*BIOLOGY, LEGAL STATUS, CONTROL MATERIALS, AND DIRECTIONS FOR USE*

## Wild Pig

Family: Suidae


Introduction: Wild pigs in the United States are referred to by many names (e.g., feral hog, feral pig, feral swine, wild boar, and wild hog), mainly because of their mixed ancestry. Wild pigs are not native to the United States. They were first introduced to the United States in the 1500's by European settlers. Many years later, sport hunters introduced true Eurasian wild boars into certain areas of California. The wild pig population that exists today is a combination of domestic, escaped, or neglected domestic swine.


Wild pigs are highly adaptable and prolific animals. Wild pigs are environmental and agricultural pests. They cause damage to the environment through wallowing, rooting for food, and selective feeding. They destroy habitat for native plants and animals and spread environmental weeds. Wild pigs destroy crops and pasture and they potentially may spread exotic diseases should there be an outbreak. Thus, wild pig control requires a sustained and integrated approach, which may include various forms of exclusion, fencing, shooting, and trapping. Check State laws and regulations concerning wild pig hunting permits.

In California, wild pigs were restricted to a few coastal counties prior to the 1950s. As of 2014, the wild pig population was estimated anywhere between 500,000 and 2 million animals, with wild pigs having been reported in 57 of 58 counties. The northern and central coast regions of California host the majority of the state's wild pigs, who depend on permanent water sources and prefer oak (*Quercus* spp.) woodlands.

Identification: Wild pigs, because of their varied ancestry, come in all shapes and colors from gray, red, black, blond, spotted, and belted. Some look like domestic pigs, others resemble Eurasian wild boars. All have small eyes, relatively small, erect ears, and a long, relatively flat snout. Wild pigs have a thick coat of coarse, bristly fur; some are able to erect the fur along their spine, lending them the common name "razorback". Most wild pigs have longer bristles than their domestic ancestors. Full grown males are usually 200 lbs at adult weight, while full grown females weigh slightly less (around 175 lbs). While they can grow larger than this, it is not considered common and would typically only occur through heavy consumption of crops or livestock feed. Boars have four sharp tusks that grow continuously, often reaching 5 inches before they break or become worn from use. The bottom tusks make formidable weapons. Boars use them for defense and to establish dominance.

Wild pigs live in matrilineal groups called sounders that are led by a dominant female. While males are nomadic and are known to move about within their home range, females tend to stay in their familial groups with 80% of females remaining with the sounder in which they were reared. Juvenile wild pigs often exhibit dark coloration with horizontal stripes.

Legal Status: Wild pigs are classified as game animals by the California Department of Fish and Wildlife (CDFW), and as such, are subject to hunting regulations as outlined by CDFW policy. However, when wild pigs are damaging or destroying, or threatening to immediately damage or destroy land or property, the landowner, agent, or employee that "encounters" the damage or threat, may take the offending wild pigs immediately. Many restrictions apply to such immediate take; specific details can be found at the following website: https://www.dfg.ca.gov/wildlife/hunting/pig/depredation.html.

In cases other than above, any owner or tenant of land or property that is being damaged or destroyed or is in danger of being damaged or destroyed by wild pigs may apply to CDFW for a permit to kill any such animals. In addition, where applicable, landowners can hunt wild pigs to reduce populations after obtaining a hunting license and wild pig hunting tags. Currently, the wild pig hunting season is year-round. Consult the Fish and Game hunting regulations for further information.

Damage: Wild pigs impact ecosystems through their rooting, wallowing, foraging, and hunting, with a conservative annual estimate of $1.5 billion in economic damage nationally to agriculture and the environment. They are highly competitive for food resources and have been known to drive cattle away from supplement. Deer are also known to vacate an area, such as a water source, upon the arrival of wild pigs.


