WILD BOAR (Sus scrofa) CONTROL IN REGIONAL PARK "LA MANDRIA" (PIEDMONT, NW ITALY)

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Abstract: The authors discuss the effects on population structure (sexes, age classes) and the effectiveness of two different methods of population control to which wild boars of the Regional Park "La Mandria" were subjected during a period of five years.

Keywords: Wild boar, *Sus scrofa,* Suidae, Damages, Control, Sex ratio, Age classes.

IBEX J.M.E. 3: 237-240

1. Introduction

In order to limit crop damages caused by wild boars living in the Regional Park "La Mandria" two different methods of population control were employed: shooting individuals caught in cage traps and direct shooting from high seats. The purpose of this study was to assess the management effectiveness of the two techniques and their impact on different age classes and sexes. Data concern the period from 1 Dec. 1988 to 30 Nov. 1993.

2. Study area

The Regional Park "La Mandria" (258-402 m u.s.l.) stretches for 6,541 ha, mainly occupied by grazing meadows, cereal fields and deciduous forests (27% of the surface) (Fig. 1).

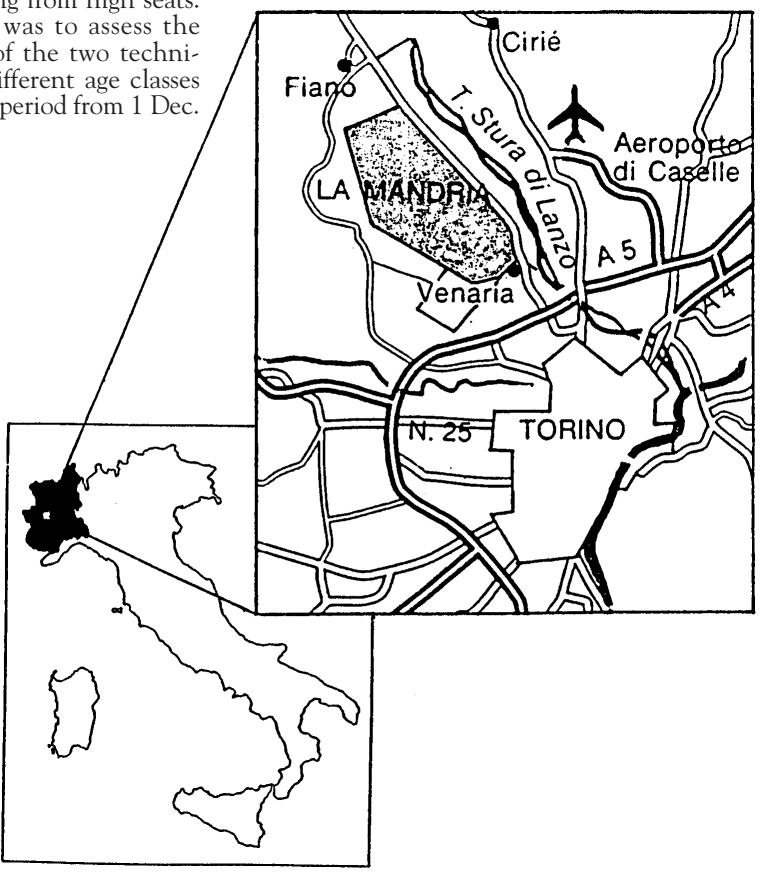

Figure 1 - Study area.

The central area of the Park is more suitable for wild boars, being lesser anthropized and thanks to its more extensive forestal cover; it is enclosed by a wall that does not represent a barrier to the species, which can move along the several water courses which cross it.

3. Material and methods

Eight movable cage traps were employed, baited with maize grains and placed in the central area of the Park. Traps were operated weekly for 5 days and checked each morning by an operator. Captured animals were killed directly within the cage, except for individuals younger than 4 months which were freed and are not considered in the present study.

Assuming a trap night (TN) to be 1 trap operated for 24 hours, capture rates are expressed as the number of caught and killed wild boars/100 TN.

Other wild boars were killed directly shooting with carbine from permanent high seats or temporary seats (lean-to type). To this purpose individuals were driven by moving operators also aiming to the selective control of Red deer and Fallow deer. The number of daily employed operators varied from 7 to 30; dogs were not employed.

Individual age was determined on the basis of the dentition analysis following the criteria proposed by Iff (1978) and Boitani and Mattei (1991).

