

Feral swine



Executive Summary

According to the Animal and Plant Health Inspection Service (APHIS), the U.S. feral swine population of 6 million causes billions of dollars in property and agricultural damage, damages to natural resources and more every year.^{1,2} Feral swine are among the most destructive invasive species in the United States.

The bills [HB508](#) & [SB236](#) increase the accountability to a class E felony for any person who knowingly or recklessly releases any swine to live in the wild or possesses or transports certain live wild boar without a permit from the Department of Agriculture. According to the proposed legislation, any person who kills a feral swine outside without the consent of the landowner or not in compliance with certain requirements would be guilty of a class A misdemeanor. The bills also repeal the requirements for the Department of Agriculture to promulgate rules relating to fencing and health standards for certain wild boar and swine held on private property.

Highlights

- Feral swine are considered **dangerous, destructive, and invasive species** and **cause tremendous damage to agriculture, livestock, natural resources, and property and can be hosts of diseases.**
- Damage to planted crops is the most widespread and costly agricultural damage that can be caused by feral swine. **These costs are estimated to be around \$1.5 to \$2.5 billion annually.**
- The extent of the economic damages is highly correlated with feral swine population size and density. **Southern counties are the most affected in Missouri.**
- Diseases of feral swine **can upset the entire global pork trade network.**

Limitations

- There are multiple control techniques currently available to land managers and owners in the U.S. However, **no single method can have a significant, long-term effect on feral swine populations across large tracts of land or on a national scale.**

Research Background

“Feral swine were first brought to the United States in the 1500s by early explorers and settlers as a source of food. Repeated introductions occurred thereafter.” The destructive species has now expanded its geographic range and their populations are increasing across the nation.¹ The National Feral Swine Mapping System estimates that the feral swine population in the U.S. is over 6 million. 35 states in the U.S have reports of feral swine. The costs associated with feral swine in the U.S. are estimated to be \$1.5 to \$2.5 billion due to damages on agricultural land and

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natural resources, control, and public health.^{9,11} The extent of these economic damages is highly correlated with population size and density of feral swine,¹² With the greatest populations in the state, southern Missouri is the most affected by feral swine (Figure 1). Similarly, to Missouri, feral swine were kept to the southern bottomlands of Arkansas for more than 100 years, but are now found in every county of the state. Experts argue that they have populated the state faster than expected from a naturally dispersing population due to an array of reasons, including **their adaptability to thrive when there is plenty of water, food and shelter.**¹⁷

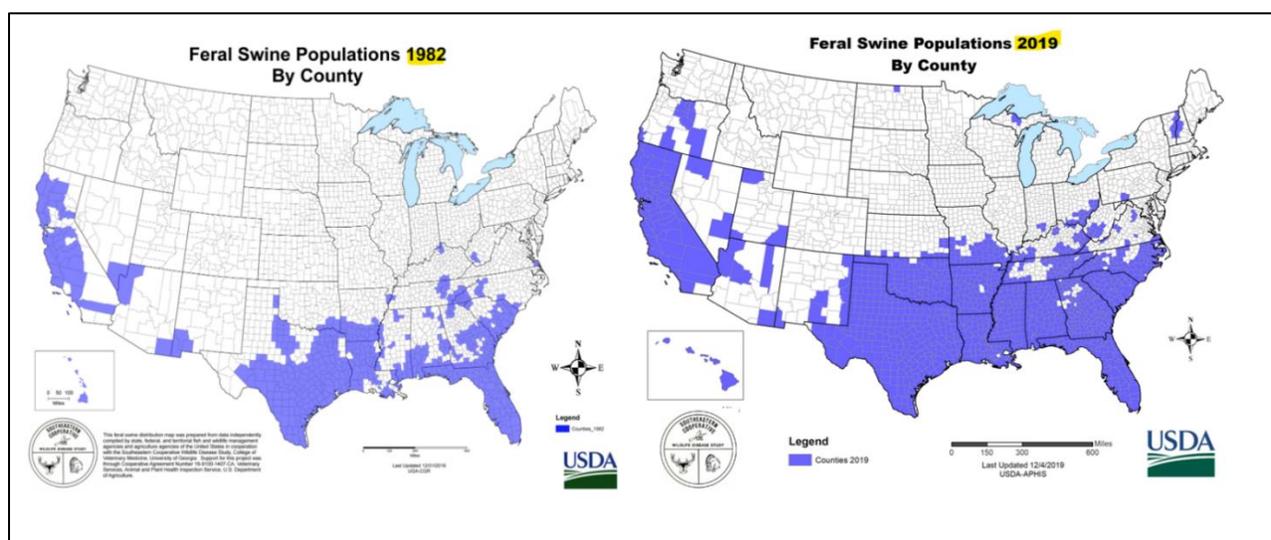


Figure 1. Feral swine populations by county in 1982 and 2019, APHIS, USDA.

Impacts of feral swine on agriculture

Because they forage for their food by rooting under the ground with their snouts and tusks, a group of **feral swine can damage acres of planted fields in just a few nights.**² Feral swine cause tremendous damage to **row crops** (e.g., corn, soybeans, and sugar beets),⁶ by consuming, rooting, and wallowing on the crops. However, they will eat almost any crop. Farmers may also experience damage to **vegetable and fruit crops** such as pumpkins, lettuce, spinach, and melons. They can damage **orchards, vineyards and large trees** by scraping bark off with their tusks to mark territory, creating an entry point for diseases on the tree.

Co-occurrence of feral swine with livestock and humans in domestic hog facilities can increase the risk for cross-species transmission of several pathogens. Pathogens can cause diseases in domestic pigs, which can result in financial losses because of increased veterinary care, or loss of animals.

