Georgia Landowner's Guide to Wild Pig Management

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Section 1
Basic Pig Biology

Introduction

All wild pigs, wild boar, feral swine, and Eurasian boar are members of the same biological species - *Sus scrofa*. Pigs, or swine, were first introduced to North America by Spanish explorers in the early 16th century. Some escaped; some were released intentionally. The actions of these explorers led to the number of wild pigs now present in America.

Pigs were initially favored by early North American settlers because of their lack of required care. Settlers raised pigs with free-range practices for centuries. In the early 1900s, the introduction of the Eurasian species of boar for sport hunting resulted in this group's interbreeding with free-ranging domestic pigs already present. Due to the cross breeding that occurred and unique features of pig biology, the pig population expanded considerably. This caused immeasurable economic and ecologic damage across the United States. As a result of the pig population boom, free-ranging practices in this country became illegal in the mid-20th century, with the exception of a few parishes in Louisiana. Due to the extent of interbreeding between these two subspecies, the Eurasian boar and free-ranging domestic pig are now considered by most experts to be the same animal - the wild pig. Unclaimed free-ranging populations of wild pigs quickly increased and spread throughout the United States.

Factors for Success

Four biological factors can be attributed to the rapid growth of wild pig populations:

- high reproductive potential,
- habitat generalization,
- wide range in diet, and
- low mortality rates.

Many sources of information on the biology of wild pigs are available. This manual will only briefly review the main factors believed to be responsible for rapidly increasing wild pig populations.

Figure 1: Several wild pigs under a game feeder. Wild pigs come in a variety of colors as a result of interbreeding.

Reproduction

Major contributing factors for the success of wild pigs are short reproductive cycles and large litter sizes. Since these animals descended from domestic stock, they were selected for their high reproductive potential. Wild pigs are the most fertile large mammal in existence. They have a gestation period of 112-115 days, or about 16 weeks. Females can begin reproducing at six months of age. There have been reported cases of sows reproducing as young as 4 months of age, but this can be considered rare. A typical sow will give birth to two litters per year consisting of 4 to 6 piglets per litter. Under the right conditions, a sow may produce up to 13 piglets in one litter.

Today's wild pig populations are related to escaped or intentionally released domesticated stock that was originally bred for the purpose of commercial production. While large litters were an ideal trait in a domestic hog, this characteristic has persisted in feral strains and is a major cofactor in the explosion of the wild pig population. As a result of animal husbandry

practices over a period of many generations, wild pigs are prolific breeders.

Figure 2: A sounder of wild pigs under a game feeder. A sounder often consists of 2 to 3 adult females and their offspring.

Habitat

Another trait that has made wild pigs so successful is the ability to utilize a variety of habitats. These animals are highly adaptable and inhabit a variety of habitats, including mountainous areas, forests, salt and brackish swamps and marshes, old growth pinelands, semi-arid brush habitats, as well as many other habitat types. Research shows that pigs are most consistently found in moist areas unless mast (acorns and other nuts) is unavailable in the leaf litter, in which case these animals will inhabit any available habitat that has an accessible food source. They are highly mobile and nomadic.

Since their introduction to North America, wild pigs have colonized more than forty of the fifty states. Wild pig populations are large and growing; their populations are present at uncontrollable densities in some areas, especially in the southeastern states. Strong mid-western populations have also been established in Kansas and Oklahoma. Populations of wild pigs are also present at large numbers in California, Hawaii, Puerto Rico, and the Virgin Islands.

Like any successful invasive species, wild pigs are very adaptable and non-specific in their habitat requirements.

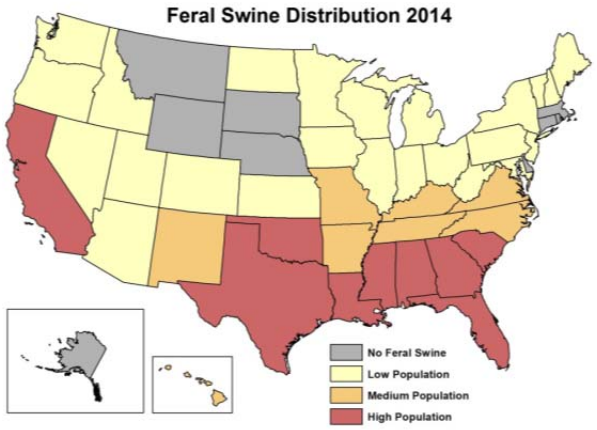

Figure 3: States that have reported the presence of wild pigs in 2014 (USDA APHIS Draft Environmental Impact Statement, 9 December 2014).

Diet

In addition to other factors, the wide-ranging diet of wild pigs has helped make this species incredibly adaptable. Wild pigs are opportunistic omnivores. They will consume almost anything from agriculture crops and mast crops, such as acorns and fruit, to grub worms and dead animals, also known as carrion. Though not considered active predators, they will consume fawns, livestock, and the eggs of ground nesting birds in addition to vegetation, agricultural crops, and other food items.

Diet varies seasonally. A seasonal change in the utilization of “above-ground” and “below-ground” components of plants corresponds to plant availability during different seasons. The roots of a vegetative food source will often be consumed when the leafy portion or fruits/nuts of the plant are no longer available.

During mast years, acorns, beach nuts, pecans, and soft fruit are consumed throughout the fall and winter. In some cases, the roots of plants may be preferred; examples include peanuts, potatoes, carrots, sweet potatoes, and many other wild plant species.

Earthworms make up approximately fifty to ninety percent of the carnivorous portion of a wild pig's diet, depending on availability and the region inhabited. The amount of earthworms consumed by wild pigs has been shown to decrease during the winter and dryer months; accessing this food source in dry soils proves difficult. Consumption of small mammals tends to increase during the winter months due to a lack of earthworms. Wild pigs will consume newborn calves, kids, lambs, and fawns. They will also kill and consume wounded animals in addition to carrion.

Mortality Rates

Typically, wild pigs travel in groups called sounders consisting of two or three related adult females and their offspring. Males, especially larger boars, are often solitary. It is not uncommon for members of a sounder to exhibit cooperative nursing, during which piglets from all of the females will suckle from one sow while the others stand watch for predators. This group behavior can be a considered a contributing factor to low mortality rates of the wild pig.

Figure 4: Solitary boar hog feeding on acorns.

Wild pigs are most susceptible to predation as piglets, falling victim to alligators, black bears, coyotes, and other predators. However, few piglets are lost to predation due to the protection afforded to them by the sounder. Beyond this early stage of life, the only true predators that wild pigs face are the humans that hunt them, trap them, and hit them with automobiles.

Figure 5: A typical sounder group. 16 pigs are shown in this photo.

Human Dimension of Pig Management

The human dimension of wild pig management often brings about mixed emotions. On one side of the spectrum, there are those who whole-heartedly promote the eradication of these creatures. These people tend to be private landowners, farmers, and ranchers who have experienced wild pig related damage on their property. The University of Georgia 2012 Wild Pig Survey indicates that 90% of people do not enjoy having wild hogs on their land. (http://www.warnell.uga.edu/outreach/pubs/wildlife.php).

Additionally, 81% of those surveyed report that they hunt pigs or allow pig hunting on their lands. The sudden appearance of wild pigs in a given area is often the direct result of the illegal translocation of pigs by hunters or private hunting guides trying to provide another species for hunters. Transporting and releasing wild pigs is illegal in Georgia.

In the UGA Wild Pig Survey, 53% of respondents felt that the increased wild pig populations in Georgia were the result of illegal transport. Wild pigs are capable of quickly establishing new populations and causing damage, and illegal transport contributes to these problems.

With their tough snouts and over-developed neck muscles, wild pigs can be considered “nature’s bulldozers.” The most common form of damage caused by pigs is ground disruption as a result of hunting for food. Destruction of crops, yards of homeowners, and natural habitat is of concern.

Figure 6: Typical destruction to a wildlife food plot caused by wild pig rooting. Damage of this magnitude can be created overnight.

Damage is attributed to the pigs’ persistent rooting during their hunt for food. In the UGA Wild Pig Survey, nearly 80% of respondents believe wild pigs negatively affect whitetail deer and bobwhite quail populations. Nearly 70% of respondents believe they have a negative effect on wild turkeys. Destruction of farm ponds and livestock watering holes is also common, as these are used by wild pigs for wallowing. Wild pigs also cause substantial damage to livestock fencing and food plots.

Along with direct predation on young livestock, wild pigs also have indirect effects on livestock. Wild pigs are known to gorge themselves on feed, which not only takes food from livestock, but could also damage feeders and potentially spread disease. Destruction

of farm ponds and watering holes also affects livestock. Additionally, wild pigs are known to damage livestock fencing.

In addition to effects on livestock and agricultural areas, wild pigs also damage natural environmental areas and represent direct competition with other wildlife for food sources and habitat. Other wildlife such as deer, turkey, foxes, quail, raccoons, squirrels, salamanders, small mammals, and waterfowl may compete with feral hogs.

Wild pigs contribute to the erosion of stream banks, forest floors, and road banks due to heavily traveled trails and wallowing patterns. Other wild pig effects include water quality degradation and damage to trees and tree seedlings due to tusking and foraging, which can lead to changes in vegetation community structure. Wild pigs are well known for their ability to quickly destroy a newly planted pine stand, especially one of longleaf pines.

Due to their highly destructive nature and rapidly increasing populations, wild pigs are gaining increased attention from wildlife biologists, land managers, and researchers across the country. Complete eradication is probably impossible on the mainland of the United States at this point in time. In areas where pigs are established in isolated pockets (such as on islands), local extermination may be possible. The best approach is the prevention of further spread. Future goals should include the development of management targets for controlling current populations and the prevention of further range expansion or invasion of new areas.

When working to control wild pig populations, it is essential to choose the most effective control techniques possible. For some hunters, this may involve a tradeoff between enjoyment and effectiveness. The Management Techniques portion of this manual, found in Section 2, discusses a

variety of control techniques and their effectiveness, covering topics such as sport hunting, night shooting, and trapping.

The most effective means of control is trapping, which is covered in detail in Section 3. Trapping can be difficult, costly, and time consuming. The most effective trapping methods remove several hogs or, ideally, whole sounders at one time. However, due to the intelligence level of wild pigs, this means of control, like all others, can become ineffective over time.

Because the authors of and contributors to this manual believe there exists a great deal of misleading and inaccurate information about wild pigs, this manual is intended to inform the reader about the biology and ecology of wild pigs. This manual will also instruct users about a variety of proper techniques for successful wild pig management or local eradication. The hope is that this manual will refute or dispel the often widely available yet inaccurate information about wild pigs.

The purpose of this manual is to explain the biology of wild pigs and to provide management techniques that can be used for the control of wild pig populations and for mitigation of the ongoing problems they cause.

Section 2
Management Techniques

There are a variety of management tools that can be employed to control wild pig populations including exclusion fences, hunting with dogs, trapping with snares, still hunting or shooting, baiting and shooting, and a wide variety of trapping methods. A combination of methods will likely give the best control results. For example, hunting with dogs may be effective, after other lethal control methods have been applied. This section will cover some positives and negatives, along with the effectiveness, of each technique.

Exclusion and Fencing

Reproductive potential of wild pigs can be increased when they have access to supplemental feed. Because of this, wild pigs should be excluded from deer feeders, which is relatively easy to do with a solid fence. Deer can easily jump over a three foot tall fence to access the feeder. Money will be saved by feeding only deer, as opposed to feeding the pigs as well. Furthermore, limiting access to an easily obtained food supply could aid in the reduction of the reproductive capacity of the pigs.

Exclusion of wild pigs typically involves fencing, which can be highly effective but very expensive. Many fence materials are available, but common designs include wire mesh, electric strand, or a combination of the two. Multiple fence designs have been used to aid in exclusion. Generally, wire mesh is recommended only for small areas like flower gardens, small crop fields, game feeders, and household yards. Before employing a fence, it is important to conduct a cost-benefit analysis to determine if protection of the product is worth the cost of building a fence. There are several styles of fencing available, and many are considered effective in excluding pigs; however, few designs will exclude their invasion completely.

