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FERAL DOGS

Jeffrey S. Green
Assistant Regional Director USDA-APHIS Animal Damage Control

Philip S. Gipson
Kansas Cooperative Fish and Wildlife Research Unit Kansas State University

Jeffrey S. Green
Assistant Regional Director
USDA-APHIS-
Animal Damage Control
Lakewood, Colorado 80228

Philip S. Gipson
Unit Leader
Kansas Cooperative Fish and
Wildlife Research Unit
Kansas State University
Manhattan, Kansas 66506-3501

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Fig. 1. Feral dog, *Canis familiaris*

Damage Prevention and Control Methods

Exclusion

Net wire fences.

Electric fences.

Frightening

Yard lights, effigies, pyrotechnics.

Electronic Guard.

Livestock guarding animals.

Repellents

Several products are registered but are practical only for small areas.

Capsaicin and anise oil may protect humans from attack by dogs.

Toxicants

Sodium cyanide in M-44 ejector devices.

Fumigants

None are registered.

Trapping

Live traps.

No. 3 or 4 steel leghold traps.

Cable neck snares.

Shooting

Hunting from the air.

Hunting from the ground.

Other Methods

Eliminate food supplies.

Destroy dens.

Catch poles.

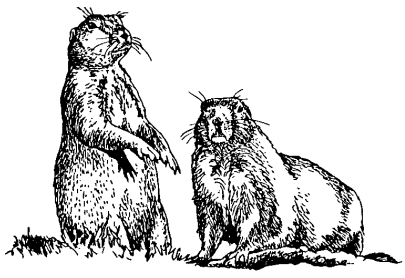
Jab sticks.

Cultural Considerations

Public education.

Dog control laws.

Professional carnivore damage control specialists.



PREVENTION AND CONTROL OF WILDLIFE DAMAGE — 1994

Cooperative Extension Division
Institute of Agriculture and Natural Resources
University of Nebraska - Lincoln

United States Department of Agriculture
Animal and Plant Health Inspection Service
Animal Damage Control

Great Plains Agricultural Council
Wildlife Committee

Identification

In appearance, most feral dogs (Fig. 1) are difficult, if not impossible, to distinguish from domestic dogs. Like domestic dogs, feral dogs (sometimes referred to as wild or free-ranging dogs) manifest themselves in a variety of shapes, sizes, colors, and even breeds. McKnight (1964) noted German shepherds, Doberman pinschers, and collies as breeds that often become feral. Most feral dogs today are descendants of domestic dogs gone wild, and they often appear similar to dog breeds that are locally common.

The primary feature that distinguishes feral from domestic dogs is the degree of reliance or dependence on humans, and in some respect, their behavior toward people. Feral dogs survive and reproduce independently of human intervention or assistance. While it is true that some feral dogs use human garbage for food, others acquire their primary subsistence by hunting and scavenging like other wild canids.

Feral and domestic dogs often differ markedly in their behavior toward people. Scott and Causey (1973) based their classification of these two types by observing the behavior of dogs while confined in cage traps. Domestic dogs usually wagged their tails or exhibited a calm disposition when a human approached, whereas most feral dogs showed highly aggressive behavior, growling, barking, and attempting to bite. Some dogs were intermediate in their behavior and couldn't be classified as either feral or domestic based soley on their reaction to humans. Since many feral dogs have been pursued, shot at, or trapped by people, their aggressive behavior toward humans is not surprising. Gipson (1983) described the numerous lead pellets imbedded under the skin of a feral dog caught in Arkansas as a testament to its relationship with people.

Feral dogs are usually secretive and wary of people. Thus, they are active during dawn, dusk, and at night much like other wild canids. They often travel in packs or groups and may have rendezvous sites like wolves. Travel routes to and from the gathering or den sites may be well defined. Food scraps and other evidence of concentrated activity may be observed at gathering sites.

The appearance of tracks left by feral dogs varies with the size and weight of the animal. Generally, dog tracks are rounder and show more prominent nail marks than those of coyotes, and they are usually larger than those of foxes. Since a pack of feral dogs likely consists of animals in a variety of sizes and shapes, the tracks from a pack of dogs will be correspondingly varied, unlike the tracks of a group of coyotes. The publication by Acorn and Dorrance (1990) contains a comparative illustration of canid tracks.

