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URBAN ANIMAL DAMAGE CONTROL IN CALIFORNIA

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ABSTRACT: Requests for assistance, monetary losses attributed to wildlife, and numbers of wild animals removed from urban areas in California increased significantly between 1982 and 1989. Five species of wildlife are responsible for the majority of complaints received from the public. Because of the inherent problems associated with animal damage control in densely populated urban areas, specialized control equipment and techniques such as cage traps, crossbows and night vision goggles are utilized by U.S. Department of Agriculture, Animal Plant Health Inspection Service, Animal Damage Control (USDA-APHIS-ADC) personnel. Urban ADC programs help educate a large segment of the population about the need for occasional control of problem wildlife.

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INTRODUCTION

The U. S. Government has maintained a cooperative animal damage control agreement with both the State of California and a varying number of its counties since 1921. The Animal Damage Control Act of March 2, 1931, as amended, and the Rural Development, Agriculture, and Related Agencies Appropriations Act of 1988, authorize and direct USDA to cooperate with states, individuals, public and private agencies, organizations, and institutions in conducting programs to control injurious predatory animals, wild game animals, nuisance mammals and bird species, and to suppress wildlife diseases. Cooperative agreements in California provide a combined funding source from Federal, State and County Government entities.

In 1990, the USDA-APHIS-ADC program in California consists of 40 cooperating counties stretching from the Oregon state line to the Mexican border. A total of 82 ADC Specialists work within the contract counties and are available full time to respond to animal damage problems involving predators and some rodents in both urban and rural areas.

Even though the number of urban requests for assistance increased from 14,117 in 1982 to 24,323 in 1989 (Fig. 1), the conflicts between urban and rural requests were minimal due to the seasonal nature of urban animal damage. Requests for service are usually coordinated through the cooperating county Agricultural Commissioner's office.

AREA DESCRIPTION

The climate and topography of California is diverse with all Life Zones found within the state (Ingles 1947). Two major mountain ranges running north to south are separated by broad flat valleys. The human population in California has increased significantly over the past 8 years, expanding from 24.5 million in 1982 to 29 million in 1989. Major population centers are located in the coastal mountains and foothills, and in the central valleys in the southern two-thirds of the state. Rapid population growth has occurred around the major metropolitan areas and in the foothill counties on the west slope of the Sierra Nevada Mountains. As the urban areas expanded, ADC records indicate verified monetary losses attributed to urban wildlife increased from \$162,000 in 1982 to \$387,424 in 1989 (Fig. 2).

TARGET ANIMALS

Five species of wildlife are responsible for the majority of urban animal damage complaints handled by ADC in

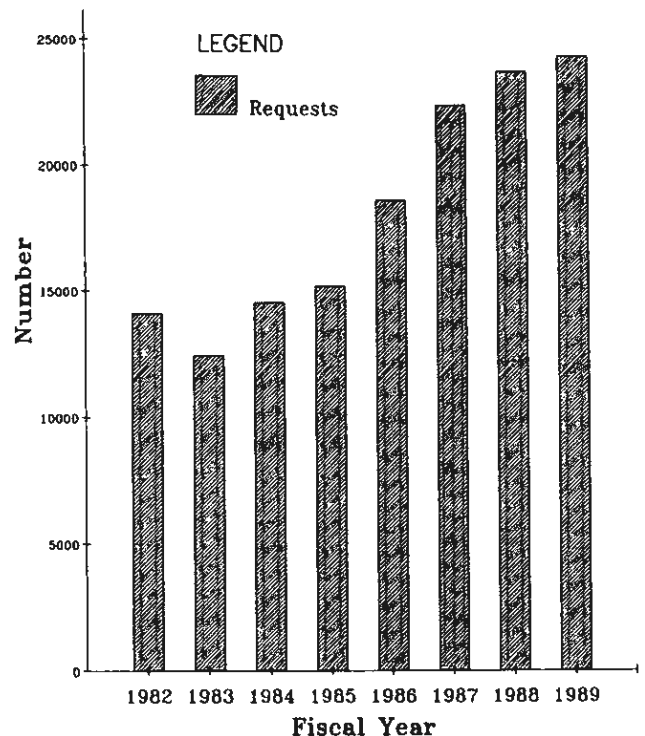


Fig. 1. Number of requests for urban animal damage control received by ADC personnel in California from 1982 to 1989.

