

Managing Wildlife Damage: Feral swine (*Sus scrofa*)

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INTRODUCTION

Feral hogs occur throughout the world. Many of these wild populations are descended from domestic animals that escaped from captivity or were released for hunting purposes. In the United States, wild pigs are found throughout California, the Southeast from Texas to North Carolina, and scattered areas across the rest of the country. In Georgia, they inhabit nearly every county, excluding the metro Atlanta area. Illegal transportation, high reproductive rates, and high survival in the wild have contributed to their spread into new parts of the country.



Feral pigs are first thought to be introduced to the Southeast by the Spanish explorer, Hernando DeSoto. Domestic hogs escaped from this exploration party and began to establish populations throughout Southeastern river swamps. During the early 1900s, European wild boars were introduced into the United States for hunting purposes. These animals interbred with feral pigs to create the animals we see today in some areas. Feral hogs are non-native invasive pests that are responsible for a great deal of damage to agricultural crops, native vegetation and wildlife.

TAXONOMY

Order Artiodactyla – Even-toed ungulates
Family Suidae - Pigs
Feral Swine – *Sus scrofa*

There are five genera and 16 species in the Suidae family. The family includes the wild hog (also known as feral hog, wild boar, Russian boar, and European boar), warthog, and bushpig. The common domestic swine is the same animal as the feral swine.

STATUS

Feral swine are descendants of stock that escaped from captivity or were intentionally turned loose. European (or Russian) wild boars are the same animal and have also been released by hunters or have escaped from captivity. Over several generations the two lines have interbred forming many hybrid forms. The feral swine is common in many southern river swamps but is not restricted to these

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habitats. The European boar is thought to have escaped from hunting preserves in the North Carolina Mountains and is now widespread in the Southern Appalachians. In Georgia, there is no closed season and no limit on harvesting feral swine on private land. Information on feral swine, including a detailed map of their distribution can be found at the Southeastern Cooperative Wildlife Disease Study website (http://www.uga.edu/scwds/dist_maps/swine04.html).

NATURAL HISTORY

Identification. The size and color can vary greatly throughout wild populations. They can range in color solid black, brown, blonde, white or red. They can also be spotted or banded with the same variety of colors. The size of feral hogs can vary greatly as well. Feral swine can range between 100 and 500+ pounds and males can reach 3 feet at the shoulder. The track of the wild hog is similar to that of a deer, but having a more rounded hoof.

Habitat. Feral swine can be found in a variety of habitats from swampy river bottoms to mature upland forests. They generally prefer thick brush for protection and cover but they can also be found in open woodlands and grasslands. During the summer months they can be found near swamps, river, stream, and ponds that have thick adjacent cover. They seem to prefer areas with water and mud for wallowing. This helps them to cool off and the mud provides some protection from biting insects.

Reproduction. Hogs can easily become established because of their ability to reproduce and survive in the wild. They are capable of breeding as young as six months of age. Hogs often have multiple litters per year. Each litter can contain up to twelve offspring.

Feeding Habits. Hogs also have an excellent ability to survive in the wild. Of all domestic animals, none have the ability to become feral like hogs. Pigs are omnivores, meaning they eat vegetation, insects, small mammals, reptiles, eggs and, occasionally, deer fawns. Because of this diet, they can find food in virtually all situations, excluding desert and arctic regions.

Disease Issues. Feral hogs carry diseases, such as brucellosis, pseudorabies and trichinella that can be transmitted to domestic animals and humans. Pseudorabies does not affect humans but can be contracted by domestic animals. Researchers at the Southeastern Cooperative Wildlife Disease Study (SCWDS) are in the process of mapping populations of wild hogs that have tested positive for these diseases. There is concern that feral hogs may pass these diseases to domestic hogs that are raised for human consumption. If this were to happen on a hog farm, the infected animals would have to be destroyed, an economic loss to the farmer.

Brucellosis is caused by bacteria. The symptoms are similar to the flu and there can be long-term effects such as reoccurring fevers and joint pain. It can be contracted from animals or animal products infected with the bacteria. Brucellosis can cause spontaneous abortions in cattle and domestic hogs. Such an event would have significant economic consequences for farmers.

Trichinosis is a parasitic disease caused by a roundworm and is usually contracted from undercooked pork containing worm larvae. It is important to remember to always cook feral pork thoroughly and wear rubber gloves when butchering the animal. All tools used in the butchering process should be cleaned thoroughly before used on other foods.

DAMAGE ISSUES

Because feral hogs are popular animals for sport hunting, they have been illegally transported to other parts of the country. While feral hogs may provide excellent hunting opportunities, they create many problems as well. Damage includes rooting up agricultural fields and food plots, destroying tree seedlings, and carrying diseases that can be transmitted to domestic animals and humans. They will root up peanuts, knock over corn stalks, and flatten soybeans. Their rooting leaves large holes in fields making it difficult to drive across fields and causing damage to machinery. Estimates of several hundred dollars per acre in damage from hogs are common in farms in the Southeast. Not only do hogs root up fields, but they will also root in woods roads, causing damage that, at times, may be impassable for vehicles.