The incidence of the two culling methods on different age classes and sexes was tested by χ^2 analyses for independent samples.

4. Results and discussion

On the whole, 486 individuals were culled, 67.3% were shot in capture traps and 32.7% shot from high seats (Tab. 1).

Individual shooting within cages has not inhibited further captures, 14% of which took place during the 48 hours following the shooting. The number of individuals shot in a trap varied from 1 to 11 per capture, with a mean of 1.68; multiple captures were 29.3% of the all cases.

The period with more captures was from May to September (Fig. 2).

The overall sample of culled individuals shows a sex ratio of 1: 1.31. The incidence on the sexes of the two methods employed does not significantly differ ($\chi^2 = 0.298$, d.f. = 1, $p>0.5$). On the contrary, the two methods significantly differ regarding to the different age classes cull ($\chi^2 = 104.514$, d.f. = 4, $p<0.001$), which is proportionally bigger on 4-6 months individuals with trapping (Fig. 3). There is undoubtedly a selection in favour of the killing of individuals older than 1 year in the high seat shooting, due to the fact that among an animal herd the culler tends to choose the bigger individual. Since we do not really know the population structure, it is not possible to check if the opposite selection exists employing traps, as noticed by other authors (Mauget, 1980; Douaud, 1983; Spitz *et al.*, 1984; Boisaubert & Klein, 1984; Gaillard *et al.*, 1987; Jullien *et al.*, 1993).

The trapping success has progressively reduced from 1989 to 1993 (Fig. 4). The exceptional acorn production during the autumn 1993 may have influenced the last figure, which is particularly low; several authors notice that a high food availability in the environment interferes negatively with the captures (Vassant *et al.*, 1993).

However, the trend on the whole denoted by the index shows how, in spite of the possible immigration, the killing has determined a progressive decrease in the number of wild boars in the area.

Table 1: Number of wild boars killed within the cages (C) and by shooting from high seats (HS) for each year.

Years	Days***	WILD BOARS		
		C	HS	Total
1989 *	98	63	19	82
1990	185	116	55	171
1991	165	61	54	115
1992	195	59	14	73
1993 **	195	28	17	45
		327	159	486

* Data relevant to December 1988 are included.

** Data until 30/11/1993.

*** Number of operating days. Trapping and high seat shooting were carried out during the same days each year.

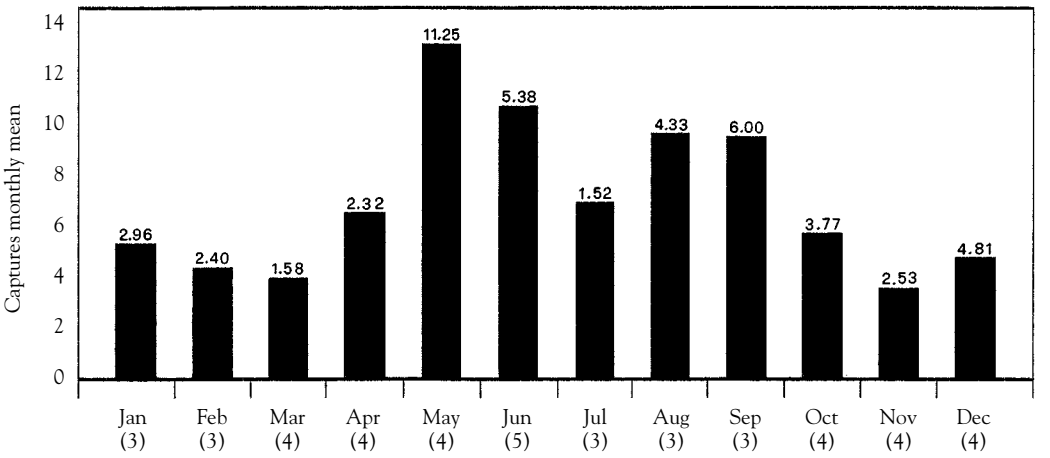

Figure 2. Captures monthly mean. Values above the bars indicate SE, values in parentheses indicate the number of months (between 1988 and 1993) in the sample.