Range

Feral dogs are the most widespread of the wild canids. They may occur wherever people are present and permit dogs to roam free or where people abandon unwanted dogs. Feral dogs probably occur in all of the 50 states, Canada, and Central and South America. They are also common in Europe, Australia, Africa, and on several remote ocean islands, such as the Galapagos.

Home ranges of feral dogs vary considerably in size and are probably influenced by the availability of food. Dog packs that are primarily dependent on garbage may remain in the immediate vicinity of a dump, while other packs that depend on livestock or wild game may forage over an area of 50 square miles (130 km^2) or more.

Habitat

Feral dogs are often found in forested areas or shrublands in the vicinity of human habitation. Some people will not tolerate feral dogs in close proximity to human activity; thus they take considerable effort to eliminate feral dogs in such areas. Feral dogs may be found on lands where human access is limited, such as military reservations and large airports. They may also live in remote sites where they feed on wildlife and native fruits. The only areas that do not appear to be suitable for feral dogs are places where food and escape cover are not available, or where large native carnivores, particularly wolves, are common and prey on dogs.

Food Habits

Like coyotes, feral dogs have catholic diets and are best described as opportunistic feeders. They can be efficient predators, preying on small and large animals, including domestic livestock. Many rely on carrion, particularly road-killed animals, crippled waterfowl, green vegetation, berries and other fruits, and refuse at garbage dumps.

General Biology, Reproduction, and Behavior

Feral dogs are highly adaptable, social carnivores. Most are about the size of a coyote or slightly larger. Many breeds of dogs are capable of existing in the wild, but after a few generations of uncontrolled breeding, a generalized mongrel tends to develop. Often it has a German shepherd or husky-like appearance. Feral dogs on the Galapagos Islands resemble the original introduced breeds: hounds, pointers, and Borzoi.

Gipson (1983) suggested that family groups of feral dogs are more highly organized than previously believed. Pup rearing may be shared by several members of a pack. Survival of pups born during autumn and winter has been documented, even in areas with harsh winter weather. Gipson found that only one female in a pack of feral dogs studied in Alaska gave birth during two years of study, even though other adult females were present in the pack. The breeding female gave birth during late September or early October during both years. It is noteworthy that all pups from both litters had similar color markings, suggesting that

the pups had the same father. Adult males of different colors were present in the pack.

Nesbitt (1975) commented on the rigid social organization of a pack of feral dogs where nonresident dogs were excluded, including females in estrus. In one instance, Nesbitt used three separate female dogs in estrus as bait (dogs were chained in the back of a corral-type trap) over a 59-day period and captured no feral dogs. He then baited the same trap with carrion, and a pack of feral dogs, including four adult males, entered the trap within 1 week.

Hybridization between feral dogs and other wild canids can occur, but nonsynchronous estrus periods and pack behavior (that is, excluding nonresident canids from membership in the pack) may preclude much interbreeding.

Dens may be burrows dug in the ground or sheltered spots under abandoned buildings or farm machinery. Feral dogs commonly use former fox or coyote dens.

Damage and Damage Identification

Livestock and poultry can be victims of harassment, injury, and death from both domestic and feral dogs. Distinguishing between livestock killed by domestic or feral dogs and that killed by coyotes may be difficult since the mode of attack can be similar. Coyotes usually attack an animal at the throat; domestic dogs are relatively indiscriminate in how and where they attack. Sometimes, however, dogs kill the way coyotes do, and young and inexperienced coyotes may attack any part of the body of their prey as dogs would. The survival of feral dogs, much like that of other wild canids, depends on their ability to secure food. Therefore feral dogs are usually adept predators. Unlike most domestic dogs, feral dogs rely on their prey for food, and thus consume much of what they kill. Feral dogs favor the hindquarters and viscera (liver, spleen, heart, lungs).

When domestic dogs attack domestic animals, they may injure or kill several, but they seldom consume their victims. Rather, they leave the impression that they were involved in vicious play rather than an attempt to obtain food. The most diagnostic characteristic of injuries caused by dogs is usually the slashing and biting of prey animals over much of their bodies. Wade and Bowns (1983) and Acorn and Dorrance (1990) present a detailed pictorial and descriptive aid to identifying predators that damage livestock.

