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Feral Hog Control in Arkansas

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Figure 1. Feral hogs are increasing in number and range in Arkansas.

Feral hogs are known by a number of names: wild pigs, wild hogs, feral pigs, wild swine, wild boars, Eurasian or Russian boars and several others. All these names refer to a single species of domesticated pig, *Sus scrofa* (Figure 1). Feral hogs were introduced to Arkansas by early European explorers and settlers in the 1600s (Mayer 2009). They are not native to North America. Feral hogs ranged freely in bottomland hardwood thickets in southern Arkansas for more than a century. Their numbers have increased dramatically since the early 1990s, presumably because of hunters releasing hogs for sport.

Wildlife biologists have sighted feral hogs in every county in Arkansas. A 2013 survey of county Extension agents indicated feral hogs were a major agriculture issue in 12 of 75 counties (16 percent), with the majority (54 percent) reporting feral hogs caused problems in their county the past year (McPeake 2014).

An overabundance of feral hogs has not only caused agricultural losses but also forest and timber damage; water pollution; food safety threats; disease transmission to livestock, pets and people; and wildlife habitat degradation. Feral hogs directly compete with and occasionally prey upon native wildlife species, including white-tailed deer (*Odocoileus virginianus*), wild turkey (*Meleagris gallopavo*), bobwhite quail (*Colinus virginianus*) and reptiles and amphibians (Rollins 1999). Feral hogs consume row crops and impede forest regeneration. Their rooting destroys pastures and forest roads. A Texas study linked rooting and soil disturbance by feral hogs with aiding the spread of invasive plant species (Timmons et al. 2012a). Their rooting and wallowing habits have been attributed to polluting streams and contamination of agricultural crops. Feral hogs carry diseases, including swine brucellosis (*Brucella* spp.)(*Human Brucellosis Risk From Feral Swine*, FSA8013, www.uaex.uada.edu) and pseudorabies (*Suid herpesvirus 1*). Disease outbreaks are reported occasionally in the state. Local "hot spots" of these diseases in feral hogs are monitored by USDA Wildlife Services – Arkansas (http://www.aphis.usda.gov).

Legislation has been enacted in Arkansas to reduce feral hog problems. A Feral Pig Task Force was organized in 1998 to "inform and educate the public and pass new and stronger laws related to feral hogs" (Mathis 1999). Its accomplishments included passage of Act 457 in 1999, which allowed feral hogs to be hunted on private land at any time. Despite this law, the feral hog population continued growing in the state. Act 1104 in 2013 addressed the common practice of hog hunters capturing feral hogs alive and releasing them at another location to expand hunting opportunities. It is illegal to transport and release feral hogs in Arkansas, unless to a terminal facility following specific procedures. Additional information is available from *Rules and Regulations Governing Feral Hogs*, FSA9106 (www.uaex.uada.edu), the hunting regulations guidebook from the Arkansas Game and Fish Commission (800-364-4263, www.agfc.com) and the Arkansas Livestock and Poultry Commission (501-907-2400, www.alpc.arkansas.gov).

Description

Feral hogs are domesticated swine that are released into the wild accidently or purposefully for sport hunting. Historically, feral hogs were a free-ranging, self-sustaining meat source for early settlers. After a generation or two in the wild, the progeny of a domesticated hog will start to develop different physical characteristics. Their fur may become darker and longer and their snout may become more elongated. They can vary in color, shape and size.

Most feral hogs in North America are hybrids of domestic ancestry (Mayer 2009). A feral hog with the appearance of Eurasian or Russian wild boar ancestry is sometimes seen, with characteristic tusks and bristle hairs (Figure 2). Most are hybrids of domestic and Eurasian/Russian wild boars (Mayer 2009). The pure strain of Eurasian wild boar has a coat of brown to black hairs with white or tan tips, giving a grizzled coloration. Their skull features are also characteristic, with longer, straighter snouts than domestic hogs (Figure 3). The University of Arkansas mascot is a captive Russian boar and therefore not feral (University of Arkansas 2009).

Figure 2. Bristles and thickened fur are characteristic of feral hogs in Arkansas. *Trail camera image by Jon Barry and Becky McPeake, University of Arkansas.*

Figure 3. Domestic hog skulls (left) have a pronounced dip from forehead to snout, whereas feral hog skulls exhibit flatter snouts (right). *Image printed with permission by Skulls Unlimited International (www.skullsunlimited.com).*

Life History

Feral hogs typically live about four to five years, with some living up to eight years. They are found in a variety of habitats, preferring moist bottomlands or other riparian areas near rivers, creeks, streams, lakes, ponds, marshes, bogs, swamps and sloughs. Feral hogs prefer dense vegetation, though they frequently appear in open fields at night. Feral hogs are very adaptable. When necessary, mature hogs can swim to dry ground during flood events.

Feral hogs are opportunistic omnivores and consume a variety of foods. Eighty-five percent or more of a feral hog's diet consists of plants and invertebrates. Common foods are roots, grasses, forbs, mast (nuts and berries), worms, insects and insect larvae. Occasionally they consume animal matter such as carcasses, eggs and young of ground nesting birds, reptiles, amphibians and small mammals.

A feral hog's home range depends primarily on food availability and water sources. Feral hogs are known to move hundreds to thousands of acres annually in search of food and mates. Seasonal activity patterns are affected by (1) high temperatures, since hogs have no sweat glands, (2) food availability, and (3) avoidance of human activity. Though active in daylight hours, they often become nocturnal to avoid heat and human activity.

Feral hogs can reproduce and populate an area very quickly. In *Managing Wild Pigs – A Technical Guide*, West et al. state, "wild pigs are perhaps the most prolific large mammal on earth." Feral sows reach puberty at six to 10 months and start producing litters on average at about 13+ months (Figure 4). An average litter size is six piglets but can range from three to eight piglets, with some sows having 10 or more piglets. In the wild, sows are capable of producing two litters per year, though the majority produce one litter. If a sow bears a litter of six with three female piglets and 13 months later each female bears a litter of six, mathematically it is possible for 31 feral hogs to inhabit an area within 400 days starting with one pregnant sow.

Figure 4. A feral sow of six to ten months in age can produce litters of three to eight piglets.