Figure 7: An example of a non-electric wild pig exclusion fence built by 50yearfence.com.

Non-electric fences should be constructed using net wire or diamond mesh, also known as chain link, with a minimum of 4 inch spacing. Some managers recommend a minimum of 6 inch spacing; however, smaller mesh size will help prevent piglets from squeezing through the openings.

When constructing a wire mesh fence, consider the following:

- Increasing the spacing of wire mesh with height is generally effective at preventing piglets from entering the area. Start with 2 inch spacing near the bottom and increase to larger spacing until about 2 feet from the ground.
- Use either pressure treated 4 x 4 inch posts, locust posts, or steel T-posts every 10-12 feet.
- Posts should be a minimum of 6 feet tall and a minimum of 20 inches below the ground.
- The mesh should be stretched tight enough to eliminate sagging; this allows for flexibility in case a wild pig charges the fence.
- Fence height can be between 30-36 inches; generally, taller is better.
- To prevent persistent wild pigs from burrowing under the fence, bury the bottom of the wire 12 inches below ground surface.
- Burrowing can also be prevented by adding an electric strand 8-12 inches off the ground along the outside of the fence.
- As with all wire mesh wildlife exclusion fences, the fence must be tight to the ground.
- Pay close attention to changes in topography.
- Regular maintenance to remove fallen trees or limbs is required.

Stranded wire fences used in conjunction with electric fence chargers are less effective than mesh wire fences but are cheaper to construct. A Texas study found that when compared to a 1-strand fence, a 3-strand electric fence reduced wild pig invasion by fifty percent.

When constructing an electric fence, consider the following:

- Use steel T-posts or locust posts.
- Plastic insulators, either nail-on or snap-on, and a minimum of 14 gauge galvanized steel wire are required. (NOTE: The larger the fenced area, the larger the wire gauge needs to be to account for voltage drop—either a 12 or a 10 gauge.)
- A high output fence charger and an 8 foot ground rod and clamp are needed.
- The bottom strand should be a maximum of 8 inches off the ground.
- There should be a 12 inch spread between strands for a three wire system and an 18 inch spread for a two wire system.

Stranded wire fences are cheaper to construct than mesh wire but tend to be more labor intensive in the long run; to prevent vegetation from growing on and potentially grounding out the fence, regular maintenance is necessary. For more detailed information on fencing, consult other publications.

Figure 8: A multi-purpose electric fence designed to exclude both wild pigs and whitetail deer. Image from the Georgia Peanut Commission.

Hunting with Dogs

Using dogs may improve the number of wild pigs taken from an individual property. This method of hunting involves a team of dogs, including bay dogs, scent trailers, and catch dogs.

Hunters, usually on horseback or in an all-terrain vehicle, supervise the hunt. Typically, scent trailers are a hound breed; these dogs have increased sense of smells and can follow scents until the pig is located. Most often, catch dogs are a boxer breed. To prevent injury, catch dogs should be cloaked in a thick leather or Kevlar vest.

Dog hunting can greatly increase the chances of locating groups of wild pigs. However, this method can be expensive due to the initial cost of dogs, as well as veterinary expenses. Injuries can be caused by wild pigs; goring and biting are common. Additionally, there is the possibility of spreading infectious diseases. Usually only one wild pig is captured so this method is time intensive and not effective in controlling large populations or covering large areas.

Figure 9: Catch dogs taking down a wild pig. The lead dog most often controls the pig by grabbing it by the ear and pulling its head down while the other dogs hobble the animal by grabbing its legs (easttexasdoghoggers.com).

Trapping with Snares

WARNING: In many states, like Georgia, the use of snares to capture wild pigs is illegal. In Georgia, snares can be set within 10 feet of water for beaver trapping only.

Advantages of using snares for pigs include:

- Low cost
- No pre-baiting required
- Effectiveness of catching trap-shy wild pigs
- Quick set-up time

Disadvantages of using snares for pigs include:

- Can only capture single pig at a time
- Non-target species issues – can be partially avoided by using a deer stop device
- Possibility of large wild pigs breaking snares

Figure 10: A snare set for wild pigs (hotwoods.com). Using snares to capture wild pigs is illegal in Georgia.

In areas where snares are legal, these are usually constructed out of a 3/16" steel cable with a sliding lock mechanism allowing the loop to close but not open easily once closed. Using a swivel at the end of the snare reduces the chance of a captured wild pig breaking the cable. Ends of snares are attached to immovable objects, such as trees or fence posts.

Hunting and Shooting

Most states have very liberal regulations for hunting wild pigs on private property, allowing harvest to occur year-round. Hunting and shooting wild pigs can be done in many different ways, including methods like traditional still hunting, aerial shooting, or night shooting. Each of these methods has advantages and disadvantages and requires excellent marksmanship for quick, humane kills.

Whenever using shooting as a means of control, consider the following:

- Head shots provide the quickest death and minimize the need for tracking.
- Target the adults of a sounder first. If an older pig falls in its tracks, most of the time younger individuals will not break and run.
- Be sure to follow state game laws whenever using any of these methods.

Figure 11: Wild pigs under a mineral block near a tree stand.

Sport Hunting

Sport hunting is commonly used in many areas across the United States as a method to reduce wild pig populations. For many farmers, ranchers, and private land owners, sport hunting provides extra revenue in the form of lease fees. Hunters often use archery equipment, high powered rifles (both semi-automatic and bolt action), or shotguns loaded with buckshot. This control method can be exciting but is not effective because few pigs are taken at one time.

Hunting as a management method can be useful in remote areas, but this approach is often difficult to employ in urban and suburban areas. Hunters typically target adult wild pigs; the removal of these individuals alone is typically not enough to reduce pig densities. Additionally, patterns of learned behavior exhibited by wild pigs suggest that, if under heavy hunting pressure, they will often become nocturnal and learn to avoid humans altogether.

To encourage the availability of hunting land, Georgia has enacted two liability laws to protect landowners who allow access to their land for hunting. The following is a passage taken from the 2013-2014 hunting regulations by the Georgia Wildlife Resources Division.

> To encourage landowners to make their lands available for public recreational purposes, including hunting and fishing, Georgia law (OCGA 51-3-20 through 51-3-26) explicitly shields landowners from civil liability for injuries to persons who use their land for recreational purposes without charge unless the landowner willfully or maliciously fails to guard against or warn of a dangerous condition, use, structure, or activity. Landowners will not be liable unless they violate this standard of care. Georgia Courts have interpreted this reasonable standard of care as the “duty of slight care” which is lower than that of ordinary care.
>
> Georgia law (OCGA 27-3-1) further extends this same protection to landowners, lessees of land, or lessees of hunting or fishing rights who have permission to hunt or fish on their property with or without charge.

Aerial Shooting

Aerial shooting, which is often used in Texas and other open areas of the western United States, has very limited use in the forested regions typical of Georgia. However, this control technique has recently been used on a few barrier islands.

Figure 12: Shooting pigs from a helicopter with a semi-automatic rifle in the open range lands of Texas and other Western states. Generally, this is not considered effective in Georgia (americanhunter.org).

Aerial shooting most often employs the use of a helicopter and semi-automatic rifles. Rarely are fixed wing aircrafts used. This method is often effective in remote areas with short vegetation where the conditions include high visibility, fairly smooth topography, and mild weather patterns. In areas with high wild pig densities, it can be highly effective. The high cost of the aircraft is often negated due to the high success rates associated with this type of control.

One study employed aerial shooting over a five day period in Australia and reduced wild the pig populations by 80 percent. Aerial shooting does require trained professionals to implement, may require special licenses and permits, and cannot be used in forested or residential areas. Much like traditional hunting methods, aerial shooting can promote learned behavior in wild pigs, causing them to avoid helicopters and become nocturnal.

Night Shooting

Should wild pigs become nocturnal, traditional hunting and aerial shooting become less effective management tools. At this point, night shooting is often attempted. Night shooting employs the use of bait and specialized equipment such as spot lights, motion detecting floodlights, night vision goggles and scopes, and sound suppressed weapons.

When considering the use of night shooting as a means of wild pig control, consider the following:

- Check state and local regulations on what equipment or lights can and cannot be used.
- Suppressed weapons require special permitting, and other equipment restrictions may apply.
- Several private companies offer night hunting opportunities. However, these can cost up to $1,000 per hunter per night and generally result in the removal of only a few animals.
- Night hunting may include the use of thermal imaging optics and high-capacity magazines on semi-automatic rifles.
- Using bait typically increases rates of success.

Spotlighting

The oldest means of night shooting utilizes spotlights with traditional rifles and scopes. Typically, spotlights of 1-5 million candlepower (or 900-1,000 lumens) are used. These lights are fairly inexpensive, ranging between $30 for basic hand-held styles and $150 for scope-mounted versions. While spotlight technology has improved with the development of LED bulbs, these lights tend to have a focused beam, which only illuminates one or two animals at a time. Plus, the constant turning on and off could spook pigs and deter them from coming back to bait set out by shooters.

In Georgia, a light must be carried by or attached to a belt system or hat of the hunter. In Georgia, there are no voltage restrictions on lights used for night hunting of wild pigs.

Solar Powered Motion Detection Floodlights

An alternative to traditional spotlights are solar powered motion detection floodlights, which range in cost from $50-150 depending on brand and lumen output. Most lights operate from a solar panel that charges a 6 volt battery during the day and has several settings that allow the bulb to stay on for 1, 3, or 5 minutes.

Solar powered motion detection lights can be mounted on a 4 x 4 inch pressure treated post about 10-12 feet tall or to a tree with the light and motion detector facing downward on bait. The beam created by the flood head should be about 10-15 feet in diameter, depending on the height of the fixture. During the pre-baiting period, the light can be set for five minute intervals to allow wild pigs to become accustomed to it.

Figure13: Solar powered flood lights with a motion detector mounted to a tree (survival-gear-guide.com).

How to Set Up a Floodlight:

- Select an area where signs of pigs are clear.
- If no suitable trees are available, purchase a 16 foot long 4 x 4 inch pressure treated post.
- Purchase a solar powered floodlight from your local home improvement store.
- Open the light and connect the red wire to the positive terminal on the battery and the black wire to the negative terminal.
- Mount the light 1-3 feet from the top of the post using the mounting screws provided.
- Mount the solar panel on the opposite side of the pole from the light and plug the cord into the provided socket on the light.
- The solar panel must face south or southwest and have a clear view of the sky. Trim branches as necessary.
- The flood head should face the ground.
- Turn the dial on the bottom of the light to 5 minutes to set duration.
- Using a set of post-hole diggers, dig a hole 3 feet deep and slide the post into the hole.
- Pack dirt tightly around the post.
- Pour bait where the light will hit it directly. (See Page 24-25 for information on baiting.)

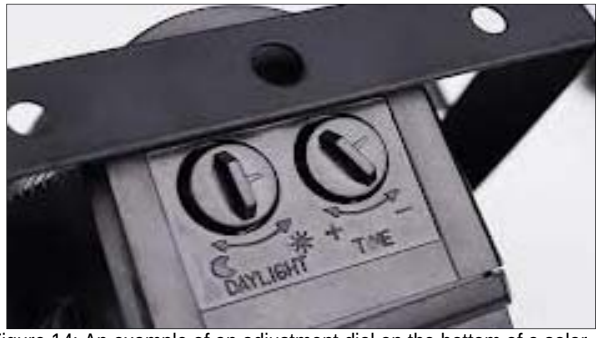

Figure 14: An example of an adjustment dial on the bottom of a solar floodlight. Photo from dealaday.co.nz.

