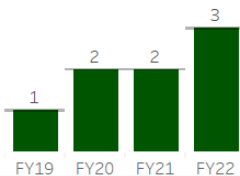
Dual ASFv/CSFv active surveillance specimens collected: **1,416**

CSFv active surveillance specimens collected: **1,167**

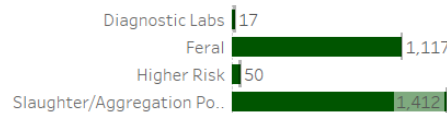
Note: Feral swine samples were only tested CSF through July 2021.

- Diagnostic Labs
- FAD Investigation
- Feral
- Higher Risk
- Slaughter/Aggregation ...

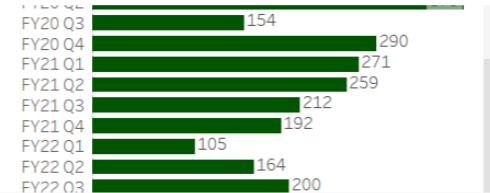
#### Foreign Animal Disease Investigations



#### Surveillance component specimen totals for selected quarters



#### Quarterly specimen totals across all surveillance components



# Education

## Areas to Maintain and or Increase

- **California Reportable Conditions**
  - Conditions which pose or may pose significant threats to:
    - ✓ **Animal Health**
    - ✓ **Environment**
    - ✓ **Food Supply**
    - ✓ **Public Health**



# Education

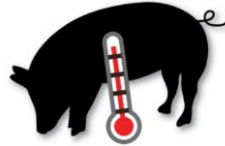
## Areas to Maintain and or Increase

- **Wild Pig: Feral swine mitigation**



- ✓ Provide educational opportunities and/or materials to stakeholders
- ✓ Materials to identify risks and solutions to at-risks groups

- **Food Waste Feeders:**



- ✓ Risks of feeding uncooked food waste to swine
- ✓ Searches of illegal garbage feeding

- **Risks of importing illegally contaminated meat products**

**AFRICAN SWINE FEVER**  
Don't Pack a Disease

# Resources



**Report Feral Swine**  
Feral swine can carry foreign animal diseases like African Swine Fever. While this disease has never been found in domestic or feral swine in the United States, there is no treatment or vaccine for it. That's why surveillance is very important. Help find feral swine by immediately reporting sick or dead feral swine.

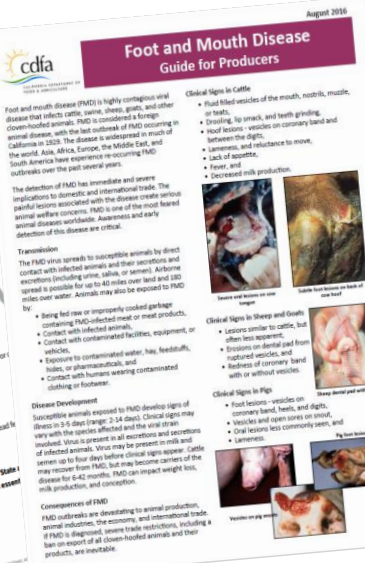
**African Swine Fever**  
Report Sick Pigs 866-536-7493

African Swine Fever (ASF) is a virus that affects both domestic and wild pigs. It spreads very quickly and is not curable. In the United States, it is a threat to our swine. It is a highly contagious disease that can be spread from pig to pig.

**What To Do**

- If you find a sick or dead feral swine with no obvious injury or a clear cause of death, report it right away.
- Don't disturb the carcass or approach it closely.
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**How to Report**  
Call the ASF Hotline Services program in your State:  
866-536-7493. Don't waste time. Quick detection is essential to prevent the spread of African Swine Fever.



**Foot and Mouth Disease Guide for Producers**

**Clinical Signs in Cattle**

- Fluid filled vesicles of the mouth, nostrils, nostrils, or hooves.
- Drooling, listlessness, and teeth grinding.
- Mouth lesions: vesicles on coronary band and between the digits.
- Lameness, and reluctance to move.
- Lack of appetite.
- Fever and
- Increased milk production.

