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DEALING WITH WILD PIG DEPREDATION IN CALIFORNIA: THE STRATEGIC PLAN

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INTRODUCTION

The *Wild Pig Management Plan* is required by Fish and Game Code Section 4651. It is intended to be a strategic plan for dealing with wild pigs for the five-year period 1995-2000. The plan is a dynamic document that will be reviewed and updated at least every five years.

As prescribed by law, the plan contains information related to the status and trend of wild pig populations, and describes management units established by the Department to address regional needs and opportunities. Those needs include alleviating damage to property, protecting sensitive natural resources, and providing recreational hunting where feasible. Opportunities include using the demand for recreational hunting of wild pigs as a practical and cost-effective means of controlling wild pigs and their impact on property and natural resources. In addition, there are opportunities for cooperation between public agencies, conservation organizations, and private landowners that use incentives to manage wild pigs in conjunction with primary land use objectives.

The plan invites participation from the public and incorporates the results of surveys and applied research to achieve stated objectives. The plan has seven objectives as follows:

1) Study the distribution and density of wild pigs in California.
2) Reduce wild pig depredation on private land.
3) Increase hunting opportunities.
4) Determine the impact of wild pigs on native communities and agricultural areas.
5) Provide public information.
6) Monitor disease, both endemic and exotic, in the wild pig population.
7) Investigate the economic impact of wild pigs.

This paper will only concentrate on that aspect of the plan that deals with reducing wild pig depredation on private land.

BACKGROUND AND HISTORICAL PERSPECTIVE

Pigs *(Sus scrofa)* are not native to North America. Their history in California dates back to the mid-1700s, when they were introduced by European settlers as livestock. Historical journals indicate that domesticated pigs were allowed to forage in oak woodland areas to take advantage of acorn crops. As a result of this practice, some pigs escaped, and this created wild, free-ranging feral populations. Additional pigs escaped to the wild as California was explored and developed through the 1800s and early 1900s. In the early 1920s, European wild boars were imported into Monterey County by a landowner in Carmel Valley under a domesticated game breeder's permit. Some animals escaped and dispersed into central coastal areas where they bred with feral domestic pigs.

Wild pigs occurred in relatively low numbers in 10 to 15 counties until the mid-1960s. Since then, wild pigs have increased in numbers and expanded their range, primarily in coastal counties from Humboldt to Santa Barbara. Recent surveys indicate that wild pigs occur in at least 45 counties (see Figure 1).

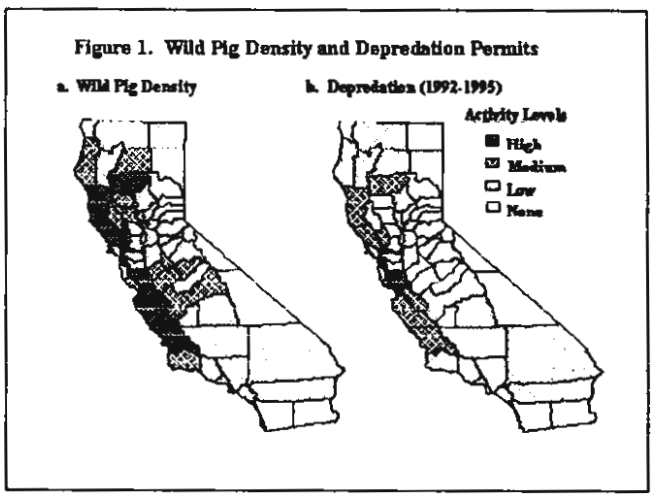


Figure 1. Wild pig density and depredation permits.

Wild pigs have expanded their range by dispersing when rainfall patterns provide good forage conditions. In addition, considerable evidence suggests that humans illegally captured wild pigs, transported them to previously unoccupied areas, and released them primarily for hunting purposes. One result is the presence of some European wild boar characteristics in virtually all wild pigs in the state.

In 1957, wild pigs were classified as game mammals by the Legislature. The intent was, in part, to recognize the valued status of the European wild boar for hunting purposes. However, the fact that: 1) pigs are not native to California; 2) they are very productive; 3) they can cause serious damage to property; and 4) they disrupt native plant and animal communities, distinguishes them from other game mammals. In addition, the history of owners allowing pigs to range freely, and the practical problems in determining the legal status of pigs captured on private lands, complicate enforcement efforts.

In 1992, the FGC §4650 through §4657 was amended to require hunters to possess wild pig license tags to hunt wild pigs. When a wild pig is taken, hunters are required to place a portion of the tag on the wild pig carcass and complete and return the report end portion of the tag to the Department. This law allows the Department to

obtain wild pig harvest information and provides funding to manage wild pigs.