Their social structure is complex with divisions based on age and gender. Matriarchal groups of sows and their offspring form a *sounder.* A sounder is led by an older sow with up to three related generations including piglets, male and female subadults and adult females. A sounder can consist of a few to 30 or more individuals. When males reach about 16 months of age, they split from the sounder. Bachelor groups of subadult to adult boars are usually siblings or cousins. As they age, individual boars become solitary and move greater distances than sounders in search of mates.

Feral hogs have few predators, particularly after exceeding 40 pounds. Alligators, black bears and mountain lions are documented to prey upon feral hogs occasionally. Human hunters are the most significant cause of mortality. The perception that hogs attack people is not unfounded, but attacks occur rarely. A review of feral hog attacks from 1835 to 2010 uncovered 330 reported attacks, most of which were mauling of the legs and were not fatal (Mayer 2011). In 38 percent of the cases, hogs were being threatened when they attacked.

Sign

Early detection and removal of feral hogs reduces damage problems before hogs become overabundant. Oftentimes feral hog sign is unrecognized until their numbers grow and hogs cause significant damage.

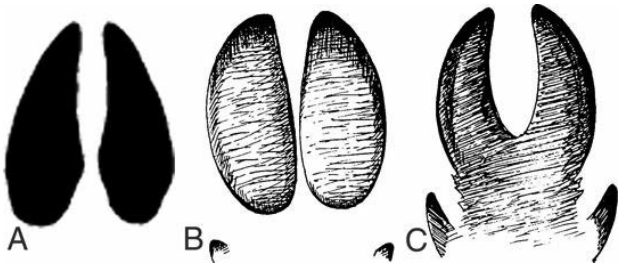

Figure 5. A deer track (A) can be distinguished from feral hog (B) and European wild boar (C) tracks by its shape. *Illustration by the University of Missouri.*

Figure 6. Rooting aerates the soil but can also destroy pastures and create water quality issues. *Photo by Craig Hicks, Bugwood.org.*

Tracks. Feral hog tracks look similar to deer tracks except they are more round overall in shape with less-pointed toes (Figure 5). Hog tracks tend to be almost as wide as they are long, whereas deer tracks are longer and narrower. Feral hog tracks resemble goat and sheep tracks, and sometimes deer tracks in certain field conditions. Typically other signs are also present as described below.

Rooting. Feral hogs dig in search of food in the soil using their noses. The turf or ground appears tilled with soil present on the surface (Figure 6). Rooting can occur in residential lawns, pastures, along creek or stream banks, and in forests. Rooting decreases soil compaction but causes erosion, decreases water quality, impedes forest regeneration and creates an environment conducive to invasive plant encroachment.

Rubbing. Feral hogs use trees or poles to scratch and rub their hides to remove mud and parasites (Figure 7). Typically bark is worn away, sometimes with bare soil circling the tree where the hog has tromped. Often hogs return to the same trees to rub. Repeated rubbing removes tree bark and devalues timber.

Figure 7. Feral hogs rub tree trunks to remove mud and parasites. *Photo by Becky McPeake, University of Arkansas.*

Wallowing. Because swine lack sweat glands, feral hogs wallow in mud to cool their body temperature, particularly in hot weather. Mud holes can be any shape or size. Sometimes wallows are distinctly shaped like a crescent or comma (Figure 8). Check for tracks in the surrounding mud to verify wallows were made by feral hogs. Such holes create road hazards and can damage field equipment. Wallows can cause soil erosion and sedimentation. Fecal matter can enter water supplies and contaminate swimming holes.

Scat. Feral hog scat (feces) (Figure 9) varies in consistency depending on what was consumed. It can look similar to dog scat but is somewhat distinguishable by its darker color and tubular shape.

Figure 8. Wallowing helps cool hogs in hot weather while mud aids hogs with parasite removal. *Photo by Becky McPeake, University of Arkansas.*

Figure 9. Feral hog scat. *Photo by Craig Hicks, Bugwood.org.*

Population Growth and Harvest

Controlling growth or stabilizing a population of feral hogs is difficult. Because of their high reproductive potential, large home ranges and avoidance of human activity, controlling feral hog populations takes effort and ingenuity. In most instances, **eradicating** feral hogs is neither feasible nor realistic. **Population reduction** has been successful in some areas, though the effort must be significant and sustained.

Timmons et al. (2012b) developed a population growth model for the estimated 2.6 million feral hogs in

Texas (at that time), and concluded "up to 66 percent of the population will need to be removed annually on a long-term basis (i.e., five years or more) to reach a stable population." Their feral hog population model was based on 21 studies about reproductive rates, piglets per litter, number of piglets and age/gender ratios. An estimated 29 percent of feral hogs were harvested in Texas, and the model confirmed field reports of their continued population increase despite harvest efforts.

To reduce feral hogs in a local area, harvesting two-thirds annually over several years may be achievable only in certain circumstances. Oftentimes, landowners on adjoining properties need to agree to remove feral hogs and invest time and energy in doing so. If removing two-thirds or more is not possible, an option may be reducing feral hog numbers to an acceptable level where damage is tolerable. Holtfreter et al. (2010) reported localized removal of whole sounders within a 3,679-acre area resulted in delayed recolonization, which they attributed to territorial behavior between adjacent sounders. At least temporarily, feral hog damage was abated in the area, until their expected return.

Shooting

Shooting feral hogs is legal in Arkansas. State law allows feral hogs to be shot or trapped year-round, day or night, on **private land** by the landowner or anyone with the landowner's permission. Rules differ for public lands. For additional information, see *Rules and Regulations Governing Feral Hogs,* FSA9106 (www.uaex.uada.edu) and current hunting regulations issued by the Arkansas Game and Fish Commission (www.agfc.com).

Incidental shooting can remove one or two feral hogs when the opportunity presents itself while hunting other game or scouting but will not reduce large numbers of hogs (e.g., Richardson et al. 1995). Hogs that experience one of their herd being shot, or a near miss, can learn to avoid shooters. In many instances, feral hogs are known to change behaviors and move elsewhere to escape repeated encounters with hunters.

Strategic shooting of feral hogs can be more effective than incidental shooting. This type of shooting requires a planned strategy, time commitment and possibly an investment in specialized equipment. Some professional feral hog removal services use firearm suppressers and night vision technology for feral hog removal. Such equipment is expensive, and special licensing may be required.