**Clinical Signs in Sheep and Goats**

- Foot lesions: vesicles on hooves.
- Lesions similar to cattle, but often less severe.
- Disposition on cattle pad from nostrils, nostrils, and
- Lameness with or without vesicles.

**U.S. pig free aid**  
How to help the US, and to protect



**African Swine Fever Protect Your Farm Using Biosecurity**

**What's Biosecurity?**  
Biosecurity refers to all measures taken to keep diseases and pathogens that carry them—viruses, bacteria, fungi, parasites, and other micro-organisms—away from livestock, property, and people.

**People can spread disease without knowing it.**  
To keep your pigs strong, biosecurity practices on your farm—day, every day.

- Review existing biosecurity plans with an accredited veterinarian, an update or improve if needed. No plan? Make one and follow it.
- Make sure anyone who comes to your farm—visitors and visitors—knows and follows your biosecurity plan.

**Know Who & What Is On or On Your Farm Don't let anyone carry disease onto your farm.**

- Limit on-farm traffic as much as possible.
- Keep detailed records of all people, vehicles, and equipment at your farm and all pig production facilities.
- Clean and disinfect all equipment and vehicles entering or leaving your farm.
- Isolate sick pigs from the herd, and keep them away from visitors.
- Ask visitors about recent international travel. Don't let anyone in from an African pig-affected country, even if only your farm last 5 days after returning to the United States.
- Make sure visitors wear clean clothes and shoes at all pig production facilities and farms.



**Classical Swine Fever Hog Cholera**

**Report Sick Pigs 866-536-7493**

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**African Swine Fever Don't Bring It Home**

International travelers could carry this disease into the United States... without knowing it. Take these steps to help keep U.S. pigs safe:

- **Understand the Risk**  
• African swine fever can be carried on clothing, shoes, and hands.
- It can also survive for months in pork products.
- **Declare Items and Farm Visits**  
• Declare any personal items you bring to the U.S. Customs when re-entering the country.
- **Take Extra Precautions When Visiting Farms Abroad**  
• If you visit any farm outside the United States, follow the farm's biosecurity procedures.  
• Wear a specific footwear and coveralls/clothing, and dispose of wash and clothes before leaving the farm. If this plan is preferred, returning to the U.S. with clean clothes and shoes.  
• When you return to the United States, don't enter a farm or other location with pigs (including livestock, markets, zoos, circuses, and pet stores with not well pigged) for at least 30 days.



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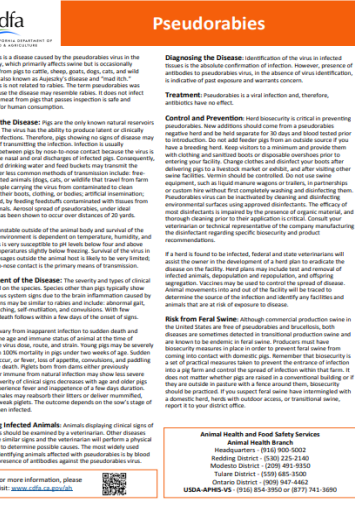
**Biosecurity Tips Swine Exhibition**

The Animal Health Branch (AHB) recommends that swine exhibits, when possible, be terminal events. Any time animals from different sources have direct animal-to-animal contact, there is a risk they may transmit disease to each other and if returned home, carry the diseases back to their herds and home premises. Contaminated people, animal housing and bedding, feeding and grooming equipment, transportation vehicles, or other objects that come in contact with animals or their bodily fluids or excretions may indirectly transmit disease. Indirect transmission of disease may also occur through airborne spread by insects, such as flies, aerosols, and dust. Potential routes of direct and indirect disease transmission should be considered when developing a biosecurity plan for exhibiting swine. If the same exhibition is not a terminal event, strict biosecurity guidelines are recommended to minimize the likelihood of disease transmission.