Night Vision Technology

Spotlights and motion detecting floodlights are fairly low tech, inexpensive, and often limited to baited areas. Recently, night vision goggles and scopes have made their way onto the public market after being used primarily for military operations.

While this technology works best with bait, it can be used to eradicate an entire sounder feeding in open terrain. Night vision technology allows shooters to get fairly close to a group of pigs using the dark of night to their advantage. However, night vision optics tend to be fairly expensive, ranging in price from $300-5,000. The following two types of night vision optics are commonly used for pig control: near-infrared light and thermal imaging.

Near-infrared Light Imaging: This technology, which has been on the public market longer than thermal imaging, involves the collection and concentration of light, including a portion of the infrared spectrum invisible to the human eye. Incoming light particles hit a photoelectric plate inside the device, causing the release of electrons. Following a series of reactions, freed electrons strike a phosphor screen, creating a reaction that makes light visible to the human eye.

Figure 15: Infrared scope image of a wild pig.

Most people identify near-infrared light technology by the characteristic green images produced in the eyepiece. Early models made for public use often produced very blurred and unclear images. Today's models can provide very clear images, but the initial costs for this type of technology can still be as high as $200 or more, even for a low resolution scope.

Thermal Imaging: With the simplest models starting around $2,000, this very expensive technology creates images from heat, rather than light. All objects in the environment have a certain temperature and radiate waves of energy known as infrared radiation. Hot objects produce more energy than cold objects. Heat signatures of warm bodied animals appear as white images in the scope because they radiate more heat than their cold backgrounds. Because the equipment works by capturing heat energy, no light source is required to operate the device.

The best models on today's market can detect heat sources from a half mile away, making it possible for a far-away shooter to kill a pig in an open space. However, due to the high cost of this type of equipment, it is not cost-effective for the average landowner to use.

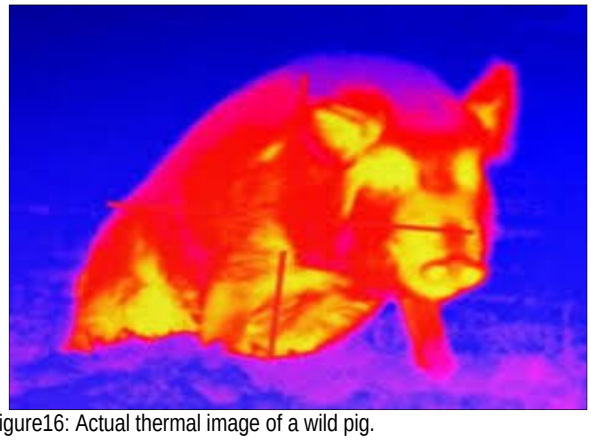

Figure16: Actual thermal image of a wild pig.

Baiting and Shooting

Typically, using bait for pig control by means of shooting begins with a pre-baiting period. This period should last a minimum of three days and occur in an area where signs of pigs are prevalent. Pre-baiting, or the act of presenting bait in an area before actual hunting efforts take place, can lead to more successful control measures. Following the pre-baiting period, shooting over bait can be done during the day or at night from a tree stand or on the ground from a distance. Longer pre-baiting periods, like those lasting up to a week, tend to be more effective than shorter periods. Pre-baiting is legal for hunting wild pigs in Georgia, and duration should depend on the type of control method being utilized. Check regulations for specific details.

Bait of choice should be placed in one large single pile. This area should be checked daily, and anyone visiting the area should wear rubber boots to reduce human scent. Place your bait of choice in one large pile. Replenish the bait as needed for a minimum of three days.

Baiting is used to increase success with both still hunting and night shooting efforts. While it is not required for either, baiting creates a central location for pigs to gather and allows shooters to focus on one area. Since wild pigs are omnivorous, a variety of foods can be used as bait, including pelletized pig feed, rotten produce, and soured corn. Whole corn and pelletized baits can be used in broadcast game feeders or in gravity feeders.

Figure 17: Soured corn can be used as bait for wild pigs. Spreading the soured corn on the ground allows for the aroma to be carried by the wind. Normal feed corn can be used inside of a game feeder for prolonged attraction.

How to make soured corn:

- Use a 50 pound bag of whole kernel corn.
- Fill a 5 gallon bucket half full of corn.
- Add two cups of sugar or molasses.
- Add two or three cans of inexpensive beer.
- Fill the bucket with water so that the level is 2-3 inches above the corn.
- Stir well using a stick.
- Cover with lid.
- Place in a sunny area for 3-5 days.
- Check daily adding water as needed.

NOTE: Some individuals add 1-2 packages of gelatin powder or fruit jelly. Some trappers claim that strawberry jelly or gelatin powder increases bait acceptance by wild pigs. No study known to the writers supports or denies this claim. Soured corn recipes tend to reflect individual preference.

Trapping

Regardless of the type of trap used, successful trapping requires a period of pre-baiting, and baiting must continue as the trap is being set up. Because wild pigs are such opportunistic feeders, a variety of food items can be used to bait traps. However, it is important to select bait that will minimize the chances of impacting non-target species, or those species not meant to be captured.

Not only is trapping the most popular method of removing wild pigs, it is also the most successful at reducing densities. Because multiple wild pigs can be removed at one time, some trapping techniques require significantly less effort and have better results than most other control strategies.

Before using trapping as a method of control consult state trapping regulations. Consider the following:

- Generally, trapping is legal in Georgia.
- Snaring wild pigs is illegal in Georgia.
- When using trapping as a control strategy, be sure to check traps daily. This is required by most state trapping regulations, and it reduces the risk of damage to the trap by caught pigs.

If traps are set up improperly, such as incorrect trigger placement, escaped pigs will become trap-shy and will not enter the trap again. Wild pigs are extremely intelligent animals; any mistakes made in the capturing efforts that allow their escape will result in the avoidance of traps in future attempts. Prior to setting traps, it is important to find the locations that will provide the highest rate of success. Once a proper location is established, pre-baiting should occur before trap construction and/or implementation.

Scouting the Area

On large properties, it may be prudent to set up multiple traps. When scouting any tract of land, look for signs of wild pig presence. Evidence of recent rooting, wallows, mud-rubs on trees, heavily used trails, and an abundance of pig tracks could suggest a population present in the area. Special attention should be placed along river and creek bottoms, as well as in swamps and marshes, especially during the summer months. Knowing the difference between pig tracks and the tracks of other animals will help in determining where to place traps. Once an area with ample pig activity has been located, start pre-baiting the site.

Figure 18: An example of a wild pig wallowing.

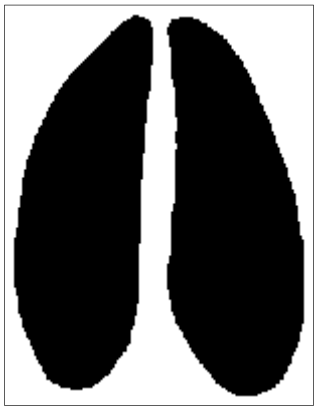

Figure 19a: Deer track. Image from Texas Parks & Wildlife.

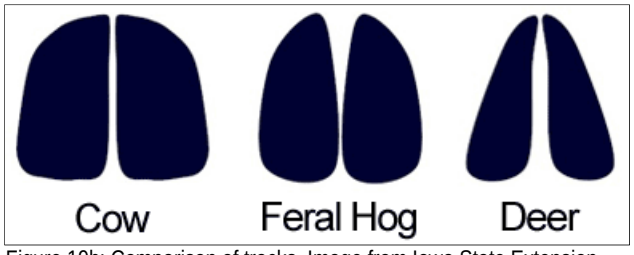

Figure 19b: Comparison of tracks. Image from Iowa State Extension.

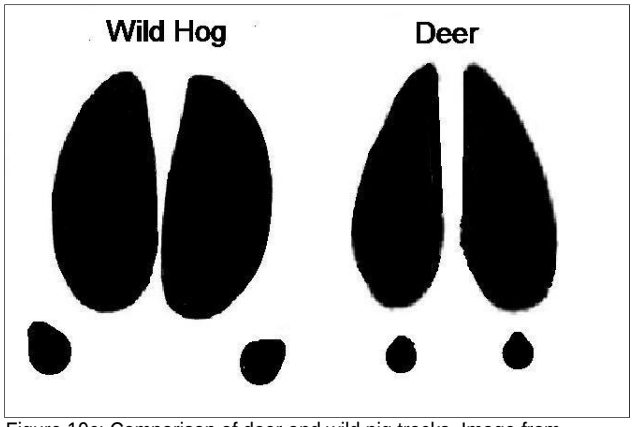

Figure 19c: Comparison of deer and wild pig tracks. Image from Indiana Wildlife.

Baiting the Traps

Regardless of the type of trap used, pre-baiting is required for effective trapping control measures.

When baiting traps, consider the following:

- Soured grain has the advantage of reducing the risk of catching non-target species.
- The pre-baiting period for trapping will last much longer than the pre-baiting time for shooting and duration should depend on trap type.
- Usually, pre-baiting for a week or longer prior to placement of the trap will allow the pig family group, or sounder, to become accustomed to feeding in the area. This will help ensure their return to the trap grounds.
- Bait can be poured directly on the ground or into a cut out barrel, a broadcast feeder, or a pipe feeder.
- Place the bait as far to the back of the trap and away from the door as possible. This will allow the greatest number of wild pigs to enter the trap.
- A small line of bait can be placed near the door and trailed to a larger bait pile at the back of the trap.
- At the very least, the pre-baiting period should last three days.
- For the best success rates, pre-bait for two weeks prior to setting the trap door.
- During pre-baiting, keep the trap door tied open so that pigs can go in and out of the trap freely.
- A trail camera can also be used and checked daily to determine how many pigs are coming to the trap and whether or not they are entering it.

Figure 20: Texas A&M AgriLife Extension Agent pre-baiting a semi-permanent coral trap.

Trapping typically utilizes the following three trap styles: portable, semi-permanent, and permanent. However, there has also been experimentation with drop nets to capture wild pigs. Portable traps are typically box or cage traps. Corral trap types are considered semi-permanent and permanent traps. These types, along with trap-door designs, will be covered in the remainder of this section.

Cage or Box Traps

These traps have the advantage of being portable and can easily be moved to different locations on a property.

Figure 21: Wooden box trap constructed out of decking boards and pressure treated lumber with a wood drop door.

Cage or box traps are most commonly used by landowners or individuals attempting to capture only a few wild pigs. Styles vary; traps of this type can be constructed entirely from wood, consist of a wood frame with heavy gauge wire livestock panels, or have a steel frame with livestock panels welded to the frame.

When constructing a Cage or Box Trap, consider the following:

- The panels of an all wood box trap can be built in a shop and transported to the trap site for assembly. This allows for a one-person set up.
- Typically, traps work best with no bottom; pigs will avoid standing on wire.
- Be sure the bottom edges of the side rails are flush against the ground. This will prevent wild pigs from pushing their snouts underneath it.
- For easy transport, wooden box traps should be the size of the bed of a pick-up truck (8 feet long and 4 feet wide) and about 5 feet tall with an open top.

- If you choose to build a trap with a closed top, it should only be 4 feet tall. Side boards should be narrowly spaced at the bottom (2 inches apart) and can be spaced farther near the top (6-7 inches).
- Drive steel T-posts at the corners of the trap and wire the trap to them with bailing wire to prevent wild pigs from lifting the edge of the trap and escaping.

Steel-framed cage traps are often available for commercial sale and also come in circular designs. Circular models tend to be the strongest because they lack corners, which are weak points. If using a wire box trap, the bottom wires must be covered with dirt. Pigs will avoid standing on wire.

Figure 22: Steel framed cage trap. These can be circular or shaped like the one in this photo.

Corral Traps

Corral traps have proven to be the most successful style of trap for catching entire sounder groups. However, the success is heavily determined by the style of door. Much of the corral design's success can be attributed to openness of the trap. When wild pigs can see a great deal of open space within a trap, they are more likely to enter it. Some traps can be disassembled and moved from one location to another; these are considered semi-permanent.