Feral hogs also compete with native species such as deer and turkey for food and territory. Hogs, being more aggressive, will drive deer and turkeys from feeders, food plots and natural food sources, such as acorns. Not only do hogs compete with native species for food sources, they will also eat small reptiles, mammals and amphibians and the eggs of ground nesting birds. Of particular concern in some areas along the coast is the problem of feral hogs destroying sea turtle nests. Hogs will also wallow in creeks, creating muddy, unsanitary water, causing negative impacts on aquatic fauna inhabiting creeks and streams.

Feral hogs may cause problems for individuals trying to establish longleaf pine seedlings on their property. In certain cases hogs have been documented rooting up entire rows of seedlings causing entire plantations to fail. Hogs will root up slash, longleaf, pitch pine, and possibly loblolly and eat the cambium layer from the roots. Feral swine will chew off all of the roots on a seedling. On larger longleaf seedling hogs have been know to root down the entire tap root girdling the root collar. This can be a serious problem to landowners who try to replant seedlings for forest regeneration. The Longleaf Alliance at Auburn University attributes the feral hogs' nickname – Piney-Woods Rooter to the habit of hogs eating longleaf pine seedlings (http://www.auburn.edu/academic/forestry_wildlife/longleafalliance/teachers/teacherkit/hogs.htm).



Figure 1. Wild hogs rooting in a wildlife food plot.

ECONOMICS

Feral hogs can cause significant economic losses if they begin feeding in agricultural fields and newly established pine plantations. In a 1998 survey of feral swine damage in California, county agriculture commissioners reported losses over 1.7 million dollars. This number may be underestimated because only 69% of all commissioners responded (Seward et al. 2003). Feral swine also cause economic loss through livestock predation. Feral swine are well documented predators of new born lambs, goats, and cattle. This is a serious problem for sheep farmers in Australia, who at times report a loss of 32% of newborn sheep a year to feral hogs.

CONTROL

Methods for controlling feral hogs include fencing, live trapping, and lethal control through hunting or sharp-shooting. However, these methods are often ineffective because of the hogs' intelligence and rapid ability to reproduce.

Habitat Modification. Because of the wide variety of habitats used by feral swine, it is not generally practical to modify habitat in ways that would discourage swine.

Toxicants. No toxicants are registered for use in controlling wild swine.

Fumigants. There are no fumigants for use on wild swine.

Fencing. Fencing can be a way to prevent hogs from entering crop fields; however, this method can be very expensive and time consuming. It is generally not practical except in small areas such as around gardens. An effective fence needs to be at least six feet tall and have one foot buried underground. Another form of fence that may prove effective is electric fencing. Electric fence combined with a hog wire fence may keep hogs from entering certain areas. Fences should be monitored regularly and damage that would allow hogs entry should be repaired quickly. Because fencing is expensive and time consuming, it is not a viable option for large acreages.

Hunting. Hunting hogs with firearms and dogs is another way to control these animals. In Georgia, hogs can be hunted at night using a six volt or smaller spotlight. Because the Georgia Department of Natural Resources considers hogs a non-native species, there is no season or limit on them and they can be hunted any time of the year with a Georgia hunting license on private lands. Many hogs are incidentally killed by deer hunters. Private landowners can also obtain permits from the Georgia DNR to take hogs at night from vehicles with the use of a 12-volt light over bait. If bait sites and hunting strategies are varied, this can be an effective method of killing and removing hogs.

The use of dogs may also improve the number of hogs taken from an individual property. Dogs are used to track, chase and bay hogs. Dog hunting can greatly increase the chances of locating groups of hogs. This method of hunting is done by releasing dogs to search an area while the hunter is on horseback or on foot. Once the dogs have located the hog, the hunter can go to the dogs and dispatch the hog. A disadvantage of this method is dogs are expensive to maintain and can be injured while catching a hog. Injuries to the dogs can result in high veterinary expenses.

Hogs are highly intelligent animals and may become nocturnal and difficult to kill if hunting pressure increases. Hunters will have to try different hunting methods, such as stalk hunting or hunting in different areas, to maintain effectiveness.

Cage/Pen Traps. Live trapping can be the most effective method of removing hogs. Traps can be constructed from wood, metal, and hog wire fencing. Traps should be at least five feet tall to prevent hogs from climbing out. There are many designs of hog traps, but one of the most popular is a wooden trap with a guillotine style door, which is used by the researchers at SCWDS. These traps are eight feet long by five feet wide by five feet tall. They are made of treated deck boards and are held together with two inch screws. Screws should always be used when constructing the sides and door of a wooden trap. This is because screws, unlike nails, are not easily pushed out by pigs inside the trap.