Ideally, the exhibition of swine breeding stock should be a separate event from a market swine exhibit, if exhibitors include both classes of swine, disease transmission can be minimized if the breeding animals are removed from the premises before market animals arrive. If both classes of swine are present on the same time, strict biosecurity should be placed on enhanced biosecurity.

**Biosecurity Before Exhibition**  
Prior to the fair or exhibition, procedures such as blood sample collection, weighing animals, and ear tagging for identification should be performed without the commingling of swine from different premises. Two effective methods to complete tasks without contacting swine are:

- **Organize community days with traveling "procedure crew"** members who work on the animals to be shown at their home premises.
- **Transport** show animals to a centralized procedure location maintaining separation of animals from different facilities.



**Pseudorabies**

**Diagnosing the Disease**—Identification of the virus is referred to as the disease confirmation of infection. However, presence of antibodies to pseudorabies virus, in the absence of virus identification, is not a reliable indicator of disease.

**Treatment and Prevention**—Pseudorabies is a viral infection and, therefore, cannot be cured. However, it can be prevented.

**Risk from Feral Swine**—Although commercial production swine and feral swine are not in direct contact, feral swine can spread disease to commercial production swine via their feces, urine, or saliva.

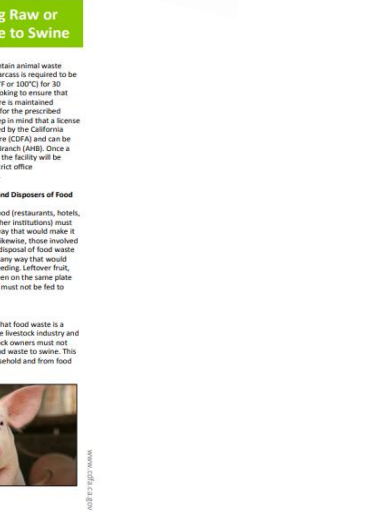


**Risks Associated with Feeding Raw or Improperly Cooked Food Waste to Swine**

Food waste feeding to swine is also commonly known as garbage feeding or swill. In Spanish, it is known as *Almuerzo*, *Lavada*, *Descarte*, *Frígoles*, *Fritados*, and *Sobras*. Feeding raw or improperly cooked animal food waste to swine can spread disease to swine and create a risk of introducing devastating foreign animal disease.

**What is Food Waste?**  
Food waste includes food waste, kitchen, or table scrap, garbage, and swill, and all food residuals discarded after serving. It can be defined as any edible material or by-product that is generated in the production, processing, transportation, distribution, or consumption of food.

**Disease Risk**  
Bacteria that are present in untreated food waste can cause disease that may spread to other livestock or humans. Illegally imported animal products, such as meats and feedstuffs, could cause outbreaks of foreign animal diseases such as foot and mouth disease, African Swine Fever, African Swine Fever, swine vesicular disease, pseudorabies (Aujeszky's disease), brucellosis, tuberculosis, and transmissible gastroenteritis. If fed to swine without being properly cooked, Other public health agencies of concern that could be present in food waste from animal products are *Salmonella*, *Campylobacter*, *Trichinellosis*, and *Toxoplasmosis*.



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Thank You



# **Economic Impacts on Farms and Ranches**

Thursday, September 22

Katie Little, Policy Advocate  
CA Farm Bureau

# CA Agriculture Stats



- California has nearly 70,00 farms throughout the state
- Agriculture economy supports 1.2 millions jobs
- California is the top agricultural state in the nations (in cash receipts)
- Top 5 commodities:
  - Dairy Products
  - Grapes
  - Almonds
  - Cattle and Calves
  - Strawberries

<https://www.cdfa.ca.gov/statistics/>

# Estimated Damages



- Researchers surveyed California natural lands managers to gain an estimate of wild pig damage and found that during the three years included in the survey wild pig management costs reached over \$11 million.
- Estimates vary, but one survey of California's Agricultural Commissioners found damage to agricultural crops, fencing, roads, and trails reached \$1.7 million for one year.