Shooting feral hogs using night vision can result in greater success, though the expense of night vision equipment, such as hunting scopes, may not justify the cost. Feral hogs often become more active feeding at night, particularly during warmer seasons, and darkness hides approaching shooters. Landowners can look for sign during daylight hours or set game cameras with time and date stamps to discover when and where hogs are feeding.

When shooting hogs at night, sneak up as close and as quietly as possible while facing the wind. (Feral hogs have a good sense of smell and will flee if a shooter's scent is detected.) Ideally, feral hogs will be more than 30 yards from cover, so several can be dispatched before they discern the direction of fire. Multiple shooters with night vision will increase the likelihood of entire sounder removal. Feral hogs may revisit particularly good feeding areas repeatedly, and shooters sometimes can return to the same location every few days or weeks to find returning hogs.

Trapping

Trapping and euthanizing feral hogs is recommended for reducing their numbers. Trapping requires periodic or daily attention to the trap. Hogs that escape from a trap or otherwise avoid capture often become trap-shy and difficult to lure back again. Therefore, it is important to follow a trapping strategy that reduces the risk of one or more hogs escaping. Because of their high reproductive capabilities, an escaped sow can quickly repopulate an area. Other methods may be necessary to remove trap-shy hogs, which typically is not easy to do.

Fence Designs

Fence design and size is very important when constructing a trap. Typically, utility livestock panels 16 to 20 feet by 5 feet are used with openings no greater than 4-inch by 4-inch square mesh, particularly along the bottom where piglets might escape. The size of the trap is determined by the number of hogs seen on a trail camera during surveillance. Traps need to be large enough for hogs to move freely and not be crowded. Circular traps prevent hogs from piling in corners and escaping over the fence. T-posts are driven outside of the panels for added support. For larger-sized hogs, metal fence panels with substantial posts may be necessary.

Fence-panel gates. Fence panels can be shaped into circular configurations to prevent feral hogs from escaping. Tension from t-posts set in the fence wire creates a flexible opening with panels bent backward to prevent hogs from exiting (Figure 10). A modified design

Figure 10. USDA Wildlife Services - Arkansas demonstrates a fence-panel trap that has been shut. *Photo by Becky McPeake, University of Arkansas.*

uses a prop stick set high enough in the fence opening for a larger hog to jostle it loose. Another design uses a trip wire affixed to the fence panel.

Fence-panel gates are considered by some to be less effective than using mechanical entry gates. Hogs are believed to have more opportunity to escape fence-panel gates, and trap-shy hogs may not enter them because of the narrow entry. Trail cameras can be set to record whether all hogs are entering the trap before setting the trigger. Because of their affordability and portability, in some circumstances a fence-panel gate could be the best option. Designs for fence-panel traps are described.

Wexford or heart-shaped trap – Feral hogs enter the trap where the two lobes meet and are unable to find their way out. Use bailing wire or fence clips to tie together the utility panels secured to t-posts. Five panels of 12 to 16 feet can capture about six to 10 feral hogs. T-posts at the funnel neck (where feral hogs enter) are spaced about 24 inches apart, with fence wire bending to a point near the center of the trap. T-posts need to be set on either side of the fence towards the end of the funnel. Some designs indicate ends should overlap by least 10 inches and have a stick set high enough for a mature hog to trigger-shut the funnel. Another plan leaves the funnel end open 4 to 6 inches, such that once feral hogs pass through, the ends mesh together and prevent escape (no trigger stick required). In either case, feral hogs outside the trap can push through the seemingly closed funnel to join other trapped hogs. Plans are available from the Arkansas Game and Fish Commission, http://www.agfc.com.

Figure 6 trap – Feral hogs enter the tail of the fence shaped as the number "6" and are unable to find their way out of the round pen. Construction techniques are similar to the heart-shaped trap.

Tight and loose C trap – Feral hogs enter either end of the C and are funneled into a tight C. Construction techniques are similar to the heart-shaped trap.

Box trap. A box trap which captures a single hog (Figure 11) may be economical and portable when only one or two hogs are present, but it is inefficient and ineffective at removing large numbers. When feral hogs are abundant, removing one or two does very little for population control. Though portable and easy to set up, using a box trap is least preferred, especially when dealing with sounder removal, because using a box trap can educate other hogs to avoid traps altogether.

Figure 11. Box traps can be purchased or constructed, though they capture only a few hogs and educate others to avoid traps. *Photo by Becky McPeake, University of Arkansas.*

Corral trap. Corral traps have more space for capturing multiple hogs as in sounders or bachelor groups. Cage traps, such as one modified from a round bale hay feeder, will capture a few more than a box trap, but not as many as a corral trap. Small enclosed traps may capture and harm nontarget species, such as deer and wild turkey. Corral traps 5 feet or more in height with open tops are recommended to allow nontarget species to escape while keeping hogs penned. Round, not square, fencing is recommended because frightened hogs will pile in corners and climb over the top. Corral traps require reassembly at different capture sites (Figure 12).

Figure 12. Three-sided corral pen with saloon head gate. *Photo by Billy Higginbotham, Texas AgriLife & Bugwood.org.*

Entry Gates

Constructed or mechanical gates are thought to permit fewer escapes than fence-panel gates. A tip for dealing with trap-shy hogs is to remove the gate and create a larger opening until hogs become accustomed to entering the trap.

Single-catch (guillotine, drop door) gates (Figure 13) typically are less expensive than other mechanical gates. They can capture multiple hogs if prebaiting and other protocols are followed. Single-catch gates are available for purchase or can be constructed from wood (see Stribling 2001).

Figure 13. Single-catch gates are economical and can capture multiple feral hogs when a strategy is followed. *Photo by Becky McPeake, University of Arkansas.*

Multi-catch (continuous catch) gates, such as saloon, closed root or trainer gates (Figure 14), were developed to capture more hogs than single-catch gates. After a multi-catch gate is tripped shut by hogs inside the trap, hogs outside can gain entry by pushing a one-way door. Multiple panels let in small hogs without opening the gate wide enough for others to escape. Smith et al. (2013) observed 222 instances where noncaptured hogs had the opportunity to enter various multi-catch gate designs. Few were observed entering root (16 percent), trainer (2 percent) or saloon (1 percent) type doors. Multi-catch doors can be an excellent way to trap large boars when sows enter the trap first. Landowners should weigh the relative cost and benefit of multi-catch doors when deciding which type of gate to use (Smith et al. 2013).