The door on these traps is a guillotine style, where the door is held up by a rope attached to a root stick inside the trap. Two stakes should be driven into the ground, near the back of the trap, leaving about two inches above the dirt. Bait is placed around these stakes and the root stick that is attached to the door of the trap is pulled and placed behind the stakes so the door is held open. Once the hogs enter the trap and root up the bait, they will release the stick from behind the stakes and the door will slam shut. The trap should also have several stakes attached to outside walls and driven into the ground to help prevent hogs from raising the trap and escaping. Figure 2 shows one of the authors with a wooden hog trap.



Figure 2. One of the authors with a wooden hog trap.

Traps can also be constructed of heavy gauge wire livestock panels. These panels can be welded to metal frames constructed from 1 ¼ inch angle iron or metal conduit. These panels should be at least five feet high to prevent hogs from jumping out. If panels are less than five feet high, then a roof will be needed to prevent hogs from escaping. Livestock panels are usually only four feet high so wire should be wrapped between the top of the angle iron or conduit frame and the top of the livestock

panel to close this gap. Doors for these traps are the same style wooden or metal guillotine doors with a root stick mentioned for the wooden traps. Figure 3 is an excellent example of a trap of this design. It was constructed with cattle panels and metal conduit and has wooden guillotine style door. Figure 4 shows a cattle panel trap that has four foot sides and cattle panel roof to prevent hogs from escaping. This trap was also made with angle iron.

Panels can be attached together with large u-bolts to form a circular trap. T-post should be driven into the ground and attached to the trap at every corner. This will increase the sturdiness of the trap and prevent hogs from lifting the trap up and escaping.

The use of traps can be a very effective method of hog control, especially in areas where there is a high density of hogs. Many landowners choose to leave traps out year round to help ensure effectiveness. Once hogs have become established on a property, it is unlikely that they will be eradicated. Combining intensive trapping and shooting can help to keep numbers in check. Hogs may also become weary of traps. This can reduce the effectiveness of trapping. However, in areas with high hog densities, trapping should continue to be effective. When a trap site becomes less effective, simply moving the trap a short distance (such as across the road or to the other side of the field) may improve capture success. A line of corn from the old location to the new may attract hogs to the new trap site.

Corn alone or corn soaked in water and molasses is effective bait for hogs. A sturdy trip mechanism on the trap door will prevent the door from closing on smaller animals like raccoons.



Figure 3. A metal frame trap with wooden guillotine style door



Figure 4. This trap was constructed with angle iron and four foot cattle panels with a roof to prevent hogs from escaping.

DISCUSSION

The nation's hog population is increasing every year and they are spreading into states where they have never been before. Illegal transportation of feral swine is partly to blame for this situation. Because of their destructive nature, the introduction of hogs into new areas should be discouraged and controlled as best possible. The best method of controlling feral hogs is to prevent them from being introduced to your property. If hogs do appear, they should be killed and hunted in every legal way possible. Because of illegal translocations or introductions for hunting, and the hog's unique ability to adapt and their reproductive efficiency, it is unlikely that a solution to the feral hog problem will arise soon.

REFERENCES

- Frazier, I. Hogs Wild. New Yorker Magazine. December 2005.
- Georgia DNR. Feral Hogs in Georgia. DNR publication, September 2003.
- Littauer, G. A. 1993. Control Techniques for Feral Hogs. Texas Animal Damage Control Service.
- Lucas, E. G. 1977. Feral Hogs – Problems and Control On National Forest Land. Research and Management of Wild Hog Populations: Proceedings of a Symposium. 17-21.
- Miller, J. E. 1997. A National Perspective on Feral Swine. Extension Service, USDA.
<http://texnat.tamu.edu/symposia/feral/feral-5.htm>
- Seward, N. W., VanCauteren, K. C., Witmer, G. W., and Engerman, R. M. 2003. Feral Swine Impacts on Agriculture and the Environment. USDA/Wildlife Services. <http://www.sheepusa.org/index>

Sweeney, J. R., J. M. Sweeney, and S. W. Sweeney. 2003. Feral hogs (*Sus scrofa*). Pages 1164-1179 in G. A. Feldhammer, B. C. Thompson, and J. A. Chapman (editors). Wild mammals of North America, 2nd ed. Johns Hopkins University Press, Baltimore, MD.

Whittaker, J. 2007. Feral hogs plague Georgia Farms. Georgia Farm Bureau News. 68(1):11-17.

Wood, G. W., Brennemen, R. E. 1977. Research and Management of Feral Hogs on Hobcaw Barony: Proceedings of a Symposium. 25-35.

WEBSITES

http://www.tpwd.state.tx.us/huntwild/wild/nuisance/feral_hogs/

<http://www.uga.edu/scwds/>

<http://www.sheepusa.org/index>

http://www.auburn.edu/academic/forestry_wildlife/longleafalliance/teachers/teacherkit/hogs.htm

<http://edis.ifas.ufl.edu/UW220>

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