California (Table 1). These species share similar behavioral traits, i.e., all are nocturnal or crepuscular and, except for the beaver (*Castor canadensis*), all are omnivorous, which gives them access to a large variety of food items found in urban areas. The major reason the public requests ADC assistance in urban areas, in addition to property damage, is the fear of disease and parasite transmission by wildlife.

The striped skunk (*Mephitis mephitis*) is the most commonly trapped species and represents 51 percent of the total urban wildlife trapped. Complaints from the public involving skunks are seasonal in nature with major peaks occurring in late winter when males fight (and spray) each other during the breeding season and in midsummer when the young disperse after being weaned. In addition, the public's fear of rabid skunks is well founded as skunks represent 65

Table 1. Summary of the most common urban wildlife species removed by ADC personnel in California between 1982 and 1989.

Year	Species				
	Skunk	Raccoon	Opossum	Beaver	Coyote
1982	3273	1492	951	22	13
1983	2456	1315	895	32	47
1984	2889	1468	1221	74	90
1985	3351	1525	990	149	54
1986	3641	2179	1372	129	82
1987	4712	2406	1672	160	148
1988	5007	2665	2254	185	169
1989	4969	2971	2395	149	155
Total	30298	16021	11750	900	758

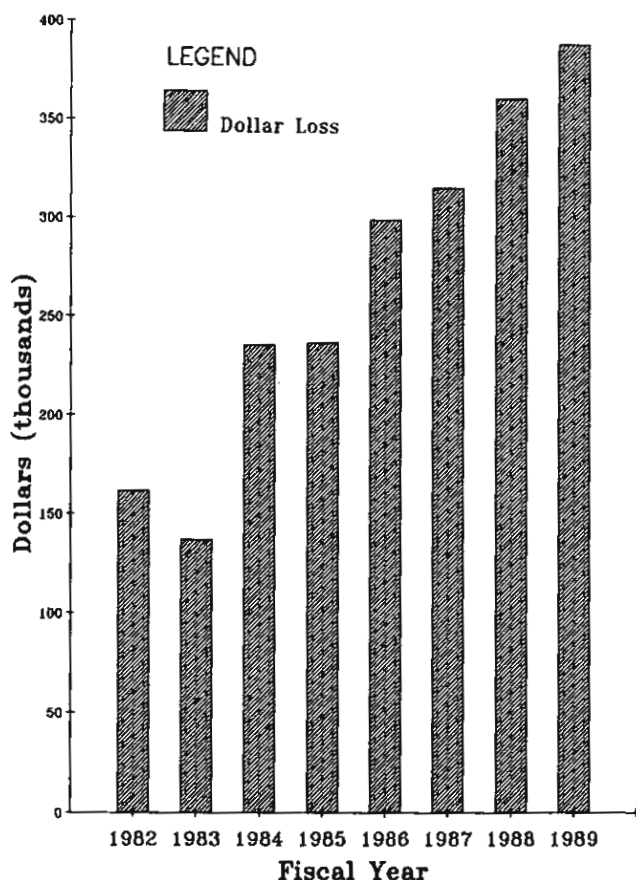


Fig. 2. Dollar value of urban wildlife damage confirmed by ADC personnel in California from 1982 to 1989.

percent of 3,623 animals that tested positive for rabies in California between 1982 and 1989 (Calif. Dept. of Health Services).

Raccoons (*Procyon lotor*) represent the second most common urban wildlife species removed by USDA-ADC

personnel. Urban damage by raccoons is diverse with the majority of complaints involving destruction of poultry, fruits and vegetables, injury to pets, and damage to buildings when the animals attempt to den inside. In California, rabies in raccoons is seldom reported although in other parts of the United States they are considered a major vector for the disease.

Records indicate the Virginia opossum (*Didelphis virginiana*) was introduced in California during the early part of the twentieth century (Grinnell 1915). Expansion of the opossum range into most of the urban areas of California is in large part due to the animal's fecundity; it routinely breeds twice a year with an average litter size of 7.2 (Reynolds 1952). Disease transmission, a fondness for pet food, fruits and vegetables, and a penchant for building malodorous nests inside or beneath occupied buildings give the opossum an unwelcomed reputation in urban areas.