The dual role of the wild pig as an exotic species and a game mammal presents a challenge to the Department. The plan provides methods to take advantage of the demand for recreational hunting to minimize conflicts associated with wild pigs damaging property and disrupting native plan and animal communities where feasible. It also recognizes the need to provide practical means of controlling wild pigs where property and natural resources are affected, including alternatives where recreational hunting is not feasible.

REDUCING WILD PIG DEPREDATION ON PRIVATE LAND

Background

Before 1957, wild pigs could be killed by any means and in any number. In 1957, the legislature designated the wild pig as a game mammal.

As with other game mammals, provisions were made to provide relief to landholders experiencing damage from wild pigs by means of a depredation permit system. Figure 2 illustrates the types and incidence of different types of depredation damage as noted by depredation permit requests from 1992 through 1995.

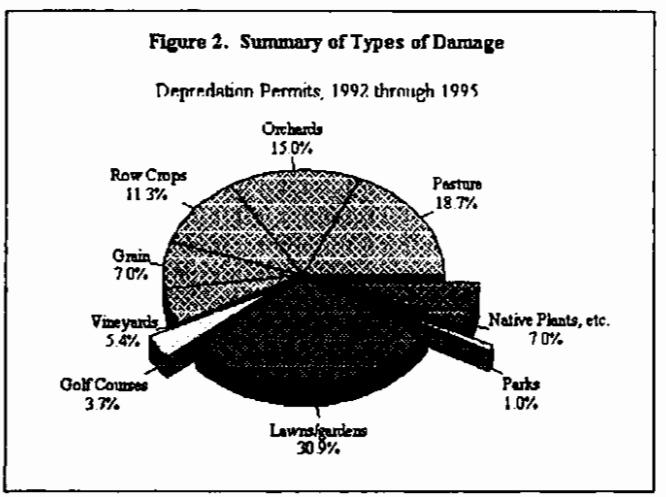


Figure 2. Summary of types of damage.

During the six-year period from 1985 through 1990, the Department issued an average of 68 permits per year to kill an average annual removal of 474 wild pigs that were causing damage, pursuant to FGC §4181 (see Table 1). Though the data are incomplete, it is estimated that an average of about 15 depredating wild pigs per year were killed during that period. This low reported take probably reflects a poor return rate of successful depredation tags.

During the three-year period from 1991 through 1995, the Department issued an average of about 112 permits per year to kill an average of over 515 wild pigs that were causing damage. Though the data are incomplete due to missing permit copies and tags, returns suggest that an average of at least 127 depredating wild pigs per year were actually killed during that period (see Table 1).

The reported removal of approximately 127 reported wild pigs per year from an estimated annual statewide harvest of 30,000 wild pigs represents approximately 0.4%. This percentage is probably a low estimate, reflecting a low depredation reporting rate. However, these figures do suggest that hunting is currently the major mechanism that is controlling the wild pig population in California.

Figure 1 shows the counties where depredation permits have been requested during 1992-1995 and compares the relative number of requests. Figure 3 demonstrates the counties which have requested the most depredation permits for the period 1992-1995.

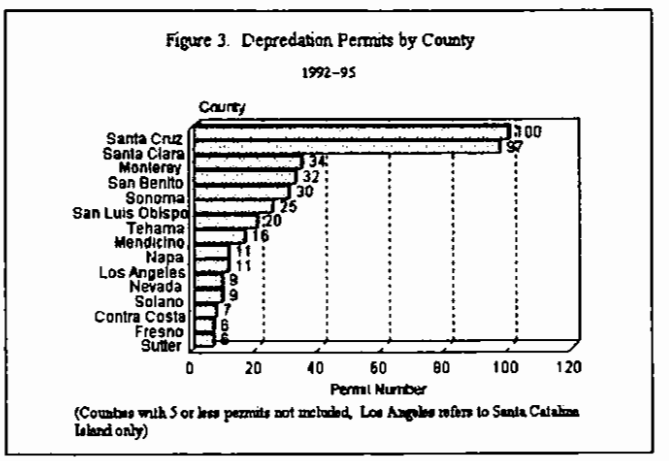


Figure 3. Depredation permits by county, 1992-1995.