# Damages Cont.



- Damage from wild pigs includes soil compaction, damage to native plants, reduced water quality, and impacts on other species including other game species, in particular, on deer and wild turkeys.
- In addition to the damage, wild pigs present a very real food safety risk. The E. coli 0157:H7 strains from people sickened in the 2006 spinach outbreak matched those found in wild pigs on the farm growing the contaminated spinach

# Common Issues



- Where there are feral hogs, there are threats to farming and ranching. These animals will eat and uproot almost any crop.
- Vegetables, nut and fruit crops are favorites.
- Pastureland makes an inviting place for herds to wallow, killing desired perennial grass species that provide feed to livestock.
- Damaged pastures and rangeland increase operational reliance on outside feed sources, increasing farm input costs and decreasing overall land value.



# Wild Pigs Burrowing into newly planted rows



# Impacts on Livestock



- Disease transmission is the primary threat feral swine pose to livestock. Disease outbreaks spread by feral swine can be difficult and costly to manage and constitutes a significant economic risk. While foreign animal diseases, such as foot-and-mouth disease and African swine fever, are currently absent in the United States, there is a growing concern that feral swine could spread these diseases, resulting in potentially devastating impacts to the livestock industry.

**Katie Little, Policy Advocate**  
**[klittle@cfbf.com](mailto:klittle@cfbf.com)**

# USDA APHIS WS – Wild Pig Control

<http://www.aphis.usda.gov/ws/ca>



**Dennis Orthmeyer - State Director**



Protecting People | Protecting Agriculture | Protecting Wildlife

# Agricultural Damage

<http://www.aphis.usda.gov/ws/ca>

## Estimated \$1.5 Billion Annual Damage

**Row Crops** - Corn, oats, wheat, soybean, peanuts, rice

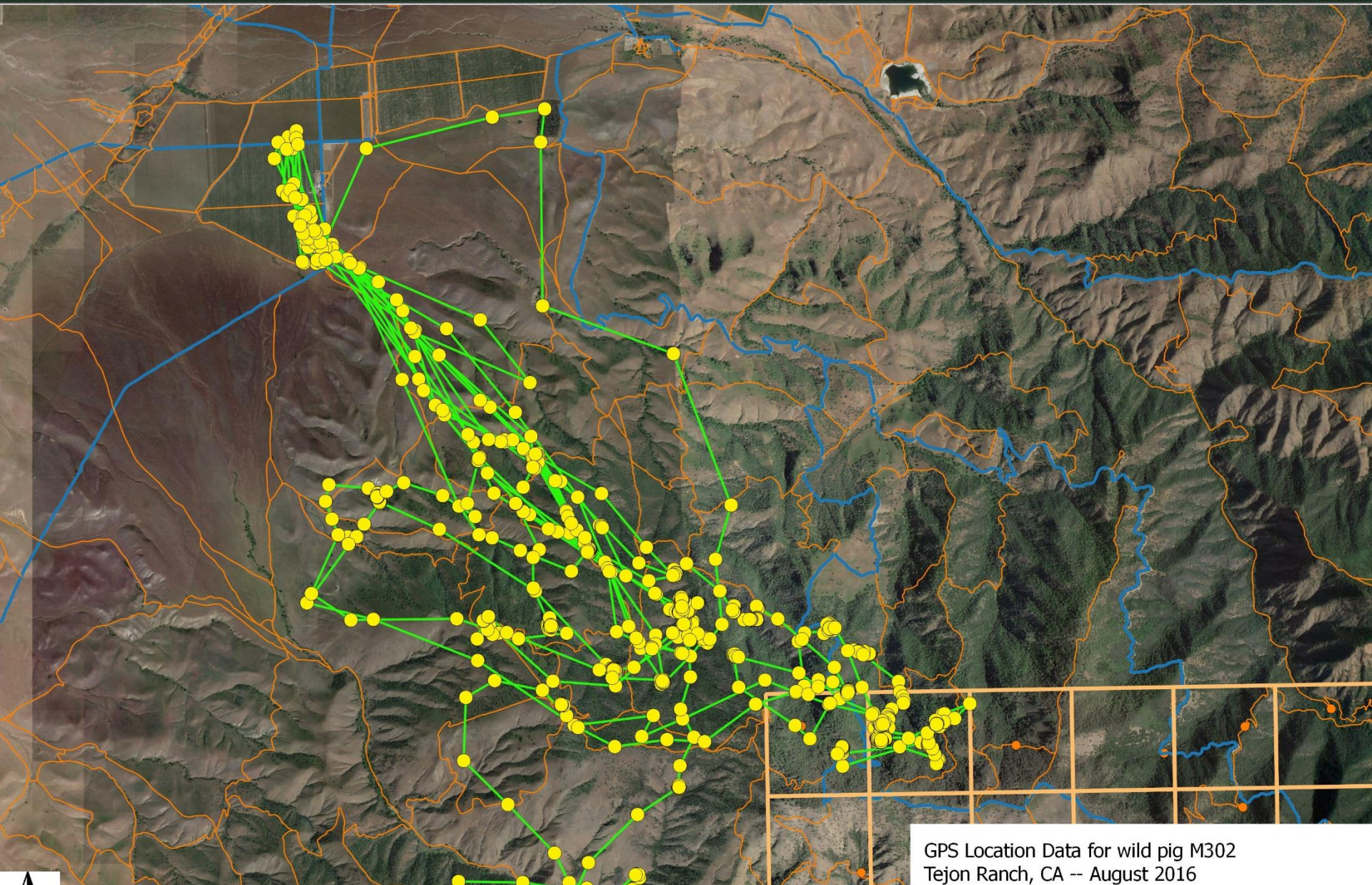
**Pasture** – Grasses & desired plant species; encourages weed growth