Beaver were almost extirpated from most of their original range in California by the middle of the nineteenth century (Tappe 1942). Legal protection was first given to beaver in 1911, rescinded in 1917 due to an increase in damage complaints, then reinstated in 1933. In 1939, beaver were finally given protection as a furbearer, and a permit system was established for the removal of depredating animals (Hensley 1946). Beaver transplants by conservation agencies in the 1940s, an extended period of low fur prices, and a restriction on trapping in urban areas all contributed to an increase in beaver numbers in many areas of California. Carrying capacities of many watersheds have been reached, forcing excess animals into submarginal habitats, often in urban areas. Flooding and the concomitant destruction of ornamental trees and shrubs for food and dam construction are the main complaints received from the public.

ADC personnel working in many of the metropolitan areas in California recorded a substantial increase in coyote (*Canis latrans*) complaints involving predation on pets (cats and small dogs), backyard livestock, garden produce, and particularly in the southern counties, aggressive behavior directed toward humans. A total of 19 incidents in California involving actual attacks on humans, including the death of a 3-year-old child in Los Angeles County, was recorded between 1975 and 1988 (Howell 1982, R. Wightman, pers. comm.). Three separate attacks by coyotes on small children occurred on August 18, 1988, in Oceanside, California, a residential area in San Diego County.

CONTROL TECHNIQUES

The presence of free-roaming pets and the potential for human interference in urban areas necessitate the utilization of specialized control procedures and equipment. The most common control method used is the Tomahawk[®] welded-wire cage trap. It is a single-door cage trap (25.4 × 30.5 × 81.3 cm), strong enough to hold animals as large as raccoons, but small enough to successfully trap striped skunks. The cage trap is either covered with 0.64-cm (1/4-in) treated plywood, 24-gauge sheet metal, or left uncovered. Covered traps are used in conjunction with a carbon monoxide gas chamber mounted to the bed of a pickup truck. The gas chamber is a 40.6 × 40.6 × 109-cm hinged sheet-metal box attached to a

[®]Reference to trade names and/or manufacturers' names does not imply U.S. Government endorsement.

5-horsepower gasoline engine. A covered trap containing a target animal is placed in the gas chamber and a replacement trap is left at the trap site. The engine is left running until the next animal pickup where the euthanized animal is removed and the sequence is repeated. Uncovered cage traps are used in areas where the target animals are dispatched with a jab stick loaded with an approved euthanizing agent. Both methods work well on skunks as very few animals spray while being euthanized.

Larger cage traps, up to 152.4 × 152.4 × 304.8 cm, are used to catch animals ranging in size from beaver to mountain lions, while smaller covered cage traps (17.8 × 17.8 × 50.8 cm) are used in attics and other interior areas that have been invaded by spotted skunks (*Spilogale putorius*).

Numerous seasonal and perennial creeks are present in many urban areas of California that not only harbor depredating beaver populations but act as magnets for neighborhood children and pets. Because of this, traditional beaver control methods, i.e., leghold traps, Conibear traps, cannot be safely used. Instead, night vision goggles (Litton Industries) capable of magnifying available light 1,700 times are used in conjunction with an infrared laser aiming light (International Technologies (Laser) Ltd.) that sends out a pinpoint beam of light visible only through the goggles (Fig. 3). The aiming light, when mounted on a compound crossbow, allows the removal of problem beaver without

generating visible light or detectable sound and is used when beaver are found close to homes or other occupied dwellings. The compound crossbow is equipped with 90-lb test line attached to 18-inch bolts. Fishing points with extendable wings are attached to the bolts for better retention while a lightweight broadhead point is glued to the fishing point for a more rapid kill. The weight of the bolt and point combined with the resistance of the attached line reduces the effective killing range to approximately 15 feet. However, most streams in the urban areas containing depredating beaver are less than 15 feet wide. In situations where it is safe and feasible to do so, the goggles and aiming light are used with a shotgun and predator call to remove urban coyotes.

Additional wildlife species have also been implicated in urban damage in California, although to a lesser extent than the five previously mentioned. Spotted skunks, bobcats (*Lynx rufus*), gray fox (*Urocyon cinereoargenteus*), black bear (*Ursus americanus*), wild pig (*Sus scrofa*), and mountain lion (*Felis concolor*) (particularly in the Sierra Nevada foothills) make occasional forays into populated areas to prey on pets and barnyard livestock or scavenge pet food and garden produce.

