

# Bringing Home the Bacon: Feral Swine and the Department of Defense

## Why are Feral Swine a Problem for DoD?

Feral swine, including wild pigs and feral hogs, are some of the most damaging mammalian invasive species on Department of Defense (DoD) lands. They cause ecological and structural damage to training lands and habitats.

Feral swine live near water and dense vegetation cover across at least 95 DoD installations in 18 states, primarily in the southern and western U.S. Swine have high reproductive potential with one to two litters of four to 12 piglets each year, and they do not have many natural predators, which contributes to population growth.

## How Can Feral Swine Impact DoD's Mission?

Feral swine degrade the landscapes and infrastructure that the military depends on for realistic training, testing, and operations. Feral swine have destroyed targets and underground wires, and their rooting - digging in search of edible insects, roots, and tubers - has led to paratrooper training exercise injuries when troops land on uneven ground.

A 2010 U.S. Army Corps of Engineers (USACE) Engineer Research and Development Center (ERDC) [survey](#) found 18 DoD reservations reported a feral swine presence on their lands for less than six years. This demonstrates a growing concern that feral swine are expanding into previously unoccupied areas. DoD continues to manage and mitigate feral swine damage to firing ranges, training lands, and civil works infrastructure while complying with [Executive Order \(EO\) 13112](#) and other invasive species legal requirements.



*Feral swine rooting on DoD training lands*



*Feral swine (photo from O'ahu Natural Resources Program)*

## How Can Feral Swine Impact Health and Safety?

Feral swine can transmit more than 30 diseases, including swine flu and 37 parasites to people, pets, and agricultural crops. External parasites include numerous tick species, fleas, and hog lice. Like deer and other large animals, feral swine-vehicle collisions are a concern on DoD lands. Male feral swine have attacked humans and pets, sometimes using their four inch long sharp tusks to cause serious injury. As presented at the 15<sup>th</sup> Wildlife Damage Management Conference, an analysis of 412 [wild pig attacks on humans](#) across the globe found 76 percent of reported attacks took place during non-hunting periods. These dangers are real, which is why DoD must manage feral swine populations in accordance with the standards outlined in [DoD Directive 4715.1E, Environment, Safety, and Occupational Health](#).

## How Can Feral Swine Impact Habitats?

Feral swine can destroy habitats and disturb native species through rooting activities, competition, and predation. These activities can reduce native species populations and increase the prevalence of invasive species. Feral swine impacts on native ecosystems can lead to endangered species and critical habitat designations, which ultimately result in mission and land use restrictions.

## Rooting

Feral swine significantly impact soil when foraging for food. They consume native plant seedlings and reduce the density of native plants, such as longleaf pine, a keystone species for 29 listed species. In one Hawaiian rainforest, [feral swine eliminated at least 30 native plant species](#), which allowed the invasive strawberry guava to take over the landscape. Rooting alters nutrient cycles and increases erosion by altering and decreasing the understory. Soil erosion can decrease water quality from siltation and bacterial contamination. Disturbed landscapes promote invasive species growth; change native species composition, and can attract foraging birds to exposed invertebrates to create an airstrike and flight operation hazard.



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## Competition & Predation

As omnivores, feral swine eat plants and animals, thereby competing with native turkey and other game animals for food. Feral swine destroy nesting habitat for endangered birds; disrupt food webs; and prey on endemic birds, herpetofauna, small mammals, and eggs of endangered species, such as sea turtles. These activities impact natural ecosystem processes; can negatively affect population recovery efforts for threatened, endangered, and at-risk species; and may adversely affect other at-risk species, increasing the danger of extinctions. Negative impacts to species populations hinder mission readiness by limiting training land availability and increasing the need for interagency consultation and formal management agreements.

## How Can DoD Control Feral Swine?

EO 13112 requires that agencies assess control alternatives in a way that is both cost-effective and environmentally sound. Feral swine are highly adaptive and intelligent creatures, and land managers must use multiple control and eradication methods to be successful.

## Hunting

On DoD installations with hunting programs, personnel may snare, live trap, shoot, or use dogs to hunt feral swine. Local ordinances and the conditions of the installation's permit may limit some hunting techniques, such as firearms or aerial shooting in densely wooded areas, because of safety considerations.

Managing feral swine on DoD lands through a hunting program has the added benefit of generating revenue. In addition, issuing hunting permits allows the installation to restrict hunters to safe areas, helping protect both the hunters and other installation personnel.

## Trapping

Cage traps are an effective way for DoD property managers to contain and remove feral swine, although these traps are difficult to install in swampy areas. Corral traps are problematic to use because feral swine are likely to escape enclosures by digging under fences, squeezing through gaps, or even scrambling over barriers. Alternatively, natural resources managers can construct exclusionary fencing to create barriers to food and water sources, or restrict feral swine from entering sensitive locations, including areas with personnel or training sites.

## Monitoring

Military personnel can develop or use existing partnerships with universities or other agencies to monitor and control feral swine populations. Some population monitoring methods include camera traps or radio telemetry tagging to find and learn about feral swine movements in the area. Once natural resources managers locate and understand the population movements, they can use cage or corral traps and snares to remove them.

## Educating & Communicating

Educating military personnel about feral swine and their impacts can make troops more vigilant during routine activities. Installation property managers can coordinate with universities and other agencies to learn more about feral swine population sizes, demographic trends, movements, foraging behaviors, food preferences, and habits.

## Successfully Managing Feral Swine

Installation invasive species management plans require many location and behavior based decisions, as well as long-term planning and analysis. Initial results show greater success with cage traps compared to hunting, especially when using cages along trails leading to bait. Restricting access to water also is an effective deterrent for swine.

In fiscal year 2015, the [Legacy Resource Management Program](#) funded a project, *Invasive Wild Pigs – Best Practices and Decision Support Tools* (15-780), to determine the impacts of feral swine on the military mission, infrastructure, native species, threatened and endangered species and supporting ecosystems, and cultural resources. In this project, the investigating team will analyze Fort Leonard Wood's control methods, including social and programmatic methods. Personnel will calculate changes in DoD's feral swine population and develop structured decision making tools, including guidance and software, to help manage feral swine. ERDC plans to complete this study and analyze results by October 2016.

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