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Wildlife Damage Management at the County Level: Fresno County, California

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ABSTRACT: The Wildlife Damage Management program in Fresno County, California, which assists landowners with solving problems regarding property damage, crop, poultry, and livestock losses, and public health threats, is described. While historically, coyote control account for approximately 90% of the program's effort, recent increases in wild hog damage have made it necessary to expend 40% of all efforts on this species. Beaver control effort are ongoing, and local mosquito abatement districts have requested beaver removal in order to eliminate mosquito habitat, as part of an effort to reduce the incidence of equine encephalitis and West Nile virus. Changes in beaver control strategies are described.

KEY WORDS: beaver, California, *Canis latrans*, *Castor canadensis*, coyotes, Fresno County, *Sus scrofa*, trapping, wild hogs, wildlife damage

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Fresno County is located near the center of California's San Joaquin Valley, which is the southern half of the Great Central Valley. The City of Fresno, elevation 325 feet, is the county seat. Fresno County sits between the Sierra mountain range to the east and the Coastal Range to the west. The San Joaquin River and Kings River borders Fresno County on the north and south respectively.

Fresno County consists of 6,000 square miles, or 3,840,000 acres. The majority of Fresno County consists of private landowners. However, the Department of Interior Bureau of Land Management, USDA Forest Service, and California Department of Fish and Game have control over sizeable amounts of property within the county.

Highways 168 and 180 are the primary access routes into the Sierra Nevada Mountain Range in eastern Fresno County. The eastern portion of Fresno County has rolling hills that consist of rangeland grasses, pine forest, chaparral, and oak savanna. The Sierra Nevada mountain range reaches an elevation in excess of 14,000 feet. The foothills of the Coast Range foothills are the western boundary of Fresno County, with peaks reaching an elevation of over 4,000 feet. The western portion of the county has arid grassland foothills with junipers, pines, and oaks at the higher elevations. The valley floor is 50 to 60 miles wide. It is agriculturally developed with foothill rangeland on the edges. The higher elevations are managed by federal agencies. Many plant and animal endangered species exist in Fresno County.

There are 1,636,224 acres in agriculture production with a 2010 value of \$5.94 billion. If Fresno County were a state, it would be ranked #21 in terms of value of agricultural production. The economic impact of agricultural production to the county is \$20.79 billion.

Since the 1920s, the Fresno County Department of Agriculture has employed trappers to manage wildlife damage to agriculture production. Currently, the Wildlife Damage Management (WDM) Unit has the responsibility to respond to requests for assistance with public health and welfare concerns, property damage, and crop, poultry, and livestock losses. WDM specialists provide aid

to cattle producers, poultry raisers, and sheep growers to manage damage caused by predatory animals such as coyotes, wild hogs, beavers, bobcats, skunks, foxes, raccoons, bears, and mountain lions.

From 2001 to 2010, the average yearly reported loss was \$403,040 with a high of \$663,795 in 2001. During the same period, the average yearly reported damage caused by coyotes (*Canis latrans*) was \$263,077 with a high of \$383,723 in 2004. Historically, coyote activity accounted for 90% of WDM's workload. The remaining 10% of the workload was mountain lion, beaver, bear, fox, and wild hog. However, due a recent surge in the wild hog (*Sus scrofa*) population in Fresno County and the accompanying damage, the wild hog damage workload is now over 40% of WDM effort. Damage by wild hogs includes the following: drip irrigation in orchards and vineyards, rangeland erosion, forage loss, fruit loss in orange groves, landscape damage in schools and county parks, public safety, damage to lawns and golf courses, predation on newborn calves and lambs, potential disease transmission to cattle, and veterinary care costs of injuries to other domestic animals.

From 1990 to 2005, damage caused by wild hogs was minimal. However, in 2006 reported damage jumped to \$104,000. During that year, WDM staff removed 49 wild hogs. In subsequent years, reported damage losses decreased to \$85,000 in 2007, \$65,000 in 2008, \$49,100 in 2009, \$33,300 in 2010, and \$26,500 in 2011. The decrease in reported losses was in response to an increase in yearly removal of 71 wild hogs in 2007, 91 in 2008, 107 in 2009, 47 in 2010 and 139 in 2011. The increased wild hog activity has caused a dramatic shift in the use of personnel and techniques. Shooting has largely been replaced by cage and corral traps. Farmers and ranchers have become more active in assisting WDM staff with baiting and daily inspections of traps.

The American beaver (*Castor canadensis*) causes seasonal damage in Fresno County that can vary year to year. Beaver occur in the San Joaquin River from the Friant Dam, downstream to the Merced County line. On the

Kings River, they occur from the Pine Flat Dam to west of the city of Laton. Beaver also inhabit many of the canal systems, ponding basins, and parks in close proximity to the rivers. They have clogged water conveyance systems, which has led to the flooding of adjacent alfalfa fields, sugar beets, roads, and highways. They have taken down or severely damaged almond, plum, cherry, other stone-fruit trees, thornless boysenberries, and grapes. Oak restoration projects along the San Joaquin River have been ruined. Beaver can become a public health and safety concern when they have downed power poles, causing power outages and grass fires. Also, beaver have plugged culverts under roads and highways, causing road flooding and thereby creating a public safety concern. They can also become a public health concern when their activity causes flooding, increasing water levels and thereby creating a larger reservoir for the development of the mosquito larvae. Larger mosquito populations increase the potential of equine encephalitis and West Nile disease. Local mosquito abatement districts have requested the removal of beaver in order to lower water levels.

Public access to most areas of the shoreline along both rivers has necessitated that our WDM staff change beaver management methods from foothold traps, snares, and conibear traps to the EZee Set Live Catch Beaver Trap (Bert Ram Manufacturing, Birtle, Manitoba, Canada). This cage trap enables a public-friendly method of management, providing the opportunity to relocate beaver taken under a depredation permit, when so directed by the Department of Fish and Game.

Recent budget cutbacks and changes in the law have made it necessary to change tactics and planning when dealing with wildlife damage. Of necessity, the WDM Unit spends more time responding to urgent needs than to conducting preventive measures. Hopefully, newer techniques and innovative uses of electronic devices will help in continuing to respond to the needs of the public, ranchers, and growers, despite the ever-present threat of reductions in funding.