Feral swine can upset the global pork trade

Feral swine can be traced back to escaped domestic pigs. It is not uncommon for diseases from feral swine to be transferred to domestic pigs and cause major issues in exports and trade.

One example is the **current global African Swine Fever (ASF) outbreak**, which began in the country of Georgia in 2007 when some feral swine ate contaminated food waste from a ship. This outbreak spread to domestic herds throughout the Caucasus region, eventually ending up in China in 2018, where over a quarter of the world's pigs died or were culled.

At the moment, China does not accept pork imports from Germany because there is ASF in German feral swine. To protect its domestic pigs, Denmark has built a pig-proof fence along its border with Germany to keep feral swine from entering and infecting domestic pigs. It is possible that if feral swine in the U.S. contract a disease like ASF, even if they don't spread it to domestic hogs, it could cause other places not to take exports from U.S. producers. This would then lead to an oversupply of pork and hogs, and prices would likely decline sharply.¹⁰

Impacts on public health

Feral swine pose great risks to human health and safety due to the wide range of viral, bacterial and fungal diseases that they carry. They are also associated with an **increase in foodborne illnesses**, since they can contaminate agricultural fields and surface waterways. One example is the nationwide outbreak of salmonella found in bagged spinach in the U.S. (*Escherichia coli* O157:H7), which has been traced to agricultural areas when feral swine were found in the Central California coast. Isolates from animals including feral swine were matched to the outbreak strain.¹⁵

Diseases can also be passed to humans through handling and butchering of feral swine or when not properly cooking their meat. The same diseases can be transmitted to livestock, pets, and other domestic animals through direct contact with feral swine or their scat, using the same feeding and watering containers, and more.

Feral swine have been implicated in the transmission of zoonotic viruses such as hepatitis E virus (HEV), trichinellids, swine influenza virus and Japanese encephalitis virus.⁴ Clinical studies have found that feral swine are potential hosts for 34 different pathogens that cause clinical disease in livestock, poultry, wildlife, and humans.¹⁴

Disease transmission is also **possible from direct collisions of feral swine and humans, vehicles or aircraft**, and as the population of feral swine increases, feral swine-vehicle collisions also increase. It is estimated that every year the costs associated feral swine and property damage and personal injury in the United States is \$36 million.⁷

Impacts of feral swine on natural resources

The ecological damage attributed to feral swine includes the **displacement and elimination of native wildlife**, the **pollution and degradation of water quality** and the reduction in the speed that forests can regenerate. The diets and habits of feral and native animal species often overlap, leading to competition for these necessary resources, such as food, habitat and water. Moreover, feral swine, which are not native to the areas they invade, tend to deter or eliminate other native species (e.g., turkey, deer). Moreover, because feral swine prey and compete with native species for food resources, the numbers of game birds and game animals can be affected.⁴

Feral swine wallow in mud to maintain their body temperatures. These wallows can be monopolized by the swine, contaminate the limited water resources and transmit bacteria, parasites and mosquitos from feral swine to native wildlife, livestock, and humans. They can also indirectly negatively affect fish populations by altering stream habitats, such as aquatic vegetation and creating algae blooms.

Naturally, water that falls on the ground infiltrates soil before it reaches the waterways and wetlands. Feral swine rooting and wallowing, however, tends to increase soil erosion and disrupt the **water infiltration and nutrient cycles**.

Feral swine damage pasture grasses and pose a risk to the **plant species and weed species** that are found on pasture grasses and can accommodate the **spread of invasive species** by the seeds that are captured on their fur or in their feces. Both the **density and diversity of the forests** can be affected by feral swine invasion and can exacerbate their competition for resources, depleting food sources for native wildlife. Moreover, the cultural and historical values of national parks, tribal sacred sites, cemeteries, archaeological sites, etc. can be at risk, because of the feral swine rooting, wallowing, and feeding behaviors.⁴

Similar legislation

The “U.S. farm bill is an omnibus, multiyear law that governs an array of agricultural and food programs”.⁸ The 2018 farm bill implemented the Feral Swine Eradication and Control Pilot Program (FSCP) as a joint effort between USDA's Natural Resources Conservation Service (NRCS) and USDA's Animal and Plant Health Inspection Service (APHIS) to eliminate feral swine from the U.S. grounds. FSCP is investing \$11.65 million in 14 projects, including in the state of Missouri, to help agricultural producers and private landowners trap and control feral swine as part of the Feral Swine Eradication and Control Pilot Program (FSECP).

When populations are small, non-lethal means or individual shootings can be effective to reduce feral swine populations.¹² However, in order to alleviate wide-spread impacts caused by feral swine, large groups must be eliminated to reduce the overall population. Some of the most popular methods of **lethal control currently legal in the United States are trapping and dispatching, ground shooting, and aerial gunning**.¹² No single method alone can have a significant, long-term effect on the feral swine populations across at a national scale.¹²

Illinois' Damage Management Program, which has reported feral swine in more than 30 of its counties, operates under the Illinois Department of Natural Resources (IDNR) and USDA Wildlife Services in collaboration with landowners throughout the state to eliminate feral swine from their properties. Their program consists of education, outreach, disease monitoring, and direct management activities and provides assistance with training and implementing effective methods of removal - all free of charge. **Indiana's** laws are designed to facilitate the elimination of feral swine in the state while also eliminating future introductions, and feral swine can be taken year-round by any legal means.¹³ In **Texas**, where there are no hunting seasons for feral swine, the animals, which cause \$400 million in crop damage in the state annually, can be shot year-round.¹¹ Last year, the Colorado Parks and Wildlife announced that feral swine were eradicated from Colorado. Prior to the completion of the eradication program, Colorado had introduced

similar legislation to the HB508 & SB236, making it illegal to transport or release feral swine, wild swine species or hybrids.¹⁶

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