Feral dogs may become skilled at hunting in groups for small game such as rabbits and hares and large game including deer and even moose. Some wildlife managers feel that feral dogs are a serious threat to deer, especially in areas with heavy snows (Lowry 1978). Others have found no evidence that feral dogs pose a significant threat to deer (Causey and Cude 1980). Clearly, the impact of feral dogs, both on livestock and wildlife, varies by location and is influenced by factors such as availability of other food, the number of dogs, and competition by other predators.

Feral dogs may feed on fruit crops including melons, berries, and grapes, and native fruits such as persimmons and blackberries. Damage to melons is similar to that caused by coyotes. The side of a ripe melon is usually bitten open and the insides eaten.

Feral dogs commonly kill house cats, and they may injure or kill domestic dogs. In areas where people have not hunted and trapped feral dogs, the dogs may not have developed fear of humans, and in those instances such dogs may attack people, especially children. This can be a serious problem in areas where feral dogs feed at and live around garbage dumps near human dwellings. Such situations occur most frequently around small remote towns.

On the Galapagos Islands, feral dogs have significantly impacted native populations of tortoises, iguanas, and birds.

Legal Status

State and local laws concerning feral and free-ranging dogs vary considerably, but most states have some regulations. Many states, particularly those in the west, permit individuals to shoot dogs that are chasing or killing game animals or livestock. State agencies or agriculture departments usually are responsible for controlling feral dogs in rural areas. No states consider feral dogs to be game animals. Most cities have animal control agents to pick up abandoned and free-ranging domestic dogs.

Damage Prevention and Control Methods

Exclusion

Protect livestock and poultry from feral and domestic dogs with well-maintained net fences. Horizontal spacing of the mesh should be less than 6 inches (15 cm); vertical spacing should be less than 4 inches (10 cm). Barbed wire at ground level or a buried wire apron will discourage dogs from digging under the fence. The fence should be about 6 feet (1.8 m) high to hinder animals from jumping over. The effectiveness of fences can be increased by adding one or more electrically charged wires along the bottom and top. Charged wires are positioned so that the intruding dog encounters them before digging under or climbing over the fence.

Electric fences consisting of up to 12 alternating ground and charged wires have been effective at deterring dogs (Dorrance and Bourne 1980). Other configurations have also been successful (Shelton 1984, deCalesta 1983). Electric fences must be checked regularly to ensure that the wires are sufficiently charged. Maintenance of fences may be difficult in areas with drifting snow and where large wild animals are common. Moose and bears can be particularly destructive to electric fences.

Fencing is one of the most beneficial investments in dealing with predator

damage and livestock management if practicality warrants its use.

Frightening

Several visual and auditory devices (yard lights, effigies, loud music, pyrotechnics) have been used to frighten coyotes from livestock pens and pastures, and are likely to be effective with feral dogs.

Researchers at the Denver Wildlife Research Center developed and tested a device called the Electronic Guard, a combination strobe light and siren that periodically activates during the night. The noise and light have been effective in reducing coyote predation on flocks of sheep. Similar results could reasonably be anticipated with feral dogs.

Guarding dogs that have been reared with livestock and trained to remain with them can be a deterrent to depredating feral dogs (Green and Woodruff 1991). Since a pack of feral dogs is quite capable of killing other dogs, more than one guarding dog may be needed where feral dogs are a threat. Donkeys and llamas have also been used to keep dogs away from livestock.

Repellents

Methyl nonyl ketone, mostly in granular form or in liquid sprays, is widely used to prevent urination or defecation by dogs in yards and storage areas. Several other chemicals are registered for repelling dogs including anise oil, Bitrex, capsaicin, d-linonene, dried blood, essential oils, napthalene, nicotene, Ropel, Thiram, Thymol, and tobacco dust. These chemicals may be useful in keeping feral dogs from establishing scent stations or relieving themselves on selected sites, but they probably have little value in protecting livestock or poultry. Capsaicin (oleoresin of capsicum) and oil of anise may be effective in protecting humans from attack by dogs.