**Horticulture** – Orchard, vineyards (leafy greens, carrot, nuts, berries, citrus, grapes)



# Agricultural Damage

<http://www.aphis.usda.gov/ws/ca>



GPS Location Data for wild pig M302  
Tejon Ranch, CA -- August 2016

# Damage to property

<http://www.aphis.usda.gov/ws/ca>

- Destroy lawns, gardens, ornamental plantings & trees through rooting.
- Damage to residential property, golf courses, parks, cemeteries, beaches



# Damage to natural resources

<http://www.aphis.usda.gov/ws/ca>



**72 Rare or T&E Plants in high impact pig range (CA)**





# Damage to cultural resources

<http://www.aphis.usda.gov/ws/ca>



# USDA WS Disease program

<http://www.aphis.usda.gov/ws/ca>

- African Swine Fever
- Classical Swine Fever
- Foot & Mouth Disease
- E. coli
- Hepatitis
- Plague
- Pseudorabies (PRV)
- Salmonella
- Swine Influenza Virus
- Swine Brucellosis
- Toxoplasmosis
- Trichinella
- Tularemia



- ✓ Opportunistic disease sampling
- ✓ Tests for up to 25 zoonotic diseases

# USDA WS Damage Management

<http://www.aphis.usda.gov/ws/ca>

- CA has an increasing pig population
- Studies show that 70% or more of a pig population must be removed each year to prevent population growth
- 84 % Private land ownership in high pig density
- 94% of pigs harvested on private land

# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Principals of Control Management

1. Access
2. Refugia
3. Methods
4. Pressure
5. Time
6. Communication



# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

- **Legal Methods of Control (CA)**
- **Hunting License**
  - Personal Hunts
  - Guided Hunts
  - PLM / SHARE Program Hunts
- Depredation Permit
- Landowner Encounter Law

# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Methods of Take

Must take into account...

- ✓ Time
- ✓ Effort
- ✓ Costs



# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Method – Trapping



**W** Wildlife  
Services

Protecting People | Protecting Agriculture | Protecting Wildlife

# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Method - Pig Brig





# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Method - Drop Net



**W** Wildlife  
Services

Protecting People | Protecting Agriculture | Protecting Wildlife

# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Method - Trapping at landfill



# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

Sometimes .....



**W** Wildlife  
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# Feral Swine/Wild Pig Solutions

<http://www.aphis.usda.gov/ws/ca>

## Solutions to Urban Pigs...?

