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.

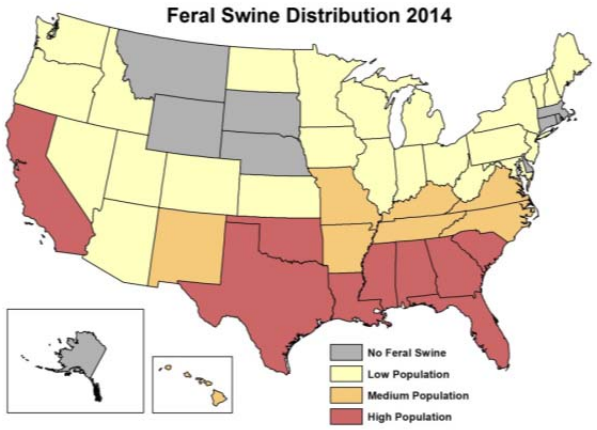

Figure 3: States that have reported the presence of wild pigs in 2014 (USDA APHIS Draft Environmental Impact Statement, 9 December 2014).

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.