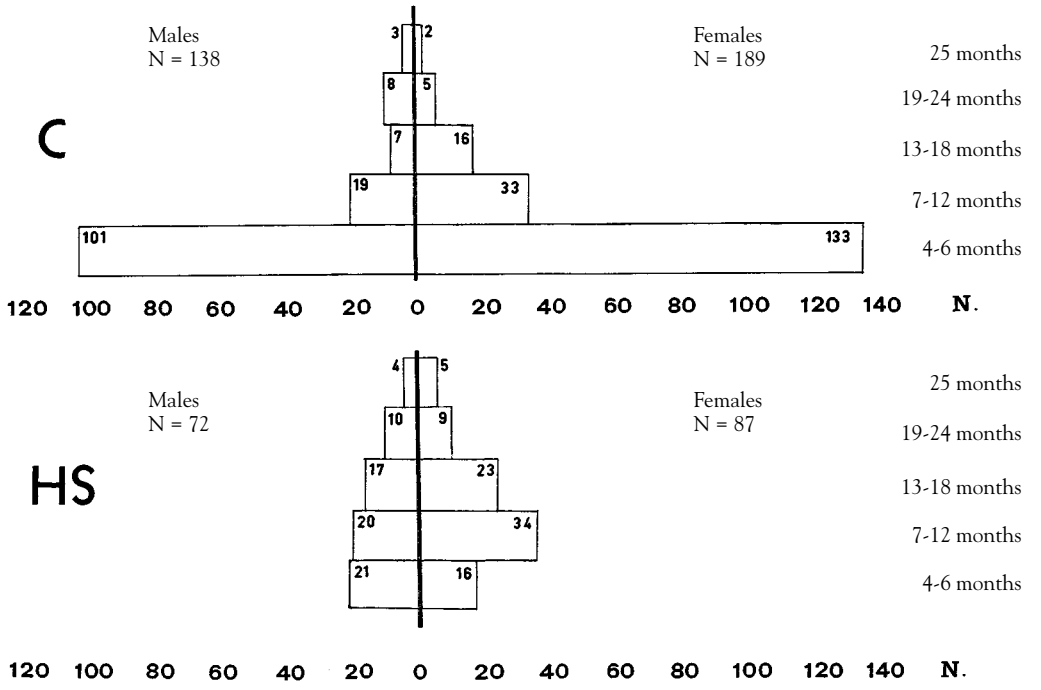

Figure 3 - Age class distribution in the two samples: (C) captured, (HS) shot from high seats.

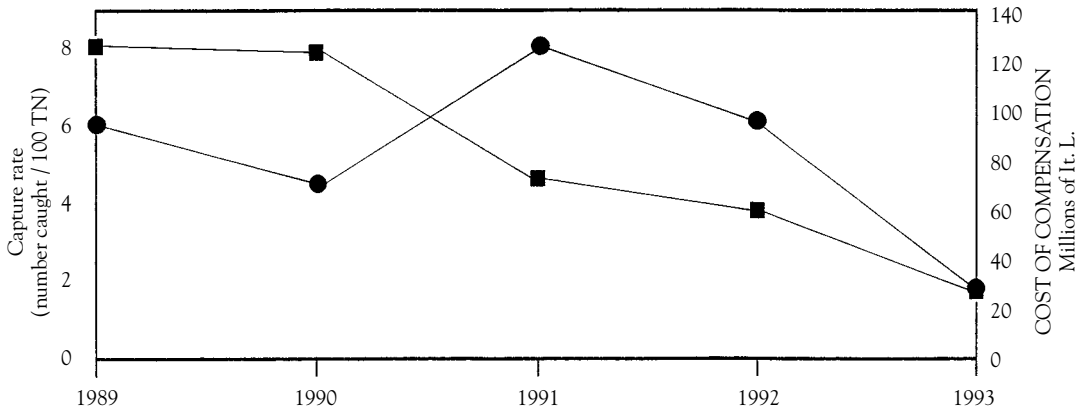

Figure 4 - Trapping success rates of wild boars and allocation of money to refund crop damages.

Since 1992, also the damages caused by the species to crops are sensibly decreased, as shown by the expense course for the compensations.
The killed Wild boar selling has covered the 21% of the total costs of compensations for damages for the whole period.
Between the two methods employed, the one based on trapping has proved the most profitable. Besides the better results in harvesting the population:
a) it has requested a minimum employment of means and men;
b) the straight and immediate animal culling has been assured avoiding wild boars' wounding risks linked to the hunting methods;
c) in the weapon employment, the maximum safety has been obtained both for the operators and for the public;

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