When constructing a Corral Trap, consider the following:

- Use 16 x 5 foot utility panels in a circular design or tear drop design.
- 3-4 cattle gates can be inverted for a similar design. Gates should be 12-16 feet in length. Line the inside of the trap with 4 x 4 inch woven wire (NOTE: To prevent escape, cover hard corners with woven wire.)
- Utility panels should be supported by steel T-posts where the panels overlap and every 4-5 feet apart thereafter; use T-posts to mark where the door will be as well.
- A diameter size of 16-20 feet is most common for semi-permanent corrals.

Figure 23: A female wild pig inside of a corral trap. This is a unique trap set up in Baker County, Georgia. It is a smaller corral trap set up inside of a larger one. The sow is left inside to draw in other wild pigs. Photo taken by Ashley Warren.

Permanent corral traps are similar to semi-permanent traps, but they tend to be larger in size, up to 35 feet in diameter. They also use 8 foot landscaping timbers or pressure treated 4 x 4 inch posts instead of steel T-posts to support the utility panels or chain link fencing. These posts can be moved, but setting up and breaking down can be labor intensive.

Due to their large size, permanent corrals can utilize a door on both ends, allowing pigs to enter from two directions. Because this set-up is permanent, be sure to choose a location with ample evidence of pig activity and where the trap will not interfere with future land use. Permanent traps are rarely recommended because they lack versatility and adaptability.

Figure 24: Permanent trap with cattle panels and treated posts.

Figure 25: Pre-baited circular corral trap constructed with utility panels and T-posts.

Door Design

Single Catch Doors

Once the trigger of a single catch door has been tripped, no more pigs can enter the trap. Most single catch doors use a guillotine or drop door to close the trap. A sliding door can also be used, but this type is not as common. The lower channel in which the door slides often fills up with dirt and debris, preventing the door from closing all the way. This design is similar to a guillotine gate, but instead utilizes heavy-duty springs to draw the door shut from the side rather than the door falling form the top.

When constructing a Single Catch Door, consider the following:

- Most guillotine gates are constructed of wood, using 2 x 4 foot channel frame and ¾ inch plywood for the actual door.
- The frame is 6 feet tall and has a pulley mounted on an eye bolt on the top cross brace.
- A draw loop made of wire is mounted to the bottom of the door so that a rope can be used to hold the door up once the trap is set.
- A steel frame barred door constructed out of 1 inch square tubing can be used for guillotine doors. Doors are usually 4 feet high by 3 feet wide and trigger off of a root stick or trip wire.

Figure 26: An example of a common wooden guillotine gate. Photo taken by M.T. Mengak.

Most trap and door combinations are limited in the number of pigs that can be trapped during any given event. Proper pre-baiting and baiting, as well as strategic trap and trigger mechanism placement, are required for the majority of the sounder to enter a trap before its door falls. When using a drop door or guillotine gate design, place most of the bait away from the trigger mechanism. Too much bait around the trigger may cause a pig to spring the trap before any other pigs have had a chance to enter.

Several commercial companies have taken this door design to new levels. Some companies include:

- Jager Pro Hog Control Systems, Columbus, GA (M.I.N.E. System);
- Tusk Innovations, Conway, AR; and
- Wireless Traps, Dallas, TX

These companies market wireless door trigger mechanisms that can be remotely activated from a computer or cell phone. This can be a major advantage over older systems of manual release from a hunting blind or a trip mechanism activated by the pigs. The remote system essentially eliminates the need for regular trap checks. However, state regulations may still require daily trap checks. The primary disadvantages to remote control door systems are cost and the need for a strong cellular signal. Optional equipment includes an automatic corn feeder and corn or other bait.

Figure 27: Remote controlled door design triggered by a cellular signal.

Table 1: Estimated costs for 30 foot diameter wild pig corral with remote activation camera system. Prices from July 2014.

Equipment	Unit Cost	Quantity
Door/Gate	$500	1-2
Panels (16 foot long)	$23	5
T-Posts, heavy duty (7 foot long), 4 foot spacing	$6	21
Camera	$600	1
Antenna	$275	1
Cellular service (monthly fee)	$50	1
Activation fee	$30	1
Accessories (cable lock, panel wires, etc.)	$100	1
Total	$1,900	

Multiple Catch Doors

These doors allow pigs to continue entering the trap after the trigger has been tripped. The most common designs of this type are saloon doors, rooter doors, and swing doors.

Saloon Doors use two doors that swing away from one another when open and utilize two heavy springs to pull the doors closed.

When constructing Saloon Doors, consider the following:

- Each door, measuring 15 inches wide and 4 feet tall, is built from 1 inch square tube steel and barred like jail cell doors.
- The doors are mounted to the inside a 4 feet tall by 31 inch wide frame. The frame is constructed out of 2 inch angle iron using 3 x 3 inch stainless steel butt hinges, ¼ inch thick.

Figure 28: Saloon style doors set up on a corral trap.

Rooter doors are often used on multiple catch pig traps. There are two main styles of rooter doors: the three paneled gate and eight fingered gate.

Three Paneled Gates have three barred panels that can be raised individually. The three separate panels allow wild pigs to push the doors open. There is some speculation of escape with this design; however, many people still use this door with some limited success.

Figure 29: An example of a three paneled rooter door.

When constructing a Three Paneled Gate, consider the following:

- The panels are built out of 1 inch tube steel and are welded to two butt hinges.
- Hinges are either welded or bolted to a steel frame made of 2 inch angle steel.
- Panels are 36 inches tall and 12 inches wide and fit inside of a 38 x 38 inch frame.
- The frame is normally extended above the panels and is fitted with a wire panel to prevent wild pigs from climbing over the gate.
- During pre-baiting, the doors are propped open using two small sections of rebar, which are tied off to a trip wire once the trap is ready to be set.

Eight Fingered Gates have eight bars that rise individually. This design allows smaller pigs to easily raise the gate and open the trap.

When constructing an Eight Fingered Gate, consider the following:

- Bars are constructed out of ¾ inch rebar, are 37 inches long and are spaced 3 inches apart.
- The inside of the frame is 30 inches wide by 36 inches tall and is constructed out of 1 ¾ inch ridged steel pipe. This can be found at any electrical supply or home improvement store.
- Each stem of rebar is welded to the center of a piece of 2 inch ridged pipe cut 3 inches long. These pieces are slid over the 1¾ inch pipe that is used for the top of the frame, creating the hinge.
- At the bottom of the frame, 2 ¾ inch segments of rebar are welded between each bar to provide a resting location once the gate has closed This will keep wild pigs from spreading the bars apart.

Figure 30: Eight fingered rooter door built by Dakota and Michael Foster.

Both of these rooter door designs reduce the chance of a trapped pig escaping as other pigs enter the trap.

Trigger Mechanisms

Root sticks and trip wires are the two main styles of trigger mechanisms used for trapping wild pigs. Both styles are effective; however, trip wires are generally more effective with saloon and rooter doors due to the amount of pressure required to pull the props. In addition to root sticks and trip wires, the M.I.N.E. system mentioned earlier is also available.

Root sticks are the easiest trigger mechanisms to construct. Only two pieces of rebar about 12 inches long, a piece of rope, and a stick are needed.

When using a Root Stick trigger, consider the following:

- Rebar should be driven into ground at the far back of the trap at a 45° angle about 12 inches apart.
- Tie one end of the rope around the draw loop on the door and route the other end through the pulley at the top of the frame.
- Tie the free end of the rope to the middle of the stick and pull the draw rope toward the back of the trap. Place the stick behind the rebar.
- Rooting stick should be placed near the back of the trap so as to allow several pigs to enter the trap before the door is tripped.
- Bait should be spread from the middle of the trap to the back so that several pigs can enter and begin feeding. Place a small amount of feed near the root stick.

Figure 31: A root stick trigger.

Trip wires are lines or wires that are strung across a corner of the trap, routed around one of the trap's sides, and tied to the triggering device on the trap door. Trip wires should be strung at the back of the trap at a minimum of 12 inches off of the ground. If the wire is tied lower than this, smaller pigs may trip the door before adults can center, or it could be tripped by non-target species like raccoons or opossums. Trip wire triggers work because of pressure; the amount of force required to pull the pin, hook, or prop stick can be adjusted by tightening or loosening the line.

When using a Trip Wire, consider the following:

- Route the rope through the pulley at the top of the door frame.
- Extend the rope to the top pulley mounted at the back or far side of the trap.
- Route the rope through the lower pulley at the back of the trap.
- Tie the end of the rope to one side of a marine snap shackle.
- Using a monofilament line, or fishing line, tie one end to the other side of the sailing clip.
- Stretch the monofilament line out and tie the other end to a stake driven into the ground 4-5 feet from the edge of the trap.

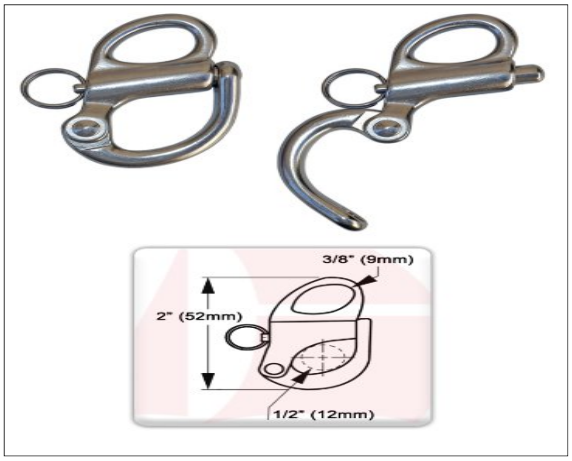

Figure 32: A marine snap shackle can be used with a trip wire.

A marine snap shackle can be purchased at any boating supply store. It has a fixed steel loop and a break-away steel loop that pulls apart once a certain amount of pressure is placed on it. Use a shackle with a 50-75 pound breaking load. The monofilament line is tied to the break-away loop when the trigger mechanism is set up.

Figure 33: A diagram on how to set up a trip wire on a rooter door.

The M.I.N.E system utilizes a guillotine door that is triggered remotely via computer or cell phone. This system incorporates a camera with a transmitter. Whenever the camera senses motion in front of it, live video or a picture is taken and sent to the owner's remote device. At this point, the owner can decide whether or not to send a signal that will close the gate. Waiting until an appropriate number of pigs are inside the trap is vital to trapping success.

Figure 34: Jager Pro remote trigger control box.

Drop Nets

The use of drop nets is a relatively new method of capturing wild pigs. Traditionally, this method has been used for capturing wild turkeys, prairie chickens, and whitetail deer. It has since been modified to capture entire sounders of wild pigs. Recent studies at the Samuel Roberts Noble Foundation in Oklahoma have documented success in with this method. Success has been attributed to the reduction of animal fear. Prior to capture, pigs do not associate the overhead net canopy of with danger.

When using a Drop Net, consider the following:

- A 60 x 60 foot net with 4 inch mesh is suspended above the ground using light weight steel tubing at each corner and one in the center.
- The corner posts are 10-12 feet tall, and the center pole is 12-15 feet tall.
- Steel chains are stretched from the top of each pole and anchored to the ground using ¾ inch steel rebar to provide support for each corner post.
- Each of the corner posts have a winch located in the center and pulley at the top.
- A steel cable is passed through the pulley to the winch; this mechanism is used to pull the corners and center of the net off the ground.
- A rope is tied to each corner of the net and fixed to the end of each of the steel cables.
- Each rope can be rigged with a blasting cap that when detonated cuts the cord in half, allowing the net to fall.
- Either 16 or 18 guage thermostat wire can be used to carry the charge needed to detonate the blasting caps. Wire should be run up each pole so that blasting caps are detonated simultaneously.
- A junction also needs to be made at the ground end of each wire, and another wire should be run back to the detonator.