SUMMARY

ADC records indicate that urban animal damage has increased each year for most of the past decade and suggest

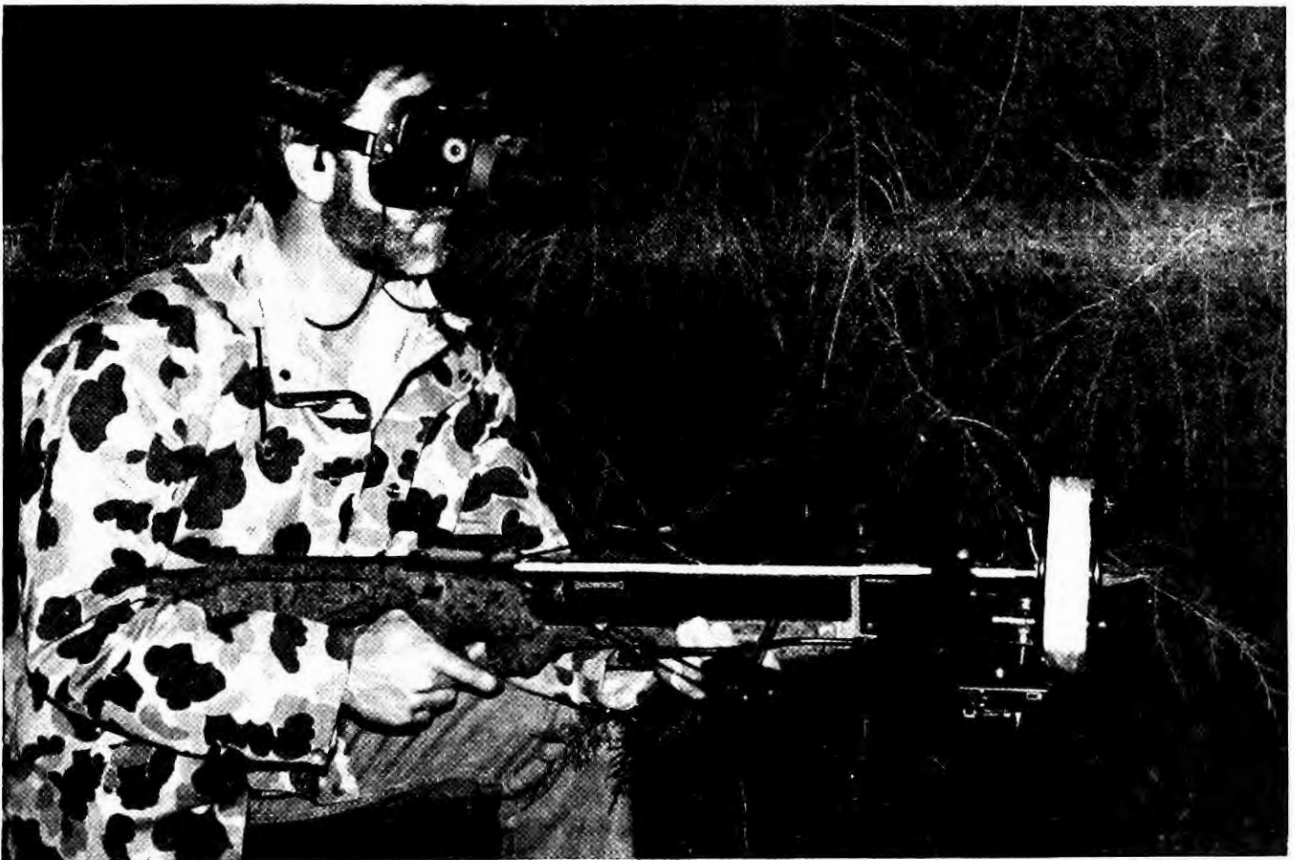


Fig. 3. Compound crossbow equipped with an infrared laser aiming light and fishing bolt with line attached. The crossbow is used in conjunction with night vision goggles to remove depredating beaver from densely populated urban areas.

that damage levels will continue to increase as the human population expands. As more people choose to live in metropolitan areas, their knowledge of and support for animal damage control is generally limited to information being provided by the media and special interest groups. A well-run ADC program exposes large segments of the urban population to professional ADC personnel, techniques, and sound wildlife management principles.

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