Their rooting behavior overturns and tills the soil, uprooting plants, exposing bare soil, and creating opportunities for weeds to invade. They disturb native and naturalized vegetation and reduce

available forage for livestock and other wildlife. Their wallowing disturbs springs and seeps and they occasionally cause damage to stock water troughs by rooting around their bases and undermining the troughs. Their rooting and wallowing behavior also disturbs riparian areas and reduces habitat suitability for native and endangered wildlife species. In urban areas, the rooting behavior of wild pigs can cause extensive damage to lawns and gardens.

Wild pigs can be a major nuisance for farmers and ranchers, as they will invade farm fields and eat crops, disturb plantings by rooting through the soil, defecate in fields leaving behind fecal coliforms that may be infectious to humans, and pose a serious risk to human and livestock health by serving as vectors for numerous diseases and parasites. In California, damage from wild pigs can be quite high. One study noted a 6 – 10% loss in revenue in various agricultural commodities when wild pigs were present, while a study in Texas estimated $57 million worth of damage caused by wild pigs to crops annually.

Wild pigs are susceptible to at least 30 transmittable livestock diseases and are hosts to over 35 types of parasites. Of the 30 diseases that wild pigs carry, many (e.g., Leptospirosis, brucellosis, and influenza) can be transferred to humans. Additionally, they are known carriers of five major waterborne pathogens (*Escherichia coli*, *Campylobacter*, *Salmonella*, *Cryptosporidium*, and *Giardia*) that can contaminate drinking water and foods.

Range: In 1988, wild pigs were reported in 31 counties. In 2014, wild pigs were reportedly distributed in 57 of 58 counties; they were only absent in Imperial County.

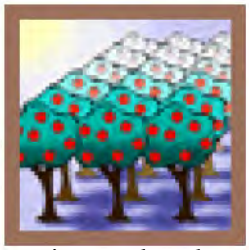
Wild Pig

Habitat: Although wild pigs are considered habitat generalists, a few common themes are often observed. Wild pigs like to rest and nest in areas with low growing dense vegetation. Like most other vertebrates, wild pigs need water. Additionally, since wild pigs do not have sweat glands, in hot weather, they wallow in seeps and springs to cool themselves. Wild pigs show a dietary preference for a number of plants that grow in riparian areas, so their home range is dictated by not only the availability of water resources, but also proximity to riparian ecosystems, especially in the summer or during dry periods.

Biology: Wild pigs usually live to be 4 to 8 years old, with high mortality rates among the young and very old. Once juveniles reach 10 to 15 lbs, predation risk is minimal. Females are sexually mature and can be reproductively capable at 6 to 9 months, although most females are over a year old before they have their first litter. Females can have up to 2 litters per year, and litter size can vary from as little as 3 to as many as 18, with an average litter size of 5 or 6. Competition among litter mates can be strong, leaving weaker pigs more susceptible to disease and predation. Up to 48% of pigs may die within the first year of life.

Wild pigs are very smart and able to adapt and respond to an array of environmental conditions in order to sustain their population. Their fecundity and litter success rates are highly correlated with precipitation amounts. Like many other species, during dry years, wild pigs have smaller litters with lower survival rates. During dry years, wild pigs also expand their home range in search of food and water. During years with above average precipitation, wild pigs have larger litters with higher survival rates among the young.

Known for their voracious appetite, wild pigs have a wide and varied diet made up of plant and animal matter. Wild pigs frequently scavenge and will prey upon reptiles, amphibians, and small mammals. Such feeding is indiscriminate; wild pigs will kill and eat whatever is most available or easiest to catch. Wild pigs will also prey upon lambs, full grown sheep, kids (baby goats), and calves. Wild pigs root through the soil to find roots, bulbs, and grubs, and show a strong preference for hard mast crops (e.g., acorns). The monogastric, or one stomach, digestive system of the pig is similar to humans; pigs will digest food in as little as 4 to 6 hours. A full grown wild pig will consume about 3% of its body weight per day, although they are capable of consuming considerably more in a short period of time.