Figure 35: Wild pigs under a drop net at the Noble Foundations research site in Oklahoma County, Texas.

Newer, high-tech trigger mechanisms utilize magnets to release the nets; however, they tend to be more expensive than those that use blasting caps.As with other methods of trapping, pre-baiting must occur prior to setting up the drop net. Using soured corn during the pre-baiting period will aid in reducing the chances of non-target species utilizing the area. Using drop nets offers the advantage of capturing an entire sounder quickly. However, drop nets require human presence at the site to trigger the net to fall. In addition to this, trapped pigs must be dispatched immediately once captured to avoid damage to the net and the potential escape.

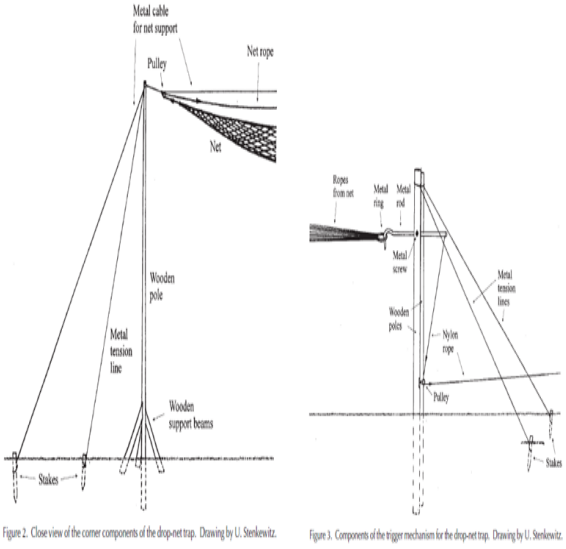

Figure 2. Close view of the corner components of the drop-net trap. Drawing by U. Sterkewitz.

Figure 3. Components of the trigger mechanism for the drop-net trap. Drawing by U. Sterkewitz.

Figure 36: A diagram on the set up of the aluminum or steel poles used for a drop net with a simple hook and ring trigger mechanism.

Figure 37: Wild pigs under a drop net in Smokey Mountain National Park.

Table 2: A list of the material costs for a drop net.

Item	Qty	Price	Total	Vendor
40' x 40' Net (21 Guage, 4")	1	$231.78	$231.78	www.customnetting.com
Aluminum Posts (5' post, 3' overhang)	6	$10.47	$62.82	Local Hardware Store
Panel Clamps (2/pk)	6	$4.98	$29.88	Local Hardware Store
Tytan Soft Tie Rope (Top Hang)	2	$17.50/ 100'	$35.00	Local Hardware Store
Vertical Haul Rope (100', 3/8")	1	$9.47/ 100'	$9.47	Local Hardware Store
2" Welded Rings	6	$0.85	$5.10	Local Hardware Store
Pulley (3/8")	1	$6.05	$6.05	Local Hardware Store
Quicklinks	6	$1.15	$6.90	Local Hardware Store
Quick Release Clevis Hook	1	$2.85	$2.85	Local Hardware Store
Total Cost			$389.85	

Another trigger mechanism used is simply a hook through a metal ring, which releases when another rope is pulled. The rings are attached to the net corners. When the rope is pulled, the hook mechanism swivels up, causing the net to fall. The correct set up of this type can be seen on the right side of Figure 36.

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Section 3
How-To Guide

This section will review and discuss the many styles of traps and trap doors commonly used in wild pig control or management. There are many designs each with advantages and disadvantages. Users should determine expectations, specifically project size. Large-scale eradication will require a different approach than the removal of just a few problem pigs. This section will review traps and doors previously discussed and will give further instruction on construction.

This section has been formatted for easier listing and contains some abbreviations for building material dimensions.

Building Trap Doors

Wood Guillotine Door

The following materials are needed to build a wood guillotine door:

- (4) pressure-treated 2" x 4" boards, 12 foot
- (1) 4' x 4' piece of ¾" pressure treated plywood
- (2) pressure treated 2" x 2" boards, 6 foot
- 2" and 3" galvanized deck screws
- Drill with ⅛" and ½" wood bit and star-head bit
- Carpenters square
- Circular saw
- Tape measure
- Nylon rope
- Pulley, S hook, and ½" eye bolt
- (1) 4' x 4' piece of woven wire
- 1 foot of 10 gauge galvanized wire and linesman pliers

Building the Channels for a Wood Guillotine Door

1. Measure and cut four 6' sections out of the 2" x 4" boards.
2. Using the ⅛" drill bit, pre-drill 5 equally spaced holes in both of the 6' long 2" x 2" boards; this will keep them from splitting when running screws through them.
3. Lay the 2" x 2" board along the edge of one of the 2" x 4" boards and attach it using 2" deck screws.
4. Lay another 2" x 4" board on top of the 2" x 2" board and screw it down using 2" deck screws. The first channel is now complete. Repeat this process for the second channel.
5. Once the second channel is assembled, lay both of them on a flat surface side by side.
6. Measure to the inside of each channel—at the top and bottom—a width of 37" apart; this will allow space for swelling of the door.

Figure 38: A pulley and S-hook used for guillotine gates.

7. From the third 2" x 4", cut three sections long enough to span the door frame; place one at the top of the channels, one at the bottom, and the last one 4' from the bottom.
8. Arrange them so that they have 5½" of overhang off of each edge of the channels, and screw them down using 3" deck screws. Be sure not to allow screws to pass into the channel.
9. Drill a ½" hole on the end of each of the lower two cross braces; this is where the gate will attach to the frame of the trap.
10. On the top support, use the ⅛" drill bit to drill a hole in the middle of the board. Twist the eye bolt into this hole with pliers. Hang the pulley from the eye bolt using the S hook.

The door should be 3 feet wide and 4 feet tall.

11. Using the ½" drill bit, drill a hole 1" from the bottom at the center of the plywood.
12. Fold the 10 gauge wire in half and pass one end through the hole. Bring the two ends of the wire together and twist them together using pliers.
13. Slide the door into the channel and tie the nylon rope to the draw loop. Pass the other end of the rope through the pulley.

Figure 39: A wooden guillotine door. Notice the rope guided through the pulley; this stops the rope from hanging up when closing.

Steel Guillotine Door and Gate

The following materials are required to build a steel guillotine door and gate:

- (2) 6' sections of 1½" channel steel
- (2) 4' sections of 1½" channel steel
- (2) 4' sections of 1" square steel
- (2) 3' sections of 1" square steel
- (1) 3' x 4' section of utility panel
- (4) ½" eye bolts
- Arc welder, gloves, and welding helmet
- Tape measure
- Flat grinder
- Pulley
- Nylon rope
- Spray paint

Do not attempt to build a steel gate without welding experience. Welding can be extremely dangerous if you are inexperienced. If you do not have experience welding, take your materials and these instructions to a welding shop.

Building the Steel Guillotine Door

1. On a flat surface, lay the 6’ sections of channel so that the channels are facing one another.
2. Using the tape measure spread the 6’ sections apart so that they are 37” from the inside of the channel.
3. Position one of the 4’ channel sections at the top of the 6’ section.
4. Fasten the grounding clamp to one of the 6’ sections. Be sure that the two pieces fit as tightly together as possible and weld them at the joints.
5. Use the flat grinder to smooth the welds. Before welding the second 4’ piece onto the bottom, build the door and slide it between the channels.

Building the Steel Guillotine Gate

1. Lay the 3’ sections of steel 4’ apart. Create a rectangle using both of the 4’ long 1” steel sections and both of the 3’ long 1” steel sections (NOTE: The ends of should meet, but not overlap). Weld at the joints and use the flat grinder to smooth the welds.
2. Place the section of utility panel on top of the door frame and spot weld it to the frame. There should be one weld at each corner and every 3” thereafter.
3. Slide the gate into the channel and weld the second 4’ channel to the bottom.
4. Weld the pulley to the top cross brace in the center. Measure 4 feet from the bottom of the frame and weld one of the eye bolts to it; do this on both sides.
5. Weld the remaining two eye bolts 1 foot from the bottom on either side of the frame. The eye bolts are used to wire the gate to the trap.
6. Pass one end of the nylon rope through the pulley and tie it to the lowest section of the utility panel on the gate.
7. Tie the other end of the rope to the trigger mechanism.

Figure 40: Steel guillotine gate on round cage trap. Photo Credit- MT Mengak, March 2014.

When using a steel guillotine door, turn the utility panel side of the door to the inside of the trap; this will reduce the chance of pigs ripping the welds off in case they charge the gate.

Building Rooter Doors

Three Panel Rooter Door

The following materials are required for building a three panel rooter door:

- (3) 38” sections of 2” angle steel
- (2) 6’ sections of 2” angle steel
- (1) 24” piece of 1” angle steel
- (15) 36” sections of 1” square tube steel
- (8) 1’ sections of 1” square tube steel
- (1) 38” x 32” piece of utility panel
- (8) 3” x 3” steel butt hinges
- Arc welder, gloves, and welding helmet
- Tape measure
- Nylon rope

Figure 41: The three panels of a rooter door assembled within a frame. Photo from Mississippi State University’s Center for Resolving Human Wildlife Conflicts.

Building the Frame for a Three Panel Rooter Door

1. Lay both of the 6’ sections of 2” angle steel on a flat surface 38 inches apart.
2. Place one 38” piece of angle steel flat on the bottom and one on the top of the 6’ sections so that they are flush.
3. The third 38” section should be placed so that the bottom edge is 39 inches from the bottom piece.
4. Weld each of these three pieces to the 6’ sections.

Building the Three Panels for a Rooter Door

1. Start by laying two of the 1’ sections of 1” square steel on a flat surface 36 inches apart.
2. Place four of the 36” sections of square steel between the 1’ pieces; two of them should be flush with the outer edges of the 1’ pieces, and the other two should be 4 inches from each of the edges.
3. Weld each of these sections to the 1’ pieces.
4. Finally, weld two of the butt hinges to the top of the 1’ side of the panel 2 inches from the outer edge so that the edge of the hinge is flush with the edge of the 1” square steel. Build the other two panels in the same way as the first.

Assembly of a Three Panel Rooter Door

1. Arrange the panels inside of the frame so that the edges of the first and last panel are ½ inch from the edge of the frame.
2. Place the middle panel so that it is ½ inch on either side from the outer panels.
3. The bottom of the panels should be ½ inch from the bottom of the frame. Be sure that the panels are arranged so that they will open to a 90° angle.
4. Weld the other side of the hinges to the frame.
5. Spot weld the utility panel to the side of the frame that faces to the outside of the trap.

Building the Out-Rigger for a Three Panel Rooter Door

An out-rigger should be used to hold the panels up during the pre-baiting period.

1. Measure 1 foot from the top of the middle cross brace and weld one of the remaining 36” square steel pieces perpendicularly to the 6’ angle sections.
2. Weld another piece of the remaining 36” sections to the other side of the frame in the same manner.
3. Weld the remaining piece between the two perpendicular square steel pieces, flush to the ends.
4. Weld the two remaining butt hinges 1 foot from the outer edges of the out-rigger.
5. Weld the last two 1’ square steel pieces perpendicularly on the hinges.
6. Weld the 24” piece of 1” angle steel to the door side of the two 1’ pieces.
7. Tie the nylon rope to either the lower right or left corner of the 1” angle steel. This is for the trip wire.

Figure 42: An example of an out-rigger used on a three panel rooter door. Photo Credit - MT Mengak, March 2014.