Figure 14. Multi-catch gates allow more hogs to enter even after the gate is tripped. *Photo by Becky McPeake, University of Arkansas.*

Trigger Mechanisms

Triggers can be of simple construction or use modern technology. Basic trigger mechanisms for mechanical gates are root sticks and trip wires (*Wild Pig Info*, www.wildpiginfo.msstate.edu). Root sticks require the right soil conditions for set stakes to stay in place and are less trigger-sensitive than trip wires. Trip wires can be used regardless of soil conditions.

Root stick. The door is held open by wedging a stick behind two set stakes (Figure 15). Set stakes are driven into the ground at a 45- to 60-degree angle pointing away from the door. A rope or cord is attached from the stick to the gate. The tension from the weight of the door holds the root stick in place behind the set stakes. Most bait is piled in a crescent shape inside the fence. Only a small pile of bait is placed around the root stick. A rooting or bumped hog will push the stick over the stakes and trigger the trap door.

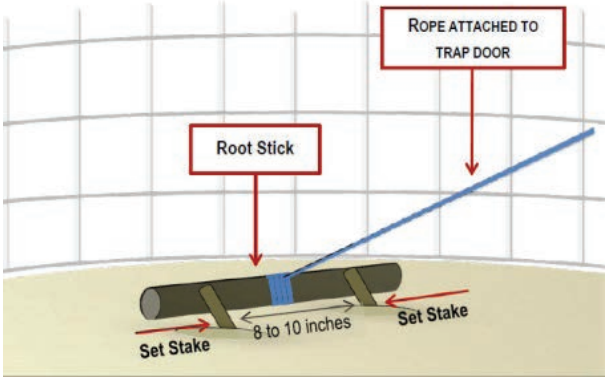

Figure 15. Root sticks work best in firm soils where stakes can be driven into the ground. *Illustration courtesy of Bill Hamrick, Mississippi State University.*

Trip wire. Trip wires are preferred where soil is unsuitable for holding a root stick in place. A low line or wire is run 16 to 20 inches above ground across the back of the trap to reduce nontarget species such as raccoons and opossums from triggering the trap. Setting the trip wire at this height also keeps smaller pigs from triggering the trap too soon. The trip line is run through rings or hooks set vertically up the side of the fence and then horizontally over the hogs' backs to the trap door. This design keeps a large hog from hitting the line prematurely and triggering the gate before all have entered. The line is attached to a triggering device (such as a pin, hook or prop stick) on the gate. Bait is piled in a crescent shape inside the fence and near (but not under) the trip wire for a jostled pig to set the trap once all have entered.

Figure 16 is an example of a trip wire. A pulley is wired to a rebar stake with ends of the rope affixed to the gate and fence. The trip wire is set high enough so smaller piglets and nontarget species won't prematurely trigger the gate. Unlike this demonstration, traps should be set in wooded areas where hogs are most likely to be found.

Figure 16. Trip wire mechanism for capturing hogs in a corral trap. *Photo by Becky McPeake, University of Arkansas.*

Remote trigger. Several remote trigger designs using wireless connections and real-time video are available commercially. These devices allow remote viewing and/or triggering with cellular phones or other devices. Advantages include less time and labor spent visiting trap sights and less human activity in the vicinity of the trap, which could improve capturing wary feral hogs. Disadvantages are costs associated with purchasing such devices and limited availability of cellular or wireless services in rural areas for employing such technologies.

Bait

Because of feral hogs' diverse eating habits, many types of attractants can be used to lure them into pen traps. The easiest and most economical is shelled corn. Whole shelled corn can be scattered in piles by hand or with a mechanized corn feeder. The gate should be propped or tied open until all hogs are comfortable entering. Secure mechanized feeders to avoid feral hogs tipping and damaging them. If bait is spread on the ground, fermented corn is sometimes used to reduce consumption by deer, raccoons and other nontarget species. Place corn in a bucket and cover with water. Let set for about a week, or longer if corn has not fermented enough. Some add a packet of yeast per 25 to 100 pounds of corn to facilitate the souring process.

Baits can be purchased commercially or prepared. A bait called "pig jam" (Texas A&M University 2011) was used successfully to attract hogs for a pilot study at the University of Arkansas - Monticello (Alexandra Locher, *personal communication*). Ingredients were 150 pounds of whole shelled corn, 8 pounds of sugar, two or three packages of yeast and five or six packages of strawberry jello. Place mixture in a 40- to 50-gallon metal drum or trash can and fill with water about 3 to 4 inches above the corn. Allow the mixture to ferment for about 4 weeks before application. (If placed in sunlight or heated environment, only 2 or 3 weeks may be necessary.)

Other examples of lures are (a) milo or rice fermented in water, beer or milk, (b) used fish grease or sardines mixed with corn, (c) bread fermented in water or beer, (d) spoiled produce, (e) dry dog food, (f) ripe peaches, bananas or plums or overripe fruit in general, (g) sweet potatoes, (h) cheese-based catfish baits, (i) fishmeal and vegetable mix and (j) molasses mixed with fish entrails. A southern Texas trial (Texas A&M University 2011) evaluated ten liquid feed additives of anise, bubblegum, butterscotch, berry, strawberry, caramel, apple, pig frenzy, blended cheese and banana. Feral hogs visited bait with liquid berry and strawberry additives twice as much as other attractants and four times more than control bait. The strawberry feed additive attracted fewer nontarget species than other attractants. Typically, sweet bait additives increase attraction of raccoons to bait sites.

Trap Placement and Protocols

Trail (game) cameras help determine the best location for a trap. Look for feral hog sign and set a trail camera near each potential trap location. Often feral hog sign is found in shaded areas in thick cover near a watercourse. Look for converging hog trails and affix the camera about 5 to 6 feet high, or higher, on a tree to limit detection by feral hogs. Tilt the camera slightly downwards. Make sure the camera is facing north or south, opposite of where the sun rises and sets, for best picture quality. Remove limbs or tall grass in the camera's line of sight, but keep such alterations to a minimum to avoid arousing suspicion of wary feral hogs. After 3 or 4 weeks, check the camera for feral hog activity. If no activity is evident, move the camera to another location until feral hogs are found.