Damage Prevention and Control Methods:

Exclusion: Excluding wild pigs using fencing is an effective option, though it can be expensive. However, if implemented on a small scale, it can be practical. Wild pigs are strong enough to upturn many types of fences and simply go under them by utilizing their natural rooting instinct. If wild pigs are excluded using a fence, it should be monitored closely to watch for signs that the perimeter has been breached. For more information on how to properly construct wild pig exclusionary fences, see West et al. (2009).

Habitat modification: Nothing practical is effective.

Frightening: General harassment can be effective at moving wild pigs off of small areas, but generally just shifts problem animals from one property to the next. As such, harassment is not a long-term solution.

Fumigants: None are registered.

Repellents: Currently there are no repellents considered effective for use on wild pigs.

Toxic baits: Currently there are no toxicants registered for use on wild pigs in the U.S.

Trapping: Trapping is a common and effective method of removing wild pigs. There are two types of traps that are most commonly used with wild pigs: box traps and corral traps. Box traps are usually relatively small, about 4 foot by 4 foot by 8 foot; they are constructed using heavy duty welded framing as well as wire paneling. A door system with a trip wire is used to allow entry but prevent escape from the trap. Some box traps are equipped with what is known as a rooting door, which allows multiple pigs to enter by utilizing their natural rooting tendencies while preventing escape.


Corral traps are generally larger than box traps and designed to capture larger numbers of wild pigs. Corral traps are either round or square, though round traps are recommended over square traps because pigs tend to pile up in the corners of square traps and will climb on top of each other to escape the trap. If a square corral trap is used, it is recommended that the corners be adequately covered to prevent pigs from climbing out. The two basic door types used in corral traps are the same as those used in box traps. Either a drop gate, triggered by a trip wire, is used, or a rooting door on springs is used. In the case of the drop gate, the trip wire is generally attached to something of interest to the pigs at the furthest end of the trap from the door. This allows more than one pig to enter in search of food before the trip wire is triggered and the door drops closed. Corral traps are preferred by many because entire sounders can be captured at once, which helps prevent trap education of other wild pigs.

Traps are baited with a number of food substances intended to draw wild pigs in as they search for food. Recommendations include corn, barley, oats, carrion, fruit, and fermented corn or soybeans, although any food that the wild pigs are currently feeding on is a good option. Trapping is considered more of an art than a science, and it may take some time to determine which bait works best. Some have developed mechanical feeding devices, like a 55-gallon drum with small holes that lets bait out. This allows wild pigs to access the bait but prevents smaller, non-target species from consuming bait. Pre-baiting traps can significantly improve the success rate of a trapping program. It is important to ensure a steady bait supply, check traps daily, and check traps from a distance. If trapped pigs are approached, they may become agitated and attempt to escape the trap. Wild pigs are large, strong animals; traps must be constructed using materials that can withstand the force of agitated individuals. For more information on trapping and how to build and bait traps, see West et al. (2009) and Hamrick et al. (2011).

Shooting: Shooting is a popular method of controlling wild pig populations. However, recreational hunting alone is not an effective control method. Pressure from hunting will drive wild pigs to move away from where they are hunted, or at a minimum, will restrict their movements. CDFW maintains a "Guide to Hunting Wild Pigs in California" on their website. It is legal to use dogs when hunting wild pigs under some circumstances. However, it has been found that using dogs is most effective for locating individuals or smaller groups of wild pigs. They are particularly useful for removing trap-shy individuals after most pigs in a population have been removed through trapping.

Eradication: Eradication efforts are expensive and time consuming, although they can be successful by implementing multiple control methods. There are two examples of wild pig eradication documented in California. One example comes from Santa Cruz Island where wild pigs were eradicated in 2007 at a total cost of about $5 million. Eradication took about 26 months and 5,036 wild pigs were shot on the 62,000 acre island. Wild pigs were also eradicated from Pinnacles National Monument at a total cost of over $600,000 dollars for 200 wild pigs. This number does not include the approximate $2 million that was spent to install an exclusionary fence to prevent wild pigs from recolonizing the monument. Eradication statewide is not likely possible at this time given the expansive range of wild pigs throughout the state.

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