Saloon Door

The following materials are needed to build a saloon door:

- (4) 15” pieces of 1” square steel tubing
- (10) 46” pieces of 1” square steel tubing
- (2) 4’ pieces of 2” angle iron/steel
- (2) 31” pieces of 2” angle iron/steel
- (4) 3” x 3” steel butt hinges
- (2) 15” extension springs
- (4) ¼” quick links
- Arc welder, gloves, and welding helmet
- Tape measure
- Flat grinder
- Drill and ¼” metal cutting drill bit

Building the Frame for a Saloon Door

1. Start by laying the 31” sections of 2” angle iron on a flat surface 4 feet apart.
2. Arrange them so that one piece forms an L and the other forms a backwards L.
3. Place one of the 4’ sections of angle iron on the left hand side of the 31” sections so that it looks like a backwards L; on the right hand side, it should look like an L.
4. Measure 49 inches between the top and bottom of the frame; this will allow for a ½ inch of space above and below the door.
5. Weld the four joints where each section meets.
6. Weld the hinges to the frame so that the swivels of the hinges are facing the inside of the trap; there will be two hinges per side. These should be welded between 6-10 inches from the top and bottom of the frame. The other side of the hinges will be welded to the doors.
7. Weld one quick link to the outside of the frame on both the left and right sides the same distance from the top as the upper hinge.
8. Use the flat grinder to smooth all welds.

Building the Saloon Doors

1. Lay two of the 15” pieces of 1” square tubing on a flat surface 46 inches apart.
2. Arrange five of the 46” pieces of 1” square tubing in between the two 15” sections spaced 3 inches apart.
3. Weld at the joints and smooth the welds with the flat grinder.
4. Weld one of the quick links to the front right side of the door; this makes the left door when looking from outside of the trap. The quick link should be welded the same distance from the top of the frame as the corresponding quick link on the frame.

Build the second door in the same way.

Assembly of a Saloon Doors

1. Lay the frame on a flat surface so that the side that faces outside of the trap is face down.
2. Set the left door into the frame and butt the edge of the door up to the hinges. Both the top and the bottom of the door should be ½ inch from the top and bottom of the frame.
3. Weld the door to the hinges. Repeat the process for the right door. There should be a ½ inch gap between the door edge and the frame.
4. Using the drill and drill bit, drill three holes in the frame between the door edges on both sides of the frame. There should be one hole in the center of the frame while the other two should be just above and below the hinges. These holes will allow the gate to be wired to two T-posts.
5. Once the doors are in place, stand the gate up and open the quick links. Hook one end of each spring to each quick link and close the links.
6. Spray paint the entire gate to prevent rusting.

Figure 43: A wild pig caught in a coral trap using a saloon door.

Eight Fingered Gate

The following materials are needed to build an eight fingered gate:

- (2) 40” pieces of 1 ¾”pipe
- (2) 36” pieces of 1 ¾” pipe
- (9) 37” pieces of ¾” rebar
- (1) 29” piece of 2” pipe
- Arc welder, gloves, and welding helmet
- Saws-all with metal cutting blade or electric hacks-all
- Tape measure
- Spray paint

Assembly of the Eight Fingered Gate

1. Lay one of the 40” pieces of pipe on a flat surface.
2. Arrange the two 36” pieces of 1 ¾” pipe perpendicularly to the 40” piece so that they are 30 inches apart.
3. Weld the 36” pipes to the 40” pipe.
4. Using the electric hacks-all or saw-all, cut the 2” pipe in to eight 3⅝” lengths.
5. Slide each of these lengths over the second 40” piece of pipe, leaving 5½ inches of the 1¾” pipe on either end.

6. Weld this piece to the 36” pipes.
7. Arrange each of the pieces of rebar so that they are centered on each of the 2” collars; weld the rebar to the 2” pipes.
8. Using the saws-all cut nine 3½” pieces of rebar.
9. Weld these in between each of the fingers at the bottom of the frame.
10. Spray paint the gate to prevent rusting.

Figure 44: Eight fingered rooter door.

Building Traps

Box Traps

The following materials are needed to build a wooden box trap:

- (14) 12’ pressure treated decking boards
- (4) 6’ pressure treated 4” x 4” posts
- (5) 6’ pressure treated 2” x 4” boards
- 3” deck screws
- Battery powered circular saw
- Cordless drill with star-head drill bit
- Tape measure
- Guillotine gate
- (4) steel T-posts
- 10 gauge steel wire and pliers
- Sledge hammer or T-post driver

Building the Panels of Box Traps

1. Start by cutting 14 pieces of the decking boards into 8’ lengths.
2. Lay two of the 6’ posts on a flat surface 8 feet apart.
3. Using the drill with the bit, attach seven of the 8’ boards to the posts with screws.
4. Start from the bottom of the two posts and screw the first 8’ board at the bottom end of the post. The next two boards will be spaced 2 inches apart. The following boards can be spaced 3 inches apart.
5. Screw two of the 2” x 4” boards to the decking boards; place one of them 24 inches from one post and the other 24 inches from the other post.
6. Repeat these steps for the other side panel. The rear and front panels can be assembled during set up.

Figure 45: The side panel of a wooden box trap. Photo taken by MT Mengak.

Set-up of Box Traps

Close in the back of the trap using seven of the remaining 4' sections of decking boards.

1. First, lay each of the side panels on the ground where the trap will be set up.
2. Next, lay the two panels on the ground 45 inches apart to allow the overall width of the trap to be 4 feet.
3. Stand one of the panels up and screw the ends of the 4' pieces of decking boards at 90° angles to the boards on the side panel. Each of these boards should be at the same spacing as the boards on the side panel.
4. Stand the other side panel up and repeat the process.
5. Set the guillotine gate between the 4" x 4" posts. Screw the gate to the posts by running the screws through the cross braces into the posts.
6. From the remaining 4' segments of decking board, screw three of them to the 4" x 4" posts above the door of the trap to close off the open space above the door.
7. Cut eight 6" segments of decking board and use them to fill the open spaces between the slide channels of the gate and the posts.

8. Using a sledge hammer or T-post driver, drive one post at each corner of the trap 1 foot into the ground.
9. Wrap a segment of wire around each of the corner posts of the trap and the T-post and twist the ends together using the pliers. This will prevent pigs from lifting the edges of the trap up and escaping.

Figure 46: A completed wooden box trap. Photo taken by MT Mengak.

Steel Framed Cage Traps

The following materials are needed to build a steel framed box trap with a saloon door:

- (4) 8' lengths of 1½" square tube steel
- (4) 4' lengths of 1½" square tube steel
- (5) 5' lengths of 1½" square tube steel
- Saloon door (see instructions on Page 59)
- (2) 5' x 16' graduated utility panels
- (1) pulley
- Bolt cutters
- Arc welder, gloves, and helmet
- Saws-all with metal cutting blade
- Flat grinder
- Four T-posts, T-post driver or sledge hammer, and 10 gauge wire

Figure 47: Pigs trapped in a steel cage trap. Photo from louisianatrappers.proboards.com.

Building the Steel Frame and Door

1. Start by building the side panels of the frame. Lay two of the 8’ sections on a flat surface 5 feet apart.
2. At each end of the 8’ sections, weld a 5’ piece of square tubing to create a 5’ x 8’ rectangle.
3. Using the remaining 8’ pieces and four of the 5’ pieces of tubing repeat the process and build another rectangle the same dimensions.
4. The remaining 5’ section will be welded to the frame of the saloon door and welded in to the front of the trap.
5. Once the rectangles are built, join them at the corners by welding the 4’ sections of steel tubing between them.
6. In the center of the top-back 4’ piece of steel, tack-weld the pulley. This will be used for the trip wire. When welding the front-bottom section, do not weld one of the corners.
7. From the unwelded corner, measure 31 inches and insert the remaining 5’ piece of tubing; weld it at the top and bottom.
8. Using the saws-all, cut out the 31” section between the unwelded corner and the 5” section just added.
9. Slide the door into the 31” opening. The bottom of the frame should touch the flat surface that was just worked on.
10. Weld the door frame to the frame of the trap.

Building the Cage of a Steel Framed Cage Trap

1. Spot weld the utility panels to the frame. Start with the sides. Roll frame onto the 5 foot tall side.
2. Measure out an 8” section from one of the utility panels and cut it with bolt cutters.
3. Lay the 5’ x 8’ section of panel on to the 5’ x 8’ side of the trap frame.
4. Weld the panel to the frame. The welds should be no more than 4 inches apart.
5. Roll the frame over and repeat the process for the other side of the trap.

6. Measure and cut two 4’ x 5’ sections of utility panel. Weld one to the back of the trap the same way that the sides were done.
7. Weld the other 4’ x 5’ section around the frame of the front of the trap.
8. Using bolt cutters, cut out the 31” x 49” section of the panel around the saloon door. Once this section has been cut out, weld the panel to the frame of the door. DO NOT WELD IT TO THE MOVING PARTS OF THE DOOR.
9. Weld an 8’ x 4’ section of utility panel to the top of the trap.

Notice there is not a panel on the bottom of the cage. Commercially manufactured pig traps will put a bottom on the cage to keep users from having to stake the trap down. However, woven wire gets caught between hooves; because of this, pigs tend to avoid stepping on wire. If using a trap with a woven wire bottom, a layer of leaf litter should be spread over top of it. Be sure not to make the leaf covering too think of the doors will not close properly.

Set-Up of Steel Framed Cage Traps

1. Choose your trap site as discussed in the Trapping Section of this manual.
2. Off load the trap from the truck or trailer used to carry it to the site.
3. Drive one T-Post at each corner of the trap using a sledge hammer or T-Post driver.
4. Wrap wire around the T-Post and the corner of the trap and twist tightly.

Corral Traps

Corral traps are meant to be built on site, typically with two or more people. The following materials are needed to build a corral trap:

- (6) 16' x 5' utility panels with graduated openings—start off with 2" x 6" openings at the bottom and graduates to 4" x 6" at the top.
- Trap door of your choice
- 10 gauge wire
- Linesman or fencing pliers
- (19) 6' T-posts
- T-Post driver or sledge hammer

Set-Up

1. Lay all six of the utility panels on the ground so that the vertical bars of the panels are facing up.
2. Overlap each panel by one grid.
3. Using the wire and pliers, connect the panels. Each joint should have at least eight wires that are twisted across welds of the panels.
4. Once all the panels are wired together, stand them up so that the vertical bars of the panels are facing what will be the inside of the trap.
5. Make a circle out of the entire assembly, leaving just enough space for the door. Circular shaped traps are more effective because there are no corners that a pig can use to climb out.
6. Drive two T-posts into the ground the same width as the door frame.
7. Sandwich the ends of the panels between the door frame and the T-posts, with the T-posts being in front of the door.
8. Make sure the panels are tight against the ground and wire them to the T-posts and the gate. Double the wires here; this is the weakest point in the trap.

9. Drive a T-post into the ground at every point where the panels overlap. The T-posts must be on the outside of the trap; this gives the trap more strength against a charging pig.
10. While one person is driving the posts, another person can be wiring the panels to them. There should be five wires per post, starting from the bottom and working up.

Figure 48: Steel T-Post wired to a typical guillotine door.

Figure 49: More than one person being present during corral trap setup makes the process much easier.

11. After all joints are secured, start at the post at the gate, move 4’ down from it and drive another post. Drive one post every 4’ after that. Wire these posts to the panel the same as before. There should be a total of nineteen T-posts for this trap.

12. Now that the trap is built, open the gate and pour a line of soured corn around the outer edges of the trap leading to a large bait pile on the inside. This will guide the pigs to the larger bait pile.
13. Wire the gate open and set a game camera up to keep track of how many wild pigs are coming to the trap at any given time.

Figure 50: Pre-baiting an area for wild pig trap.

NOTE: If using the saloon door with this style of trap, use a piece of wire mesh above the door to close the open space. This door is only 4' tall; blocking off the area above will prevent escape of pigs.

Permanent Corral Traps

The set up and materials are the same for this style of trap as the semi-permanent corral trap. The difference between the two is in the posts that are used for construction. Steel posts are used for more portable semi-permanent traps. However, when constructing the permanent corral trap, pressure treated landscape timbers should be used. Permanent traps can be made larger by adding more panels and timbers.