Proposed Programs

Proposal 1. Review and amend laws, regulations, and Department procedures to facilitate depredation control. When property is, or is in danger of, being damaged or destroyed, depredation permits to kill certain mammals, including wild pigs, shall be issued by the Department (FGC, §4181). Section 4181.1 allows a wild pig caught in the act of inflicting injury, molesting or killing livestock to be taken immediately by the owner if the taking is reported no later than the next working day. The wild pig carcass is to be made available to the Department, or there is provision for the landholder to have alternate means to dispose of the carcass.

California Code of Regulations (CCR), Title 14, Section 401, subsection (f) allows for alternate disposal methods for wild pig carcasses. Subsection (p) allows hunters to assist landholders with the removal of depredating wild pigs.

There is some concern that current laws and regulations that apply to depredation control do not allow all landholders to efficiently control depredating wild pigs. The definition of wild pig damage and means for carcass disposal are two major areas of controversy. The wanton waste law (FGC, Section 4304) includes the

Table 1. Average number of permits, average authorized take, and average actual take per year.

Region	1985-1990			1991-1995		
	Permits	Auth. Take	Actual Take	Permits	Auth. Take	Actual Take
No. California	3.3	16.2	0.2	6.8	19.0+*	1.8
No. Sierra	2.8	14.7+	1.0	6.8	22.8+	3.0
Central Coast	55.0	412.8+	13.8	91.0	422.2+	116.8
So. Sierra	1.7	8.7	0.2	3.0	12.6	1.2
So. California	5.0	21.7+	0.2	4.8	38.4+	4.2
State Total	67.8	474.1+	15.4	112.4	515.0+	127.0

*On some permits the actual number allowed was unspecified, therefore a + after a number indicates a minimum estimate.

provision that ". . . no person shall at any time leave through carelessness or neglect any game mammal which is in his possession, or any portion of the flesh thereof usually eaten by humans, to go needlessly to waste." Many members of the public comment that the Department's depredation process is cumbersome and not responsive enough to the needs of landholders experiencing wild pig problems.

The Department continually reviews and amends laws and regulations related to wild pig management. For the 1994-95 hunting season, the regulations were amended to allow more wild pigs to be harvested by hunters. In the seven counties with the highest densities of wild pigs, the bag and possession limit was raised to two per day, four in possession. In the balance of the state, the possession limit was raised to two. This change was initiated as a result of the Commission's new wild pig policy where one of the aims is to use hunting to keep wild pig populations at levels that minimize depredation problems.

The detailed proposals to amend existing regulations and Departmental procedures pertaining to wild pig depredation are being prepared. The preparation of these proposals are a high priority of the wild pig management plan. Items being considered include:

1) providing additional, more practical options for carcass disposal. The main concern is that carcass disposal requirements do not interfere with effective wild pig control. Particular areas of discussion will include the possibility of:
   a) leaving carcasses on site without concern for wanton waste when warranted; and
   b) allowing landholders to use wild pig carcasses of depredating wild pigs;
2) reviewing Department procedures to ensure that there are clear and objective criteria for issuing depredation permits;
3) exploring the concept that the mere presence of wild pigs constitutes a threat of wild pig damage;
4) examining the possibility of arranging MOU's with appropriate county agencies for "Wild Pig Control Zones" in areas where depredation control procedures that use hunting or depredation permits are found to be ineffective; and
5) taking steps to ensure all Department employees consistently interpret and implement depredation permit procedures and regulations.

In situations where the current regulations or procedures are found to be inadequate, alternatives will be proposed to the Fish and Game Commission for consideration.

Proposal 2. Depredation Hunting. Wild pigs should probably be viewed as a permanent part of the California landscape. Total eradication is not a realistic goal, and wild pig control will be a continuing annual activity. In many cases, the least expensive and most effective control method to annually reduce wild pig numbers to an acceptable level is provided by hunters at no cost to landholders. This is not always the case, and may not be the preferred solution for wild pig depredation problems in all areas.

Many landholders currently use hunters to provide wild pig control. Commonly, this is accomplished by using family friends who hunt, hunters who request hunting access, or by allowing hunting for a fee. With an estimated harvest of at least 30,000 wild pigs annually, it is suspected that hunting currently provides an adequate level of control on many properties throughout the state.

The Department has a large database of hunters that can assist private property owners experiencing wild pig problems. Private landholders may call the Department and receive a randomly drawn list of licensed hunters who they would contact. This program is intended to be a tightly-controlled program, using responsible hunters, as follows:

1) the landholder interviews and selects hunters;
2) the number of hunters is determined by the property owner;
3) the property owner has the ability to limit any aspect of the hunting. Such restrictions could include limiting the method of take (i.e., shotguns or archery only), restricting daily hunter numbers, setting hunting times (i.e., mornings only), choosing to allow the use of dogs, requiring walk-in only, or restricting vehicle use to roads only; and
4) the landholder may deny access at any time to

any hunter who does not behave responsibly or does not follow the conditions established by the landholder.