Place or construct the trap at a location that feral hogs frequent. Do not hunt or disturb feral hogs when trapping operations are ongoing. Note that human activity required for setting the trap may move feral hogs temporarily from the location, so reset trail cameras to monitor activity.

Feral hogs can be trapped year-round. In one study, Wyckoff et al. (2006) reported capturing fewer hogs in summer when temperatures exceeded 72 degrees Fahrenheit (22 degrees Celsius) and recommended trapping efforts should be conducted at other times. However, experienced USDA feral hog trappers in Arkansas report some of their most successful trapping efforts occur during summer months. During hot weather, hogs generally move at night. They become more predictable in summer since human disturbance is generally reduced. In addition, water sources can be a good attractant during drought.

Prop or tie open the gate and allow hogs to enter freely, or temporarily remove the gate and make a wider entrance to lure in trap-shy hogs (Figure 17). After hogs are consuming bait in front of the gate, replace bait just inside the door. Slowly work towards the back of the trap (opposite the door), placing bait in lines or piles. Use the trail camera to monitor progress and determine the number of feral hogs in the group. Continue placing bait deeper inside the trap until hogs are taking bait in the back of the trap.

Figure 17. Prebaiting and temporary gate removal may be necessary for capturing trap-shy sounders. *Photo by Rebekah D. Wallace, University of Georgia, Bugwood.org.*

All feral hogs in the group should be comfortably entering and leaving the trap on camera before the trigger is set and the gate activated. If any hogs are overly cautious about entering the trap, delay setting the trap until **all have entered.** It is important to capture all hogs, because even one sow that eludes capture will become

trap-shy and difficult to recapture. She will quickly reproduce and repopulate the area, making your trapping effort less effective.

When preparing to set the trigger, pile bait in a crescent shape with only a small amount of bait, if any, around a root stick. Use only a minimal amount of bait to train stragglers to enter the trap quickly. If a trip wire is used, avoid placing bait under the trip wire to prevent the gate from closing prematurely before all hogs have entered the trap. The hogs will converge on the larger, closer bait piles and slowly work their way to the trigger or wire in the back of the trap.

Check the trap frequently, preferably from a distance if bait doesn't need to be replaced, to minimize human activity in the immediate area. If hogs are disturbance sensitive, it is often beneficial to check traps less frequently.

If trap-shy hogs consistently do not enter the trap, place snares around the perimeter of the corral. This is also a good time to implement other control strategies such as hunting over bait and night shooting.

Custom-Made Strategy

Outsmarting feral hogs, particularly trap-shy hogs, requires ingenuity. Knowledge of feral hog life history, behaviors and local habits play into designing a custom-made feral hog strategy that fits your particular circumstance. How much time and labor you are willing to invest should be considered, too.

One unique and successful permanent corral trap design uses two doors and old tires (Figure 18). A permanent fenced corral, open on both ends, encloses a well-used wildlife trail. Wildlife use the trail regularly and become accustomed to the permanent fence. When feral hog control is needed, trap gates are installed and corn is placed inside discarded vehicle tires, which are prevalent in nearby waterways. Traps are prebaited for days to weeks, until a trail camera indicates all feral hogs in the sounder are entering the trap. Trap doors are triggered when a heavy tire in the middle of the trap is moved by a large hog's feeding activity, shutting both doors simultaneously. Placing corn inside the heavy tires prevents deer, raccoons, smaller piglets or other wildlife from triggering the trap gates. Trapping is conducted every few years when new hogs enter the property.

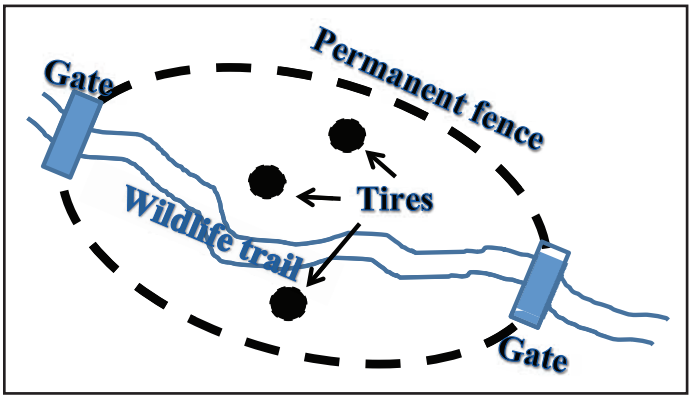

Figure 18. Feral hog trap designs can be adapted to improve effectiveness based on surrounding environmental conditions.

Common Mistakes

- **Do nothing.** Having problems deciding between trap designs? gates? baits? Do not get hung up on the details – just do it! Often such details are a matter of personal preference. More important is developing a sound strategy based on known feral hog attributes and following through. Your strategy may change or become more refined as you gain experience trapping hogs.
- **Placing a trap in a convenient spot.** Trap placement should be where feral hogs are present, not necessarily where it's convenient. Scout for feral hog sign and set trail cameras in areas where feral hog activity is evident. Prebait proposed locations to determine current presence of feral hogs before setting the corral trap. Set traps where feral hogs live. Cease shooting or disturbances that could cause feral hogs to leave the trapping vicinity.
- **Lack of prebaiting to condition all hogs to enter trap *quickly*.** Setting a trap before conditioning all hogs to enter could allow a few to escape. With the gate propped open, just enough bait should be available so any straggler hogs will go hungry. This should encourage all hogs to enter the trap quickly and improve chances of capturing all hogs. Placing too much bait may allow stragglers to remain outside the trap after it is triggered. Those which escape will reinforce learned behaviors to avoid traps, leading to more trap-shy hogs which are difficult to recapture; plus these hogs continue causing damage and reproducing.
- **Baiting heavily around the trigger.** A trigger set prematurely before all hogs are inside will teach those outside the pen to avoid traps.
- **Not capturing the entire sounder.** Feral hogs remaining outside the trap learn to avoid traps and become more difficult to capture; plus these hogs continue causing damage and reproducing.
- **Using too small a gate or pen relative to hog/sounder size.** Anecdotal evidence suggests feral hogs are more likely to enter wider gates (greater than 4 feet) and larger pens than narrow gates and smaller pens. If pen size is too small, not all feral hogs will

enter the trap. Feral hogs prefer ample open space when entering gates and visiting baiting stations within pens. It is better to err and provide "too much" open space than not enough when planning a capture strategy.