Tips and Troubleshooting

Trapping is not an exact science. Every trap has advantages and disadvantages. Every trapper has tricks and tips to increase his or her success. It is important to be creative and innovative. If an element is not working properly or effectively, try something different. The most common problem reported is of pigs not entering the trap. Pigs in the area may already be educated about traps, which could be due to past failed efforts by you or by a neighbor.

Section 4
Disease Issues

This section will discuss disease issues important to wild pig management and control.

Wild pigs are well known for environmental and economic damage, but their presence also has implications for the health of hunters and landowners. Wild pigs are known to carry or transmit over 30 diseases and 37 parasites, and many of these can be transmitted to domestic pigs, humans, pets, wildlife, or other livestock.

The National Wildlife Disease Program (NWDP, USDA APHIS VS) tests wild pigs for three foreign and seven endemic diseases. These foreign diseases – classical swine fever, African swine fever, and foot-and-mouth disease – are not present in the United States but are monitored for precautionary reasons. If one of these diseases is suspected in your area, call the Wildlife Services Hotline (866-487-3297).

According to the USDA APHIS Wildlife Service's *On the Watch for Wildlife Disease*, the NWDP tests over 2,300 wild pigs annually for diseases of interest (2009).

Some wild pig diseases can infect humans. These are known as zoonotic diseases and include the following:

- brucellosis,
- leptosporosis,
- toxoplasmosis, and
- trichinosis.

Livestock, pets, and wildlife can contract:

- psuedorabies,
- tuberculosis,
- swine fever,
- brucellosis, and
- vesicular stomatis.

Damage caused by the many diseases spread by wild pigs is often financial in nature.

Human, or zoonotic, diseases are treatable and often curable, but treatments and doctor visits can be quite expensive, especially because some zoonotic diseases can be very difficult to diagnose. Diseases transmitted to livestock often cause finacial damage to farmers and ranchers because of veternarian bills, but these diseases can also lead to livestock death, causing immediate finacial loss.

Many of the diseases spread to livestock by wild pigs have historically been eradicated from domestic animals using vaccination or good animal husbandry. Over the years, many diseases have been eliminated from domestic pigs. Good animal husbandry and surveillance can prevent the introduction of new diseases. However, a disease introduced by wild pigs can rapidly spread throughout livestock herds and wildlife populations, making it extremely costly, extremely difficult, and, in some cases, impossible to eliminate.

While there are multiple diseases that can be spread by wild pigs, a full coverage of all of them is beyond the scope of this management guilde. For the purposes of this manual, only those diseases most often encountered by hunters, farmers, and landowners, as well as those diseases posing the greatest threat to human health, will be discussed.

These illnesses are typically caused by a bacteria or a virus. Some diseases are caused by a parasite or other causative agent. Humans can contract more than two dozen illnesses from wild pigs, and most of these are passed to humans during cleaning (field dressing) wild pigs or during the consumption of undercooked meat or pork products. These diseases have different vectors for means of infection.

Brucellosis

Brucellosis is a bacterial disease that affects livestock or wild animals — primarily cattle, bison, elk, and swine — and humans. There are multiple forms of the *Brucella* bacteria. Swine brucellosis has been nearly eradicated from domestic pigs, but wild pigs, especially those in the southern United States, remain a reservoir for this disease.

Infection rates vary – up to 9% of wild pigs tested positive in South Carolina; 3.5% in Louisiana; 10% in Texas; 22% on some hunting areas in Arkansas. Up to 4% of wild pigs tested in Georgia were positive for brucellosis. Humans contract this disease through contact with blood, other fluids, and/or tissue of infected wild pigs. People can become ill if these substances come in contact with the eyes, nose, mouth, or a cut on the skin.

Diagnosis of brucellosis in humans is often difficult because it often resembles and shares symptoms with other illnesses. In some cases, symptoms may not become apparent for as long as four to six months after initial infection. Confirmation of infection requires a blood test and sometimes a tissue sample.

Patients often experience:

- Joint pain,
- Reduced appetite,
- Headaches,
- Chills,
- Weakness or fatigue,
- Abortion in women and testicular pain in males,
- Potential weight loss,
- Difficulty breathing/chest pain,
- Enlarged liver and/or spleen, and
- Abdominal pain.

Characteristics of brucellosis in livestock:

- Abortion or birth of weak offspring; abortion typically occurs between five to seven months into pregnancy.
- Milk production is reduced.
- Infected livestock usually abort once; sometimes sequential abortions may occur in any given individual.
- Offspring born from later pregnancies are often weak and unhealthy.
- Though offspring appear healthy, infected livestock continue to harbor and spread infectious bacteria; offspring of infected individuals should be treated as dangerous sources of the disease.
- Poor conception rates and lowering of fertility has been observed.
- Uterine infections are cause by the retention of afterbirths.
- Joints are often enlarged and arthritic.

Transmission of the *Brucella* bacteria often occurs during direct contact with infected animals. Contact can be in the form of nose touching, licking, sexual contact, or grooming. Other ways for transmission include contact with an environment in which an infected individual has urinated, given birth, or drank from a water tank or trough. Aborted fetuses, placental membranes or fluids, and other vaginal secretions present after an infected animal has aborted or calved are all highly contaminated with contagious bacteria. Livestock may lick placental fluids or the genital area of other animals or ingest the bacteria with contaminated food or water.

The general rule is that brucellosis is carried from one herd to another by an infected or exposed animal. For this reason, wild pigs should never be introduced or mixed with domestic herds unless they are tested and certified free of disease.

Human infection most often occurs through field dressing harvested wild pigs. Blood, guts, and knife cuts are common avenues of exposure. Humans can also be infected through the consumption of undercooked meat.

There is no cure for brucellosis in humans or animals; only treatments are available. Humans are treated with very high doses of antibiotics for extended periods of time to clear the infection. Wearing latex or rubber gloves while cleaning and butchering harvested pigs is an important precautionary measure for avoiding exposure. Also, make sure any meat consumed is thoroughly cooked. Using a meat thermometer, cook all meat to an internal temperature of 160° F.

Pseudorabies

This disease is caused by a type of herpes virus. It is not related to rabies. It does cause symptoms similar to rabies, such as convulsions and excessive salivation, and it does affect the central nervous system. The disease was named for the similarity in symptoms, but it is also known as Aujesky's disease and Mad Itch disease. Infection rates among wild pigs are generally much higher for pseudorabies than for brucellosis. In fact, swine, which includes wild pigs, are the main host of this disease. Pseudorabies does not affect humans.

Pseudorabies frequently causes abortions and mortality in mature sows. In swine, it is often spread by asymptomatic carriers, or individuals that carry the disease but show no signs of illness. The virus can survive on environmental objects and be transmitted by contaminated boots, trucks, tires, feed, and equipment. Horses rarely contract the disease, while dogs and livestock are susceptible to infection.

Studies have shown that up to 50% of wild pigs in Florida and 30% in some areas of South Carolina are infected with the virus that causes pseudorabies. This disease is rarely fatal to adult pigs but causes abortion in pregnant sows and death in young piglets.

Characteristics of pseudorabies:

- Infected individuals often suffer from lesions in the central nervous system, respiratory system, and/or reproductive system.
- In domestic pigs, clinical signs may vary from unnoticeable to infections that are often fatal.
- Young pigs less than four weeks of age often display symptoms including light fever, tremors, uncoordinated movements, convulsions, and death.
- Adults usually survive but often exhibit fever and upper respiratory inflammation.
- Infection of pregnant individuals often results in abortion of the fetus or still births.
- In wild populations, the disease is rarely fatal.

When pseudorabies affects the central nervous system of other animals, loss of appetite, depression, staggering, spasms, and high mortality rates occur. This disease is also known as Mad Itch because it leads to self-mutilation as a result of persistent scratching and rubbing.

Pseudorabies is spread through:

- Contact with an infected individual's saliva or nasal discharges
- Shared feed and watering troughs, as has been reported in Florida and Texas (This method is responsible for most of the transmission events from wild pig populations to domestic livestock)
- Ingestion of infected meat, as is seen in carnivorous species
- Sexual contact, especially in wild pig populations

Every year, millions of dollars are spent to diagnose and prevent the spread of pseudorabies. Most often seen in wild pig populations, the disease can be drastically reduced with the exclusion of wild pigs. The disease is highly transmissible to livestock.

The capture and relocation of wild pigs without the proper testing is illegal in most states, including Georgia. Where wild pigs and livestock interact, the best means of pseudorabies prevention is wild pig population control and exclusion of wild pigs from feeding and watering areas.

Trichinosis

While most diseases associated with wild pigs are caused by bacteria or viruses, trichinosis is caused by a nematode parasite, commonly known as a round worm. Most mammals, including humans, are susceptible to infection and most often become infected through the ingestion of muscle tissues.

Trichinosis typically does not cause illness in wild pigs or other animals but may cause behavioral changes. Infection can be quite severe in humans.

- Adult nematodes inhabit the intestinal tract of all infected individuals.
- In humans, infection causes abdominal pain, nausea, cramps, and vomiting.
- The larvae of the parasite invade the muscle tissues, usually active muscles like the tongue, diaphragm, jaw, and intercostal muscles.
- This generally leads to fever, muscle pains, facial swelling, fatigue, skin lesions, and swelling of the upper eyelids, which causes a sensitivity to light, also known as photophobia.
- If left untreated, infection can be fatal for humans.
- Abdominal symptoms usually occur 1-2 days after infection, but other symptoms can take 2-8 weeks.
- Treatment should begin as soon as a diagnosis is made.

Human infection is most often a result of ingestion of undercooked meat, including both wild and domestic pork. The number of incidents directly related to domestic pork sources has been greatly reduced in recent years.

To avoid infection:

- When handling meat from wild pigs, wear latex or rubber gloves.
- Cook meet to an internal temperature of 160° F.

To prevent the further spread of Trichinosis to other wildlife species:

- Bury the carcass of any dead animal.
- Georgia law requires dead animals to be buried at least 3 feet deep and not in a way that contaminates surface or ground water (O.C.G.A. § 4-5-5).
- Carcasses can also be burned to prevent further infection and spread of the disease.

Classical Swine Fever

Primarily known as hog cholera, this disease is caused by a virus once prevalent among domestic pigs. However, this was eradicated from the United States in the 1970s.

Characteristics of Classical Swine Fever:

- Infected individuals show signs of depression, loss of appetite, sleepiness, and fever.
- Vomiting and diarrhea may also occur, causing progressed weakness in infected animals.
- Symptoms progress rapidly; animals may die within 10 to 20 days after initial infection.
- Before death, the animal will convulse violently.
- If the virus does not cause death, the condition will become chronic, but symptoms are milder; infected individuals become carriers.

The virus is easily transmitted from pig to pig by direct contact, such as nasal discharge, licking, and grooming. Classical Swine Fever can be spread via exposure to contaminated feeders or pens. If infection does occur in a domestic pig population, it must be reported to state and federal animal health authorities.

Porcine Epidemic Diarrhea Virus (PEDv)

PEDv was first diagnosed in the United States in 2013. PEDv continues to wreak havoc on domestic populations. It is a viral disease associated with outbreaks of diarrhea and vomiting in pigs. Recently, the virus was found in two sets of samples from a domestic swine show in Perry, GA. While not transmissible to humans, PEDv still affects humans financially through losses of domestic pig stock.

Porcine Epidemic Diarrhea Virus:

- is most devastating to young pigs and is almost always fatal.
- affects pigs of all ages and can be fatal to older pigs. Typically, adult pigs will recover within 7-10 days.
- is usually transmitted through ingestion of fecal matter during in feeding.

Currently, there is no treatment for PEDv. Due to the epidemic presented by the disease, all confirmed cases of PEDv must be reported to the United States Department of Agriculture as of April 18, 2014.

Other Biological Concerns

Leptospirosis

Caused by bacteria, this ancient disease may be the most widespread zoonotic disease in the world. It can and does occur in domestic swine; prevalence in wild pigs is not clear. If infected, wild pigs can shed the bacteria in water, causing potential exposure of humans while swimming, fishing, or during floods.