With a program like this, landholders would likely use a small group of hunters that they know and trust. They would use the same hunters year after year to keep wild pig numbers at a tolerable level.

Legal liability of using hunting is often stated to be a concern of landholders. Section 846 of the Civil Code expressly relieves landholders of any liability for a recreational purpose (including hunting) on their property if a hunter requests permission to hunt on that land and the permission is given. This section does not limit the liability if there is a malicious failure on the part of the landholder to warn against a dangerous condition, if the hunter pays an access fee, or if the landholder expressly invites the hunter onto the premises.

Proposal 3. Use of multi-property or area hunting to alleviate depredation. In many locations, especially where high value crops are grown on relatively small acreage, two general situations frequently complicate efforts to achieve effective control. The wild pigs usually do not live on the property, but only enter now and then to cause damage, and there is often a high enough density of residences to prevent the legal use of firearms for control.

Smaller areas with more intensive agriculture are often surrounded by larger, less intensively managed properties. Small property owners can often experience damage from wild pigs that either: 1) move from small property to small property, causing damage everywhere they go; or 2) live on surrounding large properties where they generally are not a serious problem. Other than with the use of exclusion fencing, these situations make effective control particularly difficult. In the former case, even when each individual owner attempts control, small property size and easy movement of wild pigs across boundaries make most methods of control impractical or illegal; and because food in the form of crops is readily available, trapping is usually unproductive. In the latter case, the same difficulties apply with the added complication that the larger properties often do not perceive the need to undertake any control. For safety reasons, it is illegal to discharge a firearm within 150 yards of any occupied dwelling or any building or barn used in connection with such a dwelling.

If wild pigs learn to come onto a property and feed only at night, control can be even more difficult. Control using hunting is illegal at night, while control under depredation permits only allows for control to be undertaken on the property where the damage occurs.

The basic problem is the situation where wild pigs are doing damage by feeding on one property, but generally living on another property or properties. In this situation, one solution would be to get all the landholders in an area to agree to give, to a small group of carefully chosen hunters, written permission for access to each property. When damage occurs, this would allow hunters to put immediate pressure on the wild pigs regardless of where they went because hunters could follow them across property boundaries. Because it is a hunting situation, it would reduce: 1) the need to wait for significant damage to occur, as for depredation permits; 2) the need to obtain depredation permits and the unavoidable loss of time this entails; and 3) the difficulties involved with carcass disposal. With this method, there would most likely be very little wild pig damage because statistics show that where hunting pressure is continual, there are usually very few wild pigs.

The steps proposed to initiate the program are as follows:

1) The Department and the County Agriculture Commissioners would meet with local landholders to explain the proposed program and to obtain agreement from a number of adjacent landholders to allow hunter access.
2) The current Department list of wild pig hunters would be used to provide property owners with a list of hunters who meet their specific requirements.
3) The property owners, as a group, would interview and select hunters, or hunter parties, that they felt met their needs and were responsible.
4) Hunters would be oriented to discuss safety, special landholder conditions, hunting area boundaries, any special "off limits" areas within the hunting area, and the need for the hunters to be considerate and responsible.

The Department needs to clearly convey to property owners that they:

1) interview and select hunters;
2) decide on the number of hunters given permission, though the Department might give advice if this is desired;
3) limit hunting times, hunting days, party sizes, vehicle use, or methods of take (i.e., whether dogs may be used, or requiring that only shotguns or bows and arrows be allowed); and
4) have the right to cancel any hunter's permission if they decide the hunter is not responsible or does not follow the conditions laid down by them.

With a program like this, a group of landholders would end up with a small group of hunters that they knew and trusted. These same hunters could either be called on to hunt regularly, and significantly reduce property damage.

CONCLUSION

A number of points need to be stressed when considering damage caused by wild pigs. First, wild pig depredation is a long term problem. The wild pig is intelligent, mobile, and has an exceptionally high breeding potential for a large mammal. This makes control difficult and eradication unlikely. Second, the Department places a high priority on minimizing depredation on private land. Third, the solutions presented here are not the only answers, but they are the ones that will be closely investigated during the next five years. Finally, landholders, agricultural agencies, and the Department need to continue to work together to find the best solutions to wild pig depredation problems in California.