- **Not trapping all year.** Too many landowners quit trapping during uncomfortable weather conditions. Some hog trappers report these times can be the most productive periods of the year in capturing hogs.

Snares

Snares are anchored cable or wire nooses set along a pathway to capture a passing animal. Body snares can capture individual trap-shy feral hogs lingering around corral traps or along trails. The noose tightens around the captured animal as it walks through the hoop. Once a snare captures a hog, generally it is no longer functional and must be replaced. Snares can be purchased or constructed from materials available in a hardware store. Instructions for making feral hog snares are available at www.extension.org.

Snares should not be used if livestock, deer, bear or other nontarget animals are in the area. In Arkansas, all snares which are placed on land farther than 20 feet from a permanent body of water must have a functional "deer lock" which prevents them from closing smaller than 2½ inches to allow for the release of nontarget species. Read an Arkansas hunting guidebook or contact an Arkansas Game and Fish Commission office (800-364-4263, www.agfc.com) for additional regulations regarding snares for feral hogs, or see *Rules and Regulations Governing Feral Hogs*, FSA9106.

Alternative Methods

Hunting over bait. Hunting feral hogs may cause them to leave the area temporarily and thwart trapping efforts (Barrett and Birmingham 1995). Feral hogs often flee after the first shot is fired, with survivors learning to avoid baits.

Hunting with dogs. For individual hogs that avoid capture, hunting with dogs or "hog doggin" is an option on private land with the landowner's permission. Hog hunters invest in GPS receivers for tracking dogs and ATVs for the chase. Specially trained "bay" dogs track the hog, then "catch" dogs are released to hold the hog until the hunter arrives. State law requires captured hogs be killed immediately. It is unlawful to release a captured hog, whether caught in a trap or cornered with dogs. An exception is feral hogs captured and transported by permitted hog hunters to a terminal facility in compliance with the Arkansas Livestock and Poultry Commission regulations. (See *Rules and Regulations Governing Feral Hogs*, FSA9106.)

Drop net. Drop-net traps (Figure 19) have been used successfully in Oklahoma to capture feral hogs. It is thought feral hogs are not as concerned about objects above ground and are easier to lure beneath traps. In a preliminary study, Gaskamp and Gee (2011) removed 93 percent of a feral hog population from one site using drop nets and 55 percent from another site using corral traps. Further investigation revealed drop nets were only slightly more effective than corral traps when comparing unit effort, with 1.9 hours per hog for net traps versus 2.3 hours per hog for corral traps (Gaskamp et al. 2012). Other advantages were less trap-shyness, allowing capture of entire sounders in a single drop and avoiding capture of nontarget species. Drop nets can be monitored using infrared-triggered cameras during capture periods and triggered remotely, though monitored close by to quickly dispatch caught pigs.

Figure 19. Drop nets have been successful in capturing trap-shy hogs. *Photo by Joshua Gaskamp, Samuel Roberts Nobel Foundation.*

Aerial shooting. The use of airplanes or helicopters for shooting feral hogs is limited by terrain and aviation regulations. Large expanses of open areas are required for shooting feral hogs. Otherwise, they will elude observation where shrubs, trees or terrain limit visibility. Although Texas and Kansas report success at removing feral hogs via aerial shooting, aviation methods are expensive. The Airborne Hunting Act (Public Law 92-159) prohibits shooting animals from aircraft except for the protection of wildlife, livestock and human life as authorized by a federal- or state-issued license or permit.

Contraceptives. Research about the development and application of contraceptives for feral hogs is ongoing. To date, no effective species-specific oral contraceptives have been developed. Delivery mechanisms excluding nontarget species are being studied. A concern is leftover doses or residues in hog feces may contaminate water or soil. In urban white-tailed deer populations, contraception is more successful in closed populations (e.g., a gated residential community on an island) where females are darted periodically to keep the population stable, and is a costly endeavor.

Toxins or poisons. Currently, there are no toxins or poisons registered for feral hog control. Researchers continue studying baits and delivery mechanisms for introducing toxins to feral hogs. Identifying a pig-specific toxin and a delivery mechanism which avoids attracting nontarget species has proven difficult. Administering poisons or chemicals to remove nuisance wild animals (excluding rats and mice) is illegal in Arkansas (www.agfc.com/nuisance). Whether this law applies to feral hogs, which are not classified as game animals or wildlife in Arkansas, is unknown at this time.

Dispatching Feral Hogs

All captured feral hogs are to be killed immediately, per state law. It is illegal to release any pig into the wild in Arkansas. Captive feral hogs should be euthanized humanely and quickly. Captive or cornered feral hogs will attempt to flee from an approaching human, potentially causing injury to themselves or capture equipment. Approach hogs in a pen slowly and downwind to reduce their distress, and shoot through or over the top of the pen. Some hog trappers believe feral hogs won't re-enter traps where other feral hogs have been dispatched. However, other feral hog trappers and researchers contend it makes no difference.

Use an appropriate firearm, such as a .22 long rifle or larger caliber, and fire into the brain cavity. The shot should be placed about 2 or 3 inches above an imaginary line between the eyes or midpoint between the eye and ear (www.wildpiginfo.msstate.edu).

Consumption of Feral Hogs

Pork from feral hogs may be consumed by whoever killed the animal, or given away for consumption. Because of disease issues associated with feral hogs, hunters are encouraged to wear surgical gloves when handling carcasses. Avoid contacting eyes, nose and mouth when processing feral hogs. Afterwards, wash with soap.

Safe food handling practices are highly recommended when preparing and cooking pork. Cook meat thoroughly to an internal temperature of 170 degrees F. See the Extension publication FSFCS82, *A Quick Consumer Guide to Safe Food Handling (*www.uaex.uada.edu).

Pork from feral hogs cannot be sold for consumption in the marketplace. Federal inspectors require seeing animals live on the hoof prior to slaughter. Because it is illegal to transport live feral hogs, selling inspected "wild boar" meat from free-ranging feral hogs is not an option in Arkansas.