E. coli

There are many varieties of these common bacteria. Most are harmless, even beneficial, and routinely inhabit the human intestinal tract. However, several variants, notably *E. coli* O157, can cause illness in humans. Pigs are known carriers of *E. coli*. Up to 15% of animals tested in California were positive for *E.coli* O157. Wild pigs are widely believed to be responsible for the California outbreak of human illness several years ago caused by spinach from a field, which was exposed to and contaminated by wild pigs. In Georgia, streams within the Pennahatchee Creek watershed in Dooly County had high levels of *E.coli* contamination. Following an investigation, funds secured by Georgia Environmental Protection Division were used to implement a Watershed Management Plan to reduce wild pig populations in the watershed as an effort to reduce fecal contamination, including *E.coli.* Those funds also led to the production of this manual.

General Precautions for Handling Wild Pigs

- Wear latex or rubber gloves when cleaning, field dressing, or processing wild pigs.
- Thoroughly clean knives, saws, and all surfaces with hot soapy water and a commercial disinfectant, such as bleach, after processing wild pigs.
- Store and handle wild pig meat and meat products safely.
- Cook all wild pig meat and meat products to an internal temperature of 160° F.

Section 5
Legal Concerns

Most of the legal issues surrounding wild pigs primarily deal with the management strategies used to control them. This section is devoted to the issues surrounding hunting, trapping, and moving of wild pigs.

Hunting of Wild Pigs

The following statements apply to hunting on private land in the state of Georgia:

- Wild pigs may be hunted year round with no bag limits.
- They may also be hunted at night with a light carried on the person or affixed to a helmet or hat or part of a belt system worn by a hunter.
- Generally, hunting from a vehicle is illegal; however, special permits can be acquired that allow hunting from a vehicle and the use of any light source.
- Although wild pigs in Georgia are not considered a game species, a resident hunting license is required to hunt them for all resident hunters 16 years old or older, except when hunting on land owned by them or their immediate family.
- Non-residents must possess a non-resident hunting license.
- Wild pigs can be hunted over bait. However, use of bait cannot be in violation of deer hunting regulations.

Wild pigs can also be hunted on Federal lands and state Wildlife Management Areas in Georgia. The following statements apply to hunting on public land:

- There must be an open season for a listed game species.
- There are restrictions on the equipment that can be used in these areas.
- The appropriate weapon depends on the game species season open at a given time—wild pigs can be hunted with deer rifles during deer rifle season or shotguns during turkey season, etc.
- There is no limit on the number of wild pigs that can be taken on public hunting lands.
- It is illegal to hunt wild pigs on public land at night.
- It is illegal to hunt over bait on public lands.

- Hunting on public land requires a Georgia hunting license.
- Blaze orange vests are required for all hunters during firearm and primitive weapons seasons.
- Hunting wild pigs with dogs is permitted on public lands with appropriate weapons restrictions.
- Training dogs during dates when training season coincides with small game or turkey season is allowed.
- Consult the Georgia Hunting Regulations to confirm where and when training dates occur for a given area.

Transportation of Wild Pigs

It is illegal to move wild pigs within the state of Georgia unless the animals have tested negative to an official brucellosis test and an official pseudorabies test within 30 days prior to movement. These tests can be avoided only if the wild pigs are moved to an approved hunting preserve in Georgia. However, at the time of this manual's production, no approved hunting preserves exist within the state. (Authority O.C. G. A. § 4-4-70 and Chapter 40-13-3 Rules of GA Department of Agriculture, Animal Industry Division.)

It is illegal to release any trapped or transported live wild pig into any area that is not fenced to prevent escape of such wild pig. Any persons convicted of the release of live wild pigs in violation of established laws and regulations may be subject to revocation of hunting privileges for up to three years. Transport and possession of live wild pigs are regulated by Georgia Department of Agriculture; contact the Animal Industry Division at 404-656-3671 for more information.

Trapping of Wild Pigs

The following statements apply to trapping on private land in the state of Georgia:

- There is no season or bag limit.
- Trap designs described previously in this manual can be used to capture wild pigs.
- Snaring wild pigs in Georgia private lands is illegal.
- Trapping wild pigs on public land in Georgia is illegal. According to state trapping regulations, only furbearing animals are allowed to be trapped on public lands.
- It is also illegal to transport captured wild pigs to any unfenced area in the state of Georgia.
- Fences will rarely contain wild pigs. Wild pigs should never be released alive.

Toxicants

Research is in progress to determine a suitable toxicant, or poison, for wild pigs. Several products have shown promising results in preliminary research. It is likely to be 3-7 years before a poison is approved for use on wild pigs. Several compounds are often used by landowners in an attempt to control wild pig populations. Unfortunately, almost all of these products cause serious harm to the environment and to non-target wildlife species, including game animals and endangered species. The use of toxicants is not permitted in Georgia.

AT THE TIME THIS MANUAL WAS WRITTEN, APPLYING OR DISPERSING ANY POISON TO KILL WILD PIGS IN GEORGIA IS ILLEGAL.

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Section 6
Other Considerations

This section will discuss other considerations to keep in mind during wild pig control efforts including carcass disposal, contraception, and future potential of using poison.

Carcass Disposal

The meat from wild pigs is edible and can be taken home by the landowner. Depending on location, there may be local meat processors that can accept wild pigs. Generally, deer processers cannot accept wild pigs; instead, hunters and other interested persons must contact the Georgia Department of Agriculture (www.agr.georgia.gov). Wild pigs can be processed at "any facility licensed by the Georgia Department of Agriculture Meat Inspection Section" authorized to handle "custom exempt products." A list of custom exempt facilities is available by calling the Georgia Department of Agriculture at 404-656-3673. See the website and Frequently Asked Questions at http://agr.georgia.gov/hunters-helping-farmers-faq.aspx for more information.

Georgia Department of Agriculture's Dead Animal Disposal Rule, 40-13-5, describes the proper way to bury an animal. Wild pigs are not domestic animals and are therefore exempt from the rule (http://agr.georgia.gov/hunters-helping-farmers-faq.aspx). Wild pigs and associated pig products cannot be donated or given away if considered to be "hunter-killed." Hunter-killed wild pigs are to be used exclusively by the owner, or the hunter of the animal, his/her household, and his/her non-paying guests and employees.

Carcasses may also be burned or buried. If burning carcasses, dig a pit and throw the bodies into it before burning. This will help lessen the chance of spreading a fire and will offer an easy way of burial should any remains be left following the fire. An accelerant such as diesel fuel or kerosene is often poured over the carcasses to start the fire.

If burying carcasses, State law requires a minimum grave depth such that the carcass is covered by at least 3 feet of soil. Because of potential groundwater contamination, burial is not recommended in southern Georgia or areas where there is a high ground water table (M. Wilson, pers. comm.). Regulations pertaining to carcass disposal are found in the Georgia legal code (O.C.G.A – Title 4, Chapter 5, Sections 1-11).

Burning or burying carcasses will help to decrease the attraction of scavenging animals such as vultures or coyotes. Utilization of heavy digging machinery will be required to dig a pit that will be deep, long, and wide enough to contain the carcasses of dispatched feral hogs. The depth, length, and width of the pit needed will depend on the number of hogs captured and killed.

Some hunters, specifically shooters, will simply leave pigs where they lie. This action often attracts scavengers, as well as pets and wild dogs, to the area.

Wild pigs are not considered wildlife in Georgia. Hunters may let individual wild pigs lay where they fall. This is not a violation of willful and wanton waste laws as these rules apply to wildlife (T. Holbrook, GWF, pers. comm.). Wild pigs die in the woods naturally, and there is no obligation to locate them or bury them. However, when conducting large scale hunting or trapping operations, adequate means of carcass disposal in compliance with all applicable laws must be employed. Contact the Georgia Department of Agriculture or the Georgia Wildlife Resources Division for guidance on legal means of carcass disposal.

Contraception

Development of an effective contraceptive, or birth control, for any animal faces several challenges. The contraceptive must be reversible in case an animal begins to exhibit any unforeseen adverse reactions. Contraceptives must be administrable in the field and must be species-specific to ensure non-target species are not affected. Applied contraceptives should not affect animal behavior, including not only social behavior, but breeding behavior as well. At the time of this manual's printing, no anti-fertility control drugs have been approved for the control of wild pigs. However, the development of endocrine regulatory drugs that could suppress certain hormones and prevent fertility is possible in the future.

The application of bait laced with a contraceptive agent has been considered as an option, but determining a type of bait that will be avoided by non-target species is necessary.

Current research has found injections of gonadotropin-releasing hormone to be effective in captive pigs. However, application of this contraceptive in the field is difficult, making this means of control ineffective. GonaCon™, a contraceptive under research, was originally developed for controlling whitetail deer populations. This single shot, multiyear birth control agent prevents animals from entering an estrus cycle through hormonal control. GonaCon™ is effective on both sexes but works best on females. Even without boosters, the vaccine will render females infertile for 1-4 years. This contraceptive is most often administered using a dart fired from a tranquilizer gun. Although GonaCon™ is an effective means of fertility control in pigs, it is currently not registered for use in wild populations.

Problems with the application of any contraceptive include:

- Initial delivery,
- Effectiveness,
- Duration,
- Delivery of subsequent doses,
- Impact on non-target species, and
- Cost.

The greatest challenge in the use of contraceptives for wild pig control will likely be the administration. Though treating individual captive animals is relatively easy, effectively administering contraceptives to large numbers of free-ranging individuals will be difficult. Therefore, contraceptive use as a population control agent is not considered effective.

Poisoning Research

Currently, there are no registered toxicants or poisons available for controlling wild pig populations. However, research to identify and register a toxicant that can be used to combat the overabundant pig population is underway. An effective toxicant could be a powerful and cost effective tool for reducing wild pig numbers. However, the poison must humanely kill wild pigs while having little effect on non-target species.

In recent efforts to reduce the wild pip populations, researchers in Australia have developed a product known as PIGOUT®, a bait containing Compound 1080, which is highly toxic to mammals. PIGOUT® has proven successful in Australia, due in part to the absence of any native midsized generalist mammals. Unfortunately, PIGOUT® has proven useless in the United States due to too many non-target species hazards. Also, the product could cause inhumane deaths for pigs. Additionally, the compound can remain in the carcasses, which could cause some

environmental and health concerns. Furthermore, no antidote exists for accidental human exposure.

Concerns surrounding PIGOUT® have led Australian researchers to identify a different toxicant to use against wild pigs. Sodium nitrite could be the solution. This compound seems to cause a quick, humane death, and it is cheap, displays no secondary toxicity, and has an antidote. Currently undergoing trials in Australia, if this toxin proves effective, the commercially available product will be known as HOG-GONE®.

In the United States, application of a poison remains an issue up for debate, largely due to the presence of so many at-risk non-target species. Bears, raccoons, many other mammals, and even some birds could readily ingest an applied toxicant. The effectiveness of the product is also a concern; sodium nitrate, or HOG-GONE® is very salty and distasteful to pigs. In order to mask the salty taste, the toxicant must be specially formulated; otherwise, pigs will avoid it. Landowners that attempt to apply sodium nitrite in its natural form will quickly learn that it has little to no effect on wild pigs. Most importantly, though, it is illegal to apply the toxicant to the environment.

Because there are no registered toxicants for wild pigs, the use of any poisons registered for use against other pest species—i.e. rats, mice, etc.—is illegal and will result in felony charges. All registered toxicants are listed under the Federal Insecticide, Fungicide, and Rodenticide Act, and any use of these toxicants outside their labeled use is a violation of federal law with severe penalties.

AT THE TIME OF THIS MANUAL'S PRINTING, POISONING WILD PIGS IN GEORGIA IS ILLEGAL AND PUNISHABLE BY LAW.

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