Toxicants

There are no toxicants widely used for controlling feral dogs in the United States. The USDA-APHIS-ADC program holds a Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) Section 3 registration for sodium cyanide used in M-44 delivery devices. Although the product label for M-44 cyanide capsules lists wild dogs among the canids that can be controlled when they are preying on livestock (others include coyotes and red and gray foxes), ADC policy prohibits using M-44s for specifically killing dogs. Some dogs are killed by M-44s when they are being used to kill coyotes, but dogs are not the target animal. In addition, at least one state has a law prohibiting ADC from using M-44s to intentionally kill dogs.

Several states hold their own registrations for using M-44s, and their policy with regard to feral dogs may be different from that of ADC. Consult state and local regulations with respect to M-44 use. In all instances, M-44s can only be used by certified applicators.

Toxic collars containing Compound 1080 (sodium monofluoroacetate) placed on domestic animals may kill depredating dogs if the dogs puncture the collar during an attack. The collars, however, are only registered for use against coyotes.

Fumigants

No fumigants are registered for the control of feral dogs.

Trapping

Live traps are generally effective in capturing feral dog pups and occasionally adult dogs. Steel leghold traps (No. 3 or 4) are convenient and effective for trapping wild dogs. Carrion and scent baits used to lure coyotes to traps may be effective in attracting feral dogs. Nontarget species or pets inadvertently captured can be released. Caution should be exercised when approaching a dog in a trap, since feral dogs may be vicious when confined, and even pet dogs may bite under those circumstances. Cable neck snares may be set at openings in fences or along narrow trails used by dogs. Use care when setting snares because they may kill pets or livestock that are caught.

Shooting

Aerial shooting is one of the most efficient control techniques available for killing feral dogs. Where a pack of damaging feral dogs is established, it may be worthwhile to trap one or two members of the pack, fit them with radio transmitters, and release them. Feral dogs are highly social, and by periodically locating the radio-tagged dogs with a radio receiver, it is possible to locate other members of the group. When other members of the pack are destroyed, the radioed dogs can be located and shot. This technique has been used effectively by the Alaska Department of Fish and Game to eliminate packs of problem wolves.

Hunting from the ground has been used to control feral dogs. A predator call may lure dogs within rifle range. Establishing a shooting blind can be helpful, especially along a trail used by dogs, near a den, a garbage dump, or a large animal carcass.

Other Methods

Fencing garbage dumps, burying garbage in sanitary landfills frequently, or removing livestock carrion may help reduce local feral dog populations. Locating and destroying dens, especially when pups are present, may also be helpful. Use catch poles to capture and restrain feral dogs. Dart guns and jab sticks can be used to administer tranquilizing or euthanizing agents.

Cultural Considerations

The long-term solution to most problems caused by unconfined dogs, including feral dogs, is responsible dog ownership and effective local dog management programs. Many depredation problems can be solved by confining dogs to kennels or to the owner's property. Dog breeding must be controlled. Unwanted dogs should be placed for adoption or destroyed rather than abandoned, since the latter leads to the formation of free-living, feral populations.

Dog management programs should include the following: (1) public educa-

tion about proper care and confinement of dogs; (2) laws that identify that dog owners are legally responsible for damage caused by dogs; (3) laws that prohibit abandonment of unwanted dogs and require humane disposal of unwanted dogs; (4) holding facilities and personnel trained to handle unwanted or nuisance dogs; and (5) assistance by professional control specialists where feral dogs are established.

Economics of Damage and Control

Feral dogs may destroy livestock and poultry valued at thousands of dollars. In such instances, the costs of controlling dogs may be warranted. Boggess and his co-workers (1978) examined 5,800 claims of domestic livestock lost to dogs and coyotes in Iowa between 1960 and 1974. Dogs were considered responsible for 49% of the reported sheep losses, 45% of the cattle losses, 66% of the swine losses, and 82% of the poultry losses. Denny (1974) conducted a nationwide survey of state departments of agriculture, wildlife conservation agencies, and related agencies to determine problems caused by unconfined dogs. Damage to wildlife, especially deer, small game, and birds was considered the primary problem caused by dogs. Damage to game animals may be a serious local problem. In view of the value placed on game animals by hunters and other wildlife enthusiasts, local control to benefit wild game may be economically justified. The second most serious problem reported was damage to livestock.

Acknowledgments

Figure 1 drawn by Reneé Lanik, University of Nebraska-Lincoln.

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Editors

Scott E. Hygnstrom
Robert M. Timm
Gary E. Larson