Before transporting dead feral hogs to a commercial processer for packaging, contact the processor. Some processors may not take feral hogs, while others need advance notification for switching their operation from deer or cattle to swine processing.

If your freezer is already full, considering donating the meat *to Arkansas Hunters Feeding the Hungry*, a nonprofit 501(c)(3) organization which redistributes wild game to needy people in the local community. The person donating the hog can pay for processing, or *Arkansas Hunters Feeding the Hungry* receives tax-deductible donations for such purposes and will reimburse the processor. A list of processors accepting wild game donations can be found on the *Arkansas Hunters Feeding the Hungry* website (www.arkansashunters.org), or call 501-282-0006. Because most processors expect venison donations, be sure to contact the processor in advance before delivering feral hogs.

Carcass Disposal

If meat cannot be utilized, feral hog carcasses may be left in the field. Carcasses should be removed away from waterways and drainages to prevent decaying carcasses from contaminating water sources. Disposal recommendations for domesticated livestock, which can be applied to feral hogs, are available in the publications *Organic Burial Composting of Cattle Mortality* (http://www.uaex.uada.edu/publications/PDF/FSA-1044.pdf) and *Regulations for the Disposal of Large Animal Carcasses* (http://alpc.arkansas.gov/regulations/Documents/CarcassDisposalLargeAnimal.pdf) from the Arkansas Livestock and Poultry Commission.

Summary

Free-ranging domestic hogs are present and their populations expanding in forests and pastures throughout Arkansas. Agricultural producers report damage from feral hogs rooting pastures and destroying crops. They consume the same foods as native wildlife species and overtake their habitat. Regenerating forests is a problem in areas where feral hog concentrations are high.

Population reduction can be achieved using one of several capture methods. Corral trapping is more effective at removing multiple hogs efficiently when procedures are followed. Which bait or gate to use is less important than following a strategy based on modifying feral hog behaviors and teaching the entire sounder to enter the trap. Surveillance with trail cameras is recommended when designing a capture strategy. Often materials such as corn, fencing, t-posts and wood for building a capture gate are available on the farm or can be purchased. Capture methods relying on more expensive technology, such as remote triggers activated by cellular phones, may save labor expenses over time in areas where feral hogs are numerous.

Instructional Videos

- eXtension – *Feral Hogs*, eXtension.org, *Control Techniques and Managing Feral Hog Populations*, 60-minute webinar that compares various methods for capturing feral hogs.
- Texas AgriLife, *Coping with Feral Hogs*, www.feralhogs.tamu.edu
- Mississippi State University, *Wild Pig Info,* www.wildpiginfo.msstate.edu
- Alabama Extension, ACES Wild Pig Management videos on YouTube, www.aces.edu/natural-resources/wildlife/awdm/mammals/hogs.php

Literature Cited

Barrett, R. H., and G. H. Birmingham. 1994. Wild pigs. p. D-65-D-70, S.E. Hygnstrom, R.M. Timm, and G.E. Larson (eds.) *Prevention and Control of Wildlife Damage Handbook*. University of Nebraska-Lincoln, USDA APHIS Animal Damage Control, and Great Plains Agricultural Council Wildlife Committee. Last accessed 1/14/14: http://www.icwdm.com/handbook/mammals/mam_d65.pdf.

Gaskamp, Joshua A., and Kenneth L. Gee. 2011. Using drop-nets to capture feral hogs. *Ag News and Views*, The Samuel Roberts Noble Foundation, July issue. Last accessed 1/31/14: http://www.noble.org/Global/ag/news-views/2011/07/drop-nets.pdf.

Gaskamp, Joshua A., Kenneth L. Gee, Nova J. Silvy, and Tyler A. Campbell. 2012. Efficacy of drop-nets versus corral traps for feral hog capture. *International Wild Pig Conference: Science and Management Abstracts*, p. 23. Last accessed 1/14/14: http://wildpigconference.com/pdf/2012%20International%20Wild%20Pig%20Conference%20Program.pdf.

Holtfreter, Robert W., Brian L. Williams, Stephen S. Ditchkoff, and James B. Grand. 2010. *International Wild Pig Conference: Science and Management Abstracts*, p. 30. Last accessed 1/14/14: http://www.wildpigconference.com/pdf/Program.pdf.

Mathis, Greg. 1999. Existing Arkansas laws regulating feral pigs. *Feral Swine Conference Proceedings* 1:37. Last accessed 1/29/14: http://feralhogs.tamu.edu/files/2010/05/Feral-Swine-Conference.pdf.

Mayer, John J. 2009. Taxonomy and history of wild pigs in the United States. p. 5-23 in *Wild Pigs: Biology, Damage, Control Techniques and Management*, Savannah River National Laboratory, Aiken, South Carolina. Last accessed 8/18/2014: http://www.sdmmp.com/Libraries/Management_Plans_and_Reports/SRNL-2009_Wild_Pigs_biology_damage_mgmt.sflb.ashx.

Mayer, John J. 2011. Wild pig attacks. *Urban Wildlife Management and Planning Conference*, May 22-25, Austin, Texas. Last accessed 1/7/14: http://urbanwildlife2011.org/media/mayer2.pdf.

McPeake, Rebecca. 2014. *Perceptions of County Agriculture Agents about Feral Hogs in Arkansas.* University of Arkansas Division of Agriculture, Cooperative Extension Service, Arkansas Forest Resources Center.

National Feral Swine Mapping System. *Southeastern Cooperative Wildlife Disease Study.* Last accessed 2/11/14: http://128.192.20.53/nfsms/.

Richardson, C., P. Gipson, D. Jones, and J. Luchsinger. 1995. Extirpation of a recently established feral pig population in Kansas. *Eastern Wildlife Damage Management Conference* 7:100-103.

Rollins, Dale. 1999. Impacts of feral swine on wildlife. *National Feral Swine Conference* 1: 46-51. Last accessed 1/15/14: http://feralhogs.tamu.edu/files/2010/05/Feral-Swine-Conference.pdf.

Texas A&M University. 2011. Coping with feral hogs: feral hog baits (powerpoint). Last accessed 1/15/14: http://feralhogs.tamu.edu/files/2011/12/Website-Feral-Hog-Baits.pdf.

Timmons, Jared B., Blake Alldredge, William E. Rogers, and James C. Cathey. 2012a. Feral hogs negatively affect native plant communities. *Texas A&M AgriLife*, SP-467. Last accessed 1/15/14: http://feralhogs.tamu.edu/files/2010/04/feral-hogs-native-plants.pdf.

Timmons, Jared B., Janell Mellish, Billy Higgenbotham, Jonathan Griffin, Roel Lopez, Aaron Sumrall, James C. Cathey, and Kevin Skow. 2012b. Feral hog population growth, density and harvest in Texas. *Texas A&M AgriLife*, SP-472. Last accessed 1/10/14: http://www.invasivespecies.wa.gov/documents/squealonpigs/FeralHogPopGrowthDensity&HarvestinTX.pdf.

Stribling, H. Lee. 2001. Build it – feral hog trap. *Wildlife Trends*, May issue, p. 12-15. Last accessed 1/31/14: http://www.wildlifetrends.com/pdf/feralHogTrapPlan.pdf.

University of Arkansas. 2009. Tusk: the Razorback live mascot. Athletic Department news release. March 18. Last accessed 1/14/14: http://www.arkansasrazorbacks.com/ViewArticle.dbml?ATCLID=1514556.

West, Ben C., Andrea L. Cooper, and James B. Armstrong. 2009. Managing wild pigs: A technical guide. *Human-Wildlife Interactions Monograph* 1:1-55. The Berryman Institute, Starkville, Mississippi and Logan, Utah. Last accessed 1/7/14: http://feralhogs.tamu.edu/files/2010/05/managing-feral-pigs.pdf.

Wyckoff, A. Christy, Scott E. Henke, Tyler Campbell, and Kurt C. VerCauteren. 2006. Proceedings of the Vertebrate Pest Conference 22:370-372. Last accessed 1/14/14: http://www.aphis.usda.gov/wildlife_damage/nwrc/publications/06pubs/campbell062.pdf

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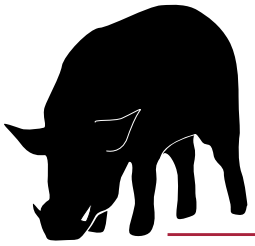


Feral Hog
Friend or Foe?

Hello my name is
Sus Scrofa

A pig by any other name... they're all the same

Wild hog, wild boar, wild pig, wild swine, feral swine, feral pig, feral hog, feral boar, Eurasian boar, Russian boar…All Sus Scrofa, genetically speaking

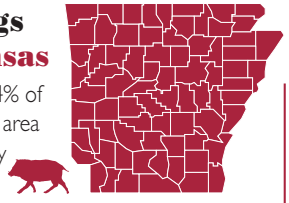
If "you are what you eat," then what's a feral hog?

85% Plants and invertebrates, roots, grasses, forbs, nuts, berries, worms, insects, insect larvae

15% Dead animal carcasses, eggs and young of ground nesting birds, reptiles, amphibians, small mammals

Feral hogs in Arkansas

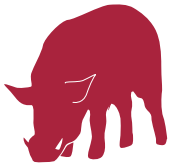
1977 – about 4% of the state's land area
Today –in every county 100%



When hogs go wild...

31 Hogs in 400 days

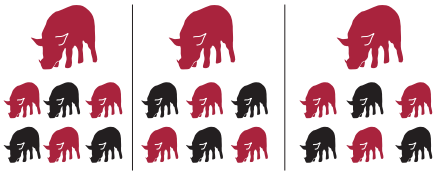
How to grow from size 1 to 31 in a little over a year:



Start with one pregnant sow

Feral sow's average litter size = **6**

If half the litter is female, in 13+ months, those 3 have 6 piglets



plus momma sow has 6 more = 31

Here piggy, piggy, piggy!

Q How fast are feral hogs moving across the state?

A About 70 miles per hour in the back of a livestock trailer

Did you know that in Arkansas

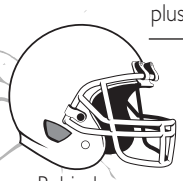
99.9%

of all cases:

- It is illegal to transport a live feral hog.
- It is illegal to release any hog into the wild.

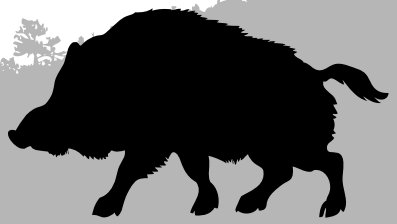
Any captured feral hog must be killed immediately.

Know the law!



Is the Razorback mascot Tusk a feral hog? NO

Behind a permanent fence = domestic
Free range = feral, wild



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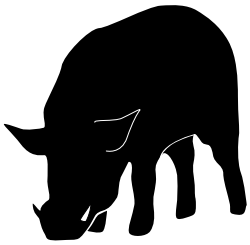
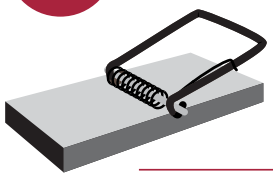


Feral Hog
Friend or Foe?

"Think Like A Feral Hog" Movement

KNOW • PREPARE • EMPLOY

1. Know Your Hog(s) – Trail Camera Surveillance
Identify Feral Hog Society membership Established sounder or transient bachelor group? Single boar?



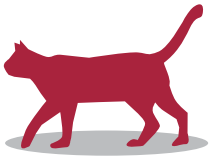
2. Prepare a DIY Custom Capture-and-Removal Strategy. Let your first move be their last move

3. Employ Best Removal Practices. Whether trapping or shooting, leave no survivors. Avoid educating feral hogs, they learn fast and may not be caught again

Living High On the Hog...Or Not

- Consume row and vegetable crops
- Destroy livestock and hay pastures
- Forest understory removal

- Spread of invasive plant species
- Direct competition with wildlife for limited food resources
- Spread diseases to livestock, pets and humans



- Competition for habitat and space
- Create soil erosion and sedimentation, water pollution
- Consumption of some game species and species of concern

What's your sign?

Think you might have Feral Hogs on your property? Look for the following signs:

- rooting
- digging
- muddy wallows
- tree rubs

- tracks
- crop loss
- pasture damage

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